

4TH REPORT ON THