SCN NEWS

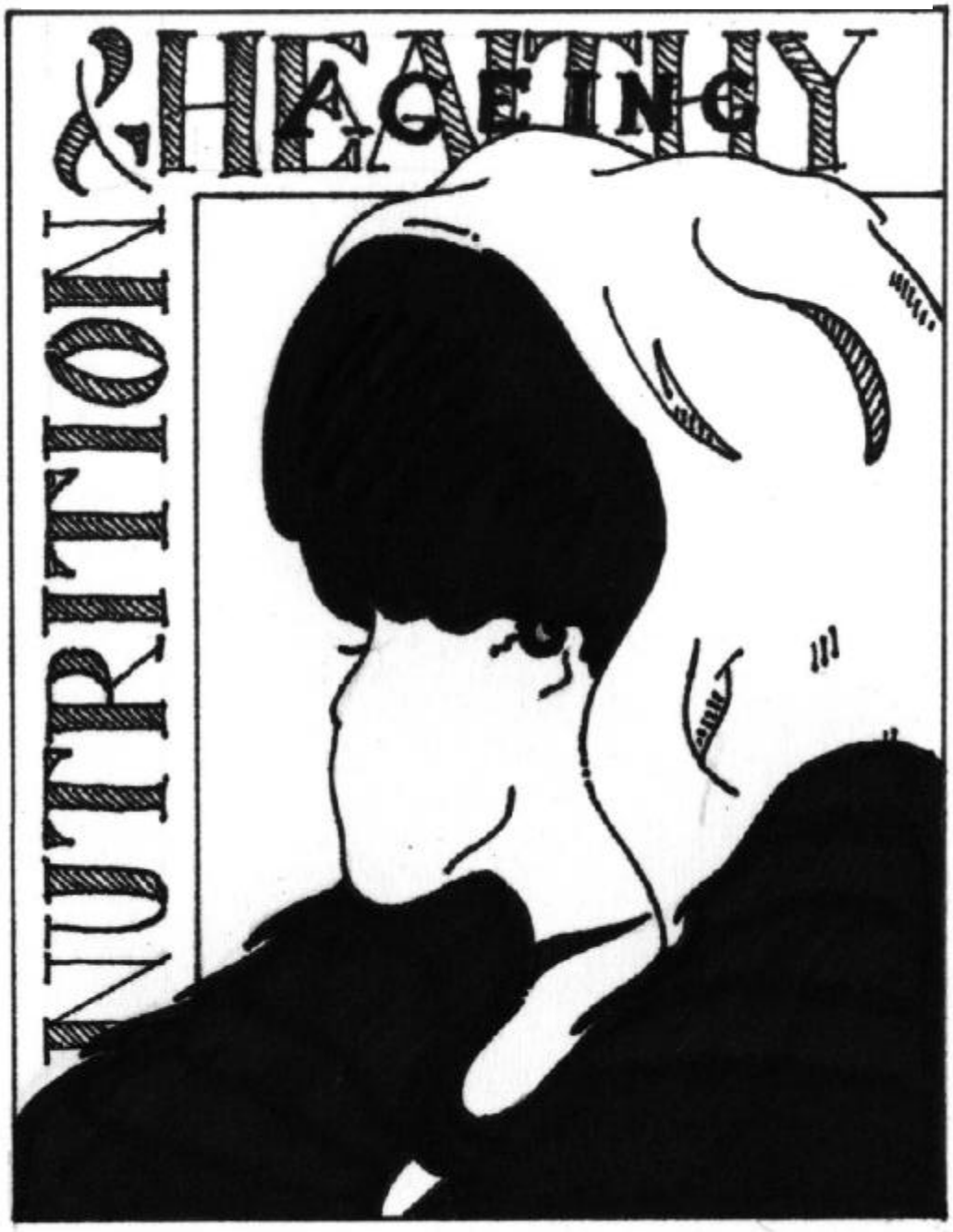
A PERIODIC REVIEW OF DEVELOPMENTS IN INTERNATIONAL NUTRITION COMPILED FROM INFORMATION AVAILABLE TO THE ACC/SCN

UNITED NATIONS SYSTEM'S FORUM for NUTRITION

ADMINISTRATIVE COMMITTEE ON COORDINATION

SUB-COMMITTEE ON NUTRITION

Number 19, December 1999



Ageing is happening right before your eyes Is she...or isn t she...?

THE UN SYSTEM'S FORUM FOR NUTRITION
SUB-COMMITTEE ON NUTRITION
(ACC/SCN)

The Administrative Committee on Coordination (ACC), comprised of the heads of the UN Agencies, recommended the establishment of the Sub-Committee on Nutrition (SCN) in 1977, following the World Food Conference (with particular reference to Resolution V on food and nutrition). This was approved by the Economic and Social Council of the UN (ECOSOC). The UN members of the SCN are the ADB, FAO, IAEA, IFAD, ILO, UN, UNAIDS, UNDP, UNEP, UNESCO, UNFPA, UNHCHR, UNHCR, UNICEF, UNRISD, UNU, WFP, WHO and the World Bank. From the outset, representatives of bilateral donor agencies have participated actively in SCN activities. The Secretariat is hosted by WHO in Geneva.

The **mandate of the ACC/SCN** is to serve as the UN focal point for promoting harmonized nutrition policies and strategies throughout the UN system, and to strengthen collaboration with other partners for accelerated and more effective action against malnutrition. The **aim of the SCN** is to raise awareness of and concern for nutrition problems at global, regional and national levels; to refine the direction, increase the scale and strengthen the coherence and impact of actions against malnutrition worldwide; and to promote cooperation among UN agencies and partner organizations. The SCN's annual meetings have representation from UN Agencies, donor agencies and NGOs; these meetings begin with symposia on subjects of current importance for policy. The SCN brings such matters to the attention of the ACC and sponsors working groups on specialized areas of nutrition.

The SCN compiles and disseminates information on nutrition, reflecting the shared views of the agencies concerned. Regular reports on the world nutrition situation are issued and external resources to address nutrition problems are assessed. Nutrition Policy Papers are produced to summarize current knowledge on selected topics. *SCN News* is published biannually, and the *RNIS* is published quarterly. As decided by the Sub-Committee, initiatives are taken to promote coordinated activities -- inter-agency programmes, meetings, publications -- aimed at reducing malnutrition, primarily in developing countries.

SCN News Editor: Judith Pojda, PhD

Illustrations by Robert Lavin

SCN NEWS is issued in July and December each year by the Secretariat of the UN ACC Sub-Committee on Nutrition. Your contributions to future issues would be most welcome. *SCN NEWS* aims to help the sharing of experience in nutrition. If you wish to receive additional copies of *SCN NEWS*, or would like to suggest other names to be added to our distribution list, please write to us or visit our website at: http://www.unsystem.org/accscn/

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CHAIR'S MESSAGE

Time for a New Perspective

The new millennium is here. It is now time to go beyond what our eyes see – like the young woman on the cover of this issue -- and explore avenues not so readily perceptible to us – like the older woman on the cover of this issue. As we age our physical eyesight may become less sharp; however, our wisdom sharpens. We must begin to see things we have failed to see before, to find and nurture "bold and imaginative" solutions to nutrition problems that plague the world.

To celebrate the United Nations International Year of Older Persons, "Nutrition and Healthy Ageing", featured in this issue of *SCN News*, begs the question: Should scarce resources, research funds, time and energy be allocated to our older population? May I answer unequivocally, in a human society: yes; in the millennium: yes; and in a world that begins to take human rights seriously: yes. It is projected that in 20 years there will be twice as many older people in the world, and 70% will live in developing countries. A radical change in our perception is needed: older people are not "burdens" or "problems" needing charity, as contributing author, Dr Suraiya Ismail explains, but rather carers of children, advisers, teachers, guardians of culture, and volunteers for numerous community projects. We must combat ageism and put a human face on policies and institutions affecting our older population. Ageing is a process which, hopefully, will affect all of us – and our quality of life.

In the spirit of examining issues from a fresh perspective, I look forward to an exciting agenda planned by our Interim Program Steering Committee (IPSC) for our 27th Session in Washington DC, 10-14 April 2000, jointly hosted by UNICEF and the World Bank. The topic will be "Nutrition Stocktaking and the Challenges for the 21st Century". The global nutrition situation at the turn of the millennium will be reviewed and the SCN will develop a strategic plan for inter-agency coordination of programmes aimed at accelerating action to reduce malnutrition in the next decade. The IPSC has re-arranged our usual schedule to better accommodate the needs of all the Working Groups. The symposium on 11 April will be devoted to reactions to our *Fourth Report on the World Nutrition Situation* from the head of a UN agency, an expert development economist, and a prominent bilateral development minister. The Fourth Annual Abraham Horwitz Lecture will be presented in the afternoon.

I am pleased to announce that Dr Namanga Ngongi of WFP has been chosen as the incoming Chair of the ACC/SCN, supported by all SCN members and formally endorsed by the ACC in October. Dr Ngongi was named Deputy Executive Director of the World Food Programme in 1994, after a decade of service with WFP. His positions included Director of Development Operations, Deputy Director of Operations, Deputy Director of External Relations, and Regional Bureau Manager of the West and Central Africa Bureau and of the East and Southern Africa Bureau. He was appointed First Secretary at the Cameroon Embassy in 1980 and later promoted to Counsellor. During this period he was responsible for relations between Cameroon and the Rome-based United Nations agencies. Dr Ngongi holds a Masters and Doctorate in Agronomy from Cornell University. Dr Ngongi and I will be working closely together during the next year, until he formally takes over as Chair in January 2001.

All of us within the SCN will be saddened by the news of the tragic death of Dr Lilian Tendayi Marovatsanga, our former AGN member. Lilian was head of the Institute of Food, Nutrition and Family Sciences in Harare, Zimbabwe. She spoke tirelessly as the voice of those less fortunate in terms of nutrition and health rights as evidenced by her lively contributions to our last symposium (*SCN News* No. 18, pp 75,80). We appreciated her commitment and willingness to act as an independent, external expert for the Secretariat and the SCN member agencies. The SCN extends its deepest sympathy to her family.

The SCN also extends its sympathy to the people of Tanzania, whose recent loss of "Mwalimu", President Julius Nyerere, was strongly felt by many people around the world. President Nyerere was a principled and incorruptible statesman whose ideas about education and health were progressive. The Tanzania Food and Nutrition Centre presented an award to President Nyerere for his contributions in support of improving the nutritional status of all Tanzanians. In 1985 President Nyerere focused the world's attention on the devastating impact of international debt when he asked the Queen of England, "Must we starve our children to pay our debts?" This issue of *SCN News* carries an analysis of debt relief by Harvard economist, Dr Jeffrey Sachs. Could debt relief be linked to actions for nutrition, to develop "bold and imaginative" strategies to reduce the magnitude of malnutrition facing us? One year ago we appealed to make 1999 a year of "nutrition enlightenment" for everyone's benefit and we have all been challenged by the Commission's Report which identified eight major nutritional challenges at our last session. Now the year 2000 is here, the millennium has opened. I summon the SCN triumvirate: let us find new vision and new energy to put the scourge of mass malnutrition behind us.

Richard Jolly

AGN PAGE

During its most recent (26th) session, the SCN decided to place the Advisory Group on Nutrition (AGN) in abeyance for one year. During this year an appointed Interim Programme Steering Committee (IPSC) has taken on the reform measures for restructuring the SCN. IPSC members were invited to provide their views on the triumvirate nature of the SCN.

Partnerships in Eliminating Malnutrition

Ian Darnton-Hill

Life, sometimes unfortunately, is never simple. Neither are solutions. This applies no less to the solutions for malnutrition. Malnutrition includes undernutrition, overnutrition and micronutrient malnutrition, but even these distinctions are blurred as it becomes ever clearer that nutritional insults suffered at one point in a life, can have long-lasting effects, even into the next generation. Nevertheless, we all still look for simple solutions, and should continue to do so. The prevention and control of micronutrient deficiencies appears comparatively simple, with clear ways of addressing them with quick and tangible results. It has been argued that the vastly increased attention to micronutrients over the last decade, largely donor driven, reflects disenchantment with the lack of success in addressing the hydra-headed protein-energy malnutrition challenge. The complexity of the underlying and basic causes and effects of malnutrition means we must also use a broader framework such as that developed by UNICEF [*see ACC/SCN NPP No.16, p.54*]. Another recent major step has been to address the non-biological determinants of malnutrition through a "human rights" framework [*see SCN News No. 18*]. It is another milestone that virtually all affected nations attending the major international fora of the 1990s [*The World Summit for Children, the International Conference on Nutrition, and the World Food Summit*] accepted three universal goals: the elimination of vitamin A deficiency, iodine deficiency disorders and the substantial reduction of iron deficiency anaemia. Much progress has been made, but **goals set for the year 2000 will not be achieved**. It is now important to see what the successes and failures have taught us as we move to adjust. In the last year, there has been re-affirmation that a single 'magic bullet' approach -- however tempting for practitioners and policymakers alike -- is not enough.

The other thing we have learned is that partnerships are not only a more effective way of working, but are in fact, simply a necessity. It is tremendously encouraging that the UN in general, and the current ACC/SCN in particular, recognize this tenet. The IPSC is composed of representatives of the key UN agencies (ably chaired by the World Bank), but also has representation from the bilateral funding agencies, and rotating representation from the NGO community. The new leadership of WHO has actively embraced the need for other partnerships from 'civil society', including international and national NGOs, and also for developing new relationships with the private sector so that they, and the more affluent world in general, share more of the global burden of disease and malnutrition.

The challenge now, is to leverage the added benefit of different groups working toward common goals, while not losing the special expertise, leverage, influence or skills of the separate partners. It is quite clear that the UN agencies have a critical role to play in acting as one voice (which is what the ACC/SCN is designed to promote globally, and what the UN Development Assistance Framework—(UNDAF)—promotes at the country level). Neither the bilateral agencies nor the NGOs have power similar to the UN agencies in terms of opening up governments to necessary action. Nevertheless, they cannot do this alone (and increasingly do not want to). Governments must be full partners -- both in countries where malnutrition levels are high, as well as in those that must be the providers of added resources. The wealthier countries must allow global structures that facilitate countries, and the international community, to help themselves. It is now totally accepted that community involvement is a prerequisite to successful interventions (although still not always acted upon, or given appropriate budgeting). The private sector also has an important role to play, particularly regarding pharmaceuticals, vaccines, and food fortification. Like all the partners, they bring both strengths and weaknesses (profit inevitably conflicts with disease intervention approaches at times).

The recognition given to NGOs by this ACC/SCN Chairman, Dr Richard Jolly, is encouraging, and will be mutually useful in reaching common goals. Without a broad range of NGOs applying their flexibility, experience, and local knowledge to these nutrition problems, the goals will simply not be reached. Partly because of some of these characteristics, and partly due to the extreme diversity of NGOs -- from single issue lobby groups (such as WABA), to national NGOs, large and small, International NGOs/PVOs (such as Helen Keller Worldwide), to more technically/academically oriented groups (such as IUNS) -- the NGOs, as a whole, are difficult to define and organize. And this is probably how it should be -- a relatively independent voice is always important -- both within an organization but also in a grouping of partners. This should not be seen as a threat. Getting the international nutrition community to agree to a common approach and goals during this decade has been a major achievement of the UN agencies involved in food, nutrition and development. While retaining their special role and mandate, the UN agencies' other major achievement toward realizing these goals, has been the increasingly welcome recognition of the vastly synergized strength of all partners working together. The Advisory Group on Nutrition (AGN) has had great impact by serving as the independent external voice and third arm of the triumvirate structure of the SCN, and has stimulated much necessary debate within the international nutrition community. It is the hope, and expectation, of many NGOs that their partnership with the SCN will also grow and even be loosely formalized, in a way that does not reduce independence but ensures that all our strengths are brought to bear on the multitudinous problems. One challenge is to show NGOs not currently involved in the ACC/SCN, that reaching their objectives can be facilitated by strengthening these sorts of partnerships. Similarly, the special responsibilities and roles of the UN agencies should not be diluted. The ACC/SCN is providing leadership to the rest of the UN and its many willing partners on how we can all maximize our impact and contribution. It will be interesting to see how the challenge is met in the 21st century. However it develops, it is clear we will be looking at a mix of interventions and a mix of partners. It is critical we succeed.

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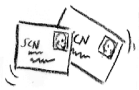
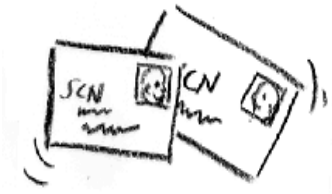
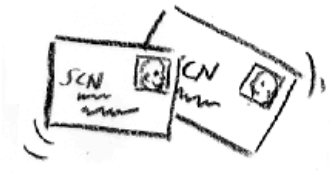




LETTERS TO THE EDITOR



A reaction to George Kent's feature article in SCN News *No. 18, p89…*

RISKS TRUMP RIGHTS IN UNPROTECTED MINORS

The Human Rights & Nutrition feature "Tested in Court: The Right to Breastfeed" by Professor George Kent in *SCN News* No 18 brought immediately to mind the words of the plaintiff ballad from the musical, *Jesus Christ Superstar*, sung by the Mary Magdalene character in the song *"I Don't Know How to Love Him."* By humanizing "The Savior" with her refrain, *"... he's just a man, and I've known so many men before ... he's just one more,"* she shocked society of thirty years ago with what was considered tantamount to blasphemy. In many parallel ways, the advent of the Human Immunodeficiency Virus (HIV) has brought human milk into the sights of human frailty. The poignant and sensitive article in *SCN News* No 17, p17, on AIDS by Dr. Jean Humphrey, on the dilemma of vertical transmission of HIV by breastfeeding Zimbabwean women, pointed out the tarnish on the sacred halo that has surrounded "nature's perfect food for the infant." Although perfectly adapted to the nutritional needs of the newborn, human milk is not perfectly isolated from becoming a vector of harmful agents, and it is, after all, just a food. Throughout history, deaths related to contaminated foods and beverages, spoiled foods, and even intentionally poisoned fare, have been a leading cause of mortality. The chapters on "food-borne illnesses" swell the textbooks of medicine and public health. Pork can transmit trichinosis. Ground-grown vegetables can transmit cysticercosis. Cow milk can transmit bovine tuberculosis and brucellosis. Jack-in-the-Box hamburger's can transmit lethal stains of Escherichia coli. The examples are legion. Joining these ranks, since 1981, has been human milk and its transmission of lethal viral infections.

What about the merits of Prof. Kent's case? If one is to be known by the company he keeps, the readers of this periodical are unlikely to be impressed by the company George Kent sports in the courts. David Rasnick's alternative theories about the etiology of AIDS run into the now irrefutable scientific reality that HIV really does fulfil Koch's Postulates for the causation of the syndrome. And, to the extent that Roberto Giraldo's critique concerns the uncertainty of HIV diagnostic tests, a battery of approaches exists for reducing the uncertainty, vanishing to near-zero. With respect to the judicial precedents, HIV-seropositive persons have been found culpable of willfully attempting to infect others through their bites, through rape, or by using their own blood as a weapon. The Oregon judge in Kent's parable followed both the law, and sound judicial judgement in the domain of the unprotected minor. If parents were to announce their intention willfully to expose their infant to any other HIV-bearing human fluids (blood, saliva, semen), the authorities would certainly take notice, followed by swift action. If parents were to announce their intention to place a lethal organism in the food of a child, the justice system would be obliged to intervene and enjoin. The halo has been tarnished; human milk can become, at the same time, an HIV-bearing human fluid and an infected food.

HIV, moreover, is not the only noxious substance or agent that can be transmitted to a child through mother's milk either knowingly or inadvertently. Hepatitides viruses can be also transmitted vertically. Mothers who have suffered radiation accidents might bear harmful levels of strontium-90 in their milk. Mothers undergoing chemotherapy to save their own lives might endanger that of their infants by passing the antimetabolite through the milk. Prior maternal exposures to excessive heavy metals, pesticide or toxins might present milk levels making it unfit for the infants' consumption. Unfortunately, technology's capacity to insult our environment portends more and increasing assaults on the safety and quality of human milk with noxious substances. Returning to the judicial court, and that of public opinion, knowingly exposing an infant to this litany of damaging and legal hazards could only be justified when (1) the vehicle is human milk and (2) all of the other feeding options are worse.

Unfortunately, in getting the discussion back to the pressing and relevant life-and-death public-health issues raised by Jean Humphrey, we have had to pass across the gauntlet ineptly cast down by Kent. He has framed the discussion in the context of competing **rights**, centered around the mother's right cum obligation to breastfeed and the infant's right to be breastfed. The Oregon, U.S. court framed the discussion in the context of competing **risks**. Where the rubber meets road of soaring HIV seropositivity in Africa, and now Southeast Asia, the issue boils down to rights versus risks. Informed choice for an HIV-positive mother involves a child who, if he or she survives the precarious challenges of infant diet, is sadly destined to become an orphan anyway, Rasnick's denial notwithstanding. The mother must be told of the finite risk of vertical transmission of the viral infection to the child from consuming her milk; such an infection would carry the child away in a matter of years. And she must be instructed in the alternative to feeding the infant at the breast, whereby the nutritional inadequacy and unacceptable hygienic and microbiological condition of the water for home-concocted formula might shorten the life of the child to an even greater extent than the progression to infantile AIDS. This is the stark choice facing the poor African or Asian mother. Mrs. Tyson's personal lot was not much better, but her options for artificially feeding her son were vastly superior. The right to life for newborn infants will only be addressed and enhanced in HIV-endemic populations when safe and accessible alternatives to infected breast-milk provide a legitimate choice, and a way out of the now, doubly-lethal, dilemma.

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Reply from George Kent...

SOLOMONS' WISDOM?

I appreciate Noel Solomons' response to my article in *SCN News* No. 18 on the trial of an Oregon mother who was prevented from breastfeeding because she was diagnosed as HIV-positive. I would like to take the opportunity to clarify the argument.

(1) I accept that the HIV diagnosis "has brought human milk into the sights of human frailty". Breastmilk can be contaminated.

(2) The argument about the company that I keep is irrelevant.

(3) It is true that people diagnosed as HIV-positive have been found guilty of willfully attempting to infect others. In the Oregon case, there was no such allegation. This argument is irrelevant.

(4) The suggestion that the mother was trying to "place a lethal organism in the food of a child" is grossly exaggerated. While I can accept that there is some level of risk associated with breastfeeding by a woman diagnosed as HIV-positive, there is no clear published evidence to show that such breastfeeding is a virtual death sentence. In the Oregon case, the state was not able to demonstrate clear evidence that a high percentage of breastfed infants of mothers diagnosed as HIV-positive would die early.

(5) I agree that there are several "noxious substances" that can be transmitted from mother to infant through breastfeeding. However, there is a difference between demonstrating the possibility of transmission and demonstrating that there is a high likelihood of negative health outcomes. Many of the studies fail to explore actual health outcomes.

6) Solomons said I framed the discussion in terms of competing rights of the mother and the child. Actually, I framed it as a question of government coercion vs. patient decision-making based on informed consent. It is not the government's task to regularly minimize the risks to which we expose ourselves or our children. Many more children die in automobile crashes than die from being breastfed by mothers diagnosed as HIV-positive, but governments do not prevent us from putting our children into cars. These are judgments that parents are expected to make.

7) I agreed that there are exceptional cases in which the state may override this principle of patients themselves making the final decisions regarding their care, on the basis of informed consent. However, I also argued that the conditions required to justify such an exception were not met in this case. I said:

> *The published scientific evidence was not adequate to justify the State's presumption that breastfeeding by a woman diagnosed as HIV-positive (but otherwise asymptomatic) would be subjecting that child to excessive risk by breastfeeding.*

In the courtroom there were some references to a few badly designed studies and to forthcoming studies that purportedly would show the risk of death, but the state was not able to produce any clear evidence on the purported lethality of breastfeeding by mothers diagnosed as HIV-positive. If Solomons or others are now able to show convincing studies on this matter, I, and I am sure most mothers diagnosed as HIV-positive, would be guided accordingly.

(8) Like the court in Oregon, Solomons conveniently ignores my point that "United Nations agencies and the United States government had repeatedly reaffirmed the principle that HIV-positive women should not be coerced." Following long and hard study of the issues, policy analysts at these levels have concluded that the treatment of women diagnosed as HIV-positive should be based on their informed consent. The court in Oregon was not willing to hear about this.

(9) I stand by my argument: "If there is a failure of informed consent, there is an obligation on the part of government and health care workers to provide better information. Resort to coercion is not the appropriate remedy."

(10) Rather than promote the assumption that infants breastfed by mothers diagnosed as HIV-positive are almost certain to die as a result, Solomons could help to clarify matters for all concerned by helping to develop good scientific data on the actual risks involved.
I appreciate Noel Solomons' provocative argument because it provides an opportunity for setting out the concerns more clearly.

George Kent, University of Hawai'i, November 4, 1999

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The Oregon Case -- Clouding the Issue of Alternative Infant Feeding Methods for Mothers with HIV

The trial of the Oregon mother who was prevented from breastfeeding because she was diagnosed as HIV positive, which led to the article by George Kent in *SCN News* No. 18, and the responses here by Noel Solomons and by George Kent, raise interesting human rights arguments. But the issues raised in this debate are dwarfed beside the enormous problem of HIV in millions of poor pregnant women living in developing countries. Discussion of the Oregon case should not be allowed to mask the uncomfortable situation in which we have to make health recommendations that differ, depending on whether mothers are affluent, or are poor, and living in developing countries. Affluent women everywhere in countries of the north or south, who are HIV positive, would generally be advised not to breastfeed their infants, but that choice for many poor women in developing countries is not advisable. There is a danger that the arguments about rights of affluent women to make a free choice may cloud the important difficult decisions for poor mothers in Africa. All this may unwittingly lead to a "spill-over effect" reducing breastfeeding rates, even in non-infected mothers.

Currently the majority of pregnant women who are HIV positive are poor and live in Sub-Saharan Africa. A tiny minority of them have conditions necessary for adequate and safe formula feeding. Most live in poverty: many have poor access to education, decent health care, safe water, good hygiene, fuel and secure supplies of breastmilk substitutes. Fortunately recent evidence (see p6) suggests that exclusive breastfeeding greatly reduces the already low risk of HIV transmission through breastmilk, at least in the first three months. The use of the relatively cheap oral drug **nevirapine** (*AIDS* 1999 Mar 11;13(4):479-86) may also reduce risks of transmission of HIV to the baby.

In the end, women should have access to HIV testing, and then make infant feeding decisions based on risk assessment. If they decide not to breastfeed normally, then the alternatives need to be considered. Formula feeding may not be the best option. Alternatives include a shorter duration of breastfeeding, with emphasis on exclusive breastfeeding; heat treatment of the mother's own expressed breastmilk to kill the virus; donations of breastmilk by non-infected mothers; milk banking, or possibly wet nursing; and use of modified animal milks. Research on alternative methods of infant feeding for infants of HIV positive mothers is urgently needed.

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Dear all,

…I would like to ask all of you if you can point me to any good published research that has shown that perhaps 90 out of 100 infants who were EXCLUSIVELY FORMULA FED from the day of birth in circumstances common for poor families in Africa were well nourished, healthy and alive at 6 months of age. Circumstances would include: no running, nor safe potable water; no latrine or decent sanitation; insecure income and supplies of formula; illiteracy; no refrigerator; no turn-on stove, and fuel shortages; poor access to decent health care; inadequate light in the house from about 20:00 to 5:00 to allow proper mixing of formula.

Figures from Pakistan showing an odds ratio for infant mortality in the first month of life associated with not breastfeeding of over 21 (one death in infants breastfed to 21 deaths in infants not breastfed) make me believe that it is well nigh impossible to provide exclusive safe breastmilk substitutes to children from poor underprivileged families. But if you can lead me to some published studies that contradict this view, I would be most grateful…

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NEWS AND VIEWS

Increased Need to Promote and Support Breastfeeding in the Face of Vertical Transmission of HIV

(This briefing note is in response to a recommendation of the ACC/SCN Working Group on Breastfeeding and Complementary Feeding at the 26th Session of the SCN, held in Geneva from 12-15 April 1999. The recommendation stated that: *"UNICEF should prepare a briefing note explaining the continued relevance of the Code in the context of prevention of mother-to-child-transmission (MTCT) of HIV, explaining particularly the provisions concerning free and low cost supplies."*)

The fact that the HIV virus can be passed by an HIV-positive mother to her child through breastmilk should not be allowed to undermine breastfeeding for the majority of infants around the world whose health and chances of survival are and will be greatly improved by it. While many governments are considering ways to make alternative feeding options available to HIV-positive mothers who have decided not to breastfeed, this must not lead to a spill-over of artificial feeding to infants of HIV-negative mothers. Even greater attention should be paid to the regulation of commercial promotion of breastmilk substitutes. **The International Code of Marketing of Breastmilk Substitutes** is of particular relevance since it aims to:

- ◊ **Regulate the distribution of free or subsidized supplies** of breastmilk substitutes to prevent spill-over to babies who would benefit from breastfeeding
- ◊ **Protect artificially fed children** by ensuring that
  - Product labels carry necessary warnings and instructions for safe preparation and use
  - The choice of product is made on the basis of independent medical advice, and not commercial influence.

The Code does not try to stop infant formula and other products being available, or being sold, or used when necessary. But it does seek to stop activities designed to persuade people to use them, or to influence their choice, such as: advertising, including posters in health facilities; giving free samples to mothers; giving discount coupons to mothers; giving free gifts to health workers and mothers; and giving free or low cost supplies of formula to health facilities.

The Code does <u>not</u> prevent governments making breastmilk substitutes available to HIV-positive mothers, free or at a subsidized price, when the government has purchased them.

The Code aims to prevent manufacturers from donating supplies of breastmilk substitutes, or providing them at a reduced price, to any part of the health care system. There are several reasons for this ban:

◊ Experience shows that when free supplies are made available by manufacturers to health facilities, they become too easily available. Many mothers who do not need them use them. These mothers often lose confidence in their ability to breastfeed, and may unnecessarily give up breastfeeding.
◊ If hospitals and health centres have to buy formula, as they usually buy drugs and food, it is more likely that they will ensure that it is given out in a carefully controlled way, and not wasted or misused.
◊ Donations make health facilities **and infants** dependent on them. If the donations cease - which often happens - there may be no alternative source of milk available, and no provision in the health service budget to buy them.
◊ Donations are a very successful form of promotion - which encourages families to buy the same product when they return home. The code does not allow any form of promotion.

If manufacturers want to make donations **for social welfare purposes**, they can do so. Indeed, the Code says specifically that donations of supplies can be made, but it means *to institutions and organizations such as* ***orphanages or other social welfare institutions***, and not to health facilities such as hospitals and health centres. Furthermore, if such supplies are given to social welfare institutions, they must:
◊ be given **only to infants who have to be fed on breastmilk substitutes** - including infants of HIV positive mothers who have chosen this option.
◊ be given **"for as long as the infant needs them"** -- which in the case of an infant of an HIV positive mother should be for a minimum of six months. Giving a few tins is not allowed since the mother or orphaned child may be left with nothing when the few tins are finished.
◊ **not be used as a sales inducement**. One way to avoid the supply being used as a sales inducement is for it to be provided in *generically labelled* containers without a brand name.

Practical Considerations in Making Breastmilk Substitutes Available
◊ Mothers need to be able to obtain their supplies easily, so that their confidentiality and self-respect are maintained. For example, they should not have to stand in a long public queue. They need to be able to get supplies at convenient times -- perhaps outside health centre working hours.
◊ Supplies must be reliable in the short term, so that they do not suddenly stop and leave the mother with nothing for a week or two.
◊ Supplies must be sustainable in the long term -- so that they are not discontinued after a few months, leaving mothers without any form of help.

There will be a need for: good stock control: formula should be managed like dangerous drugs; accurate records of whom formula is given to, without loss of confidentiality; linking distribution to health and growth follow up of the infant concerned; supervision of responsible health workers and distribution points; and identifying community groups to ensure that all the milk reaches the infants for whom it was intended.

Prepared by UNICEF for the Secretariat of the ACC/SCN Working Group on Breastfeeding and Complementary Feeding, September 1999

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Mother-to-Child Transmission of HIV Through Breastmilk

A prospective study has been done on mother-to-child transmission of HIV through breastmilk using the correct definition for exclusive breastfeeding. The study concluded that when breastfeeding is exclusive, the entire time from birth, it does not appear to transmit HIV from an HIV-positive mother to an HIV-negative baby. The paper is entitled, "Influence of infant feeding patterns on early mother-to-child transmission of HIV-1 in Durban, South Africa: a prospective cohort study" and is published in the medical journal *Lancet* (1999 Aug 7;354(9177):471-6). The authors, A Coutsoudis, K Pillay, E Spooner, L Kuhn and HM Coovadia found that transmission rates among those who were exclusively breastfed from birth were actually lower at three months than among those not breastfed at all, and much lower than those breastfed but not exclusively. Though the difference was not statistically significant for those not breastfed at all, the authors write that this *"raises a possibility that virus acquired during delivery could have been neutralized by immune factors present in breastmilk but not in formula feeds."*

Submitted by Ted Greiner, World Alliance for Breastfeeding Action (WABA) Research Task Force Coordinator; PO Box 1200, 10850 Penang, Malaysia; tel 60 4 6584 816; fax 60 4 6572 655; internet http://www.waba.org.br email: secr@waba.po.my or ted.greiner@telia.com

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Nursing Mothers' Association of Australia

Those that wish to discuss any aspect of breastfeeding, but especially the "Breastfeeding topic of the Month", are invited to visit and register with <htpp://www.bftopics.org> Each month a presentation of a selected topic will be posted on this website. This interactive site lets others know how each topic is relevant to you in your part of the world on both personal and professional levels. Notice contributed by Dr Michael Golden's ngonut site <ngonut@abdn.ac.uk>

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Click for Hunger

http://www.thehungersite.com

"The Net has pushed back many boundaries, including that of human compassion. A website that allows anyone to donate food to the starving without paying? It sounds too good to be true, but The Hunger Site, created by computer programmer John Breen, has achieved exactly that, channelling the cold, financial logic of online advertising to warmer, social purposes…Hunger Site users are met by a map of the world. Every 3.6 seconds, a country somewhere flashes black, signifying a death due to hunger…India… China… Mozambique…country after country dims in memoriam." (17. 9.99 *Sydney Morning Herald* – Australia)

Click on this website, and each company sponsor will donate 1/4 cup of grain to the UN World Food Programme. On 8 November 1999 alone, almost 26 metric tons of food were donated to WFP, and an estimated 4 million servings of food have been donated since the site's launch last summer. Bookmark it and spread the word to friends and potential sponsors. One visit per day, please.

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The Right to Adequate Food and to be Free from Hunger

UPDATED STUDY by Dr Asbjorn Eide

Dr Asbjorn Eide's updated study on the right to food (*SCN News* No. 18, p45) is completed and available on the website of the High Commissioner of Human Rights, http://www.unhchr.ch/ under 'documents', under 'charter-based', 'Sub-Commission', '1999', as document 12 (E/CN.4/Sub.2/1999/12). You may also obtain a hard copy from the documentation section of the High Commissioner's office. It will be published in printed form at a later date.

The contents of the report include: the issues and the mandate; malnutrition and hunger in dimensions, consequences and emerging issues; the World Food Summit commitments and their follow-up; clarifying the right to food and nutrition and the corresponding state obligations; ensuring freedom from hunger and implementing the right to adequate food at the national level; monitoring and dialogue in the relevant treaty bodies; the role of the Commission on Human Rights and its special rapporteurs; the evolving role of United nations bodies, specialized agencies and non-governmental organizations; globalization and the right to food; conclusions and recommendations; and the General Comment No. 12.

Dr Eide: tel +47 22 842 004; fax +47 22 842002; email: Asbjorn.eide@nihr.uio.no

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The Department of Public Health, University Miguel Hernandez

The Department of Public Health of the University Miguel Hernandez in Spain is working on three areas of research with a major nutrition focus: adult nutrition as a determinant of cancer and other chronic diseases; child infection, malnutrition and growth in developing countries; and migration and health. A Regional Health and Nutrition Survey was conducted in 1994 in the Valencia Region of Spain. The survey included personal interviews and direct anthropometric measurements of a representative sample of 1800 people. Obesity is a major concern in the Valencia Region and Professor Jesus Vioque is now researching determinants of obesity that might be amenable to public health interventions, and in particular, with respect to television viewing and obesity. Care seeking practices for children with prevalent diarrhoea and malnutrition are being studied in Equatorial Guinea, following a National Child and Reproductive Health Survey that was conducted in 1997 in that country by a research team of the Instituto de Salud Carlos under the direction of Professor Alberto Torres, former Chairperson of the Department of International Health at the National School of Public Health. A preliminary report in Spanish was released last year and scientific publications should be available early next year. Health status of migrants is a growing concern in Spain, and is a subject of active research by this group.

For information or reprints of publications contact Prof Jesus Vioque email: jvioque@umh.es and Prof Alberto Torres email: atorres@umh.es

Debt Relief Policies for Poor Countries: Beyond the Cologne Debt Initiative

By Jeffrey Sachs, Professor of Economics, Harvard University
Chair, WHO Commission on Macroeconomics and Health

At a meeting on 8 October 1999 at WHO Headquarters in Geneva, Professor Jeffrey Sachs presented his recent analyses of the Cologne Debt Initiative, and options to better implement debt relief in heavily indebted poor countries (HIPC). Dr Sachs' analysis is summarized below.

Many developing country governments have been bankrupt or insolvent since the late 1970s. Unfortunately, there are no bankruptcy procedures for governments: no rules, no courts, no mechanisms of appeal, hundreds of creditors and no coordination among them – thus, trying to provide debt relief for HIPC is a very long and frustrating process. In fact, any US corporation receives much better treatment than any of these countries have in terms of discharging their debt. The World Bank and the IMF launched the HIPC Initiative for partial cancellation of debt in 1996; by November 1999 only two countries have been partially relieved of their debt.

If an HIPC is lucky enough to have a relatively high profile or desirable geopolitical position, it will receive "first" service. (For example, the very large Polish-American community in the US rallied successfully to get Poland's debt cancelled.) If an HIPC does not fit into this category, basically the country is run by the IMF. Without exaggeration, the IMF has control of dozens of the poorest countries. The IMF has no systematic way to discharge the debts of these countries unless the country is politically influential – and even then, the debt may only be "postponed". To have the IMF and World Bank impose an "enhanced" structural adjustment framework, or an "enhanced" HIPC Initiative on debt-burdened countries, seems like Bretton Woods continuing as before with a better public relations campaign. I lack confidence in failed programmes that are projected to succeed because they are now "enhanced". The IMF and the World Bank launch of the HIPC Initiative with caution and delay, rather than with a sense of urgency, worries me. Debt is not "tightening a belt"; it is LIFE AND DEATH. If the IMF and World Bank viewed this as an urgent problem, or valued this issue as important enough, they could reduce their own claims by re-evaluating a good portion of their 100 million ounces of gold now valued at $35 per ounce (vs market price of about $260 per ounce). The IMF and World Bank solution to keep debt relative to exports is an artificial remedy which draws a line devoid of real life experiences, and which does not leave the countries solvent in the end.

The Process: "Six lean years followed by six lean years"

The HIPC process takes a country approximately 6-12 years to obtain partial relief of their debt. A country must demonstrate a "good" performance rating by adhering to IMF and World Bank macroeconomic and structural adjustment policies for a three year period before HIPC debt relief is *committed* (not *delivered*). After another three years or so of "good" behaviour, then a decision is taken to deliver the relief, called the completion point. Once at the completion point, it can then take up to three more years to calculate the amount of limited debt to be reduced. The "Enhanced" HIPC proposed by the Cologne Initiative intends to "speed things up" but how this will be done is still ambiguous. EHIPC also hopes to extend the relief to all needy countries; establish new targets, and to have one standard of relief (not 200-250% of the net present value (NPV) of debt to exports but 150% of NPV of exports OR no more than 250% of NPV of government revenue). Bilateral creditors have agreed to reduce their own claims by 90% on their non-commercial loans and 100% of the overseas development assistance loans, and will press the IMF and World Bank to do the same. The EHIPC would like 75% of qualifying countries obtain relief by the end of 2000.

What You Can Do

I urge all Ministers of Health and related departments (particularly nutrition departments), UN agencies, NGOs, and the whole of civil society to understand the dynamic nature of this Initiative. This past summer the White House confirmed "this process is set", then President Clinton spoke to the IMF, with a promise of relieving 100% of bilateral debt. We hope the US Congress will approve. The first and second solutions proposed by the G8 have not been accepted wholeheartedly by the people who say a first step has been taken but there is more we can do. The G8 moves by public pressure. This Initiative is now too limited in its ambition. It is erroneously targeted to export measures; it includes standard-setting by finance ministers and NOT by the social service sector ministers; it maintains the structural adjustment framework under a new name; and has a very uncertain timetable. This Initiative has brought new attention to reducing debt in developing countries, and has given greater attention to the global health and education crises. This is an opportunity to maintain political pressure to turn debt relief into real results – and poverty and basic health needs must be at the center of the agenda. The case needs to be made graphically and we need to hear from the HIPC.

We need to prove that: (1) Savings on debt can be translated into social progress, nutrition, health and primary education. (2) Savings on debt can be monitored: there are mechanisms to do this. (3) Technically WHO, UNICEF, NGOs and others can begin to demonstrate efficacy in spending by making their programme interventions concrete (e.g. to return vaccine coverage from 50% back to 85%; to advance anti-malarial programmes; to provide drugs to HIV patients; to reduce subclinical vitamin A deficiency; to reduce iron deficiency anaemia). Further we need to calculate, for instance, hypothetically, every $1 of debt relief = 10 capsules of vitamin A. The IMF and World Bank need to be confronted with real choices such as: a 60% reduction in debt gives us A, B, and C; an 80% reduction means…, 100% reduction translates into….

Sharper and better tools are needed and WHO is playing an extremely important active role by beginning to cost out these interventions, sharing information about how this can be done, planning for expanded budgets, and showing the trade-offs clearly on paper; translating the savings from debt relief into real health improvements. We want President Clinton to reduce the bilateral debt by 100%; and we want the other G8 countries to follow the US lead. We need developing countries, especially the HIPC and the HIPC African countries to come forward so we can work together to make your case for debt relief.

For further information contact: fax: 617 495 8685; email: Jeffrey_Sachs@harvard.edu *[Response by the World Bank was not available at press time, however, World Bank and IMF views on the HIPC Debt Initiative can be found at http://www.worldbank.org/hipc/ and http://www.imf.org/external/np/hipc]*

Global Ecological Integrity and Sustainable Development: Cornerstones of Public Health

Discussion Document by Colin Soskolne and Roberto Bertollini

This Discussion Document stems from a WHO (Rome Division) Workshop, December 1998. It summarizes the Workshop discussion and subsequent exchanges of opinions of experts worldwide. The authors believe that global change has become an issue warranting public health involvement. The public health community needs to face the challenges presented by global change and equip itself with the necessary scientific and technical means to anticipate and, where possible, prevent adverse consequences to human health arising from degrading life-support systems. The document is neither intended to be conclusive nor to reflect a WHO position on these matters. Rather, it is a contribution to the discussion on the consequences of global change on human health. It is provided for the scientific community at large as a basis for future thinking and planning in this area. Comments, suggestions and criticisms are encouraged. The deadline for feedback is December 31, 1999.

The intent behind the Discussion Document is to extend the thinking embodied in previous reports cautioning about the implications for both human and other forms of life on earth should life-support systems be degraded. Life-support systems of concern include fresh and ocean waters, fisheries, forests, climate, soils, air, as well as biodiversity. Current indications suggest that not only are certain life-support systems malfunctioning, but some are even collapsing. Where this document differs from its predecessors is in its framing of the issue and in its timing. The information upon which concerns are now based draws upon more systematic data and reflects longer-term trends. Hence, the concerns are more compelling. Furthermore, the political climate now may have become more receptive to new priorities, packaged differently, in order to have access to options that are conducive to a sustainable future. The combination of these circumstances means that the message contained in this document could actually trigger global actions where previous efforts, whether in the form of conference reports, books, agency reports or movies, did not. This Discussion Document also differs from all prior reports in that it calls upon WHO to recognize the issue of global ecological integrity as one of its foci for future activities. It calls upon WHO to consider placing the issue squarely onto its agenda for health in the new millennium, working jointly with related UN agencies playing their respective full and integrated roles. A follow-up Workshop is anticipated (in about one year) to subject the content of this Discussion Document to a broader range of critique.

This jointly-authored 74-page document is accessible on the Web site of the WHO European Centre for Environment and Health, Rome Division: http://www.who.it The Preface, Executive Summary, Foreword and Table of Contents, as well as a PDF version for download, are available at http://www.who.it/docs/globaleco.htm

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"Terminator" Seed Sterility Technology Dropped

PRESS RELEASE New York, NY, 4 Oct 1999…The Rockefeller Foundation supports the Monsanto Company's decision not to commercialize sterile seed technologies, such as the one dubbed "the terminator". "We welcome this move as a first step toward ensuring that the fruits of plant biotechnology are made available to poor farmers in the developing world," said Professor Gordon Conway, President of the Rockefeller Foundation. However, the Rockefeller Foundation continues to challenge Monsanto and other multinational seed companies to support labelling, use the plant variety protection system – not patents – in developing countries, and to make other concessions necessary to insure that plant biotechnology is better accepted by US consumers and can deliver its benefits to poor farmers in developing countries. The idea of using "terminator" technologies designed to prevent germination of harvested grain as seed, thereby blocking farmers in developing countries from saving their own seed for re-sowing, has engendered strong opposition in most quarters. The possible consequences if farmers who are unaware of the characteristics of such seed purchase it and attempt to reuse it are certainly negative and may outweigh any social benefits in protecting innovation. The Rockefeller Foundation challenges all of the major multinational seed companies and life sciences companies to work toward improving the acceptance of plant biotechnology in both the developing and the industrialized worlds. They suggest the following actions:

1. Consumers have a right to choose whether to eat genetically modified (GM) foods or not. Monsanto and others should come out immediately and strongly in favour of labelling.
2. Phase out the use of antibiotic resistance markers. The likelihood of such genes generating antibiotic resistance in livestock or humans is small, but alternatives exist and should be used.
3. Agree to use the plant variety protection system in developing countries, rather than the use of expensive patents. This will allow farmers to retain the seed and public plant breeders to continue to innovate.
4. Establish an independently administered fellowship program for training developing country scientists in crop biotechnology, biosafety and intellectual property.
5. Donate a number of useful technologies, for example, the agrobacterium transformation system, to developing countries.
6. Agree to share the financial rewards from intellectual property rights on varieties such as basmati or jasmine rice with the countries of origin.
7. Develop a new way of talking about plant biotechnology and reaching decision through a fully inclusive, global public dialogue.

Source: Internet http://www.rockfound.org/news/100499_terminator_pr.html

[*Ed. Note: "Nutrition and Agriculture" is the topic for the July 2000 issue of* SCN News *No. 20. This item should be food for thought – send in your contributions.]*

Nutrition Software Program
University of Hohenheim/Stuttgart and German Agency for Technical Cooperation (GZT)

A software program designed specifically for carrying out nutrition baseline surveys has been developed by the Work Group on International Nutrition of the University of Hohenheim/Stuttgart in cooperation with the German Agency for Technical Cooperation (GTZ). The software is based on the Guidelines for Nutrition Baseline Surveys in Communities (BASELINE) published by GTZ. The main purpose of the program is to integrate all steps of BASELINE into a single program. The program contains the standard BASELINE questionnaire, which can easily be customized for the specific site, a function for printing out the questionnaire, a data entry unit which controls the data being entered, a specially adapted plausibility check, a report function and a graphics section. The report function produces, with one click, the full set of descriptive statistics of a baseline survey. The graphics section contains, in addition to the standard graphs, specially designed graphics for the anthropometric indices with comparison to the NCHS standard. The anthropometric indices (Z-scores of height-for-age, weight-for-height, weight-for-age) and the prevalence of stunting, wasting, underweight and overweight of children are calculated automatically. For further statistical evaluation the data can be exported to SPSS or any other statistical program. The program can be downloaded for free at the following homepage: <http://www.nutrisurvey.de> In addition to analyzing the nutritional situation of communities, the software package contains also a program to analyze the nutrient intake of individuals. The homepage also contains the online version of the Guidelines for Nutrition Baseline Surveys (BASELINE), a description of the software and some useful internet links.

For further information, comments or suggestions please contact Dr. Jürgen Erhardt (erhardtj@uni-hohenheim.de) or Dr. Rainer Gross (urgross@ibm.net).

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Nutrition Training for the New Millennium

The Wellcome Trust is just about to launch an interactive nutrition CD Rom. Part of the award winning *Topics in International Health* series, the nutrition disc will be launched in December of this year. The disc provides an illustrated introduction to the causes, epidemiology, treatment and prevention of malnutrition in developing countries. *Topics in International Health* is a CD-based series of training materials specifically written for international health professionals. Each disc consists of three distinct but interrelated parts: a set of interactive tutorials, a complementary image collection and an electronic glossary of terms. The nutrition disc contains 12 tutorials, each of which will take the user between 60-90 minutes to work through. Assessments are built into the tutorials, as are up-to-date references, summaries and suggestions for further reading and other activities. The topic areas covered are: vitamin A deficiency, maternal and child health, epidemiology and aetiology of malnutrition, malnutrition and infection, prevention of malnutrition, iron deficiency anaemia, iodine deficiency disorders, assessment of nutritional status, treatment of severe malnutrition in children, emergency situations, diet and chronic diseases and an overview. The image collection consists of almost 900 images, which have been carefully selected to complement the tutorials. Each image is accompanied by a description and key words, which allow the user to search through the database to collate sets of images on topics of interest. The disc has been created by an in-house team at the Trust's Tropical Medicine Resource, supported by input from a wide range of internationally renowned nutrition experts, including contributions from UNICEF, WHO, Save the Children, and leading academics from Europe, North America and Australia. There are 11 titles in this series: malaria, trachoma, sickle cell disease, sexually transmitted diseases, leprosy, schistosomiasis, diarrhoeal diseases, tuberculosis, nutrition, HIV/AIDS and leishmaniasis.

The Wellcome Trust has five free copies of the disc to give away to *SCN News* readers. These discs will go to the first five people drawn at random from our postbag on 31 January 2000. To be included in the draw, write to: Denise Chew, The Tropical Medicine Resource, The Wellcome Trust, 183 Euston Rd, London, NW1 2BE, UK. Full CD Rom details: CAB International, Wallingford, Oxon, OX10 8DE UK; tel +44 1491 832111; fax +44 1492 929292; internet: htpp://www.cabi.org

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USAID / Leland Internet Training in Africa

The USAID Leland Initiative (http://www.info.usaid.gov/leland) is a five year, US$15 million project set up to help improve Internet conditions in 21 Sub-Saharan countries, through policy reform, technical assistance and end-user connectivity. The two-day training sessions are conducted for decision-makers and staff of NGOs, educational institutions and government agencies that do not have, or have very limited access to the Internet. Topics covered include Internet terminology, evaluating a webpage, creating a website, structured searches on the web, cost-benefit analysis of using the Internet, and email. A summary of the training and the topics listed above may be found on their website. If your country or organization lacks hardware, USAID Leland Internet trainers can supply you with the growing list of NGOs who will provide used computer equipment (computer, modem, UPS, Internet software) in excellent condition and up to speed.

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World Income Inequality Database (WIID)

UNU/WIDER and UNDP are pleased to announce the official launch of the World Income Inequality Database (WIID), which can be accessed at the following web-sites: http://www.wider.unu.edu/wiid/wiid.htm and http://www.undp.org/poverty/initiatives/wider/wiid.htm WIID has been compiled over the period of 1997-99 in the context of the UNU/WIDER-UNDP joint project on 'Rising Income Inequality And Poverty Reduction: Are They Compatible?' One of the project's main outputs, the WIID, is now available to download from the internet and on CD-ROM in order to facilitate further analysis and debate on inequality. WIID collects and stores information on income inequality for industrialized, developing and transition countries in an easily retrievable, exportable and analyzable format. The WIID database is particularly suitable for an analysis of changes in inequality within countries over time. Analysis based on the data contained in the WIID points to a widespread rise in income inequality since the early 1980s and to its acceleration in the 1990s in several countries, including all economies in transition. These conclusions -and many others that can be drawn from the database - are highly relevant for the current policy debate on inequality and poverty reduction. Indeed, the rise in income inequality poses a severe challenge to the poverty reduction targets adopted by the international community, and may also jeopardize economic growth, social cohesion and governance. We hope, therefore, that the WIID database will help stimulate research and debate in this area. We would very much appreciate it if you could take a moment to browse through the WIID User Manual and database, and send us your opinion on the usability and possible improvement of the software and the data. The web version is accessible directly from the internet. The downloading and installation of the full version of WIID should not take more than some 30 minutes and not much more will be needed to make yourself familiar with its utilization procedure. We look forward to your comments.

GA Cornia, Director, UNU/WIDER, email: kiiski@wider.unu.edu

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ELDIS Development Reporter

ELDIS is considered to be the information gateway to new information sources on development issues. All documents are available free on the Internet (or you can try their experimental email-only option). ELDIS currently includes descriptions and links to over 3000 organizations and over 6000 full-text online documents covering development and environmental issues. ELDIS research themes include: “Participatory monitoring and evaluation”: conceptual background and methodologies to PM&E; How do organizations accurately determine whether they are progressing towards, or achieving their goals and objectives? Includes key references, and training manuals <http://nt1.ids.ac.uk/eldis/hot/pme.htm> Other topics are: the “Internet in Developing Countries”: a guide to project experiences and connectivity issues; the *UNDP Human Development Report 1999*, *Donors and population programmes* UNFPA, and *Agriculture, food and nutrition for Africa: a resource book for teachers of agriculture* by FAO.

ELDIS is funded by Danida and hosted by the Institute of Development Studies, Sussex, Brighton BN1 9RE, UK. Contact T Zussman-Kay, tel +44 1273 877330; fax +44 1273 621202; email: eldis@ids.ac.uk

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The UK’s Nutrition Society’s List of Free/Low Cost Nutrition Training Materials

The following list of organizations produce useful nutrition materials (see *SCN News* No.16 p50 for additional sources). Details of materials, prices and payment from the relevant organization can be obtained on their website. The Society accepts no responsibility for information which is out of date. Please send corrections to this list to annburgess@sol.co.uk Further information about the Nutrition Society can be found at htpp://www.nutsoc.org.uk/

DAB Computing, Dr D A Bender, University College, London, Department of Biochemistry & Molecular Biology, Gower St, London WC1E 6BT, UK. Fax+44 181 907 9933 dab@biochem.ucl.ac.uk http://biochem.ucl.ac.uk/~dab/dab.html Computer programme The food you eat (nutrient/energy analysis & comparisons)

Emergency Nutrition Network (ENN), Dept. Community Health & General Practice, Trinity College, 199 Pearse St, Dublin 2, Ireland. Fax+353 1 670 5384 foreilly@tcd.ie http://www.tcd.ie/enn Example: Report Infant feeding in emergencies 1999 IR£3, Newsletter

Healthlink Worldwide, 29-35 Farringdon Rd, London EC1M 3JB, UK. Fax+44 171 242 0606 info@healthlink.org.uk Examples: Briefing paper Caring with confidence (including feeding HIV+ children) Free/£10; Newsletters Free/£12-24

Institute of Nutrition Mahidol University (INMU), International Affairs Program, Salaya, Phutthamonthon, Nakhon Pathom 73170, Thailand. Fax+662 441 9344 directnu@mahidol.ac.th

Liverpool School of Tropical Medicine, Unit for Statistics & Epidemiology, School of Tropical Medicine, Pembroke Place, Liverpool L3 5QA, UK. Fax+44 151 708 8733 LEP@liverpool.ac.uk Computer learning package Nutritional Surveillance Learning Module 1994

NGONUT Email discussion group on malnutrition. To join email owner-ngonut@abdn.ac.uk. Archives at http://www.univ-lille1.fr/pfeda

Secretariat of the Pacific Commission (SPC), B.P. D5, 98848 Noumea Cedex, New Caledonia Fax+687 263818 spc@spc.org.nc http://www.spc.org.nc Prices for outside S. Pacific. Examples: Colour posters $5; Leaflets on South Pacific foods $2; Handbook The leaves we eat $15; Flipcharts $10; Videos First foods for my baby, Healthy food choices $20. Community Nutrition Books

University of the South Pacific, Continuing Education, Alafua Campus, Private Bag, Samoa. Fax+685 22933 fairdun@samoa.net.ws Examples: Nutrition community education, Family and community food supply, Food, drinks & diseases.

OBITUARIES

Lilian Tendayi Maovatsanga

For several years Dr Lilian Tendayi Maovatsanga served as a member of the SCN's Advisory Group on Nutrition (AGN) – a group which provided assistance and advice on policy and the science of nutrition to the SCN. It was a group comprised of nutritional scientists and practitioners of world repute from different regions of the world – that Lilian was so highly respected by her African colleagues is undisputed.

Since 1993 Lilian was the head of the Institute of Food, Nutrition and Family Sciences in Harare, Zimbabwe. She initiated the first regional BSc programme in Food Science and Technology at the University of Zimbabwe and established linkages with many institutions worldwide for collaborative research. She co-founded the Zimbabwe Society of Food Science and Technology and organized the first regional conference on Food Security, Safety and Quality at which the International Union of Food Science and Technology (IUFoST) regional association, ECSAFoST (East, Central and Southern Africa Food Science and Technology) was launched. She was recently elected President of IUFoST – this key position filled by a woman's voice from Africa was a proud "first" for Africa – and definitely a pioneering "first" for the food scientists.

Lilian and I knew each other professionally and socially since the ICN preparatory meetings in 1992. We shared the vision of an Africa free from hunger, malnutrition, and poverty – an Africa filled with the professional capability to deal with its own problems. The best tribute we can accord Lilian is to continue to champion her work towards a world where "access to nutritionally adequate and safe food is the right of every individual". Lilian's memory is still fresh in our minds -- let's act on one of the following:

◊ Start a scholarship fund for young scientists in her field as she cared deeply about capacity building and training.

◊ Contribute to a building in her name at the University of Zimbabwe.

◊ Establish an award scheme in her name for a young scientist to attend major IUFoST/Nutrition meetings.

◊ Establish a Trust Fund to take care of the education of her two children.

While juggling all of her professional responsibilities, Lilian's primary role as wife and mother was always evident by her loving concern and care for her husband and children. She was endowed with a great sense of humour, energy and warmth. Lilian Tendayi Maovatsanga was a friend -- a very good friend. I cannot describe what I am feeling right now, but simply put: I feel empty, shocked, devastated and deeply grieved by the demise of Lilian at such a young age. I will miss her greatly. My heart goes out to her husband Paul and their two surviving young children.

Prof. Ruth K. Oniang'o, PhD, SS, DSM
Professor of Food Science and Nutrition, Jomo Kenyatta University

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The Honorable Julius Kambarage Nyerere (1922-1999)

Julius Kambarage Nyerere, who was the first president of the then Tanganyika and the present United Republic of Tanzania, died in London of chronic lymphocytic leukemia on Thursday, 14 October 1999. He was 77 years old. *Mwalimu* (teacher) Nyerere, as he was affectionately known in Tanzania, was a great statesman who contributed immensely to the identity of Tanzania: He was the father of our nation and an inspiring leader who earned international respect for our country.

Mwalimu Julius Nyerere cared a great deal about his people's welfare. President *Mwalimu* Nyerere spearheaded various social welfare and nutrition policies and campaigns. He declared war against ignorance, poverty and disease as these, he believed, were obstacles to national economic development. In 1967 he proclaimed the Arusha Declaration which contained a policy of *Ujamaa* (Socialism), and equity and self-reliance were proclaimed. This policy emphasized the development of people who would in turn develop things. Policies to bring about equity included: 1) fixing and regular revision of minimum wages; 2) a progressive tax system; 3) subsidizing production inputs and maize flour; and 4) redistributing income in rural and urban areas. Each of these policies underwent significant changes over time, due to limitations from a poor national economy, and also from pressures of external bodies such as the IMF and the World Bank.

His policy on food security for all had the objective of attaining food self-sufficiency. Its implementation was carried out through campaigns, programmes and reforms under the agriculture sector such as: *Siasa ni Kilimo* (Politics is Agriculture), *Chakula ni Uhai* (Food is Life), *Kilimo cha kufa na kupona* (Agriculture as a matter of life and death), *Nguvu Kazi* (Human Resource Deployment), The National Maize Programme, and The National Food strategy. *Mwalimu* Nyerere recognized good nutrition to be pivotal in national development and that malnutrition was the underlying cause of much of the morbidity and mortality among children. He noted that a nation with hungry and malnourished population cannot advance economically, culturally or politically. He said:

> *.... I have talked at length about this question of food because the foundation of development is people. A hungry person cannot bring progress. He is weak of body and also weak of mind. This must always be remembered; especially in relation to children. When a child is not well fed, he will not grow properly - he will be deformed, and his intelligence will be affected also; he will not reach his full potential. The question of sufficient food and good food is absolutely vital to the development of our people in both towns and villages.*

In 1973 *Mwalimu* Nyerere assented to an Act of Parliament and created the Tanzania Food and Nutrition Centre (TFNC) to coordinate all food and nutrition activities and research in the country. During the early 1970s Tanzania adopted an ambitious policy of providing basic social services to all her people which included health, sanitation, and education. By the end of the seventies, an impressive infrastructure was in place and service delivery (virtually free for all) was relatively smooth. It soon became clear, however, that this goal of providing basic services to all, given the size of the country and the scattered settlements in rural communities, could not be attained. This situation led to the much criticized policy of villagization that called for all Tanzanians to live in structured villages so as to facilitate provision of basic and social services. In many of the areas notable achievements were made while failures were recorded in others, but under Nyerere, Tanzania always strove to put together the vital components of development.

During his recent 75th birthday celebration, he expressed dissatisfaction that the infant and childhood mortality rate is still much higher compared to developed countries. And that those surviving to adulthood are weak and die too young – when the nation needs them the most to contribute to national development. He urged the Government of Tanzania needed to do something about poverty, which reduces opportunities and access to food quantity and quality, to essential and basic social services, and needed care. On the 20th anniversary of the TFNC in 1993, *Mwalimu* commended TFNC, noting that although malnutrition is still a major public health concern, more people are aware of it. He also observed that decisions for resource management and utilization are yet to be taken consciously for positive nutrition impact at all levels. He called upon TFNC workers to remember: ***"Malnutrition can be overcome: Play your part."***

Mwalimu Nyerere retired from Presidency in 1985 but continued to provide wisdom and leadership in a variety of issues that touched the welfare of ordinary people at home and abroad. He served as the chairman of the South-South Commission and was Principal Mediator of the Burundi Peace talks. Following his death in London, an obituary in *The Times* included the paragraph: "In 1985 Nyerere paid a visit to Britain where he both lunched with the Queen and delivered a rebuke to the City for using its financial strength to impose onerous conditions on its debtors in the Third World." *Mwalimu* Nyerere was man of principle and one wishes that today there were leaders with his courage and mettle.

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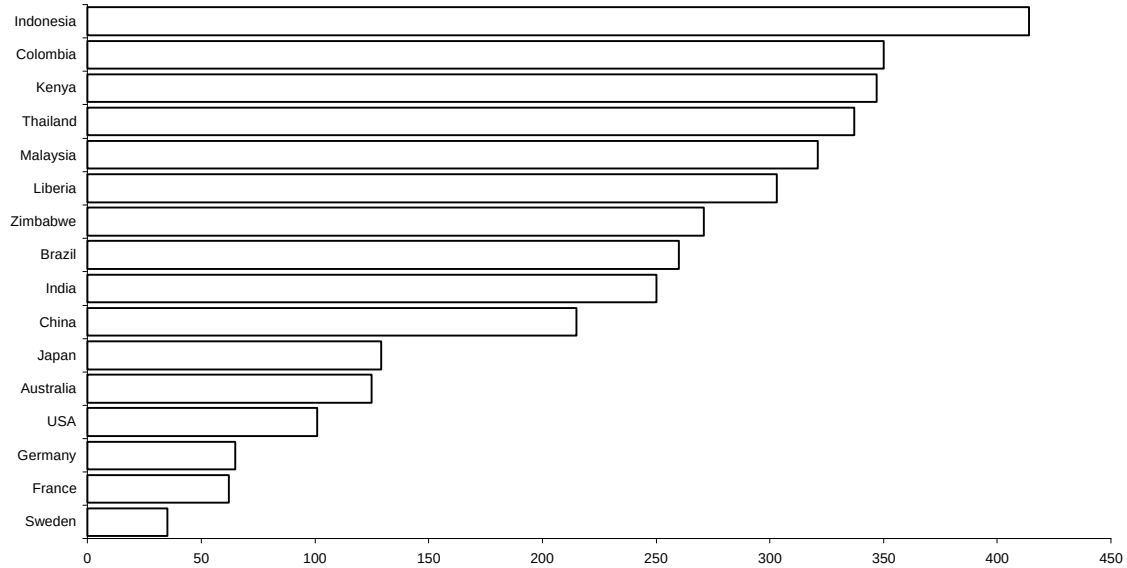
NUTRITION AND HEALTHY AGEING

The United Nations has designated 1999 the International Year of Older Persons. The ageing of the global population is one of the biggest challenges facing the world in the next century. In 1995 the number of people aged 60+ yrs increased by more than 12 million people — nearly 80% of this increase took place in developing countries. Less developed countries are ageing at a much greater rate than industrialized nations: it took 115 years for the older population of France to increase from 7 to 17% — the same change will occur in China in just 27 years! Some less developed countries, such as Colombia, Costa Rica, Liberia and Venezuela, are expected to have an increase of more than 200% in their older population in the next 25 years. In Zimbabwe, about 76% of the population over 60 are still economically active — and many engage in unpaid work such as childcare and agricultural work for the benefit of their families. Good health is a basic requirement if people are to continue to work as they age. If older people receive appropriate health care whenever it is necessary, they will be less likely to develop serious medical conditions which are more difficult to treat. Ageing is inevitable and irreversible — it is not a disease but a normal part of the life cycle which involves every dimension of our lives: physical, mental, social and spiritual. Policies, systems and structures need to be implemented now to establish programmes which support the health and welfare of our ageing population.

These feature articles provide information on how to identify, assess, and provide nutrition advice both for elders at risk and for healthy ageing. The emerging issues of sarcopenia, and homocysteine and cognitive decline are examined, and an update on osteoporosis is summarized. Contributors from Africa, China, Brazil, Cuba and the Americas Region present material on diabetes, energy requirements, lifestyles, and human rights as they relate to the ageing process.

"Who you are, we were; who we are, you will be"

% Increase in population 60+ years from 1990 to 2025 in selected countries



The number of people 60+ years will increase from today's 590 million to 1.2 billion by the year 2025. The majority of older persons already live in developing countries, and their numbers will increase at faster rates than in the developed world. For countries like Indonesia, Colombia, Kenya and Thailand the increase in population aged 60 and over will be more than 300% during the time period specified.

Identifying Elders at Risk of Malnutriton: A Universal Challenge

By Odilia I Bermudez, PhD, MPH and Johanna Dwyer, DSc, RD

Older Persons in the Americas

The World Health Organization defines older persons as people over 60 years of age. In Latin America, the projected increase in the older population is from 7.6% of the total population in 1995 to 14.2% in the year 2025, whereas the population less than 15 years of age will decrease substantially from 33.8% to 23.7% in the same period.[1] Until recently, the nutritional status of older persons was often considered to be relevant only for a few relatively affluent countries. In fact, almost every country in the Western Hemisphere now has a larger percentage of older persons than it did in 1900, and this percentage is predicted to be even larger in the 21st century.

Nutrition Problems in Elders in the Americas

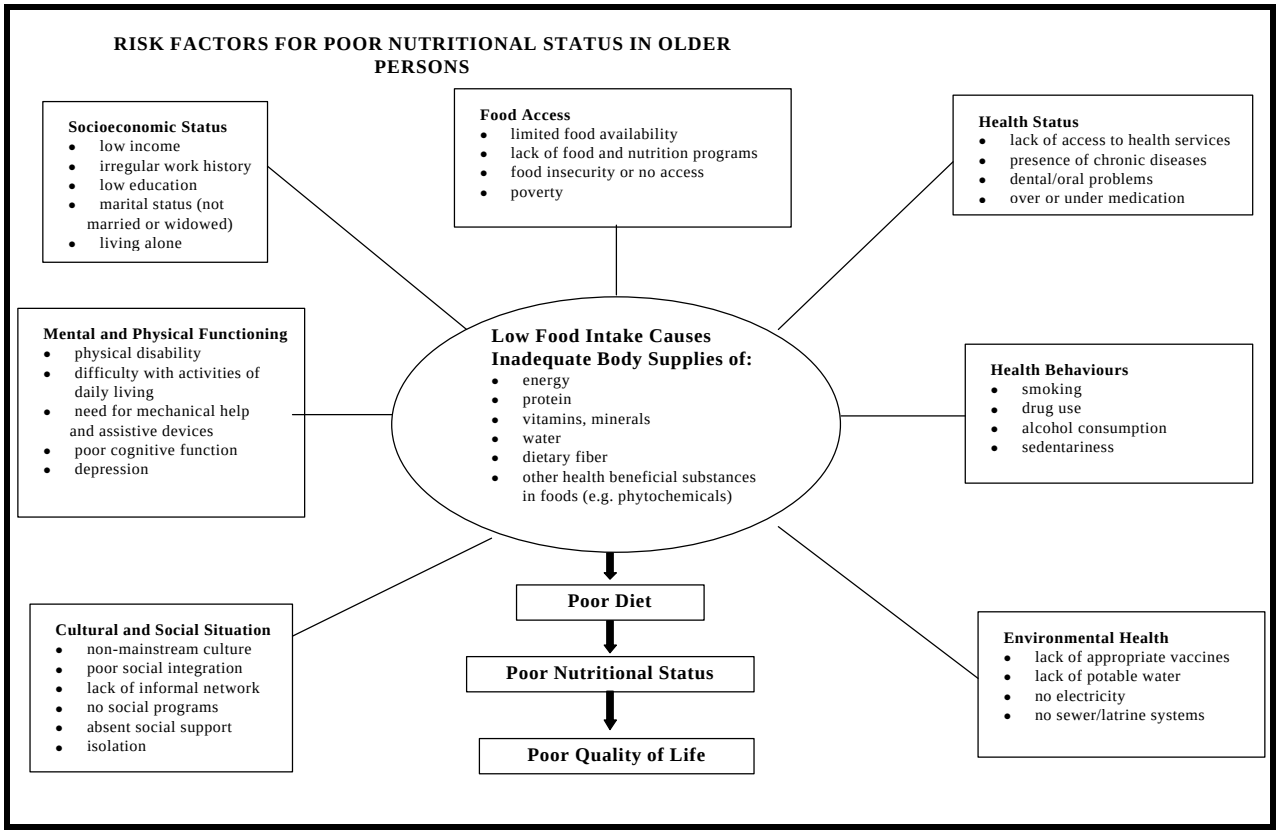
What factors determine the proportion of older persons in a population? A major factor is the health history of the country's population over the past century. Of particular importance are the impact of public health measures. For example, public health advances, such as those that decreased infant and child mortality from infectious diseases, occurred earlier in Panama and Costa Rica than they did in Guatemala and Bolivia. Thus, a larger proportion of the Panamanian and Costa Rican child population grew to adulthood and had the opportunity to reach old age than in the latter countries. Public health measures have also decreased the sequelae of infectious diseases in later life. The type of nutrition problems in older persons depends on past and current public health efforts, the relative prosperity of the country, distributive justice with respect to economic resources (since this is likely to affect the health of all segments of the population), and the extent to which public resources are used for health and social welfare programmes, especially those involving nutrition.

The current state of the economy and the percentage of the total gross domestic product devoted to health vary dramatically from one country to another within the Americas region. Because older persons are so often economically dependent on others, these factors also affect the proportion of elders at nutritional risk. In some countries, the ageing of the population is taking place in the absence of adequate economic development, and thus necessary economic resources may not be available. Many elders have insufficient income and are poor. They also are highly vulnerable because they have low educational levels, few pension benefits, lack adequate housing, suffer from gender inequalities and are poorly integrated socially. The needs of older persons for social and psychological, as well as economic, support from friends and family, and for funds to ensure economic subsistence are present in the Americas region. A lack in any one of these three domains may be partially ameliorated by enhancements in the other. Strong social and psychological systems in some Latin American countries provides support that money alone cannot buy.

Another factor that is relevant to the nutritional health of older persons is the adequacy of the country's health system and investments in it. In some countries, such as Panama, economic growth is good and spending on health and education are relatively high, equivalent to approximately 12.8% of the gross national product, or 24.4% of all public spending.[2] In Costa Rica, in spite of adverse economic conditions over the past decades, spending on health and social welfare programmes continues, cushioning the adverse economic effects to some extent.[2] Spending on food and food programs helps to decrease risks of poverty-related malnutrition, but excessive and unbalanced intakes are also problems that must be addressed. Diseases of affluence are endemic in the USA, Canada, Costa Rica, Chile, Argentina, and in some other countries in the Americas region with a history of sound health programs. For example, in Costa Rica, coronary artery disease is a major cause of morbidity and mortality in adults, including older persons.[3]

Diet Related Diseases in Older Persons

The types of malnutrition evident in elderly persons in the Americas region include undernutrition, vitamin and mineral deficiencies and excesses, obesity, nutritional imbalances, and toxicities such as alcohol abuse. In addition to primary malnutrition caused primarily by poor dietary intake, there is



malnutrition secondary to disease. Often the two problems coexist in the same individuals. Both primary and secondary malnutrition require public health interventions, however, the appropriate types of intervention vary. The prevalence of malnutrition problems differs from country to country, but all of the problems are present to some degree in all of the countries. With respect to nutrition and health, the specific needs of older persons must be identified. Much more information on these forms of malnutrition in older persons is required in order to assess national policies and for crafting appropriate interventions that encourage self-care and the continuity and quality of services that are delivered.

Nutritional Risks in Older Persons

The risk factors for poor nutritional status of older people are summarized in figure 1. Risk factors for malnutrition are the underlying reasons why people eat less or eat poorly. Individuals having one or more risk factors are more likely to become malnourished. Different risk factors are often linked to each other and they may be more or less common in certain situations.[4] The most appropriate interventions depend on the risk profiles of each country.

Until recently, little was done in the United States and Canada to identify elders at risk. Today, a number of efforts are underway to screen and identify elders at risk of malnutrition. The Nutrition Screening Initiative is one such example.[5] It focuses on the determinants for undernutrition that are listed in Box 1 which are somewhat similar for all countries, yet probably vary with respect to relevance and prevalence. Thus, while some determinants may be country- or population-specific, others are universally associated with malnutrition. For example, the Nutrition Screening Initiative determinant checklist did not predict risk of malnutrition in older persons living in the Netherlands, although it did predict risk satisfactorily in the United States. Perhaps this was because social circumstances and the health and social service systems for elders differ markedly between the two countries. Similarly, it is reasonable to expect that adaptations will be needed in checklists for Latin America, especially in poor countries and rural areas, where life circumstances and the infrastructure of health services are very different from those of affluent, urban, highly industrialized societies. Therefore, it is important to develop and/or validate systems for identifying determinants in each country and setting. Some risks are also setting-specific: those for individuals who are living in the community differ from those of persons in institutions or long term care facilities.

Appropriate Interventions

The most appropriate ways and means for intervening and ameliorating the nutritional problems of older persons differ, but the general principles are the same for all countries. Many of the chronic degenerative diseases of older persons such as cardiovascular disease, diabetes, obesity, osteoporosis and anaemias due to iron, folic acid and vitamin B12 deficiency have preventable causes, including nutritional causes. Many of the measures to prevent or control these conditions depend upon both enhanced dietary intakes and more physically active lifestyles. Appropriate physical activity (both aerobic and strength types of exercise) is a desirable health-producing behaviour in older persons. In addition, health care, social support, food assistance, and other interventions are also often appropriate. Not all malnutrition in older persons can be prevented, but it should be treated or ameliorated.

One recent review of intervention strategies from HelpAge International[4] (see page 50) is also useful for crafting interventions in the Americas. It suggests that persons should be classified by severity of the malnutrition problem prior to selecting an appropriate intervention(s). For example, this might involve improving the diets of older people, physical functional abilities, food availability, or reducing the social and emotional risk factors of nutritional vulnerability. There is a general need to insure that all older persons have a sound diet. Each country's food-based dietary guidelines should be generally appropriate and modified slightly for older persons, if needed. Simple self-feeding aids (e.g., specially bent eating utensils for arthritic sufferers) may improve physical activity and ability, and small gardens or small income generating programs may increase food availability.

Future Directions

The ultimate goal is to implement prevention oriented programs for elders and to increase the years of healthy life elders enjoy in all countries. High priority areas for action include: preventing the age-associated chronic degenerative diseases that have nutritional implications in their causation and treatment; eliminating vaccine-preventable diseases of elders such as influenza and pneumonia that adversely impact nutritional status; eradicating poverty-related undernutrition and malnutrition in elders; and instituting interventions to ameliorate loneliness and depression. Also, there is an urgent need for training health and social science professionals in the Americas to prevent, recognize, and improve the nutritional status of older persons. Health and social service infrastructures must be developed to serve the nutrition and health needs of the growing population of older persons. Advocacy efforts by elders for elders and by others are also needed.

An avalanche of older persons will overwhelm the unprepared in the 21st century. Decision-makers and leaders in nutrition in all countries in the Americas must plan now to ensure that their older population is well nourished and food secure. They must pay attention to adequate, humane, equitable, and timely integrated services, including nutrition, for older persons. Some general goals and policy recommendations for nutrition programs are provided in the United Nations International Plan of Action in Ageing[6] and summarized in Box 2. Country-specific plans, which involve the health, agriculture, education, and social welfare sectors are also needed.

Box 1
Determinants for Undernutriton in Elders

D *isease*
E *ating Poorly*
T *ooth loss and mouth pain*
E *conomic hardship*
R *educed social contact*
M *edication use*
I *nvoluntary weight loss or gain*
N *eed for assistance with self care*
E *lder over 80*
S *edentary life styles & physical inactivity*

Source: Modified from The Nutrition Screening Initiative, 1991

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Box 2
Recommendations for Nutrition of Older Persons:
UN International Plan of Action

Adequate, appropriate and sufficient nutrition is essential to the well being of the elderly. Poor nutrition is exacerbated by poverty, isolation, maldistribution of food, and poor eating habits, including those due to dental problems. Therefore special attention should be paid to:

- ◊ *Improvement of the availability of sufficient foodstuffs to the elderly through appropriate schemes and encouraging the aged in rural areas to play an active role in food production*
- ◊ *A fair and equitable distribution of food, wealth, resources and technology*
- ◊ *Education of the public, including older persons, in correct nutrition and eating habits, both in urban and rural areas*
- ◊ *Provision of health and dental services for early detection of malnutrition and improvement of mastication*
- ◊ *Studies of the nutritional status of the elderly at the community level, including steps to correct any unsatisfactory local conditions*
- ◊ *Extension of research into the role of nutritional factors in the ageing process to communities in developing countries.*

Source: *International Plan of Action on Ageing III Recommendations for Action*, (a) Health and Nutrition Recommendation 12. UN Div. Social Policy and Development http://www.un.org/esa/socdev/ageipaa3.htm

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Assessing Nutritional Vulnerability in Older People in Developing Countries

By Suraiya Ismail, PhD

The majority of poor older people in developing countries enter old age after a lifetime of poverty and deprivation, a diet that is inadequate in quantity and quality, and a lifetime of disease and poor access to health care. Until recently, we have assumed that older people represented only a small proportion of the populations of developing countries, and that they were adequately cared for within extended families. These assumptions must be challenged. The twentieth century has seen an unprecedented transition from high birth and death rates to low fertility and mortality. In 1950, there were about 200 million people over 60 years; by 2025 there will be 1.2 billion, of whom nearly 70% will live in developing countries. For most of these older people retirement is not an option. Poverty, lack of pension retirement, deaths of younger adults from AIDS, and rural to urban migration of younger people are among the factors that compel older people to continue working. Adequate nutrition, healthy ageing and the ability to function independently are thus essential components to preserve a minimum quality of life.

In 1992, the London School of Hygiene and Tropical Medicine, in collaboration with HelpAge International, began a programme of research on the nutrition of older adults in developing countries (see book review p50). The objectives of the programme were to test simple anthropometric measures of nutritional status, assess functional ability, and examine the risk factors of nutritional vulnerability. Fieldwork was undertaken in three sites: urban slum areas of Mumbai, India, Rwandan refugees in a camp in Tanzania, and rural communities in Lilongwe, Malawi.[1-3] The samples (n=1335 for India; 828 refugees; n=296 for Malawi) consisted of men and women aged 50 - 96 years.

All studies gathered data on age, a wide range of anthropometric measurements and functional ability (self-reported and physical performance tests), using slightly modified versions of standard techniques used in studies from Europe and North America. Clinical examinations were performed by nurses in Tanzania and Malawi and by doctors in India (where haemoglobin levels were also measured). Information on potential social and economic risk factors of nutritional vulnerability was obtained by interview, and in Tanzania and India, in depth case studies were conducted on sub-samples. Analyses examined the relationship

between nutritional status and functional ability and the determinants of nutritional vulnerability.

Measuring the height of older people presents a number of problems. Spinal curvatures (kyphosis) can be common, leading to inaccurate height measurements. Yet by omitting individuals whose height cannot be measured accurately, one could be excluding those with poorest nutritional status, especially among the very old. We found that 15% of the Indian sample, 17% of the Malawi sample, and 5% of the refugee sample had spinal curvatures, and the prevalence increased with age. Long bone measures (armspan, halfspan (demispan or hemispan), and knee height) have been proposed as proxies for height. These long bone measures are strongly correlated with height, but the relationship differs significantly between different ethnic groups. In Caucasian populations, armspan for example is almost equal to height, but is considerably longer than height among African populations. We therefore established the regression equations between armspan and height for each sample separately, using data from non-kyphotic individuals, and used these equations to estimate height from armspan in those with kyphosis.

Mid upper arm circumference (MUAC) has recently emerged in the literature as a potential screening tool for poor nutritional status. James et al.[4] analyzed its usefulness in adults, and calculated cutoffs equivalent to body mass index (BMI) and cutoffs for chronic energy deficiency (CED), using a range of data sets from developing countries. Accurate MUAC measurements in older people can be problematic, but with good training we achieved a high reliability (99% error free). We found that a MUAC cut off of 21.7 cm had a sensitivity of nearly 86% in relation to the BMI cutoff of 16 kg/m^2. We have therefore proposed it as an alternative to BMI as part of a screening tool in the acute phase of an emergency. WHO states that conventional BMI cutoffs for defining CED may not be appropriate for older people 70 years and over, because of age-related changes in body composition.[5] In the absence of alternatives, we used the conventional values, but feel strongly that research is needed on this subject. Table 1 shows the prevalence of undernutrition by sex in the three studies.[1,6,7]

In all three studies, the prevalence of undernutrition increased with age among women. This was most marked in India where it rose to nearly 60% among women over 70 years. The relatively low prevalence of undernutrition in the refugee population is probably because the study was conducted in the post-emergency phase: the sample represented those who had successfully reached the camp and survived a year in exile. In India, where haemoglobin levels were measured, the prevalence of anaemia was high, using WHO criteria for anaemia: 38% among men (<13g/dl) and 52% among women (<12g/dl). Among women over 70 years, the prevalence rose to 70%. In both men and women, the prevalence of anaemia was highest among those with severe malnutrition (BMI<16kg/m^2). We found that nutritional status was indeed related to functional ability. The strongest relationship was with handgrip strength, a measure of the strength of the upper limb. But undernutrition was also found to be associated with higher risks of impairments in psychomotor speed and coordination, mobility, and the ability to carry out activities of daily living independently, even after controlling for age, sex and disease.

Table 1.
Prevalence of undernutrition (BMI)

	% Men <18.5kg/m^2	% Women <18.5kg/m^2
India (Mumbai slum area)	35.0	35.0
Rwandan Refugees	19.5	13.1
Malawi (rural Lilongwe)	36.1	27.0

Case studies of Rwandan refugees showed that older people in camps face special problems. Not only have they suffered bereavement and trauma, they find it particularly difficult to adjust to an unfamiliar environment. They experience great difficulty coping with the general rations distributed in the camp: the ration is monotonous and unfamiliar or difficult to chew. They suffered also from lack of respect from younger family members and reduced social status, partly at least because they no longer had an inheritance to pass on to their children. Such transformations in traditional roles and cultural patterns are common not only in refugee camps but also in conditions of severe economic stress.

In summary, then, our results show that there is a high prevalence of malnutrition in older adults in the three developing countries in this sample, and that it is highest among the very old. While we can be sure that poor functional ability, and hence the ability to live an independent life, is associated with poor nutritional status, our cross-sectional studies do not allow us to infer cause and effect. For that, a more elaborate longitudinal study design is needed. Information from our interviews also tells us that most of our older adults are occupied in activities that contribute substantially to the family income.

Research is urgently needed in a wide range of areas. We need more studies of the kind we have undertaken, to begin to assess the magnitude of the problem and to refine techniques for the anthropometric assessment of nutritional status. We know little about the micronutrient status of older people in developing countries. The appropriateness of conventional BMI cutoffs for the older elderly need to be assessed. Nutrient requirements for elderly people are mostly extrapolated from younger adults in developed countries, and assume the reduction in energy expenditure associated with retirement. These requirements may not be correct for poor older people in developing countries. There are also age-related changes that can lead to reduced or altered food intake [see p17]. Interventions that address these problems need to be developed and tested. Pieterse (1999) proposes a screening tool for use in emergencies which needs to be tested, in particular, the validity of the MUAC cutoffs it uses.[2] Therapeutic and supplementary feeding programmes for use in emergencies should also be investigated. Indeed there is almost no experience of nutrition interventions for older persons; we have little or no idea of what works, nor do we even know if their nutritional status can be improved or if such improvement would lead to better functional ability.

The challenge facing the handful of nutritionists working with older people in developing countries is enormous. Most nutritionists have no experience of working with older people, nor have they been trained to understand their special needs and problems, food-related or otherwise. In an effort to address this in the Africa region, HelpAge International, in collaboration with the London School of Hygiene and Tropical Medicine and with funding from the UK's Department for International Development, has launched a programme of training and advocacy aimed in the first instance at nutritionists and then at staff of NGOs. Above all, we hope to change attitudes: older people are not 'burdens' or 'problems' in need of charity. They are active members of society, contributing daily to their families, their communities and their countries. Investing in older people is investing in ourselves.

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TRANSITIONS

Nutrition Transition – encompasses changes in dietary intake, physical activity and body composition; specifically refers to a shift to diets high in total fat, sugar, and refined grains; and includes a more sedentary lifestyle and increased use of tobacco products.

Epidemiological Transition – refers to a shift away from the high prevalence of infectious disease and malnutrition as causes of mortality to a high prevalence of chronic and degenerative diseases (hypertension, cardiovascular disease, and diabetes) – conditions made worse by the nutrition transition.

Countries in Transition – refers to a shift in economic conditions associated with countries experiencing a change in political philosophy or structure – may lead to a nutrition transition.

UN in Transition – "We should bring the Organization closer to the people." (Kofi Annan, 18 Dec 96, GA/9212)

Nutrient Based Dietary Guidelines for Older People

By Robert M Russell, MD

Up until the late 19th century, about 50% of all persons died while giving birth or in infancy, and people did not generally live long enough to become at risk for contracting chronic non-communicable diseases, such as cardiovascular disease and cancer, which are characteristic of middle and old age. Before the 20th century, human mortality was caused primarily by starvation, infections, and trauma. However, in the 20th century, there has come about a shift in the causes of disease mortality in many countries, which has been termed an **"epidemiologic transition."** Indeed, in certain areas of the world, this has been more like an "epidemiologic revolution". This change has been especially apparent in Europe and North America. In these developed areas of the world, the increasing number of people with chronic non-communicable diseases is not just the result of decreasing mortality rates but also, in part, because of improved medical care and improved public sanitation. Even in countries with emerging economies, the rise in numbers of people with chronic non-communicable diseases is apparent, since decreased child mortality and the resulting increase in life expectancy allows more people to reach late-middle and old age -- the ages at which chronic non-communicable diseases arise.

Thus, prevention of chronic disease is not only an issue of developed countries but is also increasingly becoming an issue for developing countries, and should be of concern to health agencies in countries throughout the world. For example, the growth in colon cancer rate is projected to be greatest in the formerly socialist countries of Europe.[1] The death rate from colon cancer is projected to grow in the 1990s by 1.2% in countries with established market economics, whereas death rates from colon cancer in Eastern European countries is expected to grow by 6.5%. Since nutrition can play a role in the prevention of such chronic non-communicable diseases, the provision of adequate nutrients to people as they age should be among the foremost concerns of health planners.

With the rise in importance of non-communicable diseases, scientists have begun to look at the contribution of nutrition in the prevention of diseases that are associated with the ageing process. It has long been known that older people are at an increased risk for developing nutrient deficiencies, although nutritional assessment of older populations is complicated due to: 1) problems in defining appropriate population samples that represent the various strata of older persons; 2) limitations of food intake assessment methods in older populations; and 3) the paucity of metabolic studies that have been performed directly on older people. The first two issues remain problematic, but over the last 15 years much has been learned about the nutritional requirements of older persons as well as the relationship between nutrients and the chronic diseases, which diminish the quality of life and life expectancy of older people.

Examples of nutrients that have been studied specifically in older people are riboflavin and vitamin B6. It had previously been thought that riboflavin requirements would be lower in older people as compared to younger people, because riboflavin is metabolically tied to energy expenditure, and older people expend less energy than younger people. However, in a recently performed depletion-repletion experiment on older people, it was found that riboflavin requirements were the same in older people as compared to younger people.[2] It should be noted that riboflavin intakes have been linked to at least one chronic non-communicable disease, esophageal cancer. In Linxing,China, the incidence of this cancer is 100 times that of the United States and Western Europe, and 95% of people in this region have riboflavin deficiency as defined by blood-testing (elevated erythrocyte glutathione reductase coefficient). In a Chinese intervention study that used a riboflavin and niacin supplement, esophageal cancer incidences and mortality over a 6-8 year period dropped significantly. Thus, in this region of China, meeting the riboflavin requirement could be an important factor to reduce the burden of this chronic disease.

In contrast, vitamin B6 requirement was previously

thought to be the same in older people as in younger people; however, recent studies performed in elderly people have shown that the vitamin B6 requirement is increased with advancing age, although the reasons for this finding is uncertain.[3] In one study, it was found that when an older person is vitamin B6-depleted, interleukin II levels drop significantly.[4] Thus, deficiency of vitamin B6 in an older person might result in immune dysfunction and an increase in infectious diseases or other chronic immune related disorders.

Because of the recent accumulation of such new data, there are two new and major changes in how nutrient requirements in elderly people are being viewed. First, nutrient requirements for the elderly are no longer simple extrapolations from data derived on younger people. Rather, as has been stated, nutrient requirements are being defined on the basis of data derived directly from studies conducted on elderly people. Secondly, scientists are now interested in the amount of nutrient that it takes to prevent a chronic disease or chronic disease marker from appearing, rather than just the amount of a nutrient that it takes to prevent a deficiency state from occurring.

Looking upon nutrients as modulators of chronic disease risk represents an important paradigm shift. For example, how much of a nutrient does it take either to affect a marker of a chronic disease (such as homocysteine for atherosclerotic cardiovascular disease) or to help prevent the chronic disease itself, (for example, bone demineralization and osteoporosis)? Indeed, the newly evolving Recommended Dietary Intakes in the United States will define nutrient intake levels that should decrease an individual's risk of developing chronic diseases and degenerative conditions that are related to specific nutrients and associated with negative functional outcomes.[5] Examples of strong links that have been made between specific nutrients and particular chronic illnesses are: the B vitamins (folate, vitamin B6 and vitamin B12) and the prevention of atherosclerotic cardiovascular disease and stroke;[6] vitamin D and calcium and the amelioration of bone demineralization or osteoporosis;[7] the antioxidant nutrients vitamins C and E and selenium and the prevention of atherosclerotic cardiovascular disease and/or certain site-specific cancers;[8,9] and the carotenoids, zeaxanthin and lutein, and the prevention of age-related macular degeneration.[10]

Since prevention of specific non-communicable diseases has been shown to be related to specific nutrients, the key element in planning diets for the elderly should be nutrient based dietary guidelines; that is, in order to reduce the burden of chronic disease by nutritional means, nutrient based guidelines in fact, become, essential to develop. Elderly people have distinctly different metabolic processes that do not allow for easy extrapolation of nutrient needs from results of experiments performed on younger adults. Because adults over 70 years consume less food than younger people (primarily because of decreases in energy expenditure) it is important to emphasize for old people:

- ◊ Foods that are nutrient dense in vitamins and minerals. For example, whole grain and enriched or possibly fortified breads and pastas are preferred to refined grain products for provision of adequate amounts of B vitamins. This is especially important since cereals and bread comprise the bulk of the diet of elderly people, many of whom are at risk for malnutrition.
- ◊ In the fruit and vegetable category, elderly should choose those that are deeply colored for provision of folate and antioxidant nutrients.
- ◊ Within the milk, yogurt, and cheese food group, emphasis should be placed on low-fat dairy products for the provision of adequate amounts of calcium and vitamin D.
- ◊ Within the nutrient rich meat, poultry, fish, dried beans, eggs and nuts food group, variety should be the key principle to follow with individual choices being made according to availability, affordability, chewability, individual preference and ease of preparation.
- ◊ Foods high in dietary fiber should be stressed and the fluid intakes of elderly people should be emphasized since thirst sensation is decreased in older people.

Although the information on nutrient requirements in ageing applies across the board to all older people, the way in which this information is translated into specific foods will vary from region to region. Further, geography and other local environmental

factors may necessitate stress being placed on particular nutrients. For example, it is known that circulating concentrations of vitamin D in healthy older people exposed to ultraviolet radiation are much lower than in younger people because of a decreased capacity of the epidermis and dermis of elderly people to synthesize previtamin D on ultraviolet light exposure.[11] At a latitude of 42° N or above (e.g. north of Milan, Boston or Kazakhstan) very little vitamin D, if any, is synthesized in the winter months because of the angle of the sun, whereas maximal synthesis can be seen during the summer months of June and July. Thus, oral intake of vitamin D by older people to prevent chronic bone demineralization is of greater concern in countries located at more northerly or southerly latitudes than in countries located near the equator. Vitamin B12 is an example of a nutrient whose dietary requirement is influenced by the presence or absence of atrophic gastritis, which is caused by chronic infection with the bacterium *Helicobacter pylori*. In the United States only 5% of individuals are infected by *Helicobacter pylori* by age 15, but by age 50, approximately 75% of individuals are infected. In Peru, in contrast, infection occurs at a much earlier age.[12] By age one, 50% of individuals are infected, by age 20, 75% of individuals are infected, and by age 50, almost everyone is infected with *Helicobacter pylori*. Atrophic gastritis results in decreased acid secretion in the stomach. In order for vitamin B12 to be absorbed normally it must be digested from food proteins by acid and pepsin. In countries with a high prevalence of atrophic gastritis related to *Helicobacter pylori* infection, the prevention of vitamin B12 deficiency in the ageing population is an important issue, not only for preventing neurologic disease and megaloblastic anaemia, but also for preventing coronary artery disease via a homocysteine mechanism. In some countries, food fortification or possibly supplementation of food products with unbound vitamin B12 may be needed for the elderly, due to the diminished bioavailability of vitamin B12 from normal food sources.

In order to reduce the burden of chronic non-communicable disease globally in our increasingly ageing world population, it is essential to develop and promulgate nutrient-based dietary guidelines. The best evidence to date is that specific nutrients or combinations of nutrients are related to specific chronic non-communicable diseases. In order to use this nutrition knowledge most effectively, geographically-specific dietary guidelines based on nutrient content and nutrient bioavailabilty are the best hope for maintaining elders in the healthiest state possible -- and for as long as possible.

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Food Based Dietary Guidelines (FBDGs)

By Mark L Wahlqvist, MD and Antigone Kouris-Blazos, PhD

Food based Dietary Guidelines (FBDGs) are new. Although the idea is based on the familiar idea of dietary guidelines, FBDGs depart from them in important ways. Current Dietary Guidelines (DGs) are essentially nutrient-based (fat, alcohol, salt, sugar, calcium, iron), but expressed as food groups. As a result, this may create confusion about the term "Food-Based" since most existing guidelines around the world also mention foods, e.g. eat more vegetables, cereals. However, FBDGs are a more integrated way of describing the human diet, because they go beyond addressing "foods" simply as "food groups": they address food production (agriculture), preparation (cuisine), processing (food industry) and development (novel/functional foods). They address traditional foods and dishes, and most importantly cuisine, making such guidelines more practical and user-friendly at the individual level. To develop a plan for re-orientation from nutrients to foods, a WHO work group met in Cyprus on 2-7 March 1995.[3] At this meeting the concept and philosophy behind FBDGs were born and encompassed in the "Cyprus declaration". Conclusions of the "Cyprus declaration" are:

◊ FBDGs should be developed in cultural contexts, recognizing the social, economic and environmental aspects of foods and eating patterns.

◊ Public health issues should determine the relevance of DGs, e.g. FBDGs can be culturally specific, relate to particular public health concerns and acknowledge excess, deficiency or a combination of these errors in food intake.

◊ FBDGs need to reflect food patterns rather than numeric goals.

◊ FBDGs need to be positive and encourage enjoyment of appropriate dietary intakes.

◊ Various diets and food patterns can be consistent with good health.

Requirements for the realization of this declaration are:

◊ a broad socio-cultural approach to food and health, with sensitivity to food traditions/beliefs

◊ major advances in food science which allow an appreciation of food component complexity and its implications for human biology

◊ scientific studies which show that food patterns (like variety, traditionality and acculturation), and not simply nutrient intakes, are predictive of health outcomes and are amenable to useful change in their own right

◊ the ability to handle large data bases of food intakes, health outcomes and trends in those variables with time -- the new discipline of nutrition information applied to nutritional epidemiology

◊ and an appreciation of the ecological implications of dietary guidelines.

There are at least four possible approaches to the assessment of nutritional quality in the development and evaluation of FBDGs (cited from the Cyprus report):

1. *Food pattern*: Assessing the health outcomes of adherence to a particular food pattern with a favourable health relationship is one way of evaluating the nutritional soundness of an envisaged DG approach. This is most likely to be a traditional food pattern of people with longevity, low morbidity and low prenatal and infant mortality rates (e.g. Scandinavian, Japanese, Mediterranean), through traditional or through cultural adaptation. Negative effects following changes in dietary patterns also indicate food patterns to be avoided. Tracking health indices in populations in accordance with food intake has so far, been the most valuable evidence on which to base FBDGs.

2. *Food Variety Indices*: While the value of increased food variety in either ensuring essential nutrient adequacy or decreasing the risk of food toxicity (adverse health factors in food are generally diluted where varied foods are eaten) has been understood for some time, measuring food variety as a predictor of health outcome is a relatively recent approach. Enough evidence is available to justify its inclusion in the methodologies for

development of FBDGs as a technique to reduce morbidity and mortality while awaiting further scientific studies on how it operates. To increase food variety, FBDGs can promote healthy traditional foods/dishes from the local cuisine as well as from other cuisines (if available). Similarly, healthy modern, novel and functional foods will be introduced and promoted.

3. Recommended Nutrient Intakes (RNIs): FBDGs should be structured to enable the population to meet RNIs that are critical for diet related public health problems.

4. Use of nutrient densities in establishing and evaluating FBDGs: Using nutrient densities to evaluate dietary quality involves expressing existing RNI values provided by the diet. The conditions for this model are that if a diet provides for the energy needs of individuals it will also satisfy the RNIs for all essential nutrients. This approach permits the simplification of age and gender RNI figures. If these figures are expressed per 1000 kcal the values differ minimally. Individuals within a family group usually form the basic unit for food consumption. Thus, if there is enough food at the family or household level, all members can consume a diet with the recommended nutrient densities and meet their specific RNIs. The problem of intrafamily food distribution needs to be considered in establishing general FBDGs and those specifically addressing the needs of vulnerable groups.

FBDGs allow the principles of nutrition education to be expressed mostly as foods and culture-specific dishes (qualitative and quantitative) in order to make the guidelines as practical as possible. They are intended for use by individual members of the general public. They can largely avoid technical terms of nutritional science. FBDGs can also take into account the positive and negative nutritional effects which follow changes in dietary patterns (e.g. changes to traditional diets during migration and acculturation to mainstream diet) where there is evidence that some food patterns should be avoided or encouraged. Even though they focus on diet, groups responsible for developing FBDGs are encouraged to integrate these messages with other policies related to health (e.g., smoking, physical activity, alcohol consumption). WHO and FAO have now applied the Food-based Dietary Guidelines framework to the nutritional and health needs of populations in the Western Pacific Region[4] and in older adults.[5]

The principles of FBDGs:

1. Encourage a variety of low-energy dense foods (at least 20 biologically distinct foods per week drawn from all food groups).

2. Emphasize healthy traditional dishes which are vegetable and legume based and where meat and nuts are used as condiments (i.e. small servings of nutritious but energy dense foods are combined with larger servings of low energy dense foods). Encourage consumption of available protective foods (fish, garlic, onion, cruciferous and leafy vegetables, tomatoes, soy, other pulses, citrus fruits, grapes, berries, olives, herbs, tea - to name a few).

3. Limit traditional dishes/foods heavily preserved/ pickled in salt, or breaded and fried.

4. Consume fat that, ideally, should be unrefined from whole foods such as nuts, seeds, beans, olives, fish, lean meat. Limit fatty spreads in cooking or on bread. Minimize or combine foods containing hidden animal fats (fatty meat, full-fat dairy products, some fast/processed food, and hydrogenated plant fats (some fast/processed food, commercial cakes/ biscuits).

5. Reserve added liquid fats (oils, coconut products) for cooked meals, vegetables and salads. Liquid plant fats added during cooking or at the table are useful if they encourage the consumption of a variety of low energy dense foods (especially plant foods, fish) by improving the flavour of such dishes (traditional vegetable dishes cooked with coconut milk or extra virgin olive oil). Added oils may also assist in the absorption of fat soluble nutrients and phytochemicals from plant foods. Encourage a variety of liquid plant fats for cooking which have been minimally processed (cold pressed or 'extra virgin').

6. Enjoy food and eating in the company of others, but avoid the regular use of energy dense (nutrient poor) celebratory foods which are high in fat and or sugar.

7. Encourage food industry and fast food chains to produce ready-made meals that minimize or

combine liquid plant fats with low energy dense plant foods (frozen vegetarian meals based on pulses, vegetables and extra virgin olive oil) as alternatives to animal-based convenience foods containing animal fats or hydrogenated plant fats. Functional foods produced by the food industry (bread based on whole grains and seeds like soy linseed bread) can also be reflected by FBDGs.

8. Transfer as much as possible of one's food culture and health knowledge and related skills (in food production, choice, preparation, and storage) to one's children and grandchildren and to the broader community. Ensure knowledge is transferred. Teach cooking techniques (as part of survival skills) to all primary and secondary schoolchildren.

In summary, FBDGs incorporate the nutrient and non-nutrient composition of foods, locally available foods, sustainable food production, food patterns (e.g. traditional diets) and food preparation (cuisine) and their influence on morbidity and mortality levels in populations. Because of their cultural sensitivities and their immediacy to the communities in question, they have the ability to address not only current concerns about the emergence of chronic non-communicable diseases, but also the previous health profile of societies in health transition and possible future health profiles. FBDGs emphasize local adaptation and application, and the focus is clearly on local workers (fieldworkers may be a better term) - their application requires local experts to work with community elders in their implementation. Culturally appropriate modes of presentation of the main messages should be sought, pre-tested and disseminated. FBDG should be developed in each country and different guidelines may also be required for different geographic regions or socio-economic groups within the same country. Whatever FBDGs are developed they must be subject to critical appraisal, monitoring and review, especially in regard to unintended consequences and to ecological considerations. This process is part of the new 'public health nutrition'.

The development of culturally sensitive FBDGs, in light of the best scientific evidence, is to be preferred to food-changes driven by studies on single food components and single disease outcomes; the risk-benefit ratio is likely to be much lower in this way. This changing understanding and acknowledgement of people's personal and cultural needs as well as more integrative, and not only reductionist nutrition science, is now reflected in FBDGs. There is, yet, much to be learned and distilled from the pooling of food cultural tradition.

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FEATURES

Sarcopenia: Inevitable, But Treatable

By Ronenn Roubenoff, MD

A normal part of ageing is the loss of muscle mass, and with it of strength, that has been termed sarcopenia, from the Greek for "poverty of flesh". This process is a universal one, as befits a feature of normal ageing, and is not a product of a disease. Many illnesses, however, can cause accelerated loss of muscle, which older persons are less able to tolerate than the young because they are already experiencing age-related sarcopenia. In this case, the combination of the two processes can be devastating. Although little is known about the determinants of sarcopenia, there is a growing body of evidence regarding the detrimental effects of muscle loss and weakness. Fortunately, much is known today about how to minimize and treat sarcopenia in older persons, using strengthening exercises that can be done at home with simple, low-cost techniques.

What is Sarcopenia? Sarcopenia involves loss of muscle, the largest component of the lean body mass compartment of the human body (the other components of lean mass are the visceral organs, immune cell mass, and extracellular water and connective tissue). There is reasonable evidence that there is a limit on how much lean body mass can be lost before death supervenes. The available data, based on starvation, AIDS patients , and critical illness, suggest that loss of more than about 40% of baseline lean mass is fatal.[1] "Baseline" is a slippery concept here, because again absolute mass is not explanatory - basketball players do not necessarily outlive jockeys - but rather the amount of loss as a function of the baseline mass with which the individual started. Kehayias et al.[2] defined baseline as the mean for adults aged 20-30 years; no healthy subjects were found below approximately 70% of that standard, and there was a steady decline in body cell mass for both men and women across age groups between 30 and 100 years (Figure 1). Most of this decline has been shown to occur in the muscle, as visceral organ size, and connective tissue mass do not change appreciably with age.

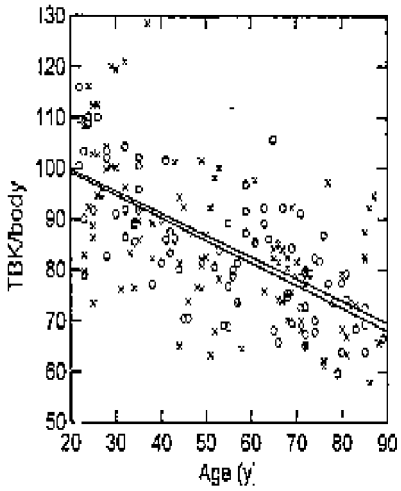

Figure 1. Decline in body cell mass (primarily muscle) across age groups in healthy, ambulatory, successfully ageing adults aged 20 - 100. TBK = total body potassium, the reference method for cell mass. Data are expressed as a % of the 20-30 year old group for men and women separately. (From Kehayias et al. 1997 with permission.)

The decline in muscle mass has two important effects on the body. First, strength is directly proportional to the amount of muscle, so that people with less muscle mass are necessarily weaker than people with more muscle. In fact, estimates of muscle mass explain the vast majority of the difference in strength between men and women, and between young and old. Although there is much research currently focusing on the question of whether there is a decline in muscle quality with age, it is clear that loss of muscle quantity is a critical determinant of weakness in the aged. The loss of strength has direct functional implications: weaker persons have more difficulty with tasks that are needed for independent living, and thus are more likely to require assistance or be institutionalized. This functional effect of sarcopenia is shown in Figure 2, which compares the strength needed to rise from a chair for two persons of the same weight. Young persons can do this with only a fraction of their maximal voluntary contraction (MVC, or strength), and thus have little difficulty rising from a chair. Older persons, however, who have lost a significant amount of muscle will require nearly all of their strength to achieve the same work, so they can only do it once or twice before the muscle is too fatigued to accomplish another repetition. Since

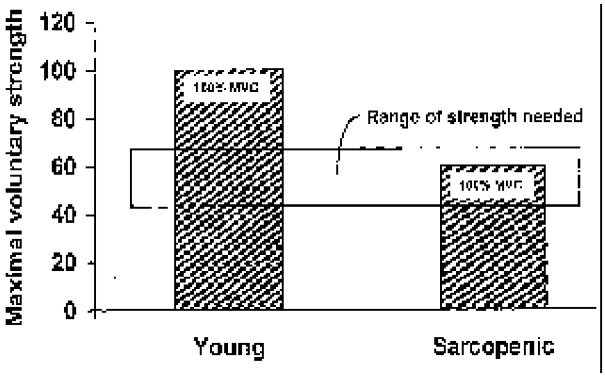

Figure 2. Effect of loss of strength on the ability to perform an action such as rising from a chair, for a young, healthy adult (left) and for a sarcopenic older persons adults (right). MVC = maximal voluntary contraction. Actions that

roughly two-thirds of human muscle is below the waist, it is basic motions such as rising from a chair or bed, walking, and standing that are affected by sarcopenia, and these activities in turn are the fundamental units of independence - the ability to stand up, cross a room, prepare a meal, shop for food and other necessities, etc. Sarcopenia affects all of these in profound ways.

The second major impact of sarcopenia is a metabolic one, as an indicator of reduced protein stores for times of physiologic stress such as an acute illness. It is well accepted that during illness, gluconeogenesis increases in importance, while ketogenesis is relatively suppressed, so that protein is burned for energy in excess of the levels seen in starvation adaptation. Given the anorexia caused by acute illness, and by the iatrogenic limitation on dietary intake that often occurs in hospitals, endogenous protein stores are crucial in determining the availability of metabolic substrate to cope with the illness, and thus the ability to survive it. Therefore, it is no wonder that older, sarcopenic patients fare worse than young, healthy adults for almost all diseases. Tellado et al.[3] have shown that measurement of body cell mass was the only independent determinant of survival in intensive care unit patients in multivariate analysis, removing the significance of univariate predictors such as albumin, age, and even diagnosis. Thus, the metabolic significance of sarcopenia in illness should be considered independently of its functional impact during times of better health, as both are important to the survival and well being of older persons.

How Common is Sarcopenia? There is not much information about the prevalence of sarcopenia. There is one population-based study of the prevalence of sarcopenia with advancing age. Data are available from the New Mexico Elder Health Survey by Baumgartner et al.[4] who measured appendicular muscle mass by dual-energy x-ray absorptiometry (DXA) in 883 older Hispanic and non-Hispanic white men and women. The subjects were selected randomly from the Health Care Financing Administration (HCFA) Medicare listing for Bernalillo County, New Mexico. A total of 2,200 subjects were sampled; 534 had died, moved, could not be contacted, or were ineligible. Of the 1666 eligible subjects contacted, 1,130 (67.8%) completed the home interview and 883 (53%) underwent DXA. Sarcopenia was defined as a muscle mass 2 or more standard deviations below the mean for young healthy participants in the Rosetta Study, a large cross-sectional study of body composition in New York. The prevalence of sarcopenia by this definition increased from 13-24% of persons under age 70 to over 50% of those over age 80 years (Figure 3).

What Can Be Done About Sarcopenia? Muscle is an amazing organ because it can adapt to new demands to a remarkable degree. The difference in body habits between Olympic weightlifters and marathon runners shows the vast range of muscle mass and content that humans can achieve. Muscle will grow if it is repeatedly stressed to the point of failure. In other words, lifting weights that are heavy enough to make the last one or two repetitions of the motion extremely difficult or impossible to achieve will lead to hypertrophy of the muscle and a gain in strength to the point that the exercise can now be accomplished. Even more remarkable in many ways is the finding that this adaptability is maintained throughout life, even into ages 90 and

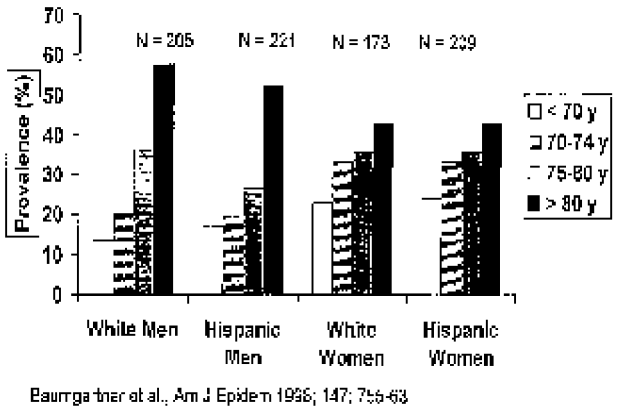

Figure 3. Prevalence of sarcopenia with age in men and women of European or Hispanic descent. (Adapted from Baumgartner et al. 1998.)

above.[5] Data from our laboratory and others' have shown clearly that muscle strength and mass can be regained even in very frail elders, including those suffering from comorbid conditions such as heart failure, kidney disease, arthritis, diabetes, and obesity. In addition, there is now good evidence for improvement in these chronic conditions with strength training, as the exercise reverses many of the peripheral effects of the disease on muscle, generally without worsening the disease, and often with improvement in that as well.[6]

In order for strength gain and muscle hypertrophy to occur, it is crucial that the exercise be intensive and progressive. Intensive in that only 6 to 8 repetitions can be done in one set before failure occurs, and the weight can no longer be lifted in good form. Progressive in that as soon as strength has increased to the point that the exertion required to perform the exercise is not intensive, the weight or resistance is increased. Thus, it is not adequate to lift soup cans or milk bottles -- it is necessary to increase weights as people become stronger. Usually, 2-3 sets of exercises are performed two to three times a week. The large muscles should be exercised, since that is where the bulk of body protein is. Conversely, it is not necessary to use elaborate or expensive equipment in order to achieve the desired results. Training can be done in people's homes, using second-hand or home-made dumbbells and ankle weights, or two or more people can share equipment and exercise together. Such a "buddy system" is often a useful way to continue training after the novelty has worn off. The most important issue, however, is to learn how to do the exercises properly, with good form, so that gains occur as rapidly as possible while injury is avoided. This is best done by following training principles learned over the past four or five decades. An excellent book by Miriam Nelson, PhD, from Tufts University, called *Strong Women Stay Young* (Bantam, 1997), outlines in great detail and with many illustrations the right way to strength train for older persons. Despite the title, it is equally applicable to men, and it has been translated into 11 languages and is available worldwide (see p52).

In summary, sarcopenia is physiologic part of ageing. We still do not know much about what causes it, but we do know how to treat it. Such treatment -- and its application at the public health level -- will be a major determinant of whether the burgeoning older population we expect in the 21st century will be made up of millions of incapacitated, frail, fractured, and unhappy persons, or whether we can in fact extend not only chronologic age, but also functional status, so that the "golden years" are in fact valuable to the majority of elders. The research is clear. The challenge now is translating it into practice.

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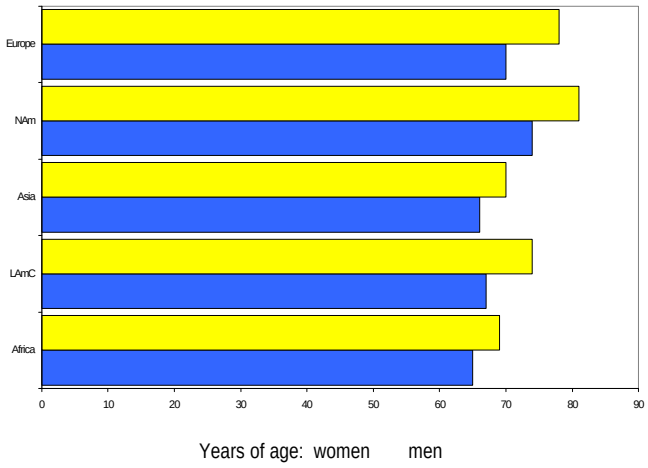
Life expectancy at birth for men and women by UN Region in the year 2000



Source: UN, the Population Prospectus, database update 1998

Men & women age differently. It varies from about 2 yrs difference between men & women in Africa to 8 yrs in Europe — in very old age women outnumber men by about 2:1. Research shows this may be partly due to biological factors (e.g., endogenous hormones protect women from ischaemic heart disease until menopause). Other factors are lifestyle & socioeconomic issues (i.e., men are exposed to work hazards, more often, have more accidents, drink alcohol more excessively, and tend to smoke more (although women are now smoking more, especially in developing countries.

B Vitamins, Homocysteine, Heart Disease and Cognitive Function

By Katherine Tucker, PhD

There are many aspects of ageing which are generally accepted as part of the process -- we slow down, have more aches and pains, have more trouble seeing well, and start to forget things. Although ageing is inevitable, the past few decades have witnessed exciting advances in scientific understanding which suggest that at least some of these functional declines may be prevented, or at least delayed, through health behaviours. Thousands of papers have documented the value of smoking avoidance, drinking in moderation, regular physical activity and good dietary practices for health maintenance. We continue to find new aspects of dietary intake that may contribute to optimal health. Recent research has emphasized the role of specific dietary fatty acids, antioxidant vitamins, a variety of phytochemicals, and an emerging understanding of the important role of B vitamins.

B Vitamins and Homocysteine

One relatively new and very promising area of research highlights the importance of B vitamins in the prevention of vascular disease. Several studies have shown consistent and strong relationships between low concentrations of blood folate, vitamin B12 and vitamin B6, and high concentrations of homocysteine which, in turn, have been linked with heart disease, stroke and other vascular outcomes. Homocysteine is an amino acid that is created as an intermediate product during the process of protein metabolism. The breakdown of homocysteine to cysteine requires the vitamin B6 dependent enzyme, cystathionine beta synthase. Re-methylation to methionine requires a vitamin B12 dependent enzyme, with folate as a cofactor. The most common cause of homocysteine accumulation, therefore, is deficiency or low availability of folate, vitamin B12 or vitamin B6. The strong relationships between these nutrients and homocysteine concentrations have been noted in several studies and were clearly demonstrated in the Framingham Heart Study cohort[1].

Homocysteine and Heart Disease

Lowering high homocysteine is thought to be important because of its strong and consistent relationship with heart disease. In case-control, cross-sectional and prospective cohort studies, high homocysteine has been linked with occurrence and mortality from heart disease -- as well as with indicators of heart disease risk, including thickening of the carotid arteries and venous thrombosis. A recent case control study in nine European countries estimated that the associated risk of vascular disease associated with high homocysteine was approximately twice that of those with normal levels for both men and women[2]. Although the evidence for homocysteine as a causal risk factor is strong, it remains possible that low folate or some other strongly associated factor is primarily responsible. More definitive proof of causation awaits randomized controlled trials, several of which are now ongoing. Assuming the likely causal association between high homocysteine and/or associated low B vitamins is true, it has the potential to have enormous population importance. In the Framingham Heart Study's original cohort (aged 67-96 years), 29% were found to have high homocysteine concentrations (>14 μmol/L) and 64% of these were attributed to low B vitamin status, particularly to low folate status[1].

Folate

Folate, or folic acid, has been gaining increasing recognition worldwide due to its protective effect against neural tube defects. Based mainly on this concern, it has been recommended that all women of child bearing age should consume 400 μg of folate per day and, in the United States, cereal grain products have recently been fortified at the level of 140 μg/100 grams product. In light of evidence that low folate intakes may contribute to risk of vascular disease, through elevated levels of plasma homocysteine, increased intake of folic acid is likely to benefit a much wider segment of the population. A recent analysis of data from the Framingham Offspring (aged 30-59 years at time of measurement), showed that fortification of the US flour supply with folic acid cut the prevalence of high homocysteine (defined as >13 μmol/L for this

younger group) in half--from 19% prior to fortification, to about 10% after fortification[3]. If either folate or homocysteine is causing the increased risk of heart disease, as the data suggest, then we can expect to see declines in heart disease associated with this improved nutritional status in the future.

In countries where nutrient intakes are generally poor, and where there is no enrichment or fortification with B vitamins, it may be expected that low B vitamin status and high homocysteine concentrations may be even more prevalent. Major sources of dietary folate include most fruit and vegetables, particularly orange juice, green leafy vegetables, banana, and legumes. In the United States, fortified breakfast cereals are also an important contribution to total dietary intakes of this vitamin. In the Framingham study, we found that intake of approximately seven servings of fruit and vegetables per day, or 6-7 servings of fortified breakfast cereal per week, were associated with folate intake at the recommended level of 400 μg/ day[4]. These intake patterns were also associated with significantly lower homocysteine when compared with those with lower intakes of these foods. Dietary changes to increase folate intake -- more fruits, vegetables, and fortified breakfast cereals, where available--would have additional benefits, associated with the wide variety of healthful nutrients and non-nutrient factors balanced in these foods. However, while good diets are advisable for everyone, the majority of the population is unlikely to achieve this level of intake without added fortification.

Vitamin B12

The question of diet improvement vs. supplementation or fortification is particularly relevant for the elderly population. While the benefit to folate status and homocysteine concentrations is clear, there has been some concern about the possible masking of vitamin B12 deficiency with increased intakes of folic acid. Although results are not consistent, some studies have shown improvement in indicators of anaemia, but worsening of vitamin B12 related neurologic status with administration of folic acid, usually at doses greater than 1 mg/day (1000 μg). If undetected and left untreated, some of the neurologic consequences of vitamin B12 deficiency, including peripheral neuropathy, gait disturbances and dementia, could become permanent. In addition to masking neurological symptoms, it has been suggested that high folic acid intake may also precipitate these manifestations in some patients with vitamin B12 deficiency. Although true pernicious anaemia is not common, recent data suggest that the prevalence of vitamin B12 deficiency and associated neurologic symptoms may be more widespread than previously thought, affecting persons even at levels formerly considered borderline normal and among patients without anaemia or macrocytosis[5].

Common symptoms in patients with diagnosed vitamin B12 deficiency include decreased vibration sense, impaired sense of touch, memory loss and fatigue. Many of these neurologic symptoms have been shown to improve with vitamin B12 therapy[5]. Low vitamin B12 status may also contribute to dementia through both the toxic effects of homocysteine on blood vessels, and because vitamin B12 is required for the production of myelin basic protein needed for the protection of nerves. Vitamin B12 status is related to adequacy of dietary intake, but to a lesser extent than is folate status. Studies of vitamin B12 status among older adults have consistently identified large segments of the population as either deficient or "low normal" despite apparently adequate dietary intakes. In the Framingham offspring study, about 16% of the population had vitamin B12 concentrations low enough to be at risk of inadequate vitamin B12 status, despite intakes generally above recommendations[6]. Vitamin B12 is found in all animal products. However, because of the need for several steps in the separation of vitamin B12 from food protein and preparation for absorption, many older individuals with otherwise adequate intakes have difficulty absorbing vitamin B12, resulting in inadequate status. Common causes of vitamin B12 deficiency include atrophic gastritis, gastric or intestinal surgery, vegetarianism or persistent use of antacids. For this reason, the most recent dietary reference intakes suggest that most of the vitamin B12 obtained by individuals aged 50 years and above come from supplements or fortified foods, where the vitamin is in a form which is more bioavailable than that bound to protein in food. The reversal of cognitive and neurological symptoms after vitamin B12 therapy appears to be related to duration of symptoms, suggesting that early identification and treatment of vitamin B12 deficiency

is of critical importance. With the increased emphasis on folic acid in the food supply, greater attention should also be given to the risks of inadequate vitamin B12 status and its health effects.

Vitamin B6

Most of the studies examining homocysteine have measured fasting concentrations, which appears to be most effectively lowered by folic acid, with additional lowering with vitamin B12 when the status of this nutrient is inadequate. The third vitamin associated with homocysteine, vitamin B6, has generally been shown to have less of an effect on fasting homocysteine concentrations. However, because it works through a different biochemical pathway, it does have a significant effect on homocysteine levels' post-methionine load, or on the time it takes to clear the increased homocysteine concentrations that occur after a protein meal. While more research is needed to determine if this more transitory elevation in homocysteine is a causal factor in heart disease, it is interesting to note that epidemiologic studies have identified associations between vitamin B6 status and indicators of heart disease which are independent of fasting homocysteine concentrations[2]. Good dietary sources of vitamin B6 include banana, avocado, beef, poultry, fish, green leafy vegetables, and whole grains. Dietary surveys regularly show that large proportions of the population have diets that are low in this vitamin.

Homocysteine And Cognitive Function

Most recently, there is growing interest in the association between homocysteine and cognitive decline. Because hyperhomocysteinemia has been recognized as an independent risk factor for cerebral, coronary, and peripheral vascular disease, it may also be expected to relate to cerebrovascular dementia. Not surprisingly, cerebrovascular diseases and other cardiovascular diseases have been associated with an increased risk of cognitive impairment. Furthermore, several studies have shown that patients with dementia of vascular cause tend to have significantly higher plasma homocysteine concentrations than those without history of vascular disease. In a study of ageing men in Massachusetts, plasma homocysteine, folate and vitamin B12 were each associated with higher scores on cognitive functioning, and higher concentrations of vitamin B6 were associated with better performance on memory tests[7].

It is well known that severe deficiencies of B vitamins can result in dementia -- including, most notably, thiamin, niacin and vitamin B12. However, it is only recently that there has been a focus on the possible effects of even milder deficiencies of these and other nutrients -- with some evidence of association with impaired cognitive function even at the "low normal" blood concentrations and dietary intakes. Although associations between homocysteine and cognitive impairment have theoretical support, most available data are cross-sectional and cannot, therefore, prove a causal relationship between nutritional status and cognitive function. In addition to evidence for a link with vascular dementia, elevated homocysteine concentrations and lower levels of folate and vitamin B12 have also been reported in Alzheimer's patients when compared with controls[8]. This, however, does not answer the question of whether the elevation in homocysteine is responsible for some of the cognitive impairments or whether it is a result of the impairment -- through poorer diets or other mechanisms. More evidence of a causal direction is offered by the observation that in genetic disorders of methionine metabolism leading to high homocysteine, young individuals develop cerebrovascular disease and cognitive impairment. This suggests that the impairment is likely to be caused by elevated homocysteine or other closely associated factor. Still, the mechanisms of action for the effect of homocysteine on vascular disease remain unproven and it may be that the inadequacy of one or more of the vitamins, or even some other highly correlated factor, is primarily responsible for the vascular disease association.

There are a number of mechanisms by which elevated levels of homocysteine may cause cognitive impairment. Homocysteine is thought to cause abnormal adhesion of platelets to the endothelial wall (clotting) through a direct effect on the vessel wall. It may also have neurotoxic effects, leading to cell death. In one longitudinal study, higher homocysteine concentrations in Alzheimer's patients were associated with greater progression of brain atrophy as measured by medial temporal lobe thickness, as well as a similar (although non-significant) declines in cognitive test scores[8].

Homocysteine has also been proposed to affect vascular systems through the promotion of oxidative damage and the enhancement of chronic inflammation. In addition to the effects of homocysteine, low concentrations of these B vitamins may also inhibit methylation reactions which may affect nerve myelin, neurotransmitters and membrane structures, which in turn, may lead to neuropathology and cognitive effects[9]. While these hypothesized mechanisms are plausible, research in this area remains limited, but is rapidly gaining attention.

Conclusion

The past decade has seen a new appreciation of the importance of folate, vitamin B12 and vitamin B6 to human health. Their association with homocysteine is clear. The evidence for an important role in the prevention of heart disease is becoming clearer. Ongoing clinical trials should provide further evidence of the causal nature of these relationships. A variety of mechanisms have been proposed to explain these associations and the next few years should offer more answers to these questions as well. An important result of this work is the realization that "low normal" intakes and blood concentrations may result in health impairments, suggesting that dietary intakes and clinical cutoff points should be higher than those used in the past. To date, much less work has been done to understand the possible roles of these vitamins in the prevention of cognitive decline. Initial associations look promising and hypothesized vascular and neurologic mechanisms associated with homocysteine and/or individual B vitamins are plausible. This is an exciting area of research that offers hope for future intervention to improve the quality of life of the ageing population.

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Calcium

By Ann Prentice, PhD

Dietary surveys and milk supply data demonstrate that the calcium (figure 1) intake of many populations is below recommended levels but there is little evidence that this compromises bone health in terms of fracture risk. It is possible that the ability of the human body to adapt to differing levels of calcium intake is sufficiently powerful that calcium intake is largely irrelevant in this context, although treatment of those at greatest risk of osteoporosis with supplemental calcium may be beneficial. It is also possible that early life exposure to differing amounts of calcium, or nutrient-gene, nutrient-nutrient or nutrient-lifestyle interactions may alter calcium requirements, rendering some populations more at risk from the consequences of a low calcium intake than others. However, the recent demonstration that older women in Africa and Asia have poor bone mineral status, despite their low fracture incidence,[1-3] could also suggest that calcium intake is important in maintaining bone health but that protective factors, such as vitamin D and physical activity, reduce the likelihood of fracture. Since a low calcium intake may have a role in growth retardation[4] and has been implicated in other diseases which can affect people in developing countries such as colon cancer and hypertension, especially pregnancy-induced hypertension,[5] it is premature to assume that populations with a low calcium intake will not benefit from an increase towards recommended levels. Until the controversies surrounding human calcium requirements are resolved by future research, the question of what priority should be given by governments in developing countries to meeting population targets for calcium intake will remain difficult to answer.

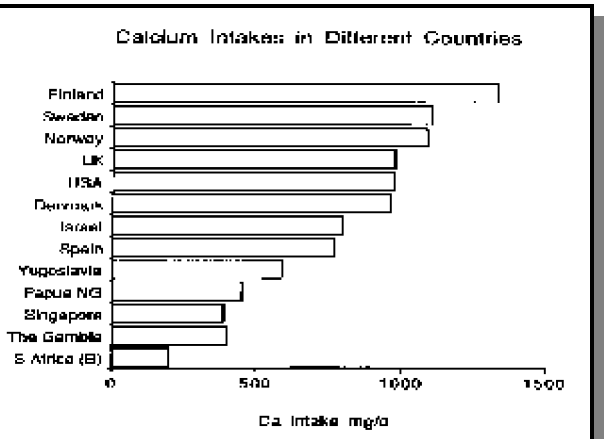

Figure 1. Comparison of average calcium intakes in different countries. Data from A Prentice, *Am J Clin Nutr* 1994;59(S):477S-483S.

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Extracted from a larger position paper by Dr Prentice for the UN ACC/SCN dated November 1997, "Milk, Calcium and Osteoporosis with Special Reference to Developing Countries". Contact email ann.prentice@mrc-hnr.cam.ac.uk

Calcium recommendations for adults over 50 years

USA/Canada	(1999)	1200 mg/d	UK	(1998)	700 mg/d
European Union	(1993)	700 mg/d	WHO/FAO*	(1974)	450 mg/d

A Joint WHO/FAO Expert Consultation on Vitamins and Minerals was held in Bangkok in 1998. Recommendations are forthcoming and will be available in hard copy and on the FAO website. Contact: Guy Nantel, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy; tel 00 39 06 5705 2028; email guy.nantel@fao.org (Re: nutrient requirement)

Osteoporosis

Extracted from the WHO Bulletin: International Journal of Public Health

Osteoporosis affects the majority of older persons, including an estimated 33% of post-menopausal women (figure 1). It is called "the silent disease" because by the time symptoms (pain and fractures) appear, the disease is already in an advanced stage. Hip fractures are associated with considerable morbidity, lengthy hospital admissions, and a correspondingly large economic burden (figure 2). Although economic costs associated with osteoporosis are enormously high, the human cost of this disease includes years of debilitating pain, deformity, loss of height, and a diminishing quality of life.[1]

Epidemiology

The increase in the global population and prolonged life expectancy with a disproportionate increase in the number of the very elderly means that the burden of osteoporosis is increasing for all societies.[2] The case is made persuasively that more needs to be done in developed countries, but there is a desperate lack of information about even the basic epidemiology of osteoporosis in many parts of the developing world. For instance, more than half of the total number of fractures worldwide are expected to occur in Asia and Latin America.[3] It is also known that the prevalence of osteoporosis varies both from country to country, and within countries.[4] Differences in race, nutritional status, physical activity, lifestyle and living conditions all contribute to its variability.[5]

Targeting

Health professionals emphasize the need to develop strategies to prevent osteoporotic fractures, however, the varied epidemiological nature of the disease makes targeting difficult. Most of one's bone mass is gained during infancy, childhood and adolescence. One can only expect to build strong bones while the bones are growing. During this period of life many nutritional, physical and other habits are formed and, if they are not appropriate, they may cause failure to attain peak bone mass that may contribute to fractures later in life.[5] As the young of today throughout the world are now increasingly likely to survive into old age and be increasingly exposed to risk factors, it is arguable

that all ages should be targeted to ensure maximal bone strength by the time of most risk, that is in old age.[2] This means that every effort must be made to ensure that mothers are guaranteed early on, from the moment they become pregnant, the best possible nutrition and hygiene to ensure that their children develop normally and have satisfactory bone mass. It is also necessary to teach a lifelong awareness of health, emphasizing the importance of a balanced diet and the importance of regular physical exercise to avert demineralization and to consolidate bone mass.[6]

Interventions

To date, intervention studies with calcium for up to three years during childhood and adolescence have shown only modest bone gain in Caucasian populations and evidence is lacking that any benefit is maintained in increase peak bone mass.[7] Many retrospective, cross-sectional and longitudinal observational studies have established a clear association between weight-bearing physical activity and increased bone mass. Some research supports the proposition that early adolescence represents a 'window of opportunity' when the sensitivity of the skeleton to beneficial anabolic effects by mechanical loading is optimal.[8] Short term controlled studies have also supported this proposition.[9] These findings are encouraging, but more needs to be done. This should include definition of the nature and amount of exercise that is beneficial, confirmation that benefits to bone health are maintained in the long term, the introduction of effective physical-activity regimens that will encourage retention through adolescence and into adult life, and the rigorous assessment of potential adverse effects so that risk-benefit comparisons can be made.[3]

A second problem relates to the ability to change lifestyle habits and their impact on risk, and in the context of osteoporosis no studies have addressed these issues. For example, several clinical trials have shown beneficial effects of exercise on bone mass[10] but the effects are small, and the impact on the community has not been tested. It is questionable whether a patient of 40 years of age would maintain an exercise programme until 75 years of age when hip fractures arise. A further problem relates to the impact of remedial factors on the frequency of fractures within a community. Uncertainties remain not only with exercise, but also with nutritional risk factors. Despite the high prevalence of many such factors, the increase in relative risk associated with each is small. For all these reasons, population-based strategies of prevention are not presently feasible. Prevention is therefore more appropriately targeted to those segments of the community at high risk.[11]

Hormone replacement therapy at menopause is not yet accepted by all women. It is questionable whether this intervention is acceptable worldwide. Women on estrogen or estrogen-progesterone therapy should be tested for osteoporosis prior to ingesting these hormones. The type of test, or how early the test should be performed is presently unknown. Many think, however, an effort should be made to introduce this treatment, particularly because of its usefulness in providing protection against cardiovascular risk factors, whose incidence increases significantly among post-menopausal women.[6]

Prevention

For disease control, socioeconomic factors are inseparable from factors related to the health systems currently in place. Several socioeconomic factors may be considered as barriers to health prevention and are listed as follows:

- ◊ A high rate of illiteracy, which in some countries exceeds 50% of the total population and 75% of women;
- ◊ Excessive focus of the health system on curative care and insufficient attention to early detection and prevention of diseases;
- ◊ Medical training that is frequently too theoretical and ill-adjusted to the needs of the population; physicians are often ill-equipped to deal with these epidemiological situations and to develop sound preventive strategies;
- ◊ Inadequate medical information and health education: the dietary advice given by a physician during brief consultation cannot compete with relentless television advertisements for unsuitable products;
- ◊ No census of the different diseases and no reliable statistics on the causes of mortality on account of failure to use the standard international death certificate;
- ◊ Scant material and human resources to detect and manage diseases at an early stage;

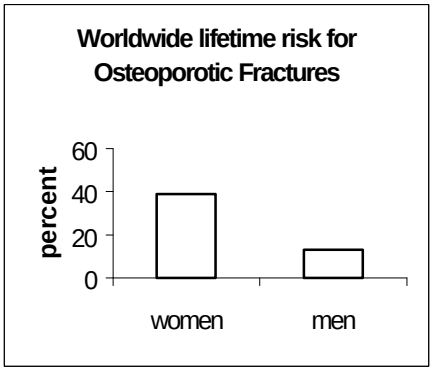

Figure 1

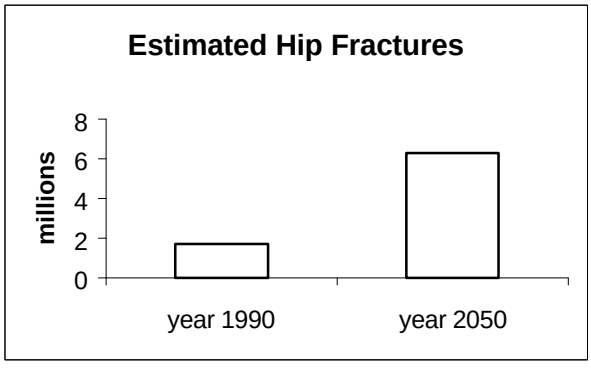

Figure 2

◊ Inadequate and inefficient health insurance systems that frequently fail to cover screening examinations and preventive treatment such as hormone replacement therapy.[6]

Unhealthy lifestyles are associated with a spectrum of disorders in addition to osteoporosis, and in developing countries, where osteoporosis is considered of less priority, a broad public health message that will have benefits beyond health may achieve greater priority and success. The difficult question is, can public health messages can overcome the pressures of social change in developing countries with diets of poor quality, less exercise, and commercial media promoting foods of poor quality, smoking, and alcohol?[2]

Conclusions

In developing countries in particular, there are no precise data on the incidence of osteoporosis and its progression; the means of detecting osteoporosis are inadequate; and there is lack of agreement about when to administer a diagnostic test and to whom. Ensuring that people have strong bones throughout their life is no luxury. Indeed, the notion of luxury is not appropriate where health is concerned and it is a question rather of need, and even more so of their right to health. This need must be met as early in life as possible through the development of an integrated strategy suited to each country's epidemiological situation.[6]

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Nutrition and Ageing in Africa

By Professor Karen Charlton

Although the proportion of elders in African populations is much smaller than that in European or North American countries, the absolute numbers of older Africans are rapidly increasing. The huge majority of Africans are in poor economic circumstances and few countries are able to offer social assistance programmes. The health and well being of older persons largely depend on the integral existence of informal services, social support networks and kin support. African gerontologists have urged social welfare policy makers to take cognizance of self-organized intergenerational help systems already present on the continent, and to make public sector finance available to support these systems. Nutrition service programmes should be included in such support systems .

These themes were some of those deliberated in the Third African Regional Workshop of the African Gerontological Association (AGES International) held in Nairobi, Kenya from 12-17 April 1999. AGES is presently chaired by Professor Nana Apt, Head of the Centre for Social and Policy Studies at the University of Ghana. Dr Alexandre Kalache, Chief of Ageing and Health at WHO, gave the keynote address "Healthy Ageing as a Key Development Issue for Africa." The workshop, which was attended by 140 participants from 11 countries, showed that Africa has become

an important new global player in the field of ageing, nutrition and health status, and that there is much to be learned from the continent in this regard.

***Food Security**:* Much of Africa is plagued by drought, famine, civil strife, poverty, and more recently the devastating effects of the AIDS epidemic. As a result of these problems food is scarce and is regarded as a priority basic need. NGOs such as HelpAge International play an important role in promoting meal programmes and in developing food security initiatives. These international agencies work together with local NGOs and church groups in various countries. The regional office of HelpAge International is in Nairobi with branches in Zimbabwe, Ghana, Tanzania and South Africa.

***Poverty/Social Security**:* Only two countries in Africa - South Africa and Namibia - provide formal economic support for older citizens. In South Africa, nearly 90% of older blacks receive a non-contributory, means-tested, state old-age pension which is paid monthly. The social pension contributes substantially to household budgets, and pension monies are used collectively to support kin (three generations commonly co-reside in African households), with food being the major expenditure item. A large survey, funded by the US National Institute of Aging and coordinated at the Centre for Gerontology at the University of Cape Town, is currently investigating the impact of South Africa's state pension scheme on the health, well being, coping strategie, and household income and expenditure of not only pensioners, but also other household members.

Indicators of Malnutrition: HelpAge International and the London School of Hygiene and Tropical Medicine have recently conducted a three-centre study in subjects aged 50 years and over (Rwandan refugees in Tanzania; rural elders in Malawi; and poverty-stricken older persons living in slum areas of India) to identify anthropometric indicators of malnutrition for use in older people in developing countries. A summary of the findings has been published. [See book review on page 50 in this issue.]

***Urbanization, Nutrition Transition and Emergence of Chronic Diseases**:* The nutrition transition in Africa, associated with increasing urbanization, will be accompanied by an increase in chronic diseases in present and future cohorts. Preliminary data from a birth cohort study is showing that, already at the age of five years, black African children in Johannesburg have higher arterial blood pressure than age-matched white children. Research efforts to improve the health of future elders need to focus on the nutrition transition.

An ILSI/IUNS Urban Nutrition Workshop was held in Durban, South Africa from 5-7 March 1999, in conjunction with local affiliated nutrition groups. The topic "Urban Nutrition: Lifespan and Lifestyle Issues for Africa" incorporated three broad age bands, namely childhood, adulthood and later life. The IUNS Committee on Nutrition and Ageing was represented in the workshop by three members: Professor Mark Wahlqvist (Australia), Dr Noel Solomons (Guatemala) and Professor Karen Charlton (South Africa). The workshop was an historic event as it was the first of its kind to be hosted in an African country.

***Health Services/Traditional Healers**:* A finding that emerged from the aforementioned workshop was that the preferred treatment agency for older Africans, especially in rural areas, is the traditional healer or "sangoma". A strong reason for this preference appears to be related to good communication channels between healer and patient, and a mutually negotiated "diagnosis" and treatment regimen, as well as a social explanation that is provided for an illness. Similarly, reliance on the use of herbal remedies to treat and prevent illness, as well as the contribution of indigenous plant sources to nutrient intake, warrants inclusion in the methodology of any dietary or health survey of older African populations. In this regard, an Institute of Traditional Medicine (TRAMED) has been established at the University of Cape Town, and a database of the chemical composition and uses of indigenous plants is being compiled.

Older Women: In African culture, the grandmother is a central figure in the daily management of the household, responsible for housework, food purchases ,meal preparation and child care. In rural areas, women are additionally responsible for tilling the soil, planting crops, growing food, etc. Thus, nutrition education activities targeted at older

household female members may impact on the family unit as a whole.

Research-networking Opportunities: There are a number of initiatives in the African region which include nutrition, health and ageing as a primary focus of research. The African Foundation for Research and Interdisciplinary Training in Ageing (AFRITA) is based in Harare, Zimbabwe. The Director of AFRITA, Dr Adrian Wilson, has recently been appointed to the Chair of Geriatrics at the University of Cape Town (UCT). Professor Wilson is committed to conducting nutrition-related research, in conjunction with UCT's Nutrition and Dietetics Unit, headed by Professor Karen Charlton. Also based in the Faculty of Health Sciences of the University of Cape Town is the only dedicated research centre on ageing in Africa, the HSRC/UCT Centre for Gerontology. Networking links and collaboration with other African researchers, as well as with researchers in countries elsewhere, are urgently needed in order to allow cross-cultural perspectives on ageing to be strengthened.

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Diet, Nutrition, Lifestyle and Health in Older Chinese Adults

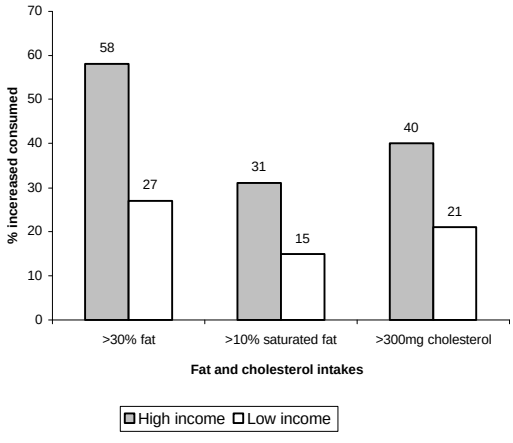
By Professor Jean Woo

The relationship of lifestyle factors such as diet, physical activity, smoking, and alcohol intake, to chronic diseases is well known. With increasing life expectancy and ageing of the population all over the world, the concomitant increase in the burden of chronic diseases and disability has resulted in growing emphasis being placed on primary preventive measures such as lifestyle modifications. In China, with economic development, the prevalence and mortality rate of non-communicable diseases will become a long-term economic burden. Between 1930-80, the rate of increase in the contribution of stroke, cancer and heart disease to mortality in China is steeper than in the United States. By 2030, the annual deaths from coronary heart disease, stroke, and lung cancer are estimated to reach 800,000, 3 million, and 1.7 million respectively.[1] In the (industrialized) Special Administrative Region of Hong Kong, the three primary causes of mortality are cancer, coronary heart disease and stroke. Among older people, diseases having the largest contribution to disability are stroke, dementia, fractures, Parkinson's disease, and diabetes mellitus.[2] These diseases tend to present as functional or cognitive impairment and frequent falls. Lifestyle modifications have a role in preventing the occurrence of diseases, in delaying deterioration, or in maximizing residual function even in the presence of disease. This article describes the relationship between some lifestyle factors (diet, physical activity, and smoking) and health problems in the older Chinese population.

Undernutrition: There are few surveys regarding this problem among the Chinese population. Data is available mainly from Hong Kong, where protein-energy malnutrition and poor nutritional status in older persons have been documented both in long term care institutions and on acute medical wards.[3,4] Poor nutrition may result in loss of muscle strength (predisposing older persons to falls resulting in fractures), impaired immunity, poor functional ability and increased health care utilization.

Overnutrition: The prevalence of obesity in China is increasing in urban areas although it is lower than in the

Figure 1. Prevalence of Type 2 Diabetes among Elders in the US: The Massachusetts Hispanic Elders Study.



Source: Adapted from Guo X, Popkin BM and Zhai F, Patterns of change in food consumption and dietary fat intake in Chinese adults, 1989-1993 (1999 September) *Food and Nutrition Bulletin* 20(3):344-353.

United States. Qualitative comparisons of dietary habits between rural and urban Chinese populations have shown that as income increases, energy intake increases, and a high percentage of that extra energy comes from fat. A recently published study of almost 6000 Chinese adults compared dietary changes between 1989 and 1993 and showed that among high income persons total fat, saturated fat and cholesterol increased quite dramatically (figure 1).[5] When income increased, daily consumption of animal foods and edible oils increased, and consumption of grains and potatoes decreased. In Hong Kong, 38% of men and 34% of women are overweight (BMI>25 kg/m^2), and the prevalence of obesity (BMI>30 kg/m^2) is 5% for men, 7% for women, and 8% for children. This high figure for children is particularly alarming. Obesity results in the metabolic syndrome of hyperinsulinaemia, hypertension and hyperlipidaemia, and increased mortality and morbidity. It also predisposes to osteoarthritis affecting the knees, a common problem among older persons. The prevalence of diabetes mellitus has increased among Hong Kong-Chinese elders from 10% in 1985 to 20-30% in 1995.[2]

Hypertension: The prevalence of hypertension and stroke is high for older Chinese persons. The positive association between salt intake and blood pressure is well documented. Many countries recommend that daily intakes of sodium chloride be limited to 5-6g (about 2000mg of sodium/day). A reduction in the blood pressure of a population is likely to result in a decreased prevalence of stroke, as well as in multi-infarct dementia. The traditional Northern Chinese diet consisting, in part, of preserved vegetables has an average salt content of about 15g per day. The prevalence of hypertension between northern and southern parts of China may differ by more than three-fold, and that for stroke by two-fold.[6]

Coronary Heart Disease*:* The prevalence of coronary heart disease among the Chinese is lower than that for Caucasians. It is suspected that the low percentage of fat in the traditional Chinese diet, which falls within the recommended guidelines for prevention of CHD (30% of total daily kilocalories), may account for the difference. Other dietary factors may contribute to the lower prevalence of CHD. Because the Chinese populations in China consume a high amount of vegetables, fish, seafood, and few dairy products, their diets may contain more folate, anti-oxidant vitamins, omega-3 fatty acids, and phytoestrogens than Caucasian diets.[7] Urinary phytoestrogen concentration is also higher in Asian populations, reflecting the high consumption of soy products.

Osteoporotic Fractures*:* Low bone mineral density and falls predispose older persons to fractures, which constitute a major cause of disability as well as mortality. Certain features in the Chinese diet are known to predispose the body to bone loss: the low consumption of dairy products results in low calcium intake, and the high salt intake increases obligatory urinary calcium excretion, hence increasing the calcium requirement. Throughout China calcium intake values range from 300mg to 800mg per day and are considered low compared to the recommended requirement for North Americans of 1200mg per day (800mg per day for those over 50 years of age). Although the calcium intake appears lower when compared to Western women, Chinese women have a smaller body size, so that when the intake is adjusted for body size, calcium intake is really no less than that for US women.[7] A recent study suggested that absorption of calcium may be higher for subjects with habitually low calcium intake and higher than that for whites or blacks.[8] Based on these observations, it has been suggested that the recommended calcium intake may be lower for Chinese populations. Definitive conclusions cannot be made, however, since the calcium isotope used for the absorption studies was not mixed with food[7] (unlike the studies in Western women), and ideally, recommendations should be made based on calcium balance studies.[9] Although the consumption of dairy products is lower in the Chinese population,vegetables and soy products provide 41% of the calcium intake, and calcium absorption from some of these vegetables is higher than that from milk.[9] The study by Kung et al.[8] also showed a higher urinary calcium excretion among older osteoporotic subjects (in spite of similar parathyroid hormone levels and creatinine clearance values in older normal subjects), and this may be compatible with higher salt consumption in the osteoporotic subjects' increasing obligatory renal calcium loss. Other dietary factors affecting bone health include a negative association between protein and vitamin K intake which increases the risk of hip fractures;[10,11] and vegetarianism, a feature of some Chinese religious sects, is associated with low protein intake and low bone mineral density.[12] These dietary factors may be ameliorated by genetic factors, in that there is a low prevalence of the vitamin D receptor BB genotype noted to be associated with osteoporosis in Caucasians.[13]

Cancer: The changing patterns of cancer in China (decreasing incidence of oesophagus and cervical cancer; rising incidence of lung, colorectal and breast cancers) parallel changes in the national Chinese diet towards consumption of more fat, oil, meat and foods of animal origin. Large scale epidemiological studies are in progress to examine the relationship between diet and disease. It is likely that the shift towards a more Western dietary pattern may be associated with the changing patterns of cancer.

Physical Activity*:* A higher level of physical activity has been associated with increased survival, delay in the

progression of disability, loss of functional ability, improved balance and strength, reduced incidence of falls (and thus fractures), as well as the quality of life. There is a general decrease, however, in the level of physical activity with an urban lifestyle, resulting in an increased prevalence of obesity. For older persons, the age-related loss of muscle mass, "sarcopenia", (see page 27) is thought to be a major contributor to the development of this metabolic syndrome, which may be retarded by high resistance exercise. Physical inactivity is a risk factor for coronary heart disease in elders, predisposing them to hypertension, an adverse lipid and haemostatic profile, and left ventricular dysfunction. In subjects with heart failure, physical training improves endothelial dysfunction. Weight bearing exercise is also important in the prevention of osteoporosis. While physical inactivity will not be a problem for rural populations in a large part of China, it is a significant problem for people living in cities such as Hong Kong. The design of the city is such that few people use stairs or walk any distance on steeply graded roads. For cities in other parts of China, the widespread use of bicycles results in a higher level of physical activity. It is important to promote the health benefits of exercise to the public. Traditionally, Chinese elders regularly practice some form of exercise in the morning, whether it is a walk, *Tai-Chi* or related exercises. It is important to encourage this practice, and at the same time to carry out studies to document the health benefits associated with exercises that are acceptable and practical for the majority of the population. Walking or similar aerobic exercises will improve cardiovascular fitness. The benefits of *Tai-Chi* are now being documented: *Tai-Chi* improves balance, reduces falls and probably the risk of fractures. Its effect on the prevention of sarcopenia is uncertain. It is possible that resistance exercises will also be needed to maintain optimal health. With more studies on the health benefits of different types of exercises practiced by older Chinese persons, evidence-based exercise regimes that are likely to be practiced by the majority of the population can be more easily promoted.

Smoking: Adverse health effects of smoking have also been documented in China,[14] yet the tobacco companies, under increasing pressure from developed countries, have intensified marketing effects in Asia. The prevalence of smoking is much higher in men (about 50%) than women (less than 10%). Even in persons more than 70 years old, the effect of smoking on health is still apparent. In a three year longitudinal study of 2030 Hong Kong Chinese subjects age 70 years and older, elevated mortality risks from all causes were observed for current smokers of both sexes. Eighty percent of deaths were due to cancer, cardiovascular and respiratory diseases, for which smoking is an established risk factor. Therefore smoking cessation is beneficial even in the older population.

Conclusion: The Chinese population can modify their lifestyles not only to prevent chronic diseases, but to minimize their accompanying disease and disability burden. Steps to be taken to achieve this goal include raising the awareness of the magnitude of the problem among health care workers and the general public, and disseminating clear, healthy lifestyle messages. Further research is needed to decide on the methods which will have the greatest impact.

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The Diabetes Epidemic in the Americas: Greater Risks for Older Persons

By Carmen Castaneda, MD, PhD and Odilia I Bermudez, PhD, MPH

Type 2 diabetes (formerly known as non-insulin dependent diabetes mellitus—NIDDM) poses a major health threat worldwide. Based on 1994 extrapolations from prevalence studies, there are now about 28 million persons with diabetes in the Americas (15 million in the United States and Canada and 13 million in Latin America and the Caribbean). This accounts for 25% of the world's total population suffering from diabetes (Table 1). This 28 million estimate for persons with diabetes in the Americas is projected to increase by about 45% by the year 2010, with Latin America and the Caribbean surpassing the US and Canada. According to projections, however, the most dramatic increase will be seen in Central America with an increase close to 100%. In the Caribbean Islands prevalence is expected to increase by 74%, compared to a 40% and 25% for South America and the US and Canada, respectively.[1] Although these figures represent diabetes of all types, the majority of persons (90-95%) 20 years of age and older have type 2 diabetes. Metabolic, genetic, and environmental factors may play a role in the development of diabetes and its complications. It has been documented that the risk of developing type 2 diabetes increases with age, obesity, sedentary lifestyle, family history of diabetes, and low high-density lipoprotein (HDL) or high triglyceride concentrations.

Table 1. Estimates and projections of prevalence of type 2 diabetes in the Americas (1994 to 2010).

Subregion	1994 (millions)	2000 (millions)	2010 (millions)
Mesoamerica (including Mexico)	3.7	5.4	7.1
Caribbean region	0.9	1.3	1.6
South America	6.7	8.1	18.2
Subtotal	11.3	14.8	18.2
Canada & United States	13.4	15.1	16.8
Total	24.7	29.9	34.9

Source: PAHO (1998). Health in the Americas. Washington DC. Volume I.

People with diabetes are subject to both acute and long-term complications.[2] In the US, diabetes is associated with 7.5-20% of cardiovascular disease in people over 45 years of age. People with diabetes are two to four times more likely to report having heart disease, and the age-adjusted death rate from coronary heart disease is about twice that of people without diabetes. Peripheral vascular disease is another serious complication, leading to 50% of all amputations of the lower extremities in adults. Diabetes is the most common cause of end-stage renal disease, and the leading cause of blindness in adults.[3] Diabetes ranks sixth as a primary cause of death in the US, and when its complications are considered, it ranks third. The estimated economic impact of diabetes is considerable. In 1997, the total medical expenditures incurred by people with diabetes were $77.7 billion, or $10,071 per capita, compared with $2,669 for people without diabetes.[2] Proper care of diabetes is essential because no known cure exists and good management reduces the frequency of long-term complications. Diabetes management requires early diagnosis, intensive treatment, and education and communication; patient knowledge is vital because diabetes health care is primarily self-care.[3]

Hispanics in the US

International migration is one of the least documented demographic phenomena worldwide. An estimate of international migration is usually determined by the change in the number of foreign-born individuals based on national census data. The US is the largest recipient of immigrants in the world, surpassing the rate of entry into any other country on earth. Based on the 1990 census data, the US had 10.2 million residents who were born elsewhere in the Americas. The largest proportion of immigrants to the US comes from Mexico, the Latin Caribbean, and Central American. As for older Hispanics in the US, 60% are Mexican Americans, followed by Puerto Ricans and Central and South Americans. The proportion of Hispanic elders in the general elderly population is projected to increase from 4% in 1994 to 16% by 2050.[1]

Diabetes mortality among Hispanics is higher compared to non-Hispanic whites, possibly reflecting limited access to health care, and lack of adequate monitoring.[4] In Latin America mortality rates from diabetes mellitus have increased dramatically, especially among the population over 25 years old (see Box 1**).** Recent changes in mortality profiles in the Region of the Americas (between 1980 and 1990) indicate that diabetes mellitus is the seventh leading cause of death and the third most common chronic condition leading to high mortality, only after infectious diseases and malignant neoplasms**.** Rates

Box 1
Diabetes-related DEATHS
from 1980 to 1990

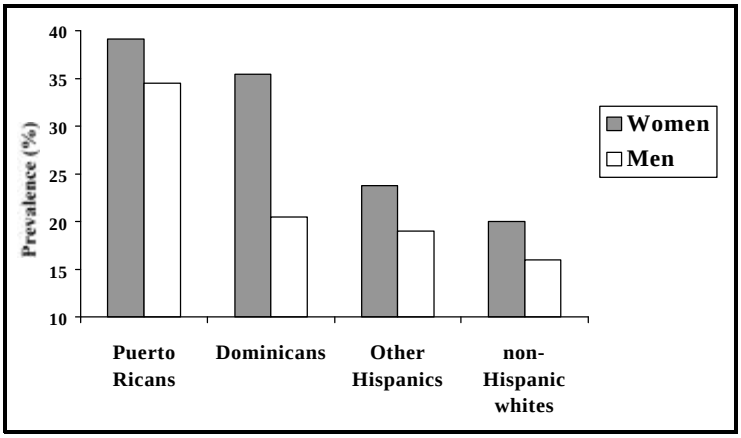
Americas Region	**+147%**
Andean Area	**+126%**
Brazil	**+113%**
Mexico	**+107%**
Southern Cone	**+ 44%**
North America	**+ 64%**
Caribbean	**+ 63%**

of diabetes have been reported to be 25% higher among Hispanic Americans in comparison to African Americans. This is of great concern given that Hispanics are the fastest growing minority group in the US. Data from the Third National Health and Nutrition Examination Survey (NHANES III) showed that minority persons with diabetes in the US, particularly Mexican Americans, were more likely to have poorer glycemic control than African Americans and non-Hispanic whites.[4] Poor glycemic control requires more intensive insulin treatment and may be a risk factor for functional limitations and disability in the elders. Functional limitations and disability influence quality of life, likelihood of hospitalization, and survival. The burden of disease on functional limitations has been established for chronic conditions such as diabetes. The Established Populations for Epidemiologic Studies in the Elderly (EPESE) showed that non-institutionalized Mexican Americans over 65 years with diabetes had greater likelihood of impairment in activities of daily living than non-Hispanic white populations.[6]

Puerto Ricans living in the US constitute a large minority group. Diabetes prevalence among Puerto Ricans has been determined in the Hispanic Health and Nutrition Examination Survey (HHANES), 1982-1984. HHANES reported that 26% of Puerto Rican and 24% of Mexican American adults between 45-74 years of age had type 2 diabetes. In contrast, a study conducted on the island of Puerto Rico (1981-1985) reported lower diabetes prevalence than that seen in the HHANES- with 14% and 19% of adults, aged 45-64 and >65 years, respectively. Puerto Rico's Department of Health estimates that the prevalence of diabetes, including both diagnosed and undiagnosed cases in the adult population is 13.98%, compared to 10.9% of Puerto Ricans residing in the US.[1] More recently, results from the Massachusetts Hispanic Elders survey also showed significantly higher diabetes prevalence for Puerto Rican women and men over 60 years of age when compared with Dominicans, other Hispanics, and non-Hispanic whites (Figure 1).[5]

Risk Factors

Type 2 diabetes is associated with risk factors that need to be identified in order to prevent or treat the development or progression of this disease. In addition to environmental factors (particularly dietary patterns, lack of physical activity, and increased body weight), socio-demographic factors are also important and often underestimated. Socioeconomically disadvantaged and less educated minority elders are not as likely to follow health preventive measures such as diet and exercise. Low income and educational attainment increase the risk of health and functional problems. Poorer levels of health and functional status are thought to be common barriers to physical activity among older minority groups. In addition, lower levels of education and income are associated with lower levels of self-confidence in specific behavioural domains, including physical activity and dietary patterns.



Of all Hispanic American families, 25% live below the US poverty level compared with 10% of families that are not Hispanics. The economic impact of illness on Hispanic workers is exacerbated by their over-representation in low-paying jobs and jobs that do not provide health insurance, sick leave, parental leave, disability benefits, or retirement benefits. Among individuals aged 65 and older, 38% of Mexican Americans, 16% of Puerto Ricans, and 24% of Cuban Americans do not have health insurance. Furthermore, Hispanics are less likely to have graduated from high school than any other US population. English literacy is also low in the Hispanic population in general, a problem compounded by the fact that some groups have low Spanish literacy also.[1] Studies comparing migrant populations with native non-immigrant populations have established a consistent theme of elevated prevalence of type 2 diabetes with acculturation. The common elements of acculturation include a diet higher in total calories and fat and lower in fiber, and less need to expend energy because of labour saving devices. Data from other parts of the world also show increased prevalence of diabetes in urban compared with rural areas and in minority persons who

have moved to other more developed nations. Further, as Hispanic Americans have changed their diet and physical activity patterns over time, diabetes prevalence has also increased. Acculturation exerts an effect, primarily with its association to language skills, employment, and education.[1]

Lifestyle Modification Interventions

Physical activity is one of the environmental factors important in the management of diabetes that can be modified. Several studies on endurance exercise training support its efficacy for diabetes prevention and management. Another type of exercise known as resistance exercise training (or weight lifting) has also been shown to have the same beneficial effects as aerobic exercise. In addition, weight lifting exercises increase muscle mass and strength, and improve functional capacity. The fact that the prevalence of diabetes increases with age and related body composition changes may support the usefulness of resistance exercise training in people with diabetes.

We are currently conducting a randomized controlled trial of resistance training in community-dwelling Hispanic men and women over 60 year of age. All subjects are followed for 16 weeks. Exercises are performed under supervision 3 times per week. Both groups continue standard medical care. Preliminary results from the first 19 subjects showed that persons in the exercise group improved muscle strength, physical performance, physical self-confidence, and increased leisure-time physical activity, and less depression. Compared to the control group, exercise resulted in decreased glycosylated haemoglobin and plasma insulin levels, and body fat (Table 2). The improvement in glycemic control with resistance exercise was higher than that reported with 200mg of troglitazone (rezulin) treatment. The advantage is that resistance exercise is not only safer but also it is a non-pharmacological intervention that has other important benefits on body composition, muscle strength, functional capacity, and quality of life in this patient population. More studies are needed to better understand the effectiveness of physical activity programs in people with diabetes; however, these results are promising.

Recommendations

A rise in the prevalence of overweight, obesity, and sedentary lifestyles, coupled with the ageing of the population in all countries, has contributed to move diabetes to the forefront of public health concerns worldwide. Most persons with the disease have type 2 diabetes, the form most intimately associated with lifestyle and, therefore, theoretically preventable through health promotion and lifestyle modification. Given the increasing prevalence of diabetes in many populations, increased awareness of the disease, surveillance of high-risk populations, early diagnosis and treatment are all important in reducing the morbidity associated with this disease. There are simple tools to determine risk of becoming a diabetic that can be easily adapted to different regions of the world. Examples of these are available on the World Wide Web: http://spin.com.mx/~jledesma/nhweb/nhweb.html in Spanish, and http://www.diabetes.org/ada/risktest.asp in English.

Diabetes prevalence, complications, and mortality are by far higher in minority populations, particularly among those physically inactive, less educated, and with lower income. Interventions that improve people's awareness

Table 2. Effects of Progressive Resistance Training on Glycemic Control in Hispanic Elders with Type 2 Diabetes. A Pilot Study. (Castaneda, C. unpublished).

Outcome Measure	Exercise Group (n = 8)			Control Group (n=11)		
	INITIAL[1]	*FINAL*	*% D*	*INITIAL*[1]	*FINAL*	*% D*
Body mass index (kg/m^2)	**30.4 ± 4.3**	30.3±4.6	*none*	29.7±3.9	30.1±3.3	*+ 1*
Glycosylated haemoglobin (%)	8.9 ±1.4	7.9 ± 1.0	*- 11*	8.8 ± 1.8	8.4 ± 1.9	*- 4*
Fasting plasma glucose(mg/dl)	175±58	154 ± 32	*- 12*	188 ± 72	151 ± 36	*- 20*
Fasting insulin level (μU/mL)	24 ±18	15 ± 7	*- 38*	23 ± 14	32 ± 29	*+ 39*
Body fat by DXA[2] (kg)	34.5±8.1	33.5±8.6	*- 3*	29.7±8.9	29.9 ± 8.3	*none*
Lean tissue mass by DXA[2] (kg)	42.8±8.5	43.9±9.7	*+ 3*	43.8±11.5	44.1±11.2	*none*
Waist circumference (cm)	98 ±12	97 ± 11	*- 1*	97 ± 11	98 ± 11	*+ 1*
Leisure time physical activity	10 ± 10	27 ± 11	*+170*	23 ± 21	11 ± 25	*- 52*
Physical performance score	28 ± 6	32 ± 2	*+ 14*	25 ± 6	25 ± 6	*none*
Self-efficacy for walking (%)	77 ± 35	95 ± 7	*+ 27*	80 ± 17	71 ± 20	*- 11*
Geriatric depression scale	12 ± 7	5 ± 6	*- 58*	9 ± 8	11 ± 9	*+ 22*
Muscle strength (1-RM lbs.)[3]	323±113	451±168	*+ 40*	233±96	203 ± 94	*- 13*

[1] Initial subject characteristics not statistically different when adjusted for age and gender
[2] DXA: dual X-ray absorptiometry
[3] 1-RM: one repetition maximum strength

and understanding of diabetes disease are needed. Lifestyle modification interventions are important in increasing one's self-efficacy and self-esteem. Self-confidence is positively associated with levels of education and income, thus increasing the individuals' assurance necessary to adopt and adhere to a behavioural modification, such as that required for a healthier diet and a more physically active lifestyle. Hispanics living in the US or in their own countries are caught in a reinforcing cycle of environmental factors that exacerbate diabetes. Public health interventions that increase exercise and physical activity would improve several aspects of this cycle (self-efficacy, glucose control, functional capacity, etc.). The goal of diabetes treatment should be to empower those individuals with diabetes to take better control of their disease while working together with the health care team. Health services delivery should be based on accessibility and quality in a framework of equality and social justice. It should be expected to eliminate many of the barriers that hinder access at various levels of the health care system (social, economic, etc.). Health care should emphasise the need to design and implement educational programs, and lifestyle behaviour modification practices, while maintaining an adequate standard of health care. It is important to determine the effectiveness of such programs, and to work closely with existing community resources, community leaders, and organisations working directly in health promotion, health education, and disease prevention.

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Energy Requirements & Physical Activity Levels of Older People in Cuba

By Manuel Hernández-Triana, Md, PhD and Carmen Porrata-Maury, PhD

Since the decade of the 1980s it was foreseen that by the year 2001, about 60% of the human population aged 65 years and older would be from the developing world. This indicated a 78% net increase in the group 65 years and above in developing countries in the period 1980 to 2000. In 1998 in Cuba 13% of the population were aged 60 years and over; 22.8% were older than 50 years. A complete restructuring of the Cuban health care system and commitment to disease prevention and health promotion have resulted in impressive gains over the past forty years. Cuba now leads the developing countries in some categories of the infant health picture and is ranked twenty-fifth in the world overall, frequently called "a third world nation with first world health care and statistics". The reduced mortality and fertility of the Cuban population and a remarkable change in the age structure is coincident with an advanced stage of the epidemiological transition, where chronic diseases appear simultaneously with deficiency diseases. These changes are often accompanied by a sedentary lifestyle and a reduction of the **total energy expenditure (TEE)**, which could promote weight gain.

The sudden break-up of the Eastern European bloc resulted in grave consequences for Cuba's external economic relations, resulting in a serious nutritional crisis for the population. The US blockade against Cuba has been in place for almost 40 years, and during the 1990s the sanctions against trade with the island have become tighter and more wide-reaching. In only two years the per capita intake of energy and protein of the Cuban population dropped 31% and 38% respectively. By 1993 the average Cuban diet was composed of 10% protein, 13% fat, and 77% carbohydrates as percent of total energy. According to the Cuban Report to the World Food Summit held in Rome in November 1996, after reductions of more than 30% of the Gross Domestic Product (GDP) since 1989, with a dangerous imbalance of internal finances in which the budget deficit hit 33.5% of the GDP, a slow recuperation of the Cuban economy has begun in the last three years. All the targets of the children's immunization program for the year 2000 had already been met by 1996, and the infant mortality dropped to 7.1/1000 live births by 1998. The special health and care programs for older people, however, require carefully monitoring. After the economic changes in Cuba during the early 1990s, the basic food basket

consumed by the population could not meet the established requirements, especially for older people, although a slight improvement has been observed since 1993. Some studies show that the appearance of chronic energy deficiency in older Cubans is a consequence of the nutritional crisis.

Table 1

Nutritional status according to BMI of older people living in institutions for elders in Matanzas, Cuba, 1996.

Nutritional status	BMI (weight/height²)	BMI (weight/height²)		BMI (weight /semi arm span²)	
		n	%	n	%
CED Grade III	< 16	15	7.1	52	24.8
CED Grade II	16 - 16.9	26	12.3	31	14.8
CED Grade I	17 - 18.4	27	12.7	27	12.9
Σ (Grade I- III)	< 18.5	68	32.1	110	52.5
NORMAL	18.5 - 24.4	108	50.9	84	40
Overweight	25 - 29.9	28	13.2	14	6.7
Obesity	> 30	8	3.8	2	1.0
TOTAL		212	100	210	100

CED: Chronic Energy Deficiency.

The economic changes in the island since 1989 have also modified the pattern of physical activity of the Cuban population. Will those changes influence the patterns of the energy requirements for older adults? A reduction in physical activity obviously reduces the TEE and is considered an important factor in the reduction of the energy requirements in older persons. Cross-sectional observations suggest that the transition from traditional to modern lifestyles may have induced a decrease in daily energy expenditure of 1-2 MJ/d (240-480 kcal/d).[1] The physical activity of elders in rural areas is usually higher than those living in urban areas. The energy cost of the normal daily activities increases with age.[3,4] This reduced efficiency may be one of the reasons older individuals slow down, and which may also contribute to negative energy balance, weight loss and some degree of undernutrition. Coronary heart disease (CHD), obesity and non insulin dependent diabetes mellitus (NIDDM) -- chronic diseases related to the ageing process and modifications of the lifestyle -- are becoming a significant problem in Cuba. Modifications of the Cuban diet occurred in the 1990s relative to macro and micronutrients, and are directly related to the etiology of some of the most relevant chronic diseases in the health picture of the country.

Cuba is classified as a country with a food deficit. In 1992, the US Government ignored the warning of the American Public Health Association that the tightening of the embargo would lead to an abrupt cessation of supplies of food and medicine to Cuba, resulting in widespread "famines". Five months after the passage of the Torricelli Act the worst epidemic of neurological disease to occur during this century became widespread in Cuba. More than 50,000 of the 11 million inhabitants were suffering from optic neuropathy, deafness, loss of sensation and pain in the extremities, and a spinal disorder that impaired walking and bladder control. The Institute of Nutrition in Havana reported the association of this epidemic with the reduction in the food consumption.[5] By 1993 food consumption had decreased by 30% when compared to 1989 levels. Food availability became critical, far below the nutritional requirements of the basic food basket, despite the fact that imports of food products and materials for processing doubled, accounting for almost 25% of the total of the country's imports.

Antioxidants and vitamin B complex are being actively investigated in relation to cardiovascular risk factors by many groups. An adequate supply of vitamins A, C and D are also directly or indirectly related with lifestyle modification and the genesis of chronic diseases. Metabolic cardiovascular syndrome and the potential risk of glucose intolerance or eventual diabetes is associated with an increased risk of clotting, hyperlipidaemias, hypertension, accelerated degenerative changes in the vasculature, small stature, abdominal obesity, and enhanced predisposition to cerebrovascular or cardiovascular incidents, and must be taken into account in formulating nutritional requirements of older persons. The diminished calcium and vitamin D intake in the diets of Cuban elders could be an important contributing factor to mortality rates. Those factors should also be taken into account in studies on the energy expenditure and energy requirements of older adults. The scientific data on energy requirements in elders is variable. This inconsistency is often generated by the data of energy intake and requirements, but more importantly by the diversity of the physical activity patterns in the aged population.

The changes in basal metabolic rate (BMR) and physical activity are the most important components of TEE. BMR reflects the energy requirements for maintenance of the intracellular environment and the mechanical processes of respiration and cardiovascular function. This generally accounts for 60-75% of the TEE. The predictive equations suggested in the report of the FAO/WHO/UNU Expert Consultation[6] are not appropriate for calculating BMR in older persons. BMR is generally 10-20% less in older people because of reduced muscle mass and increased fat mass with ageing.

WHO, the US National Research Council, and the Department of Health of the United Kingdom have used a factorial method to estimate energy requirements, but this method underestimates energy requirements due to the difficulty of classification and quantification of physical activity. A recent evaluation of doubly labelled water (DLW) studies in adults 60 years of age and older from developed countries has shown a physical activity level (PAL) value of 1.61 for men and 1.63 for women; these

Table 2. Dietary energy allowances for Cuban women 60-70 years of age.

	kJoules/day Mean ± SD	kcal/day Mean ± SD	Interval
Cuban Daily Energy Allowance* (BMR X 1.60) (MJ/d)	7.67 ± 0.64 (a)	1833 ± 152	1632 - 2045
BMR(a)**	4.79 ± 0.4	1145 ± 96	1022 - 1278
Energy Intake (MJ/d)	5.63 ± 1.76 (b)	1346 ± 421	729 - 2115
Daily Energy Allowance FAO/WHO/UNU 1985 (BMR x 1,51)	7.24 ± 0.60 (a)	1730 ± 143	1542 - 1929
TEE by the DLW - method	7.57 ± 1.43(a)	1809 ± 342	1405 - 2511
PAL Value (TEE/BMR)	1.59		1.24 - 2.26

(Means with different superscripts are significantly different $\alpha = 0.05$) (n = 11)

* Recommended Dietary Allowances for the Cuban Population.

** BMR (MJ/d)=0.038 (kg body weight) + 2,755

Source: Bayley,H, Hernandez M, Estrada G., Porrata C, Monterrey P Energy expenditure by the doubly labelled water method in non-institutionalized Cuban women of 60-70 years of age from Havana City. (1999).

results show that the energy requirements of older persons are underestimated by the above-mentioned organizations. An analysis of 574 measurements of TEE with the DLW method in older people of affluent societies has shown a PAL value of 1.62 for women from 65-74 years of age and a reduction to 1.48 for women older than 75 years. The values for men were 1.61 and 1.54. This analysis included persons with differing levels of physical activity.[7]

In a study carried out in 1998 in collaboration with the School of Dietetics and Human Nutrition, McGill University, Canada, using the DLW method for the measurement of the energy expenditure, a mean PAL value of 1.59 was measured in non-institutionalized women of Havana City (Table 2)[8] The mean value did not differ from the one estimated in the energy allowances for the Cuban population (1.60)[9] According to the last FAO/ WHO/UNU Expert Committee,[6] the energy requirements should be preferably determined by the measurement of the TEE than by the observation of dietary intakes. Of all existing methods, isotopic measurement of the TEE in non-institutionalized persons, using the doubly labelled procedure, is presently the most accurate method.

With the support of the International Atomic Energy Agency (IAEA) a Research Coordinated project will be carried out in a group of older adults living in a rural mountain community in western Cuba. They will participate in a medical, epidemiological, dietary and biochemical study of their nutritional status. Approximately 50 elders from the mountain community of "Las Terrazas" will be selected for the study. The population of that community differs slightly from the average Cuban older person in that: (1) They are classified as rural inhabitants but they live in a concentrated area where modern urban facilities are available. (2) They were previously employed in activities related to ecological tourism and reforestation projects, therefore their PAL and exposure to sunlight is generally higher than that of the older urban population. (3) Their intake of oily fish and other sources of vitamin D is somewhat limited. After a classification according to the absence of the metabolic cardiovascular syndrome, they will be submitted to heart rate monitoring, BMR and TEE measurement by the DLW method. The data will be used to calculate energy requirements. Inferences will be made about the relation between Syndrome X and the level of physical activity, nutritional status (especially with respect to vitamins), and appropriate light exposure.

Research on nutrition and health in old age has, thus far, received low priority, in spite of the fact that increasing longevity now establishes the need for more attention to these issues. In community health programmes, health workers will need to be equipped to advise and educate the population on healthy eating and related physical education. Adequate instruments to assess food-health relationships should be validated. Previous work at the Institute of Nutrition in Havana, in collaboration with McGill University, validated the Recommended Dietary Allowances for energy in old age. Our studies with active older people will contribute to developing the skills of future health professionals so that we can offer innovative and improved programmes for our ageing population.

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Nutrition and Older Persons in Brazil: A HUMAN RIGHTS Perspective

By DC Coitinho, PhD and JA Silvester, PhD

Brazil, along with many other countries in the developing world, faces an epidemiological transition in a scenario characterized by gross fertility rates as low as 2.3 and a continually rising life expectancy to 67 years (63 for men and 71 for women). On the one hand, this is good news; on the other hand, however, it translates into a fast-growing older population which presents society with major social challenges. Foremost among these challenges is to guarantee that older persons have access to adequate food and nutrition -- their basic and fundamental human right.

The legislative framework to deal with these challenges is gradually being created. Following the adoption of the principles of the 1966 Covenant on Economic, Social and Cultural Rights into a body of national law in 1992, a first attempt to assure the social rights of older citizens was the establishment, by law, of the National Policy for Elderly Persons in 1994. The purpose of this policy was to promote autonomy, integration and the effective participation of older people in Brazilian society. State obligations were detailed in the areas of work and social security, health, education, housing and urban planning, culture, sports and leisure and social assistance.

Four years later, the Brazilian Human Rights Programme was launched with a specific item devoted to elders. In early 1998, the Ministry of Health launched a public process of health policy formulation which addressed priorities established on epidemiological relevance, social demand and political needs. The principles of partnership, inclusiveness, shared responsibility and decentralization were taken as the basis for the process of policy formulation which encompassed the consultation of all relevant segments of the Brazilian Society. The Food and Nutrition Policy was the first to be considered, recognizing the access to adequate food and nutrition as a fundamental human right and defining a number of guidelines and strategies to deal with food and nutrition problems throughout the lifecycle, especially those specific to the needs of older citizens. Following these same principles and process, the National Policy on the Health of Elderly Persons was recently formulated, defining in greater detail the obligations of the different social actors in promoting the health and living standards of this segment of the population.

Within such a comprehensive body of official policies, what can older adults in Brazil expect from the health system in terms of nutrition and the access to adequate food and nutrition as a basic human right?

As a first step, the health sector should have a full, updated and comprehensive assessment of the nutritional situation of our older population. The only nationally representative household survey that assessed the nutritional situation of elders was carried out in 1989. Anthropometric assessment showed rates of BMI <20 kg/m^2 of 26.9% in men and 24.7% in women 65 years of age or older, living in families with monthly incomes of less than US$68 per capita. These percentages decreased with an increase in income, and for those older persons living in families earning more than US$300 per capita; low BMIs were found in 11.3% of the men and 10.5% of the women. In all income groups, however, a steep increase in the percentages of low BMIs for the older population was observed when compared with the group 45-64 years of age-- the percentages almost doubled.

More recently, a series of locally based studies and assessments have shown:

- ◊ Poor knowledge and professional advice on the best feeding practices in order to maintain a healthy weight and to manage the most prevalent non-communicable diseases;
- ◊ High rates of undernutrition and micronutrient malnutrition among hospitalized and institutionalized older persons;
- ◊ Increasing rates of undernutrition and micronutrient malnutrition among those 70 years and older -- the main causes being poverty, isolation and poor family/community support, dependency, physical and mental disabilities and diseases.

Although these studies give an overview of the situation, more emphasis should be given to such assessments. “Mapping” (cataloguing names and addresses) older persons in need and assessing their needs are essential parts of respecting, protecting, and fulfilling the basic right to adequate food and nutrition -- the three obligations of the State in human rights governance. As a first attempt to address the nutritional

problems of older persons in Brazil, activities are being planned and implemented with financing from federal funds. The starting point of any nutrition activity is the baseline assessment and continuous surveillance, followed by the dissemination of correct information about food contents, food safety, healthy food habits and lifestyles, the improvement of hospital care in regards to nutrition, and the provision of supplementary foods to those most in need. Given the technical advice of experts, members of the Ministry of Health's Advisory Committee on Nutrition and Ageing are developing the following strategies:

(a) Information, education and communication activities are being planned and implemented at national level to improve the general awareness and knowledge of the Brazilian population on the rights of older people. Examples of such activities include the distribution of a booklet containing appropriate nutritional information to the more than eight million older persons who attended the immunization campaign against influenza in April 1999; 30 second broadcast inserts on commercial television channels; and the creating a comprehensive databank on food and nutrition and ageing within the Ministry of Health's free-of-charge telephone information service (Dial Health).

(b) To act locally through the Incentive to Combat Nutritional Deficiencies . This is a financial incentive provided to municipalities by the Brazilian Federal Government through the Ministry of Health to implement nutrition activities and interventions. To be entitled to these financial resources, a work plan is formulated by the local health officers and submitted to the Municipal Health Council. These local Councils are the main mechanism of social control over public funds spent on health and therefore, include representatives of civil society, community leaders and the local business sector. This incentive is directed primarily to the nutrition rehabilitation of malnourished children, but municipalities decide their own priorities. More than 4,600 of the 5,507 Brazilian municipalities have already enrolled in the programme, and 23% have already decided to assist their older population with a portion of the available funds. This shows how much local level health officers, personnel and community leaders are aware of the nutritional vulnerability of this age group, and that activities to raise public awareness about the problem may be showing some impact. In such municipalities, the work plans should include nutritional assessment, monitoring, and information, education and communication activities. The distribution of food supplements may or may not be part of the local initiative. In those instances in which the municipalities have decided to distribute food for needy older persons, general technical advice from the Ministry of Health is given; the food is, however, produced locally, making it more likely that the food will meet local cultural values.

Also fundamental is the understanding that human rights governance is the responsibility of all sectors of society; therefore, social action directed to elders should not be limited to the governmental sector, but equally be the responsibility of all other social actors in society: organized civil society, community leaders and the business sector. The Municipal Health Councils can play an active role to establish and to promote such key partnerships. In addition, the Councils could monitor the extent to which the economic, social and cultural rights of older persons are being respected, protected and fulfilled by reporting to the National Human Rights Commission or to the Ministry of Justice on possible violations. The International Year for older Persons has been celebrated during 1999, and it marks the start of a long road to assure the realization of the right to food as a fundamental human right for all Brazilian citizens -- who are all getting older every day!

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COMMENTARY

Transcending the Generation Gap in Nutrition

By Professor George Kent

My professional work has focussed on advocacy on behalf of children. Thus, the question of how to deal with nutrition problems of the aged brings to mind the challenge of choices. Resources for dealing with nutrition, health care, social services, etc. are always limited. To what extent should they be used for children, and to what extent should they be used for older persons? I have found several reasons for encouraging a bias in favour of children. However, as a good liberal, I acknowledge that, of course, we should also take care of our ageing population as well. I have some self interest in that.

I see conflict between the interests of the young and the interests of the old. They are competing claimants on scarce resources, and those who make public policy face a difficult dilemma in allocating those resources. There are several technical models that can be helpful. For example, one could allocate resources to maximize the number of DALYs — Disability Adjusted Life Years — saved. DALYs are a key analytic device in WHO's study of the global burden of disease, and the analysis of saved DALYs often helps to guide public health decision-making.

Along with my interests in children and in nutrition, I also work on conflict management. After many years, I have learned one fundamental point: as a practical matter, one should never accept the definition of a conflict as it is first given to you. Game theorists can devise their abstract zero-sum games, but social situations in the real world often can be re-constructed and 're-perspectived' so that what had appeared to be an irreconcilable conflict can be transcended. Traditional thinking about conflict resolution has the parties settle down to an uneasy compromise somewhere in the middle, each settling for something less than the optimum, the goal. Transcendent thinking about conflict says: let us find a way to reconfigure this situation so that all of you come out to something better than you had dared to imagine.

How can this approach be applied to the conflict between the interests of children and elders in obtaining nutrition services? The answer is simple: create conditions under which they can provide services to each other. The young and the old, who we have become accustomed to viewing as some sort of burden, should instead be viewed as resources. There have been experiments in which day care facilities for older adults are combined and integrated with day care facilities for children. It works marvellously well. Children interact with elders, and enjoy having many virtual grandparents. The capable elders interact with the children and have meaningful interaction to fill their days. Even less capable elders, who can only observe, benefit from the brightened ambience of the place. Teenagers can be involved as well, providing care to both young and old, and thus find meaningful ways to spend their spare time. Everyone involved is likely to feel good about the experience.

This sort of thinking can be applied to nutrition. For example, in a joint care facility, older adults can help in cooking and feeding the children. Teenagers can help in serving meals and in feeding the elderly. Food preparation and cleanup can be joint activities. In each case, the basis for deciding who gives what and who gets what should be determined more by ability and needs and interests than by age. If there is land available (as there should be), everyone could work in the chicken coops and the vegetable garden together, maybe with the young doing more learning and digging than older persons.

We know now, better than ever, that care is an essential element in good nutrition, along with food and health services. While food products are consumable resources (obviously), care is a resource that somehow can multiply itself. In many cases of malnutrition, the major ingredient that is missing is care. Thus, through creative social arrangements, we may be able to transform what had been viewed as burdens into resources.

This approach closes the loop of the lifecycle approach, recognizing that each of us begins with high dependency and low capacity, we gradually increase our independence and our capacity, and then, in time, we see them diminish. We should give and get according to where we are in the cycle. This is how families work, and it is how strong communities work. It should be the same for social services. Social services -- including nutrition and many other kinds of services -- should not displace and dismember familial and community-based interactions, but should facilitate and reproduce those relationships to the extent possible.

Maybe talking about DALYs takes us in the wrong direction. That is certainly a cold way to think about grandma.

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Better Nutrition for Older People — Assessment and Action

By Suraiya Ismail and Mary Manandhar

Book Review by Noel W Solomons, MD, Scientific Coordinator

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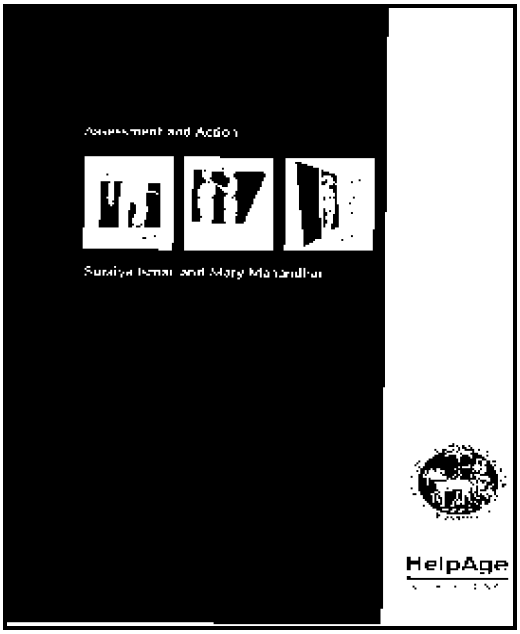
A superb combination of institutions with unique -- and in this instance, complementary -- interests and talents, HelpAge International (a private, charitable agency for developing country elders) and the London School of Hygiene and Tropical Medicine (an institution heralded for both its basic and applied health investigation in the tropics) have collaborated to place onto center stage as a health concern the increasing number of persons surviving into old age. The process of the formation of this new self-instructive guide and manual, *Better Nutrition for Older People Assessment and Action*, was ideal. Samples of destitute elders were measured in India, Tanzania and Malawi to provide the basic experience and information. It was then pre-tested in three additional countries: the Philippines in Asia, Ethiopia in Africa, and Grenada in the Caribbean. The authors and their sponsors are up-front about their intent and interest: *"In this handbook, we are concerned only with undernutrition so we use the word malnutrition to mean undernutrition only."*



All of this care and forethought has led to a 79-page manual with a laminated-plastic cover, and A-4 paper size divided into six chapters: 1. Background to Nutritional Assessment; 2. Anthropometric Measurements; 3. Assessing Nutritional Status from Anthropometric Measurements; 4. Assessing Nutritional Vulnerability 5. Interventions - A Brief Overview; and 6. Conclusion. A bibliography is included, in addition to ten appendices (including a Glossary of Terms). There are four diagrams and nine numbered tables distributed throughout the text. Many more diagrammatic silhouettes and unnumbered tables are included as well. The design and editing of the book are more than admirable, achieving a clarity of presentation and a simplicity of language that is right on target for the presumptive audience of non-titled (empirical or apprenticed) community health workers in developing countries. The treatment of gender issues is explicitly politically correct and the casual illustrations (silhouette figures) represent women in Hindu saris, elders with African features and garb, and persons in western dress, allowing any reader to identify personally. This is not a casual offering, but a crafted product -- although not a finished product. The authors state in their concluding chapter: *"As more information becomes available we will update this handbook. Please help by giving your comments about it and telling us about your experiences of malnutrition in older people and the design of suitable interventions."* This honesty and humility on authors' part is even more ingratiating than the high quality of the work itself.

The subtitle of the book is *Assessment and Action*. The second and third chapters constitute a handbook for diagnostic "assessment" of nutritional status as defined by reference standards of body composition. The measurements are height, weight, armspan (or its proxy measurement of the hemispan or "halfspan") and mid-upper-arm circumference (MUAC). Armspan is the horizontal distance between the fingertip of the longest digit on one hand to the corresponding point on the other hand, with the subject assuming a "crucifix" position with the arms extended laterally. If range of motion in the shoulder, elbow or wrist excludes this posture, or there is a unilateral amputation, a hemispan (termed "halfspan" by these authors) is measured on one side with the distance from the center of the sternum to the tip of the one hand constituting the index. Its value is doubled to estimate the full span for individuals so measured. It has been established in cadaveric studies and living persons that the armspan has a strong correspondence to the maximal stature achieved in early adulthood, with the advantage that it does not "shrink" as does the standing height with advancing age. The derivative, interpretative indices for nutritional classification are Quetlet's body mass index (BMI) and MUAC, each applied to normative standards for older persons. The didactic instructions are so effectively written that one could credibly believe that a basic level professional could learn to perform accurate and precise measurement simply with the written directions and the self-assessment exercises.

The Appendix 5 consists of three "BMI Charts": multicolored, nomogram-based graphs in which a subject's BMI value can be easily determined; moreover, the nutritional classification is included in the colour coding. The criteria used in Appendix 5: Chart 1 are those of James and Ralph (1992) in which severe undernutrition of <16 kg/m^2 is the red area of the upper right diagonal field, 16 to 16.9 kg/m^2 is the yellow area of moderate undernutrition, and 17 to 18.5 kg/m^2 is mild undernutrition, signified by a blue band. A broader green area encompassing 18.5 to 24.9 kg/m^2 represents adequate nutrition, and in the extreme lower left field shaded in purple includes those who are overweight at >25 kg/m^2. In keeping to its focus on undernutrition, this manual did not include an area for obesity, defined as BMI >30 kg/m^2, nor for extreme or morbid obesity, defined as >40 kg/m^2.

Appendix 5 Charts 2 and 3 are based on classifying individuals when stature cannot be assessed and either armspan or halfspan is the measurement for the horizontal axis. The former is labelled for application in Asians, excluding Chinese; the latter is labelled for application in Africans. No further explanation is given to the user. A careful inspection of the intersection of the classificatory shaded zones on the Charts 2 and 3 (armspan) have quite distinct margins as compared to Chart 1, which is based on standing height. The boundary BMI values for the gradient from severely-undernourished to overweight for the Asian elders are 14.6; 15.6; 17.1; and 23.6 kg/m^2 and 14.0; 15.0; 16.6; and 22.9 kg/m^2 for the African elders when armspan comprises the horizontal value. One can only assume to know the rationale for the difference in the BMI criteria using span. We assume armspan was not equal to height in any ethnic group, and was different between the Africans and the non-Chinese Asians, and that the authors mobilized robust data to make the proportional conversions. However, were the conversions made based on young adults or the older persons themselves? This answer would make a major difference in the classification of nutritional status.

The armspan is a useful surrogate for height when a person cannot stand, or assume a suitable posture on the stadiometer. The armspan, based as it is on the length of long bones, remains constant throughout life, whereas stature decreases due to senescent loss of height by the combination of compression of the intervertebral disk spaces and any osteoporotic compression of the vertebrae themselves. As such, the use of measured stature will overestimate the "true" (height-loss adjusted) BMI, but armspan can be used itself as a height-loss adjustment. In the opinion of this reviewer, the index of "BMA" (BMI from armspan) should be the routine index for comparative analysis across populations and across adult age groups, but the normalization should be a relation to the BMI of a person at the peak of his or her adult height. It is a promising step that the manual introduces users to the concept and measurement of armspan and halfspan.

The most serious technical flaw in the manual has to do with issues of measurement precision, based on the tolerance for agreement of replicate measurements. These are found in Chapter 3 as a self-assessment exercise on p35. Let me first assert that with proper thermometer instrumentation, the change from 0 to 1 C is equally measured as that from 99 to 100 C. In a curious departure, the authors demand a reproducibility within 1.0 cm for duplicate measurements of armspan but only 0.5 cm for halfspan. This is the logical equivalent of imposing a 0.5 cm tolerance on one's stadiometer measurement for a person who is 1 meter tall and a 1.0 cm tolerance for someone who is 2 m tall. It is the same metric tape* whether applied extended from mid-sternum to one fingertip or stretched across the body from fingertip to fingertip. As one doubles the halfspan value to estimate the full span for use with Charts 2 or 3 of Appendix 5, this introduces yet another, intrinsic error in measurement based on the propagation-of-error principle, i.e. summation or multiplication of discrete measurements compounds the additional error. In fact, the legitimate tolerance for duplicate estimates for armspan derived from hemispan should be greater than that for armspan measured directly. Users of this manual may become discouraged with their inability to repeat sequential halfspan measurements within a 0.5 cm difference of one another!

The "action" component comes in the fifth chapter entitled “Interventions - A Brief Overview.” It addresses the issue of *"how you can promote better nutrition amongst the older people that you work with."* Perhaps these six pages are too brief, both in narration and its consideration as well. The action components of the handbook are based more on "common sense", bordering at times on platitudes, and for the arena of the settlement house social worker, rather than on any serious analysis of the prognostic and actuarial considerations of malnourished older persons living in conditions of poverty. There is nothing "macro" about the scale of considerations for what to do once the diagnostic assessment of a population has been made using the manual. There is nothing strategic for policies or programmes; nothing that would seek an entry point for actions taken at the level of the society as a whole that contains the elders as a segment nor at the level of the aged as a subgroup. Rather, it presents merely a tactical and situational approach. The plan of action is almost like "cherry picking" in which one identifies the individuals based on an implicit assumption

That the nidus for action represents almost a "settlement-house social worker" outlook is not surprising given the nature of a HelpAge International, but it is hardly what we have come to expect from the London School! Also, the explicitly one-tailed interest in "undernutrition" will introduce critical blind spots when anything other than individual "curative" nutritional measures are considered. The recommendations for intervention are thin even for a book not aimed at the trained dietician. They derive from the paradigm of poverty and deprivation, and see diet, and constraints on intake, as the principal modifiers of body composition of the elders. To some extent, for a slum in Calcutta or a hamlet on the slopes of the Andes, they might be more right than wrong. Western gerontology treats underweight from its non-community-based focus of nursing care facilities and tertiary hospitals. In this context, recent (unintentional) weight loss and cumulative weight loss of greater than 10% of maximal adulthood weight (often jocularly called "the dwindles" in geriatric circles) have dire adverse prognostic consequences, predicting the demise of the older person in relatively short order. This poor prognosis holds whether or not dietary interventions are imposed. In the West, malignancy, dementia or some other irreversible process is most often the basis of the geriatric undernutrition receiving notoriety. Geriatricians are much less intervention-minded in the sense of an optimism about the reversibility of weight lost than are Drs Ismail and Manadhar. They might be right -- I might be overall academic.

I would argue, however, that the nature of low weight in free-living elders in abject situations is not known. Even paranoids have real enemies; even older paupers in low-income Third World setting may have real organic illness causing their wasting. Obviously, if adequate food is a scarcity then sophisticated high-tech medical and surgical intervention is much more out of reach. The intellectual caution would not be overly locked into poor accessibility, availability, or acceptability

as the universal cause of underweight, and the practical consequence is not to be overly optimistic that the weight loss one detects is reversible. One must consider the process of "sarcopenia" i.e., that inexorable loss of muscle mass associated with senescence; to "recover" one's former weight is to replace muscle weight with fat mass, a challenge to weakened limb strength and a potential metabolic liability. Moreover, one must also raise the heretical question of the extent to which low weight in deprived elders might represent an adapted state, or even be adaptive. That is, the organism has reached a stable equilibrium with his or her surroundings, and other "set-points" brought on by higher caloric consumption would be meta-stable at best and fatally disruptive at worst. Hence, we come to a final caveat concerning the potential hazards of refeeding. For acute refeeding of persons in the "red zone" coordinates of the BMI charts, patience and caution is more prudent than aggressive haste.

The manual was based on multicentric work carried out in India, Tanzania and Malawi and it has gone on the road in Ethiopia, Grenada and the Philippines for pilot testing; the question arises now as to whether or not it is ready for "prime time." In an arena of virtual total abandonment of the older segment in developing country populations, this handbook is much, much better than the nothing that preceded it. It is clear enough, concise enough, and self-instructive enough to attain its goal of empowering health technicians to make an accurate assessment of the body composition of individuals or groups of older persons. The technical flaws are minor and amenable to correction. I do, however, have a few suggestions for the authors. In the diagnostic domain, this manual could be -- and should be -- pressed into service in another, opportunistic and "academic" endeavour, namely as a survey instrument. How valuable it would be if *Better Nutrition for Older People* were taken up by undergraduate and masters degree candidates in Latin America, Asia and Africa! A proliferation of mini-surveys using this instrument could be the beginning of stitching together a quilted tapestry of the state of the poor older-aged residents across the tropics. This should be a two-tailed application in which the question of "excess" would not be a pariah.

With respect to the advocacy for action component, it is only human and humane that one takes the nutritional assessment beyond the point of archival statistics or curiosity to some benefits and betterment for the subjects surveyed. In fact, to date, the world has chosen to deal with its scant population of older persons by omission; as their numbers burgeon, they can be invisible no longer. But rapidly, the world needs to get beyond the notion of individual charity for elders to some considerations at the population-wide public health level. And, for the sake of the short term goal of benefits outweighing risks, and from the long term value of preventing debility of senescence and preserving function, we must admit that we really know too little about the nature and causes of low weight in the developing world's destitute elders. That is, we know too little to chalk it all up exclusively to dietary determinism. Simplicity in diagnosis does not always find its counterpart in simplicity of remedy. Both individual action to refeed underweight elders and mass action to feed aged populations at apparent risk are multi-edged swords. The call for advocacy in this manual brings its users face-to-face with the rock of neglect and inaction, and the hard-place of the consequences of imprudent and overzealous intervention. Fortunately, the "loose-leaf" spirit of the authors' intention to maintain permanent revision is such that any legitimate concerns of critics and skeptics can rapidly be incorporated in the generations of the ground-breaking manual to come.

* The manual recommends the use of a flexible metric tape for the determination of span and hemispan. In this reviewer's experience, a rigid metric bar -- rather than a flexible tape -- produces the most consistent, reproducible and accurate measurements as it forces consistent abduction for the subject to have his or her arms parallel to the ground and perpendicular to the spinal axis, and limits flexion and extension of the sagittal plane.

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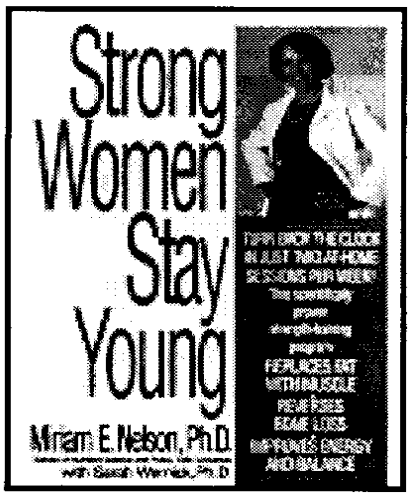
Strong Women Stay Young

By Miriam E Nelson PhD



This book is an excellent resource for health and nutrition professionals who counsel patients on exercise for the prevention or treatment of osteoporosis. Strong Women Stay Young is a scientifically-based strength training book for women and men of all ages who want to get strong and stay strong for the rest of their lives. Research by exercise physiologist, Dr Nelson of Tufts University, demonstrated that weight-bearing exercise improves bone density, crucial to preventing osteoporosis in women; it also improves balance, increases energy, and helps to control weight. This book features eight simple, safe exercises done standing or seated – no sweat, no special clothes; fully illustrated step-by-step instructions that any person can customize to their needs. This book includes important new information on muscle, bone, balance and fitness. This is a scientifically tested program that only takes two 40 minute sessions per week.

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I U N S

International Union of Nutriton Sciences

CRONOS

CRONOS (KRONOS) is the ancient Greek God of time, from which we get the word "chronology." Chronology -- or the passage of time -- is one of the two factors involved in human ageing; one only reaches advanced age to the extent that he or she evades mortality from accidents, violent aggression and acute infectious diseases. The other factor is the progressive changes in tissue structure and in the function of the body known as "senescence." The longer one lives, the more senescent processes effect changes on one's body.

CRONOS also has come to mean the acronym for the Cross-Cultural Research on Nutrition of Older Subjects, a research initiative of the International Union of Nutritional Sciences (IUNS). It responds to two important demographic currents in low-income nations with profound implications for health: urbanization and increased longevity. It was conceived and designed within a process of pilot testing and review within the Committee II/3 on Urbanization and Nutrition of IUNS. Pilot studies conducted in five Asian countries (China, Indonesia, Malaysia, Philippines, Thailand) and three countries in Latin America (Brazil, Guatemala, Mexico) tested the procedures of the original draft protocol and their cost, complexity and acceptance by the populations of interest. This was called the "reconnaissance" phase. The protocol was subsequently redrafted to provide an improved field instrument.

The third annual issue of the *Food And Nutrition Bulletin* in September 1997, was entitled "Development of a Protocol to Study the Interactions of Nutrition, Ageing, and Urbanization in Developing Countries." The volume summarizes experiences in research on older persons in developing societies including the EURONUT-SENECA 12-nation study in Europe and the IUNS-Food Habits in Later Life: A cross-cultural approach in six nations (Australia, China, Greece, Japan, Philippines, Sweden). From the point of view of the new, the CRONOS multicenter study has two components. The first is a narrative history of the reconnaissance phase involving the eight-site pilot study. It covers lessons learned and corrections applied. The second component was the presentation of a revised protocol, one which incorporates all of the 134 discreet variables, listed into a 36-page protocol with explicit detail as to how to collect, code and interpret the data. This is authored by Dr. Rainer Gross. In summary, the protocol calls for enrolment of 600 persons equally divided between men and women. The sample is also equally divided between young adults (aged 35 to 45 years) and older adults (aged 60-75 years). Three age-balanced and sex-balanced -- but geographically and socioeconomically distinct -- populations of healthy, free-living men and women of 200 subjects each are to be enrolled in each of the three strata. The strata are: rural agrarians; urban low-income; urban elite.

Two committees of the IUNS are currently promoting and overseeing the recruitment and execution of CRONOS-protocol studies in developing and transitional societies. The original committee, that on Urbanization and Nutrition (Committee II/3) is involved with the phases of data-collection in the field and data inventory. The IUNS Committee II/4 on Ageing and Nutrition has joined the effort at the level of data analysis and coordination of the entire data-sets from all eventual participating sites.

We hope that access to participation in CRONOS should be of interest to the readers of the *SCN News*. It has been the experience in Southeast Asia in Indonesia, the Philippines, and Vietnam, that the CRONOS protocol provides an excellent vehicle for creating Masters degree research proposals. We recommend that research groups working in low-income countries contact us concerning the joining of a concerted consortium to coordinate diverse studies. Please contact the authors of this note.

Reference: Gross R, Solomons NW, Hautvast JGAJ (eds) (1997) Development of a protocol to study the interactions of nutrition, ageing, and urbanization in developing countries *Food and Nutrition Bulletin* 18: (Supplement) p 305.

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Committee II/4 Nutrition and Ageing
Food Habits in Later Life (FHILL) Program Report 1999

As the food supply changes and there is considerable pressure on young people to conform to a global fast-food culture, the older members of society represent, in many cases, the principal repository of the food knowledge and skills. So, on the one hand, they are an invaluable food and health resource for their community but, on the other hand, a growing body of evidence shows that many health problems amongst the aged are diet related and nutritionally dependent. To this end, the need for descriptive studies of food and health among the aged was identified more than a decade ago. It not only aimed to document traditional food habits and beliefs but also to predict health and survival outcomes. This information is used for intervention programs and in the development of culturally-sensitive dietary guidelines, known as Food-based Dietary Guidelines or FBDGs.[1-3]

Between 1988-1993 the IUNS Committee "Nutrition and Ageing" established the international "Food Habits In Later Life" (FHILL) Program,[4,5] which was coupled to a socio-anthropological methodology known as RAP "Rapid Assessment Procedures".[6] RAP encouraged the expression of the food culture of the study communities and, within the framework of food habits inquiries,

BOX 1
Initial Geographic and Ethnic Surveys (FHILL Phase I-Bibliography)

Australia (Greek & Anglo-Celt)

Kouris-Blazos A, Wahlqvist ML, Trichopoulou A, Polychronopoulos E, Trichopoulos D (1996) Health & Nutritional Status of elderly Greek migrants to Melbourne, Australia *Ageing* 25:177-189.

Kouris-Blazos A, Wahlqvist M, Wattanapenpaiboon N (1999) 'Morbidity mortality paradox' of Greek-born Australians: possible dietary contributors *Aust J Nutr Diet* 56 (2):97-107.

Wahlqvist ML, Kouris-Blazos A, Trichopoulou A & Polychronopoulos E (1991) The Wisdom of the Greek Cuisine and Way of Life: Comparison of the Food and Health Beliefs of Elderly Greeks in Greece and Australia *Age & Nutr* 2(3):163-173.

Wahlqvist ML, Kouris-Blazos A (1996) Olive oil - Nutrition and Biological value. In*: World Encyclopaedia of the Olive*. Int Olive Oil Council.

Wahlqvist ML, Kouris-Blazos A, Hsu-Hage BH-H (1997) Ageing, Food Culture & Health *SE Asian J Trop Med Pub Health* 28(2):100-112.

Wahlqvist M, Kouris-Blazos A, Wattanapenpaiboon N (1999) The significance of eating patterns: an elderly Greek case study *Appetite* 32:23-32.

China

Side X, Mingtang S, Shuquan Z, Zhaomei M, Yinzhi X, Yujun L, Jun W, Kui J (1991) Anthropometric and dietary survey of elderly Chinese *Br J Nutr* 66(3):355-62.

Greece

Trichopoulou A, Kouris-Blazos A, Vassilakou T,Gnardellis Ch, Polychronopoulos E, Venizelos M, Lagiou P, Wahlqvist ML & Trichopoulos D (1995) The diet and survival of elderly Greeks: A link to the past *Am J Clin Nutr* 61(6S):1346-1350.

Guatemala

Hermann D, Solomons NW, Mendoza I, Gonzales C, Quershi AK (1998) Anthropometric measures and indices of body composition among Guatemalan elderly: relation with self-rated health and activities of daily living and comparison with other sites in the "Food Habits in Later Life" multicentre study *Asia Pac J Clin Nutr* 7:55-64.

Hermann DR, Solomons NW, Mendoza I, Quershi A (in press) Self-rated health and its relationship to functional status and well-being of elderly Guatemalan subjects *The J Nutr, Health Ageing*.

Indonesia

Purba M, Lukito W, Wahlqvist ML, Kouris-Blazos A, Hadisaputro S, Lestiani L, Wattanapenpaiboon N, Kamso S (in press) Food intake and eating patterns of Indonesian elderly before the economic crisis in Asia *Pac J Clin Nutr*.

Japan

Darmadi I, Wahlqvist ML, Horie Y, Kouris-Blazos, Wattanapenpaiboon N, Sugase K, Horie K (1998) Food predictors of later life status in Japanese Elderly. Proc of Australian Clinical Nutrition Society, Brisbane, Australia, Nov 1998.

Horie K, Sugase K, Horie Y (1997) Intakes of food and nutrient and health relationship in the Japanese elderly by gender and by living arrangements. Proc 16th International Congress of Nutrition, Montreal, Canada, p59.

South Africa

Charlton KE, Labadarios D, Lombard CJ, Louw ME (1996) Vitamin D status of older South Africans S Afr Med J 86:1406-1410.

Charlton KE, Bunn AE, Lombard CJ, Marais AD (1996) Body composition assessment of older coloured South Africans: no association between obesity and conventional cardiovascular risk factors S Afr J Food Sci Nut 8:123-130.

Charlton KE, Fourie JM, Steyn K, Lombard CJ (1997) Prevalence of hypertension among the elderly coloured population of the Cape Peninsula. S Afr Med J 87 (Cardiovascular suppl 2):C75-C80.

Charlton KE, Levitt NS, Lombard CJ (1997) The prevalence of diabetes mellitus and associated risk factors in elderly coloured South Africans S Afr Med J 87:364-367.

Charlton KE, Kruger M, Labadarios D, Wolmarans P, Aronson I (1997) Iron, folate and vitamin B12 status of an elderly coloured population in Cape Peninsula Eur J Clin Nutr 51:424-30.

Charlton KE, Ferreira M (1997) Food and health beliefs of an urban sample of coloured older persons. S Afr J Food Sci Nutr 9:9-13.

Charlton KE, Wolmarans P, Lombard CJ (1998) Evidence of nutrient dilution with a high sugar intake in older South Africans J Hum Nutr Diet 11:331-343.

Charlton KE, Wolmarans P, Kruger M, Labadarios D, Marais AD, Lombard CJ (1998) Micronutrient status of older coloured South Africans S Afr Med J 88(5):653-658.

Sweden

Augustsson O, Eriksson BG, Rosenhall U, Rothenberg E, Warne B, Steen B (1994) The Johanneberg study - a sociomedical survey in an urban elderly population. I. General presentation of the study including an analysis of non-response and identification of risk groups Scan J Soc Med 22:283-292.

Rothenberg E, Bosaeus I, Steen B (1993) Intake of energy, nutrients and food items in an urban elderly population Aging Clin Exp Res 5(2):105-116.

Rothenberg E, Bosaeus I, Steen B (1994) Food habits, food beliefs and socio-economic factors in an elderly population.

allowed for modification of the survey instrument. RAP was used to obtain information on food and health beliefs and to examine other factors possibly affecting food intake.[7,8,9] An FHILL goal has been to provide tools for communities to establish their own assessment procedures.

The FHILL study investigated the food habits, health, lifestyle and body composition[4,10-12] of 2013 older people around the world - including Greece, Sweden, Australia (Anglo-Celts and Greek-born), South Africa, China, Japan, Guatemala, the Philippines and Indonesia (see Box 1). Moreover, potential markers of 'youthful' ageing are also being investigated with cutaneous microtopography (skin wrinkling in sun unexposed sites) and dehydroepiandrosterone (DHEA) with the purpose of identifying nutritional and non-nutritional factors associated with a younger biological age for a given chronological age.[13,14] The major finding from Phase I (comparative descriptive study) highlighted that it is possible to achieve comparable health in old age in different cultural settings with widely differing food habits.[15-19] At the same time, there is the opportunity for nutritionally related health improvement within and between cultural settings.

Phase II (mortality follow-up) of the FHILL study commenced in 1993 and aimed to examine prospectively the effect of food patterns, social and lifestyle variables on survival in five-to-six year interval mortality follow-up studies of the older cohorts (see Box 2). From the analyses of mortality data from the elderly Greeks in rural Greece, and Greek-born and Anglo-Celtic Australian cohorts, has come an understanding that food patterns, even as late as 70 years and onwards, remain predictive of survival and are also associated with function and morbidity. In particular, the retention of a varied, but traditional food pattern (e.g. high in plant food, low in animal food) appears to be important for longevity and has implications for the development of FBDGs. Also, the retention of traditional

Box 2: Mortality Follow-up (FHILL Phase II Bibliography)

Charlton KE, Lambert EV et al. (1997) Physical activity, change in blood pressure and predictors of mortality in older South Africans-a 2-year follow-up study *S Afr Med J* 87:1124-1130.

Darmadi I, Wahlqvist ML, Horie Y, Horie K, Sugase K, Kouris-Blazos A, Wattanapenpaiboon N (1998) Body mass index as a predictor of all-cause mortality in a Japanese elderly population. *Proc of Nutrition Society of Australia* 22:184.

Horie K, Sugase K, Horie Y (1998) Follow-up studies on the relationship between mortality and food and nutrient intake by gender in elderly Japanese *Proc 2nd Asian Congress of Dietetics* Seoul, Korea, August 1998, p 280.

Kouris-Blazos A, Wahlqvist ML (1998) The traditional Greek food pattern and overall survival of elderly people. *Aust J Nutr Diet* 4(S):20-23.

Kouris-Blazos A, Gnardellis C, Wahlqvist ML, Trichopoulos D, Lukito W, Trichopoulou A (in press) Are the advantages of the Mediterranean diet transferable to other populations? A cohort study in Melbourne, Australia.

Kouris-Blazos A, Wattanapenpaiboon N, Mylvaganam A, Wahlqvist ML, Trichopoulou A (in press) Olive oil and longevity.

Trichopoulou A, Kouris-Blazos A, Wahlqvist ML, Gnardellis CH, Lagiou P, Polychronopoulos E, Vassilakou T, Lipworth L, Trichopoulos D (1995) Diet and overall survival in elderly people *Br Med J* 311(7018):1457-1460.

eating patterns (e.g. early breakfast, main meal consumed in the middle of the day as opposed to the evening) may also protect against obesity and elevated fasting blood glucose. Data from a two-year follow-up of the South African cohort found that in men, a low baseline BMI and raised serum ferritin levels were associated with increased mortality, whereas in women, being diabetic and having a waist/hip ratio in the upper tertile were associated with mortality. Information of this type may be useful to screen the general health risk of older adults at primary care level and provide indications for social or medical intervention.

Mortality follow-up studies of older Japanese and Swedes have also been completed and will soon be analysed, along with the Greek and Anglo-Celtic cohorts. The mortality follow-up of the Guatemalan cohort is planned. The value of the cross-cultural survival data not only relates to food patterns, but will allow interpretation of the influence of social activity, social support, sleep patterns, physical activity, body composition and other biological markers (e.g. immune function, DHEA and iron stores) on survival. WHO and FAO have now applied the FBDG framework to the nutritional and health needs of the aged.[3] The results from the FHILL project should provide valuable information for their development.

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International Dietary Energy Consultancy Group

Impact of Human Ageing on Energy & Protein Metabolism and Requirements

IDECG convened 27 scientists from 10 countries at the USDA Human Nutrition Research Center for the Ageing at Tufts University in Boston on 3-6 May 1999 to discuss the Impact of Human Ageing on Energy and Protein Metabolism and Requirements. Following are some of the main conclusions derived from the information presented at this workshop. An attempt was made to summarize what is known about major biological changes seen in elderly populations. Several of these changes seem to occur primarily as a result of the biological process of ageing (and can be referred to as *primary*), while others are frequently seen in elderly populations but seem to be more due to environmental and lifestyle factors (and can be referred to as *secondary*). There is evidence to suggest that several of the following changes are primary, have a biological basis, and are associated with the process of ageing in humans:

- ◊ a gradual loss in bone density with age that is accelerated in women after menopause
- ◊ sarcopenia (a loss of skeletal muscle), which may be slowed by resistance exercise
- ◊ a gradual reduction in basal metabolic rate (BMR) and total energy requirement as a consequence of sarcopenia and changes in organ size and function
- ◊ a gradual reduction in VO2 max and aerobic capacity
- ◊ loss of estrogens after menopause in women and a gradual decrease in androgens in men may contribute to sarcopenia
- ◊ although highly variable, there tends to be a gradual loss of acuity of taste and smell that may affect food intake
- ◊ a tendency to gastric atrophy which may result in a decreased absorption of vitamin B12
- ◊ cognitive impairment seen in the elderly is sensitive to vitamin and mineral status; reduced B vitamin and mineral status is known to adversely affect cognition in older persons.

The following age related changes have been observed although they may not be intrinsic to the process of ageing per se and may hence be considered as secondary. These changes may be caused by or influenced by extrinsic factors, which include the nature of the diet and level of physical activity as well as the lifestyle of the individual. (1) increased blood pressure; (2) reduced insulin action; (3) deranged fat metabolism; and (4) although strongly culturally influenced, there is a tendency for the aged to experience more social isolation and economic privation that can affect their health in multiple ways. While there are no specific data on elders, data from population studies, which include older persons, suggest that the following factors affect health and survival at any age but seem especially important for elders:

- ◊ Aerobic and resistance exercise promotes health and contributes to a better quality of life for elders. Aerobic exercise slows age-related bone loss, improves balance, lowers lipids, reduces glycemia and risk of diabetes, and improves cardiovascular status. Strength training may stop or reverse sarcopenia, increase muscle strength and muscle mass in the elderly and can be the first step towards a lifetime of increased physical activity. Both forms of exercise are realistic strategies for maintaining functional status and independence.
- ◊ Increased vitamin D and dietary calcium intake *may* help slow the development of osteoporosis.
- ◊ Overweight and obesity predispose to co-morbidities including hypertension, heart disease, diabetes, osteoarthritis, and some cancers.
- ◊ Cessation of smoking improves health at any age.
- ◊ A diet with a relatively high variety of fruits and vegetables is highly beneficial.
- ◊ Diets relatively low in saturated fats reduce the risks of hypertension, coronary heart disease and some forms of cancer.
- ◊ The consumption of alcohol in moderation is compatible with sustained good health; however, it is better to abstain rather than to consume alcohol in excess.
- ◊ Although sensitivity to salt varies greatly within a population, salt intakes should be moderate; the higher the salt intake the greater the proportion of the population that will develop hypertension with an increased risk of cerebrovascular stroke.
- ◊ Improving the psycho-social environment of the elderly and alleviating economic privation will improve dietary intake and health maintenance.
- ◊ For elderly in nursing homes, physical and social activity, varied diets and assistance should be provided as required for mobility and eating.
- ◊ A major contributor to morbidity in the elderly are falls associated with poor balance and co-ordination that can be improved by activities that promote improved balance (e.g., Tai'chi, dancing, etc.).

Recommendations and interventions should be based on these considerations.

Energy and protein requirements: The definition of energy requirements of the 1985 FAO/WHO/UNU Consultation as "the level of energy intake from food that will balance energy expenditure when the individual has a body size and composition, and level of physical activity consistent with long term good health" applies also to older people. Energy requirements are derived from estimates or measurements (with the doubly-labelled water method) of total energy expenditure (TEE), and most conveniently expressed as the Basal Metabolic Rate multiplied by a Physical Activity Level (PAL). One of the main problems is that the elders form a very heterogeneous group, some remaining healthy and very active, others becoming ill and/or very inactive. Most of the available data come from cross-sectional studies of elders in high-income countries. The PAL in reasonably healthy elders from such countries ranges from 1.5 to 1.8 with a mean of 1.65. The prevalence of many diseases increases with age. Many of these diseases limit the physical activity of patients,

and even though the BMR may be slightly higher (e.g. because of an increase in body temperature), the net effect of disease is in general a lowering of TEE. The range of PAL becomes more variable, ranging from 1.1 to 1.6. In practical terms this means that in the ill, PAL may need to be determined on an individual rather than a group basis, taking also into account desirable body weight changes. Low energy intakes may endanger the adequacy of micronutrient intake, which may have to be monitored more closely.

Data on protein requirements are limited and suffer from methodological problems. Despite these limitations most currently available evidence suggests that, in healthy elders, a mean intake of 0.8 g of protein/kg bodyweight daily results in nitrogen balance. This is more than the current mean recommended intake of 0.6 g/kg/day. Information from nitrogen balance studies suggests that an even higher protein intake per kg bodyweight may be desirable for the elders. Even though further studies are needed before a recommendation to increase requirements can be made, it appears that protein intakes of 0.9-1.1 g /kg /day may be beneficial in healthy elders and are not harmful in the general population (i.e. in the absence of renal or hepatic disease).

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ILSI (Southeast Asia)

International Life Sciences Institute

Nutrition & Healthy Ageing in Asia: Harnessing Science for Action

Asia will soon have the largest percentage of older persons in the world. Challenges faced in caring for older persons in Asia include the erosion of traditional family care practices, spiralling medical care costs, and in general, a low priority accorded to programmes and interventions for older persons. Against this backdrop, the ILSI-(SEA) symposium/workshop was held on 6-7 July 1999 in conjunction with the Singapore Ministry of Health. The main objective of the symposium was to identify key issues on maintenance of optimal health of older persons that are important in developing strategies and programmes to improve the care of the elderly in Asia.

Good nutrition and appropriate physical activity — as major contributors to healthy ageing — constituted the focus of many presentations. It was pointed out, however, that gaps exist in our current knowledge on several key issues including age-appropriate dietary guidelines and physical activity. In the Asian region, there is a dearth of even basic information on the nutrition of older persons such as food practices and nutrient intake. The need for age-specific indicators and standards to assess the health significance of age-associated decreases in energy intake and physical activity was emphasized by Prof. Johanna Dwyer from Tufts University (see p15). Age-appropriate dietary reference standards for older persons should also be developed and employed because of changes in lifestyle, reserve capacity and functions which results in changes in nutrient requirements. Whether the Dietary Guidelines for Americans are fully applicable to persons over 70 years was questioned. Dr. Adam Drewnowski, University of Washington, asserted that dietary guidelines restricting fat, sugar, and cholesterol may have little bearing on the health of that age group, considering that the principal risk factor for morbidity and mortality is age.

In sharing the Japanese experience, Dr Hiroshi Shabata, Tokyo Metropolitan Institute of Gerontology, attributed prolongation of the Japanese life expectancy to a dietary pattern that has not changed markedly since mid-1970s. Total daily energy intake is about 2000 kcals; protein and fat from animal and plant sources are equally balanced; and a variety of vegetables are consumed each day. Dietary supplements may have a role in the nutrition of older persons as anti-oxidant vitamins, zinc, selenium and copper, pre-hydrolyzed proteins, dietary fiber, and pre- and pro-biotics have been demonstrated to be able to restore "favourable" immune functions. Ageing brings about a marked decline in immune and gut function that can predispose elderly individuals to an increased incidence of infections and autoimmune diseases, malignancies, allergies and digestive problems, as explained by Dr. Harsharnjit Gill, Massey University, New Zealand.

Priority Research Areas: A panel shared their experiences on two major studies involving older persons in Asia. Prof. Khor Geok Lin, Universiti Putra Malaysia, highlighted the unique features of the CRONOS Study (see p53). The pilot phase of the CRONOS project had been carried out in China, Indonesia, Malaysia, Philippines and Thailand. Dr Widjaja Lukito from SEAMEO-TROPMED, Indonesia compared key findings from the IUNS Food Habits in Later Life Study (see p53) which was conducted in China, Japan and the Philippines. He also presented results from the CRONOS Study in Vietnam. Dr Corazon Barba, Food and Nutrition Research Institute, the Philippines, reported that both the IUNS and the CRONOS Studies revealed protein and energy deficiencies among older Filipinos.

Dr Alex Malaspina, President of ILSI pointed out that the challenges for research on older persons in Asia are diverse, and called for more research to identify quality of life indicators and the social, cultural, environmental and psychological barriers towards healthy ageing. He also proposed that ILSI-SEA collaborates with other agencies to act as a catalyst to produce a manual for optimum nutrition and physical exercise for older persons for the health professional community in Asia. The workshop identified the following priority research areas:

- ◊ develop dietary recommendations and food guides that are culturally appropriate for Asian older persons
- ◊ validate suitability of current anthropometric indices, biochemical indicators, dietary standards and functional indicators for Asian older subjects
- ◊ assess physical activity levels, energy expenditure, energy and nutrient requirements of older Asians
- ◊ collaborate research on lifestyles, health and nutrition of older persons in Asian countries, using a common protocol such as

the CRONOS Study
- ◊ establish a regional network for research on healthy ageing
- ◊ organize a follow-up workshop to identify and harmonize research and intervention efforts.

Priorities for Action in the Area of Education and Training:
- ◊ undertake training and update knowledge on healthy ageing for professionals and community caregivers
- ◊ develop culturally appropriate communication materials
- ◊ include input from older persons in planning and management of community programs and organize educational activities in easily accessible places such as community centers and senior citizens clubs
- ◊ create a regional directory of organizations and activities involved with care for older persons

Concerns of older persons should be brought to the attention of governments in order to establish stronger measures and policies towards improving their health and well being. Partnerships among the governments, NGOs, academia and the community are essential for successful implementation of the recommendations.

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I L S I (Japan)

Third International Conference on Nutrition and Ageing

"Nutrition and Ageing: Eating Habits for Healthy Elderly Life" an international conference sponsored by ILSI Japan and the ILSI Research Foundation, was held in Tokyo, Japan, on 21-22 September 1999, to provide an international forum to discuss the latest trends and developments regarding the role of sound nutrition in healthy ageing. Welcoming remarks by Dr Shuichi Kimura, President, ILSI Japan, and Dr Alex Malaspina, President, ILSI, highlighted the need for close collaboration with organizations such as WHO and FAO to review the global pattern of undernutrition and underactivity in older populations. Keynote lecturer Dr Jun-ichi Nishizawa, Iwate Prefectural University, suggested that the growth of the global population, and the benefits of technological advances will mean only strong, healthy humans can expect to be functional and independent as they become older.

Approximately 300 participants from Asia and around the globe heard the latest scientific information from an international group of experts including Dr Junshi Chen, Chinese Academy of Preventive Medicine (China); Dr Yang Lee-Kim , Yonsei University (Korea); Dr Klaas Westerterp, Maastricht University (The Netherlands); Dr John Morley, St. Louis University (USA); and Dr Takeshi Hoshi, (Shizuoka Foundation for Health and Longevity, (Japan). Issues presented included: eating habits and appropriate intake in the elderly diet; the impact of food labeling on eating habits; nutrition and physical activity programs to reduce the risk of chronic disease in the elderly; and changes in physiological function and food preferences.

Country representatives from Japan, Korea, Vietnam, Indonesia, Thailand, Europe, and the United States highlighted the changing trends in dietary habits and physiological function throughout the ageing process. Specific topics addressed were: the sharp decline in activity levels in older males and females, and the need to overcome misperceptions about exercise in senior populations; the optimal level of vitamin E intake for immune enhancement and disease reduction; and the nutritional related benefits of physical activity in seniors, including increased basal metabolic rate, increased appetite, and correction of constipation. Various approaches by the governments to approve product health claims were also discussed; methods ranged from the development of detailed guidelines in the UK, to an historical perspective of food as part of unregulated traditional medicine in China. Closing remarks by Dr. Kimura focused strongly on the need for partnerships between the public and private sectors in an effort to promote healthy diets and physical activity. Proceedings from the conference will be published in Japanese and English in mid-2000.

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The 2nd World Congress on the Ageing Male
9-13 February 2000

The 2nd World Congress on the Ageing Male is sponsored by the International Society of the Study of the Ageing Male, WHO, and the European Association of Urology (EAU). This Congress is intended for practitioners, experts and researchers of medical, behavioural and social sciences as well as for providers of services and technologies for the ageing population. Topics will cover the areas of: health services research and the national policies towards the ageing male; quality of life; endocrinology of men (hormone levels, androgen therapy); uro-genital problems (prostate cancer, prostate hypertropy, incontinence); erectile dysfunction; the ageing male in the developing world; sleep disturbance; growth hormone; obesity, and diabetes.

For further information contact: Secretariat, 2nd World Congress on the Ageing Male, Juoni Congress, PO Box 1731, 7 Rue de Berne, CH-1211, Geneva 1, Switzerland; tel +41 22 908 1855; fax +41 22 908 1835; email agingmale@kuoni.ch website http://www.kenes.com/aging/

FEATURES

WHO

The Global Movement for Active Ageing

The overall objective of WHO's Ageing and Health Programme is to achieve a sustained and continuing improvement in the health status and well being of older persons around the globe, in developing and developed countries alike. During the International Year of Older Persons 1999, with the focus on creating a society for all ages, WHO launched the Global Movement for Active Ageing through a world-wide walk event, called the Global Embrace.

The Global Movement is a new network for all those who are interested in moving policies and practice towards Active Ageing. The challenge is to understand and to effectively promote the factors that keep people healthy. The messages of the Global Movement point to the central role of health in ensuring a fulfilling older age, what the individual can do to remain healthy and active at older ages, and what policies should be developed and implemented at all levels. The Movement also aims to replace prevailing stereotyped images of old age with more accurate images of older persons as contributors to society in many different ways.

The official launch of the Global Movement for Active Ageing took place world wide on 2 October 1999 through a series of walk events and celebrations around the globe. On this day, in time zone after time zone, celebrations marked the fact that people are living longer in better health, thanks to progress in hygiene, nutrition, public health, and living circumstances. Both Fiji and New Zealand were the first to launch the celebration. From there the Global Embrace continued through many cities in Asia. From here walks continued through the Middle East and Africa. In Tanzania, the slogan "Old is Gold" was chosen to serve as a reminder of the important roles older people play in traditional societies. Then the walk went on to Europe where celebrations for Active Ageing took place in many different cities in all parts of Europe. In London, for example, the walk started at historic Tower Bridge and ended at the Royal Festival Hall with entertainment and information booths all along the way. The Finnish City of Turku organized a walking festival to explore the various ways one can walk: on a tightrope, on wooden legs, on one's hands, power walking with skipoles, outdoor and indoor walking, etc. Finally, celebrations reached the Americas. In New York City, the organizers had chosen the theme "Ageing Out Loud" for their walk and celebration in New York's Central Park to let us all know that ageing is something we can be proud of, it is not to be feared but it is a natural part of the life-span process. Throughout Latin America and the Caribbean, many cities joined the walk. In Bogotá, the Colombia, a human chain with 10 000 participants was organized in the main park of the city. Altogether, almost 3000 cities and towns throughout the world joined this event.

The thinking behind this global walk event was quite simple: as there are still negative stereotypes associated with old age in many societies, a participatory event that promotes a positive and active image of ageing helps to dissipate these prejudices and stereotypes. Eliminating ageism is an essential prerequisite for enabling older people to contribute to their societies and for building a harmonious, intergenerational, global community. The walk events enabled health care workers, concerned activists, and policy-makers to initiate a dialogue with the general public on what determines healthy and active ageing. After launching the Global Movement for Active Ageing, WHO's Ageing and Health Programme (AHE) is now compiling evidence of policies and programmes which are models of good practice for Active Ageing. To facilitate information dissemination networking and research on all aspects of Active Ageing, AHE is working to set up a system of information centres on healthy ageing which will ensure that information is exchanged throughout the world.

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NUTRITION IN EMERGENCIES

Older Refugees

By UNHCR

Older refugees make up a much larger proportion of the UNHCR caseload than might be expected. It has long been assumed that older people were more likely to choose to stay in their place of origin, or, unfortunately, to perish in flight or to pine away and die in exile. In fact, older refugees make up about 10% of the population of concern to UNHCR (up to 30% in Armenia). In many situations they are over-represented in refugee populations, particularly older women. Of course, definitions of "older" reflect average life expectancy of the region concerned; they range from the age of 46 in Ethiopia to 73 in Venezuela.

A 1998 UNHCR evaluation entitled *UNHCR Assistance to Older Refugees,* which was undertaken to identify the problems of, and propose solutions for, older refugees. Three crucial factors were identified: older refugees are in situations of social disintegration, negative social selection, and chronic dependency.

Economic decline is the main factor behind the erosion of social support systems, whether formal or informal, resulting in a drastic reduction of living standards for the poorest. Refugees are among the hardest hit; the separation and dispersal of families as a result of war, flight and economic or security pressures, results in a rise in the number of unaccompanied older persons in need. In many cases, families have to make painful choices to abandon older relatives in order to survive.

In Eastern Europe, the comprehensive pension, health care and social welfare systems of the socialist era have not survived the transition to a market economy. This has led to a dramatic drop in the standard of living of all those who previously depended on State welfare - principally older persons. Hardest hit are the victims of forced displacement such as those in the former Yugoslavia and in the Caucasus region who lost not only the value of their former entitlements, but also their homes and all their economic assets.

The gradual but no less painful erosion of traditional support networks in developing countries is much less well known. Economic decline, social mobility and the pace of social change have eroded traditional community values in refugee settings. Older persons no longer enjoy the same authority, care and attention they had in the past: not all elderly are elders. As a result, unaccompanied older refugees in developing countries may face situations of utmost misery and destitution. In both the Sudan and Yemen, the poorest among them live a totally marginalized existence as beggars. Poor nutrition, appalling living conditions and lack of medical attention result in their life expectancy being severely curtailed.

The term "negative social selection" is used in the former Yugoslavia to describe the manner in which camps and collective centres empty over time. Those who are young, healthy and able bodied are the first to depart, leaving behind the more vulnerable members of the group: the sick, the handicapped, single mothers with young children and older persons. At the end there remains a core of mostly older persons who have nowhere to go and no one to take care of them. In this way, some collective centres in Bosnia and Herzegovina, Croatia and Serbia have become geriatric wards in all but name.

This phenomenon is not limited to the former Yugoslavia but is, to a greater or lesser extent, a spontaneous process characteristic of camps and collective centres everywhere. In the Sudan negative social selection has been an important factor in nullifying UNHCR's 20-year efforts to help wage-earning settlements become self-sustaining. These settlements now comprise a disproportionate number of small children, single-headed households and elderly who live in extremely poor conditions and remain wholly dependent on the continuation of assistance provided by UNHCR and WFP.

Government resettlement policies can contribute to the negative selection process by discriminating against elderly applicants who may not pass medical screenings and are left behind in countries of first asylum, painfully separated from the rest of their kin. Reports received from UNHCR Branch Offices in different parts of the world indicate that this is a common problem.

Many refugee situations produce a residual caseload of solitary older persons who have not found a durable solution, are unable to secure state benefits or family support, and may become dependent on UNHCR for long periods of time. UNHCR currently provides allowances to destitute Russians and Armenians, who became refugees in the 1920s, in countries as far afield as Argentina, Egypt, Morocco and Venezuela. Many of the 170 frail older persons in Cairo who currently rely on UNHCR assistance originally came to Egypt as orphans and remain stateless. While they were self-supporting as healthy adults, now they are dependent on support from UNHCR. Most are women who never married.

Handbook for Emergencies

The UN High Commissioner of Refugees (UNHCR) has just published the second edition of this Handbook for Emergencies. The revised and updated Handbook provides useful guidance as UNHCR continues to cope with the swift and increasingly dangerous nature of fresh displacement. It stresses the importance of pre-emergency planning, as well as planning throughout every stage of a crisis. It focuses on setting coordination priorities, as well as contingency and operational planning. Important information has also been included regarding staff safety and working with military personnel, as well as a section addressing the issue of how to cope with personal stress. Reflected in this edition is the dedication and experience of field staff and specialists both within the office and from partner organizations, which spans the last 17 years since the original UNHCR Handbook was first published. This Handbook will assist colleagues to meet the challenges ahead as we cope with the changing nature of emergencies. It should serve as a reminder that displacement crises require carefully prepared and well managed responses that optimize the unique strength and capacities of various groups and organizations.

The handbook is structured as follows: Section One summarizes UNHCR's mandate of international protection and the aim and principles of emergency response; Section Two deals with emergency management; Section Three covers the vital sectors and problem areas in refugee emergencies, including health, food, sanitation and water, as well as key field activities underpinning the operations such as logistics, community services and registration. The chapters in this section start with a summary so that readers, who might not need the full level of detail in each of these chapters, can understand the basic principles of the subject quickly; Section Four gives guidance on the support to field operations, primarily administration and staffing; and the Appendices include UNHCR's Catalogue of Emergency Response Resources, which set out what resources can be immediately deployed, and how and when. The appendices also include a "Toolbox" which gathers, in one location, the standards, indicators and useful references used throughout the handbook.

In addition to the Catalogue of Emergency Response Resources, another key companion reference is the Checklist for the Emergency Administrator to which is annexed many of the essential UNHCR forms, policy documents, and guidelines referred to in this handbook, which are necessary for the administrator establishing a new office.

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Inter-Agency Workshop on Assessment and Targeting in Ongoing Refugee Situations

This workshop was hosted by WFP on 3-5 November 1999 in Rome. Technical staff from NGOs were well represented; other participants included UNHCR staff, a donor representative, and independent consultants. The primary purpose of the workshop was to discuss and seek consensus on issues relating to assessing food security, targeting food assistance, promoting self-reliance and determining when and how to phase out food assistance among refugees in ongoing 'care and maintenance' situations. Presentations considered the limits of the current Joint Food Assessment Missions and the different types of food security/household economy methodologies currently in use. Several case studies outlined the difficulties of developing and undertaking efficient targeting and ration reduction systems. Examples were drawn from several situations including the Sudan, Kenya, Mauritania, United Republic of Tanzania and the Balkans region.

The full report of this meeting will be available through the Emergency Nutrition Network, Department of Community Health and General Practice, Trinity College, 199 Pearse Street, Dublin 2, Ireland.

The Global Internally Displaced Persons (IDP) Database of the Norwegian Refugee Council

As a response to a growing need for information on IDPs, the Norwegian Refugee Council has created the Global IDP Database. The various facets of internal displacement are documented, ranging from population figures to specific protection needs of the IDPs at the different stages of displacement, as identified in the UN Guiding Principles on Internal Displacement. All countries affected by internal displacement (currently over 50 countries) will ultimately be included in the database.

Even in countries strictly closed to external scrutiny, local NGOs, opposition groups in exile, and research institutions manage to collect and disseminate information on the web, much of which needs to be checked for accuracy. A good starting point to identify sources, which may not maintain a direct presence on the web but are likely to have useful information, is through resource directories, cross references, and discussion groups one the web. These sources must then be contacted individually by e-mail or other means. This time-demanding process is being performed by the Norwegian Refugee Council/Global IDP Survey from its office in Geneva. Much of the information is gathered through Internet access, although existing contacts from relevant NGOs, UN agencies, research institutions, and interested individuals, are encouraged to submit public information and to validate information posted in the database. The project provides a valuable service to a wide range of users: e.g., desk officers, researchers, journalists. Field workers who have already received compiled information by post or electronic mail, have expressed their satisfaction with the database results. Cooperative contacts have been established with other humanitarian information management systems, such as the ACC/SCN's *RNIS*, for the mutual enhancement of research

and networking capacities. Humanitarian and human rights information cannot be embraced by one single system but is best served through a rational burden-sharing between specializing information projects, to which the Norwegian Refugee Council is proud to contribute.

The database will be accessible on the web from 10 December 1999 under the following URL: http://www.idpproject.org (The evaluation version of the database is available at: http://tornado.jstechno.ch/nrc/nrcdefault.html)

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Gender Issues In Natural Disaster Emergencies
By Shubh Kumar-Range

In the past year, natural disasters were responsible for more damage than ever before, and there is authoritative evidence of a trend towards more weather triggered super-disasters such as those caused by Hurricane Mitch.[1] According to the 1999 report by the International Federation of the Red Cross and the Red Crescent Societies (IFRCRCS), natural disasters created more 'refugees' than wars and conflict in 1998. In the past six years, the number of people to whom such assistance was provided rose from less than half a million to more than five and a half million. The report also indicates that declining soil fertility, drought, flooding, and deforestation drove 25 million 'environmental refugees' from their land into the already vulnerable squatter communities. This group represented 58% of total refugees worldwide. The main reasons for this are increasing environmental problems created by global warming and deforestation, overlapping with increasing concentrations of poverty. In the past, natural disasters were seen to occur as a result of natural forces impacting on human systems, and requiring technological and engineering solutions for their mitigation. Increasingly however, it is the social dimensions of natural disasters that are seen to be responsible for the human suffering in the aftermath of these events. As disaster relief and recovery efforts have consumed more and more development resources, sociologists and relief professionals are increasingly examining the social and political characteristics of human organization that contribute to vulnerability in such disasters, so as to more effectively mitigate their effects. This body of work persuasively argues that characteristics of human organization produce inequalities and vulnerabilities, which in turn influence the dimensions of natural disasters.

Gender relations, being an intrinsic part of human organization, are thus central to understanding how communities are affected by, and respond to, natural disasters. A recent paper reviewing the experiences of disaster mitigation and recovery efforts and the relevance of gender dimensions[2] shows that a combination of weaker entitlements and home based responsibilities tend to limit women's coping capacity. However, women are active in their communities and families in assisting the recovery, despite being less likely to benefit from official disaster assistance. Recognizing and mobilizing women's social force and channeling it to enhance efforts to protect their safety and that of their dependent children, is a necessary ingredient of effective disaster preparedness and response.[3] A better understanding of socioeconomic and gender dimensions brings the interface between sustainable development and disasters into clear focus. Unsustainable patterns of development, or the absence of development, can be precursors of disaster. Natural disasters are especially devastating for the poor, who depend on natural resources for all aspects of their livelihood -- income, food, fuel, water and housing. This makes already precarious living conditions in disaster prone areas suddenly much worse. From this perspective, disasters in low-income countries often produce only a more acute, more extreme form of the chronic daily suffering of many people. Women's effective participation in development is at the core of sustainable poverty eradication. Their involvement in both economic production and household maintenance is key to human capital investment in terms of health and education of children, and hence to future economic performance. To the extent that gender inequities limit sustainable development, they also contribute to predisposing populations to disasters. Counteracting the foundations of gender stereotypes (in which women face obstacles to organizational success and in participation in institutional recovery efforts within disaster programs) could have large developmental benefits as well. Surprisingly, disaster conditions may offer even better opportunities for enhancing gender equity, than under the 'business as usual' of development programmes. Following a disaster, the political environment may favour a much higher rate of economic and social change than before, and facilitate long term benefits.

Extensive case material on disaster experiences suggests that community based mitigation is more likely to meet needs of vulnerable groups, and also to better involve women.[1] Women's groups or associations that have formed spontaneously during disasters, or have reoriented their activities to deal with disaster responses, are a resource to be fostered and used in facilitating community involvement. These have demonstrated community leadership, and can inspire trust. When built on these emerging institutions, disaster responses can be effective in mitigation, and also promote long term involvement of women in their community's development.[4,5] It is necessary, however, to provide better guidance to government officials and outsiders who generally find it easier to deal with the prevalent male power structures in communities. In order to achieve this, a more systematic analysis of local institutional development and capacity building, and on success of alternative community based approaches for incorporating gender perspectives, is needed.

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To obtain a copy of the full report, contact Dr S Kumar-Range, kumarrange@aol.com.

PROGRAMME NEWS

Agencies Report on Nutrition Activities

C I D A

Canadian International Development Agency

Food Security

On October 16 1998, World Food Day, Canada's Action Plan for Food Security: a Response to the World Food Summit (WFS) was released. The plan was prepared by a Joint Consultative Group representing both government (federal and provincial) and civil society. The latter included non-governmental organizations, representatives, farmer's unions, professional associations and universities. The plan follows the seven commitments endorsed by 187 countries as the WFS Plan of Action and details Canada's domestic and international response. Ten priorities are identified by the consultative group and include the right to food, poverty reduction, production and access to safe and nutritious food, Aboriginal and coastal communities' food systems, environmental sustainability and fair trade. The document is meant to be a flexible blueprint with specific actions, timing, roles and responsibilities defined over time. Civil society is a full partner in the plan with unique responsibilities in its design, implementation, and follow-up.

Of particular interest to nutritionists is the recognition that breastmilk is crucial to food security for infants, that both production and equitable access to food must be addressed, and that food must be not only be sufficient in quantity but must also be safe and nutritionally adequate. It is understood that ensuring access to food will have a limited impact unless individuals live under conditions that support the effective utilization of that food including education, primary health care, potable water and sanitation as well as sustainable access to fuel. Ensuring women's access to resources such as land, training, credit, inputs and time is an important part of the plan including implementation of the Platform for Action from the Fourth World Conference on Women.

Given its poverty reduction mandate and the high priority accorded to basic human needs, CIDA's current support to food security programming is extensive. Relevant multilateral programmes encompass breastfeeding promotion and protection (in the context of HIV), elimination of micronutrient deficiencies, developmental and emergency food aid, support to agricultural research, and microcredit. On the bilateral front, the Africa Branch has prepared a regional food security strategy and this theme is a key component of the country policy framework for Ghana and Ethiopia.

The Multilateral Programmes Branch and Policy Branch share the responsibility for monitoring implementation of the Action Plan. Initial efforts have been made to document and harmonize food security programming across the Agency. In addition, CIDA's Senior Agriculture Specialist is developing corporate guidelines for enhancing the effectiveness of food system programming and support has been provided to IFPRI for improving statistical methodologies associated with food security measurement.

Canada's Action Plan for Food Security may be found on the internet at: http://www.agr.ca/cb/fao/emain.html

CIDA Contacts for Food Security: Iain MacGillivray, Senior Agriculture Specialist, email iain_macgillivray@acdi-cida.gc.ca Barbara Macdonald, Senior Nutrition Specialist,email barb_macdonald@acdi-cida.gc.ca Sandra Poohkay, Deputy Director, Food Aid Centre, email sandra_poohkay@acdi-cida.gc.ca

FAO

Food and Agriculture Organization

Follow-up to the FAO/WHO International Conference on Nutrition

Seven years after the FAO/WHO International Conference on Nutrition was held in Rome, the strategies adopted at the conference continue to have a significant impact on nutrition policies and programmes throughout the world. Countries have formulated and implemented National Plans of Action for Nutrition (NPANs) to varying degrees, and as the end of the decade approaches, it is necessary to review progress in their development and implementation. It is important at this juncture to identify constraints as well as key elements of success in attaining the ICN goals, and to discuss additional actions and support which may be required. FAO, WHO and UNICEF are jointly sponsoring workshops on ICN follow up. One was in Kuala Lumpur, Malaysia, 25-29 October 1999 and another will take place in New Delhi, 8-10 December 1999.

Participatory Approaches to Improving Nutrition

Community nutrition in Mauritania: FAO is assisting the Secrétariat d'Etat à la Condition Féminine in Mauritania to prepare for a World Bank funded LIL (Learning and Innovation Loan) project. The project includes three main components: the promotion of a participatory nutrition approach (combining inter-institutional planning at regional and district level, and participatory appraisal and planning in selected communities); an inventory of natural resources according to their contribution to food security and nutrition and; support to communication and nutrition education activities. Project staff were trained

in techniques to assist institutions in identifying causes of malnutrition and creating local strategies to address these problems. This provided the basis for a Participatory Rural Appraisal (PRA) training for food security and nutrition, which was carried out in Nouakchott. Project staff were trained in participatory communication as well. Such training is a pre-requisite for the success of the LIL.

Developing technical guides in Madagascar: As part of the World Bank funded project, Surveillance et Education de Ecoles et des Communautés en matière d'Alimentation et des Nutrition Elargie (SEECALINE), the government of Madagascar has asked FAO to prepare technical material in the field of food and agriculture. FAO will hold workshops to allow the different development institutions operating in each district to share experiences and information and agree on a local strategy to improve the food and nutrition situation. Communities will then be selected to test the interventions identified. These tests will be developed as part of a participatory process, which will involve field workers from different sectors (education, health, and agriculture). The project was launched in October 1999 with an initial workshop in which project staff were trained to facilitate inter-institutional workshops using techniques to understand the causes of malnutrition for food insecure groups and to create local strategies to improve food security and nutrition. The district level phase will be followed in early December with PRA training for food security and nutrition prior to the community level phase starting in January 2000. The project is expected to contribute to the re-orientation of food habits through the better use of existing food sources in the different agro-ecological zones (through diversification of food production, food processing at household and community level and food preparation, including child feeding) and to add to SEECALINE Information Education Communication strategy.

I A E A

International Atomic Energy Agency

The IAEA is about to start a new Coordinated Research Programme (CRP) on "The use of isotopic techniques to examine the significance of infection and other insults in early childhood to diarrhoeal morbidity, malabsorption and failure to thrive". IAEA **wants at least 2 or 3 African countries to participate**. Immediately contact Dr G Venkatesh Iyengar, Head, Nutrition & Health Related Environmental Studies, IAEA, PO Box 100 A-1400 Vienna, Austria; tel 43 1 2600 21756; fax 43 1 26007; email v. iyengar@iaea.org

Isotopic Evaluations of Maternal and Child Nutrition to Help Prevent Stunting

The concept for this CRP was a consequence of discussions held between IAEA staff (Ms Carla Fjeld and Ms Hinke Haisma), and participants in a regional training course on "Isotope Techniques in Human Nutrition" held in Lima, Peru in June 1996. The intention then was to develop research on factors influencing the success of lactation and the consequent effects on the breastfed child. The project would have Latin American participants to promote regional exchange of expertise and ideas. Initial participation was from Argentina, Chile, Mexico, Peru and Venezuela. Brazil and Pakistan have now been added to these. The Pakistan participant, Rakhshanda Bilal, was working at U. Sao Paulo at the time of this meeting so the Latin American principal can be said to remain.

Isotopic ratio mass spectrometry (IRMS) has been used for work in hydrology at The Chilean Centre for Nuclear Energy (CChEN) for many years. In the '80s Carlos Infante Barros, a physicist at U Chile, and Fernando Vio del Rio (U Chile/INTA) realised that these facilities could be used to apply newly developed methods for measuring breast-milk intake and in the next few years several publications emerged. This was the start of INTA's transition from a traditionally oriented nutrition institution to a site employing the best of modern scientific tools, including mass spectrometry for nutrition research. IAEA has assisted in many of these developments including the recent purchase of IRMS equipment for both U Chile and CChEN. A potentially similar opportunity for linking facilities originally acquired for hydrology to nutrition work also exists at PINSTECH in Pakistan but for all the other groups in this CRP, both the technology and application in the measurement of breastmilk intake are new. There are, therefore, three specific research objectives:

1. To develop stable isotope methods for measuring breastmilk intake using regionally available equipment;
2. To apply the methodology in the assessment of milk intake in infants in relation to maternal nutrition, socioeconomic status and education, and infant nutrition and intake of macro- and micronutrients;
3. To use information gathered at 2) to determine the need for supplementation programmes for mothers and/or infants, and educational programmes for the mothers.

"It is not by muscle, speed, or physical dexterity that great things are achieved but by reflection, force of character, and judgement; in these qualities old age is usually not only not poorer, but is even richer."

—Cicero (106-43 BC)—

I F P R I

International Food Policy Research Institute

Linking Agriculture and Nutrition

IFPRI recently organized an interdisciplinary workshop, "Improving Human Nutrition Through Agriculture: The Role of International Agricultural Research", held 5-7 October 1999 in Los Banos, the Philippines, and hosted by the International Rice Research Institute (IRRI). This workshop brought together 90 agricultural and nutrition scientists from around the world to discuss the merits of breeding staple food crops for micronutrient density and the need for greater attention to existing food-based approaches for reducing malnutrition. Eleven international agricultural research centers belonging to the Consultantive Group on International Agricultural Research (CGIAR) presented their research that is explicitly driven by concerns for human nutrition. Scientists from outside of the CGIAR and representatives of multilaterals, bilaterals, and NGOs also attended.

Research findings from the IFPRI research project - Identifying Agricultural Strategies for Reducing Micronutrient Malnutrition - provided a focus for many of the discussions. IFPRI and research institutes in Columbia, Mexico, the Philippines, Australia and the United States have collaborated on inter-disciplinary projects to develop micronutrient-dense staple food crops (rice, wheat, maize, beans, and cassava) using traditional breeding techniques based on genetic material contained in international germ plasm banks. The most progress has been made on rice - a high-yielding, iron-dense, aromatic rice variety has been identified. Human nutritionists are planning a feeding trial to test for the bioavailability of the extra iron in this specific variety. At the same time they are working with the plant breeding community to look at further modifications of crops which could lead to greater intake of bioavailable minerals and vitamins. The expectation is that by getting plants to be self-fortifying, a breeding strategy will provide a low-cost, sustainable intervention to reduce micronutrient malnutrition.

Food-based approaches to improving vitamin and mineral intakes that already exist were also discussed. Extensive research is underway to strengthen their impact on dietary quality and human health. Researchers presented work on the benefits of diversifying diets and the need to support research efforts to increase the supply and consumption of non-staple foods such as vegetables, fish and livestock and to reduce the negative effects of naturally occurring toxins in the food system that inhibit nutrition and consequently, human growth and development. Participants agreed that more emphasis should be placed on agriculture's role in the fight against micronutrient and other forms of malnutrition among the poor. To that end, workshop participants agreed to pursue an effort to establish a transdisciplinary CGIAR systemwide initiative on human nutrition that would involve collaborative partners both inside and outside of the CGIAR. Research efforts within that initiative would involve plant breeding and other food-based activities to reduce malnutrition in developing countries.

Contact: B McClafferty, Food Consumption & Nutrition Division, IFPRI, 2033 K St NW, Washington DC 20006-1002 USA; tel: 202 862 5600; fax: 202-467 4439; email b.mcclafferty@cgiar.org website http://www.cgiar.org/ifpri

[Ed. Note: The next issue of SCN News *will focus on the topic "Nutrition and Agriculture" – this inspiring news should encourage readers to send us articles, materials and publications related to this theme.]*

I U N S

International Union of Nutrition Scientists

Capacity Building

The IUNS in collaboration with the UN University is playing a lead role in capacity building — nutrition expertise and operational capacity — including strengthening the infrastructure for nutrition policies and implementing national strategies in developing countries. A workshop for that purpose was held in June 1999 in Cape Town, South Africa. The major part of the workshop was devoted to issues related to the types of professionals needed to implement the growing knowledge base available to the nutritional sciences. It also devoted some time to evaluate the supplementary role that short term training plays in the recruitment and preparation of professionals for specific purposes or upgrading and/or broadening of skills. The enhancement of national and regional research capacities was also a part of the discussions. The anticipated outcome of the workshop is a regional plan including training, research, and establishing linkages between regional and global expertise and centers of excellence. The plan of action will provide a framework for investment by donor agencies. It is expected that participants will take stock of progress in developing human and institutional capacity for nutrition in southern Africa. They will also examine the disciplinary and interdisciplinary competencies essential to meet specified regional needs. They will explore the possibilities for strong collaborative relationships among training and research institutions and policy and program implementing agencies in the region, and discuss appropriate collaborative South-South, South-North, and North-South relationships. A follow-up action group was established to elaborate the plan.

The International Council for Science (ICSU) met for the 26th Session of ICSU's General Assembly in Cairo, Egypt

from 26-30 September 1999. Their symposium on "Sciences and Food Security" included several speakers on various aspects of food security. Dr. Osman Galal, Secretary-General of IUNS, gave a presentation on "Food Safety and Food Health." IUNS is engaged in organizing the home page that was developed recently. Reports from committee and task-force activities and highlights in nutrition information will be published on the home page as well as important scientific issues that are of interest to worldwide nutritionists. Refer to http://www.iuns.org for information on IUNS structure and functions.

M I

Micronutrient Initiative

Double Fortified Salt (DFS)

Two key micronutrients, iron and iodine, are present in inadequate quantities in the diet of more than a billion people in developing countries. Salt has been chosen as a vehicle for fortification as a staple food that is widely consumed and available for central processing to be fortified with nutrients. DFS is a high purity, dry, table salt, fortified with ferrous fumarate and encapsulated with potassium iodate. The iodate is encapsulated with dextrin using a spray drying technique. The MI has tested the salt on four different levels:

Stability: Over one year of storage in various conditions such as high density polyethylene bags, paper bags, polyethylene jars and low density polyethylene bags has found the salt stable with very mild colouration, not objectionable by consumer acceptability tests.

Consumer Acceptability: Products made with local and iodized salt were acceptable to consumers with the exception of certain vegetable dishes such as plantain, which darkened when cooked with DFS. Encapsulation is expected to overcome this problem.

Efficacy: A double-blind placebo controlled study was conducted in Ghana to test the efficacy of the DFS in preventing anaemia and IDD in mildly anaemic women and their families. The use of DFS proved to be as efficacious as a weekly iron supplement in preventing anaemia in women. DFS also prevented and alleviated anaemia in children, and iodine deficiency in both women and children.

Production Feasibility: The feasibility was explored through refinement of technology developed to date, and reduction of its complexity in order to effectively transfer the technology to local salt suppliers. The technology used for encapsulation (spray drying), though effective, is too complex to be widely introduced in developing countries. A similar technology involving encapsulation/agglomeration is sought to (a) develop a simple agglomeration technology for enclosing the iodine in a moisture resistant capsule, and (b) simplify and refine the technology that will enable centralized facilities in developing countries to manufacture a pre-mix for distribution to local salt suppliers to mix with the local salt. To this end, trials are underway at Guelph Food Technology Centre (GFTC). MI expects to go to country implementation of DFS trials within the coming six months in India, Nigeria and Ghana.

Contact T Guay, MI, tel 613 236 9579; email tguay@idrc.ca

W H O

Nutrition for Health and Development

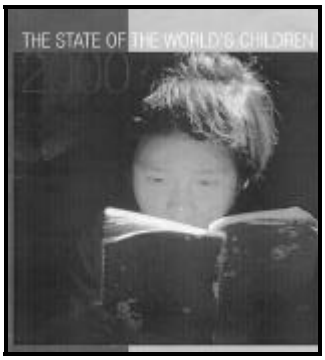
Nutrition in Adolescence

Dr. Hélène Delisle, professor at the Department of Nutrition of Université de Montréal's Medical Faculty, spent part of her sabbatical leave with the Nutrition for Health and Development Department (NHD), WHO. She prepared a review and discussion paper on *Nutrition in Adolescence* in collaboration with the Department of Child and Adolescent Health. She also drafted a review paper on *Foetal Nutritional Programming*. The purpose of the discussion paper on *Nutrition in Adolescence* was to lay out in specific terms what is known - or not known - on the subject, and to spell out action recommendations for WHO, and to clarify the evidence base for them. The review concludes that adolescents are nutritionally vulnerable and deserve more attention. Priority nutritional areas are: iron deficiency anaemia and other micronutrient deficiencies, particularly in adolescent girls; severe undernutrition in adolescents in emergency situations; obesity and other nutrition-related chronic disease risks. The nutritional, health, and socio-economic consequences of adolescent pregnancy, are also underlined. It is felt that explicit policies for adolescents' nutrition are needed at country level in order for the specific nutrition issues of this lifecycle group to be adequately addressed. Well designed programmes to improve nutritional status of girls, with particular emphasis on micronutrients, before (and during) their first pregnancy, are regarded as critically important. Food-based approaches are emphasized, although they will often need to be complemented by nutrient supplementation schemes using various channels. Promoting healthy lifestyles and eating patterns among adolescents is considered crucial, particularly in urban settings and in schools, in order to halt the progression of obesity and reduce nutrition related chronic disease risks. The development of culturally acceptable and location-specific dietary guidelines appear significant for this purpose. In emergency settings, adolescents may be seriously affected by malnutrition and yet be neglected. Better anthropometric assessment and management of severe malnutrition in adolescents is deemed important. Research needs are to: define anthropometric standards; better document eating patterns and determinants; assess their micronutrient status and the implications; and to measure the effectiveness and impact of dietary improvement in adolescent girls before and during pregnancy.

Contact: Dr G Clugston, WHO/NHD; email: clugstong@who.ch

PUBLICATIONS

The State of the World's Children 2000



The State of the World's Children 2000 seeks to fan the flame that burned so brilliantly a decade ago, when world leaders adopted the Convention on the Rights of the Child in 1989, and then confirmed their commitments for children and adolescents at the 1990 World Summit for Children. It is a call to leaders in industrialized and developing countries alike to reaffirm their promises for children. It is a call for vision and leadership within families and communities, where the respect for the rights of children and women is first born and nurtured and where the protection of those rights begins.

Despite the progress made, the last decade has also witnessed countless abuses of women and children. The section of this report, "Undeclared war", discusses four of the most daunting obstacles to full human development: HIV/AIDS, armed conflict and violence, increasing poverty, and gender discrimination. The chapter, "In a single generation", is based on the belief that intergenerational patterns of poverty, violence, disease and discrimination can be broken in a single generation. This section offers compelling arguments about the power of early childhood care, quality education, and participation and development for adolescents in ensuring children's rights and human development. In addition to eight statistical tables which summarize data on the well being of children from 193 countries, and six maps which illustrate child and adolescent populations, there are ten pages of evocative photographs showing the strength of families, communities, women, children and adolescents. Also noted are 52 individuals who have distinguished themselves by their work on behalf of children.

Published by UNICEF, ISBN: 92 806 3538 8 US $12.95 Contact: Div of Communication, 3 UN Plaza, NY NY 10017 USA; email: pubdoc@unicef.org

The State of Food Insecurity in the World 1999

To fight world hunger, policy makers, the public and the media need to know precisely who is hungry and why. This is the information contained in FAO's latest publication, "The State of Food Insecurity in the World 1999" (SOFI). SOFI provides detailed data on the number of people facing hunger by region and looks at a broad range of factors that contribute to food insecurity. The report offers some encouraging news. Since 1990/92, the number of people going hungry in developing countries has declined by 40 million. Food insecurity fell in 37 countries between 1990/92 and 1995/97. But the number of hungry people in developing countries remains unacceptably high, at 790 million. The findings in SOFI make it clear that at the current rate of progress – 8 million fewer food insecure people each year – the World Food Summit's goal of reducing the number of hungry people in the world by half by the year 2015 will not be reached. SOFI also presents the first data on hunger in industrialized regions. According to SOFI, around 34 million undernourished people are living in developed countries. More than 75% of them are in the countries in transition in Eastern Europe and the former Union of Soviet Socialist Republics.

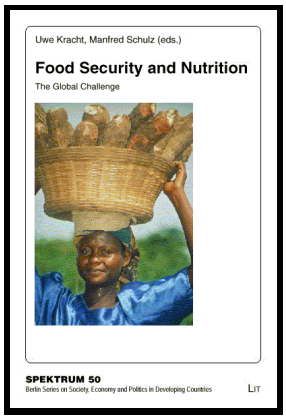
Contact B Huddleston, Chief, Food Security Service, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy; telephone 39 06 570 53052; email barbara.huddleston@fao.org

Food Security and Nutrition: The Global Challenge

Edited by
Uwe Kracht and Manfred Schulz

This book is a response to recent advances in the understanding and conceptualization of food security and nutrition problems and their underlying food and non-food causes. In it, over 40 experts and leading authorities from academic and development institutions, multilateral and bilateral aid agencies and non-governmental organizations take a fresh analytical look at world hunger and the strategies to eliminate it. The book is divided into five parts:

Part I deals with concepts, trends and projections into the early 21st century; Part II presents nine case studies on selected topics drawn from the world's major regions; Part III discusses present and future strategies to overcome hunger and



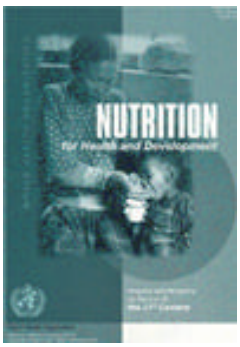
malnutrition; Part IV examines the institutional framework for international cooperation and an emerging global policy and action agenda; and Part V synthesizes the food security and nutrition outlook and policy agenda. The book addresses such emerging topics as the ethical dimension of development and, in this context, the role of human rights in solving food and nutrition problems. Considerable space is given to the future role of technology in feeding the world's growing population in the long run, in

particular biotechnologies and genetic engineering, and the implications of a transition from the Green Revolution to the Gene Revolution. Against the background of growing local and regional conflicts, the book also addresses the humanitarian challenge of famine prevention in civil strife.

The book is designed to further interdisciplinary debate and understanding of this vital issue among all concerned with the sustainable development and future of our Planet. In particular, it addresses all those involved in one way or another in the fight against hunger, malnutrition and poverty and, more generally, in international development cooperation. It is equally intended as a reader for teaching at the higher education and university levels.

This 1999, 692pp hardcover book (ISBN 3-8258-3166-3 Germany; ISBN 0-312-22249-1 USA) may be ordered from: LIT Verlag, Grevener Str. 179, D-48159 Münster, Germany, Fax: +49-251-231972, e-mail: hopf@lit-verlag.de or from: St. Martin's Press, Inc., Scholarly and Reference Division, 175 Fifth Ave, NY, N.Y. 10010.

Nutrition for Health & Development Progress and Prospects on the Eve of the 21st Century



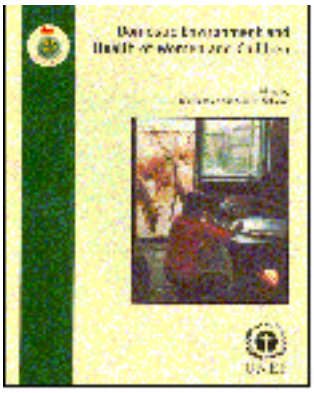
Nearly half of the more than 10 million deaths among under-five year old children each year in developing countries are associated with malnutrition; iodine deficiency is the greatest single preventable cause of brain damage and mental retardation; and vitamin A deficiency remains the greatest preventable cause of needless childhood blindness. Concurrently, particularly in rapidly developing and industrialized countries, there is a massive emerging obesity epidemic among children, adolescents and adults – in some cases affecting more than half of the adult population. The human health consequences are dramatic since obesity is such a major risk factor for heart disease, hypertension, stroke, diabetes, some cancers, and other chronic degenerative diseases. Resources allocated to preventing and reducing infectious and noncommunicable diseases will be effectively invested only to the extent that the underlying causes of malnutrition are successfully engaged. With malnutrition at the very centre of poverty and underdevelopment, it is essential for health focused development to promote healthy nutrition.

This report summarizes WHO's approach to combating the major forms of malnutrition and describes the related technical support that WHO is providing its Member States, in close collaboration with the international community, at global and regional levels. It sets out WHO's vision, mandate, aim and objectives for good nutrition and it provides an up-to-date analysis of the current magnitude and distribution of malnutrition. The report also summarizes activities and achievements in the programme's seven priority action areas: protein-energy malnutrition; micronutrient malnutrition including iodine, vitamin A and iron deficiencies; obesity; infant and young child feeding; national nutrition policy and planning; nutrition in emergencies; and food aid for development. Finally, the report highlights WHO's nutrition research work, global and regional nutrition surveillance activities in the programme's seven nutrition data banks, and its worldwide network of collaborating centres in nutrition.

WHO/NDH/99.9 p122, Progress Report June 1999 contact NDH, WHO, 20 Avenue Appia, CH 1211 Geneva 27 Switzerland; fax +41 22 791 4870; email: info@who.ch

Domestic Environment and Health of Women and Children
Edited by
HNB Gopalan and S Saksena

The household environment of poor people, especially women and children in developing countries, carries great health risks. These risks are typically 'traditional' in nature i.e., they're associated with a lack of development. Household environmental problems typically include overcrowding, lack of sanitation and garbage disposal, indoor air pollution, and vector-breeding grounds. It has been estimated that



about 30% of the global burden of disease could be averted by improvements in the household environment and of these, 20% are just modest interventions. Health risks associated with the domestic environment include lower respiratory infections in children, diarrhoea, and adverse reproductive outcomes.

This book is an assessment of the state of knowledge, contemporary situation, and status of scientific data that links domestic environmental parameters to the health of women and children. It identifies critical knowledge gaps and needed research. Further, it provides policy options, guidelines, possible interventions, and regulatory tools for improving their health. Estimations are based on modern analytical tools such as total and integrated individual daily exposure, burden of disease and disability adjusted life years used in risk assessment. A few important epidemiological studies and case studies that attempt to alleviate health problems have also been highlighted. Housing, fuel shortage and indoor pollution, water supply and sanitation, and nutritional status are reviewed in this book. Given that the health problems associated with the domestic environment mainly affect women and children, gender issues are a strong component of this study. The book provides examples of how social and political backgrounds determine women's activity patterns at home and at work, and how this consequently affects their health. The book provides facts and arguments to support a case for transforming current environmental regulatory tools and policies for achieving sustainable health improvement for women and children.

(ISBN 81 85419-54-X) 1999, p253, UN Environment Programme (UNEP), PO Box 30552,

Nairobi, Kenya, telephone 254 2 623246; fax 254 2 623861; email ipainfo@unep.org or TATA Energy Research Institute, Darbari Seth Block, Habitat Place, Lodhi Rd, New Delhi 110 003 India, telephone 91 11 460 1550; fax 91 11 462 1770; email outreach@teri.res.in

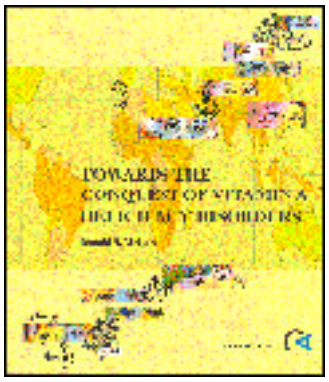
World Development Report 1999/2000: Entering the 21st Century: The Changing Development Landscape

Policymakers in the next century will need to pursue development across a transformed economic and political landscape. The World Development Report, the 22nd edition in this annual series, focuses on two forces of change: the world economy and the increasing demand for self government, which will affect responses to key issues such as climate change and water scarcity. It proposes rules and structures on which to build a more effective, comprehensive approach to development; provides insight into how current viewpoints can be adapted to fit evolving development concerns; and offers guidance for decision makers, researchers, and others with an interest in development.

Hardcover (ISBN 0-19-521125 1) 1999, p312 US $50; Paperback (ISBN 0 19 521124 3) US$26. The World Bank, PO Box 960, Herndon VA 20172-0960, USA; telephone: 703 661 1580; fax 703 661 1501; email books@worldbank.org

Towards the Conquest of Vitamin A Deficiency Disorders
By Donald S McLaren

This book describes the saga of vitamin A in a refreshingly anecdotal manner. At first glance, the book appears to be an autobiography, but Donald McLaren's "personal odyssey" has always led him to areas directly or indirectly involving vitamin A. It is a testimonial to his life's work which spans over half a century. Dr



McLaren made early and decisive contributions to the general recognition of vitamin A deficiency as a public health problem and to our current ability to combat this condition effectively. The history of vitamin A is told from a medical point of view and the value of this publication lies in the way it revealingly draws the reader's attention to the element of time. Those prepared to take a cold, hard look at the aberrations and confusions of the past run less of a risk of accepting today's received wisdom as definitive and absolute. The insight that the current state of our knowledge is also a measure of our current ignorance is a crucial impetus for the improvements and advances of tomorrow.

Chapter 1 outlines the history of vitamin A deficiency disorders and of the discovery of the vitamin. Chapter 2 is a personal odyssey which interweaves Dr McLaren's own experiences in many developing countries with a series of panels that serve as vignettes of various people, places or institutions involved in the VAD field. Chapter 3 discusses the new era for VAD which began in the early 1980s with large scale field studies and the knowledge that vitamin A plays an important role in young child survival. Chapter 4 looks to the future and the conquest of VAD. There is no question that Dr McLaren is an irredeemably inquisitive investigator and a man who argues his views elegantly.

(ISBN 3 906412 02 4) 1999, p144. Task Force SIGHT AND LIFE, PO Box 2116, 4002 Basel, Switzerland; telephone +41 61 688 7494; fax +41 61 688 1910; email basel.sight_and_life@roche.com

Focusing on Women Works: Research on improving micronutrient status through food-based interventions
By Charlotte Johnson-Welch

The International Center for Research on Women (ICRW) has published a series of three summary reports to explore ways to strengthen women's contributions to reducing iron and vitamin A and to a lesser extent, iodine, deficiencies by combining women's productive and reproductive activities. The idea was to tap into women's roles as income-earners and food producers on the one hand, and as food processors and care givers on the other. Community members, particularly women, drew on their knowledge and experiences to develop and implement solutions to micronutrient deficiency problems in their communities. ICRW, a nonprofit policy research institution that promotes economic and social development with women's full participation, undertook five action research studies in Ethiopia, Kenya, Peru, Tanzania and Thailand in order to contribute to the dialogue of how policies and programmes can invest in women, and thereby investing in improved nutrition and well being. Other reports of this series are "Reducing Vitamin A Deficiency in Ethiopia: Linkages with a women-focused dairy goat farming project" and "The Effects of Women Farmers' Adoption of Orange-Fleshed Sweet Potatoes: Raising vitamin A intake in Kenya:"

Contact ICRW, 1717 Massachusetts Ave NW, Suite 302, Washington DC 20036 USA; fax: 1-202-797-0020; email icrw@igc.apc.org

A Critical Link: Interventions for physical growth and psychological development

Gretel Pelto, Katherine Dickin and Patrice Engle authored this expert review linking good nutrition with caring environments for children's intellectual and social development. The future of society depends on children being able to achieve their optimal physical growth and psychological development. This requires that children be protected from the

immediate risks to their life and the long term damages of repeated illness.

A Critical Link reviews the evidence on the effectiveness of three types of interventions: those designed to support physical growth, those to improve psychological development, and combined interventions to improve both growth and psychological development. The review concludes that the most effective programmes are ones that link interventions to enhance the intellectual and social development of children with interventions to improve their nutrition. Combined interventions, for example, have a better effect on growth than programmes that focus on nutrition deficits alone. Furthermore, children under three years old gain most from nutritional and psychological interventions, and the greatest improvements in both growth and development are seen among malnourished children. Programmes that provide early childhood care and education have a greater effect if they also help families gain skills to provide better nutrition and support for the psychological development of their children.

Evidence for these conclusions comes from a range of experiences, including: the Programa de Alimentacao de Pre-Escolar (Brazil), Hogares Comunitarios de Bienestar (Columbia), Integrated Child Development Services (India), PANDAI Project (Indonesia), PRONOEL (Peru), Family Development Programme (Thailand), and Head Start (USA).

WHO/CAH/99.3, 1999, p79, FREE (US$7 per copy for 10 or more copies) WHO Department of Child and Adolescent Health and Development 1211 Geneva 27 Switzerland

Devenir Ami des Mères: Guide pratique: femmes actives et allaitement maternel

By P van Esterik and L Menon

Devenir l'ami des mères est un résultat concret de l'Initiative des *Lieux de Travail Amis des Mères* (MFWI) lancée par WABA en 1993. Dans un style facilement accessible, il aborde les problèmes auxquels sont confrontées les femmes actives qui choisissent d'allaiter. Ce manuel donne des informations et prodigue des conseils sur la manière dont les femmes peuvent associer l'allaitement maternel à la reprise d'une activité professionnelle. Ces informations concernent la situation des femmes et du travail dans le monde, les bienfaits et avantages de l'allaitement maternel, les expériences menées dans plusieurs pays en matière de création des *Lieux de Travail Amis des Mères*, la législation régissant la maternité et d'autres politiques qui protègent les femmes allaitantes et actives, et la documentation en la matière. Ce manuel est une ressource utile pour les femmes actives, les employeurs, les syndicalistes, les groupes de femmes, les activistes de la santé, et des défenseurs de l'allaitement maternel.

WABA is pleased to announce the publication of "Being Mother Friendly" in French. WABA acknowledges IBFAN Afrique, Burkina Faso for doing the translation of this book. (ISBN 983 99192 0 2) p105. US$20 per copy via airmail in developed countries; complimentary copies are provided to groups in developing countries where there is a need.

WABA, PO Box 1200, 10850, Penang, Malaysia; telephone: 60 4 6584 816; fax 60 4 6572 655; email secr@waba.po.my

List of FREE MATERIALS in Reproductive Health

The 1999 List of Free Materials in Reproductive Health is the eighth edition prepared and issued by the Program for International Training in Health (INTRAH), The University of North Carolina at Chapel Hill School of Medicine. It is the aim of the this list of free materials to inform reproductive health professionals,

particularly in developing countries, of the large number and variety of materials available free of charge from organizations around the world. This edition contains over 740 entries, organized into ten categories: overview of reproductive health, family planning, maternal and newborn health, family and community health, reproduction and sexuality, STIs/RTIs and HIV/AIDS, gender, people and the environment, economic and community development, catalogues and resources. Each entry contains a brief description as well as bibliographic and ordering information, including restrictions concerning availability. The Appendix contains an index of materials by organization and by title and a sample request letter. Readers may request materials by directly contacting the organization identified at the end of each description.

(ISBN 1 881961 56 7) 1999 INTRAH p276 Contact in North America INTRAH, 1700 Airport Rd, Suite 300, Chapel Hill NC 27514 USA; phone 919 966 5636; fax 919 966 6816; email intrah@med.unc.edu West/Central/North Africa, BP 12357, Lomé, Togo; email intrah@café.tg East/Southern Africa, PO Box 44958, Nairobi, Kenya; email intrah@africaonline.co.ke Asia/ Near East, 53 Lodhi Estate, New Delhi, India 110 003 email intrah@giasdl01.vsnl.net.in LatinAmerica/Caribbean, Federico Henriquez y Carrajal #11, Los Casicasoz, Santo Domingo, Dominican Republic; email alcprime@codetel.net.do

1999

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Graduate Programme in Nutrition and Health Sciences
Emory University

Emory University's interdisciplinary PhD program in Nutrition and Health Sciences provides students with the necessary skills to investigate the relationship between nutrition and human health, especially with respect to the prevention and control of nutritional problems and related diseases. Training opportunities are available with faculty in the School of Medicine, the School of Public Health, the Centers for Diseases Control and Prevention (CDC), the American Cancer Society, and other groups in the Atlanta, Georgia USA area. Research specialties of the faculty include: molecular, clinical and international nutrition, and nutritional epidemiology. Accepted applicants receive a full tuition waiver of US$22,855 and are eligible for a competitive stipend of US$18,000 per year. Obtain an application through our web site at http://www.biomed.emory.edu

Contact: Recruitment and Admissions, Graduate Div of Biological and Biomedical Sciences, Emory University, 1462 Clifton Rd, Ste 312, Atlanta GA 30322 USA; tel 404 727 2545; email gdbbs@gsas.emory.edu

Gender, Health and Communicable Disease
Liverpool School of Tropical Medicine
3-20 April 2000

This short course is presented by the Gender and Health Group of Liverpool School of Tropical Medicine. The aim of the course is to enhance the capacity of policymakers and planners to analyze and address gender inequities in health and health care in developing countries. The course will have a specific focus on gender in infectious diseases such as TB, malaria and sexually transmitted infections (STI) and the implications for health systems development. It is designed for senior level policymakers, planners and managers in health from national ministries, international or national health organizations and from NGOs. Participants limited to 20; course fee US$1980 (£1200) plus living expenses estimated at US£1050 (£700); application deadline is 31 January 2000.

For further information contact: R Tolhurst, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool, L3 5QA UK; tel 0151 708 9393; fax 0515 707 1702; email r.j.tolhurst@liv.ac.uk

European Nutrition Leadership Programme
14-22 June 2000

The sixth seminar of the European Nutrition Leadership Programme will be held in Luxembourg from 14-22 June 2000 under the Directorship of Prof Clive E West and Prof Frans J Kok. The aim of this programme is to organize an advanced annual training seminar with an emphasis on communication of nutrition science information, future strategies and topics for nutrition research; and nutrition science and health in a European perspective. The seminars are designed for PhD students in their final year and post-doctoral fellows studying or working in Europe. Registration fee is 750 Euro; application deadline is 7 Jan 2000. A small number of grants up to 500 Euro are available. Those interested should send, together with their application form, a letter justifying their application together with a budget.

For information and forms contact: L Duyum-Brookman, Div Human Nutrition and Epidemiology, Wageningen University, PO Box 8129, 6700 EV Wageningen, the Netherlands; tel +31 317 483 054; fax +31 317 483 342; email lous.duym@staff.nutepi.wau.nl website http://www.ftns.wau.nl/nutepi/enlp

World Federation of Public Health Associations — IX International Congress "Challenges for Public Health at the Dawn of the 21st Century" 2-6 September 2000 in Beijing, China

The World Federation of Public Health Associations announces its IX International Congress to be held in Beijing, China in September 2000. The meeting will be hosted by the China Preventive Medicine Association and the Chinese Academy of Preventive Medicine. Join health practitioners, policymakers, administrators, development workers, researchers, and many others from governments, academia, international organizations, and the NGO community for this exciting event. WFPHA is an NGO composed of national public health associations from 60 countries. WFPHA Congresses are held every three years and are co-sponsored by WHO and UNICEF. Plenary sessions are planned on Global Tobacco Control and Poverty Alleviation and Social Justice for the Millennium. Sub-themes include community development and health promotion, reproductive health, maternal and child health, ageing and health, nutrition quality and food security, traditional medicine and health, globalization and health, HIV/AIDS prevention and control, and the environment pollution and ecosystem degradation. The call for abstracts is expected to be issued in late May/early June.

For further information contact: WFPHA Secretariat, 800 Eye St NW, Washington DC 20001; tel 202 789 5696; fax 202 789 5661; email allen.jones@apha.org

Fourth International Conference "A Challenge for the New Millennium: Promoting the Appropriate Use of Dietary Assessment Tools for All" 17-20 September 2000 in Tucson, Arizona USA

This conference, sponsored by the University of Arizona's Prevention, Center will provide critical information for current and potential users of dietary assessment methods and dietary data who work in research settings and clinical and public health programs. It will also provide cutting edge information for researchers who work on developing new dietary assessment methods and who compare and evaluate dietary assessment tools. The conference will consist of workshops, round table discussions, plenary sessions, concurrent sessions and poster sessions. A series of social and cultural events will allow conference participants to exchange ideas and to stimulate collaborative projects. The overall goals of the conference are to enhance the understanding of changing dietary patterns as they relate to diet and health, and to facilitate the development and monitoring of nutrition related health objectives through the use of better methods of assessing food and nutrient intake. Conference registration forms are available on the website – early registration with discounted fees will be accepted until 15 July (reduced fees for students, some scholarships available). Abstracts to be submitted on or before 1 May.

For further information contact: D Taren, PhD, PO Box 245163, Tucson AZ 85724 USA; tel 520 626 4609; fax 520 626 7906; email dietconf@u.arizona.edu website http://www.ahsc.arizona.edu/apc/conferences/dietmethods.htm

17th International Congress of Nutrition 27-31 August 2001 in Vienna, Austria

The IUNS and the Austrian Nutrition Society announce the 17th International Congress of Nutrition to be held in Vienna on 27-31 August 2001. This congress will present scientific discussions on all aspects of nutritional sciences under the theme, "Modern Aspects of Nutrition – Present Knowledge and Future Perspectives". Distinguished scientists from all parts of the world will attend. In addition to plenary lectures and traditional subject-specific symposia, the programme will include debate sessions on selected controversial issues. The "Preliminary Program and Call for Abstracts" will be mailed during the Fall 2000; the deadline for submitting an abstract is 31 December 2000; advance registration until April 2001.

For further information contact: Dr I Elmadfa, IUNS, University of Vienna, Althanstrasse 14 (Pharmaziezentrum), A-1090 Vienna, Austria; +43 1 31336-8213; fax +43 1 31336-773; email ibrahim.elmadfa@univie.ac.at; Administrative Secretariat at AUSTROPA INTERCONVENTION, 17th International Congress of Nutrition, Wahringer Strasse 6-8, A-1090, Vienna, Austria; tel +43 1 316 8017; fax +43 1 315 5650; email austropa.congress@verkehrsbuero.at

Erratum: Please correct an error in SCN News No. 18 on page 75, second column, line 12; it should read: "It is NOT unrelated to nutrition."

SCN News sincerely thanks all contributors to this issue, especially the USDA Human Nutrition Research Center on Ageing, Tufts University; our reviewers; and J Hedley. The July 2000 issue of SCN News will have the theme of ***Nutrition and Agriculture***. We are considering the theme of ***Nutrition and the Environment*** for the December 2000 issue. Please send us materials, books, notice of events, letters to the editor, etc. that you would like us to consider.

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No. 19 December 1999 Nutrition and Healthy Ageing.

No. 18 July 1999 Human Rights and the Right to Adequate Food, SCN's 26th Symposium Report.

No. 17, *December 1998* Nutrition and HIV/AIDS, HIV and Infant Feeding, Micronutrients in HIV transmission.

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No.14 *July 1997* The Nutrition Challenge in the 21st Century: What Role for the United Nations? Poor Nutrition and Chronic Disease Part II; Effective Programmes in Africa for Improving Nutrition.

No.13 *late 1995* Interview with Dr A. Horwitz, SCN Chair, 1986-1995; Behavioural Change and Nutrition Programmes; and Poor Nutrition and Chronic Disease Part I.

No.11 *mid 1994* Maternal and Child Nutrition.

No.10 *late 1993* Nutrition and Food Aid, Nutrition and Human Rights, The Nutrition Transition.

No.9 *mid 1993* Micronutrient Malnutrition - The Global Situation

No.8 *late 1992* Highlights of the World Nutrition Situation, Food Prices and Nutrition, Food Security and Nutrition 1971-91, Long-Term Effects of Improved Childhood Nutrition.

No.7 *mid 1991* Refugees' Nutrition Crisis, LAM, Community-Based Development , Micronutrient Intakes, Incomes and Prices. ***Supplement***: Some Options for Improving Nutrition in the 1990s

No.5 *early 1990* Nutrition and School Performance, Uses of Anthropometry, Malnutrition and Infection (Part II), Flows of External Resources for Nutrition.

No.3 *early 1989* Does Cash Cropping Affect Nutrition? Nutrition in Times of Disaster.

Nos.1 and 2 *March 1988* Vitamin A Deficiency, Urbanization, World Nutrition Situation, Economic adjustment.

Country Case Studies

Brazil by R. F. Iunes & C. A. Monteiro. September 1993.
Egypt by H. Nassar, W. Moussa, A. Kamel & A. Miniawi. January 1992.
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Indonesia by I. T. Soekirman, G. S. Idrus Jus'at & F. Jalal. December 1992.
Tanzania by F. P. Kavishe. April 1993.
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Zimbabwe by J. Tagwireyi, T. Jayne & N. Lenneiye. December 1992.

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Many thanks to all those who contributed to this issue!

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***Second Report on the World Nutrition Situation, Volume I, Global and Regional Results**, October 1992*

***Supplement on Methods and Statistics to the First Report on the World Nutrition Situation**, December 1988*

***First Report on the World Nutrition Situation**, November 1987*

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by Philip James, Suttilak Smitisiri, Per Pinstrup-Anderson, Rajul Pandya-Lorch, Christopher Murray, Alan Lopez & Isatou Semega-Janneh. April 1998 (NPP No. 17)

***Nutrition and Poverty,** by S. Gillespie, N. Hasan, S. Osmani, U. Jonsson, R. Islam, D. Chirmulay, V.Vyas & R. Gross. November 1997 (SOA No.16)*

***How Nutrition Improves**, by S. Gillespie, J. Mason, R. Martorell. July 1996. (SOA No.15)*

***Controlling Vitamin A Deficiency**, by S. Gillespie and J. Mason, January 1994. (SOA No.14)*

***Effectiveness of Vitamin A Supplementation in the Control of Young Child Morbidity and Mortality in Developing Countries**, by G. Beaton, R. Martorell, K. Aronson, B. Edmonston, G. McCabe, A. Ross, B. Harvey. December 1993. (SOA No.13)*

***Nutritional Issues in Food Aid**, August 1993. (SOA No.12)*

***Nutrition and Population Links -- Breastfeeding, Family Planning and Child Health**, including papers by S. Huffman, R. Martorell and K. Merchant, R. Short, P. Ramachandran. (SOA No.11)*

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***Managing Successful Nutrition Programmes**, edited by J. Jennings, S. Gillespie, J. Mason, M. Lotfi and T. Scialfa, October 1990. (SOA No.8)*

***Appropriate Uses of Child Anthropometry**, by G. Beaton, A. Kelly, J. Kevany, R. Martorell, and J. Mason, December 1990. (SOA No.7)*

***Women and Nutrition**, including papers by J. McGuire and B. Popkin, M. Chatterjee and J. Lambert, J. Quanine, P. Kisanga, S. Bajaj, H. Ghassemi, October 1990. (SOA No.6)*

***Malnutrition and Infection - A Review**, by A. Tomkins and F. Watson, October 1989, reprinted June 1993 (SOA No.5)*

***Women's Role in Food Chain Activities and their Implications for Nutrition**, by Gerd Holmboe-Ottesen, Ophelia Mascarenhas and Margareta Wandel, May 1989. (SOA No.4)*

***The Prevention and Control of Iodine Deficiency Disorders**, by Basil S. Hetzel, March 1988, reprinted June 1993. (SOA No.3)*

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How Nutrition Improves Report based on ACC/SCN Workshop held on 25-27 September 1993 at the 15th IUNS International Congress on Nutrition, Adelaide, Australia by S. Gillespie, J. Mason, R. Martorell. (SOA No. 15)

Controlling Vitamin A Deficiency Report based on ACC/SCN Consultative Group Meeting held in Ottawa July 1993. Prepared by Gillespie and Mason, January 1994 (SOA No.14)

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Nutritional Issues in Food Aid Report of symposium on "Nutritional Issues in Food Aid" held at the 19th Session of the ACC/SCN in Rome, February 1992. Includes papers on the support of public works by food aid as a nutrition intervention, experiences of feeding programmes, and protecting refugees' nutrition with food aid. August 1993 (SOA No.12)

Nutrition and Population Links - Breastfeeding, Family Planning and Child Health. Papers from the ACC/SCN 18th Session Symposium, by Sandra Huffman, Reynaldo Martorell, Kathleen Merchant, Roger Short & Prema Ramachandran. February 1991 (SOA No. 11)

Nutrition-Relevant Actions - Some Experiences from the Eighties and Lessons for the Nineties Book developed from the original background paper for the ACC/SCN ad hoc group meeting held in London in November 1990. Proposes a framework for the analysis of policies and programmes affecting nutrition, before reviewing experiences during the 1980s in several countries, and moving on to consider options for improving nutrition in the 1990s. Complements and expands on Supplement to SCN News No.7. Prepared by Stuart Gillespie and John Mason, October 1991. (SOA No. 10)

Controlling Iron Deficiency Report of ACC/SCN workshop held in Trinity College, Dublin, June 1990. Focuses on iron supplementation and practical means of improving large-scale programmes. Also introduces fortification and diet change. Gives information from six large-scale programmes. Prepared and edited by Gillespie, John Kevany, and John Mason, February 1991. (SOA No. 9)

Managing Successful Nutrition Programmes Report of ACC/SCN workshop held at IUNS meeting in Korea, August 1989. Includes reports on 16 large-scale nutrition programmes, and summary of discussions on targeting, staff issues, community participation, management information systems, sustainability and replicability. Edited by Joan Jennings, Stuart Gillespie, John Mason, Mahshid Lotfi and Tom Scialfa, October 1990. (SOA No. 8)

Appropriate Uses of Child Anthropometry Report based on workshop held by ACC/SCN, June 1989. Basic concepts, uses for screening, growth monitoring, population assessment, and surveillance. Prepared and edited by G. Beaton, A. Kelly, J. Kevany, R. Martorell, and J. Mason, December 1990. *(SOA No. 7)*

Women and Nutrition Background, and papers presented at SCN Symposium, held at UNICEF, New York, February 1989. Papers include "Beating the Zero Sum Game" by McGuire and Popkin, "Reflections from India and Pakistan" by Chatterjee and Lambert, "Grameen Bank Experience" by Quanine, "Improving the Nutrition of Women in Tanzania" by Kisanga, "Nutrition Security System at Household Level" by Bajaj, "Issues in Need of a Global Focus" by Ghassemi, October 1990. *(SOA No. 6)*

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No. 13, late 1995 Interview with Dr A. Horwitz, SCN Chair, 1986-1995; Behavioural Change and Nutrition Programmes; and Poor Nutrition and Chronic Disease Part I.

No. 12, early 1995 The Role of Care in Nutrition -- A Neglected Essential Ingredient; Summary of findings from the recently published ACC/SCN "Update on the Nutrition Situation, 1994"; Specific Deficiencies Versus Growth Failure: Type I and Type II Nutrients; and Enrichment of Food Staples Through Plant Breeding. A New Strategy for Fighting Micronutrient Malnutrition.

No.11, mid 1994 Maternal and Child Nutrition: Adolescent Growth; Prepregnancy Nutritional Status and its Impact on Birthweight; Maternal Nutrition During Pregnancy as it Affects Infant Growth, Development and Health; The Consequences of Iron Deficiency and Anaemia in Pregnancy on Maternal Health, the Foetus and the Infant; Impact of Maternal Infection on Foetal Growth and Nutrition; Maternal Micronutrient Malnutrition: Effects on Breast Milk and Infant Nutrition, and Priorities for Intervention; Vitamin A Deficiency in the Mother-Infant Dyad; Maternal Protein-Energy Malnutrition and Breastfeeding; and Maternal Nutritional Depletion.

No.10, late 1993 -- features: Nutrition and Food Aid, Nutrition and Human Rights, The Nutrition Transition.

No.9, mid 1993 -- Focus on Micronutrients. Features: Addressing Micronutrient Malnutrition, Micronutrient Deficiency -- The Global Situation, Effectiveness of Vitamin A Supplementation in the Control of Young Child Morbidity and Mortality in Developing Countries, Zinc Deficiency -- Is It Widespread but Under-Recognized?

No.8, late 1992 -- features: Highlights of the World Nutrition Situation, Food Prices and Nutrition, Food Security and Nutrition 1971-91 -- Lessons Learned and Future Priorities, Long-Term Effects of Improved Childhood Nutrition.

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No.6, late 1990 -- features: Preventing Anaemia, Policies to Improve Nutrition -- What Was Done in the 80s, Weaning Foods -- New Uses of Traditional Methods. (*out of print*).

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No.3, early 1989 -- features: Does Cash Cropping Affect Nutrition?, Nutrition in Times of Disaster.

Nos.1 and 2, March 1988 -- features: Vitamin A Deficiency, Urbanization, World Nutrition Situation, Economic adjustment (*No.1 is out of print).*

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India: Nutrition in India, by V. Reddy, M. Shekar, P. Rao & S. Gillespie. December 1992.

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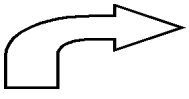

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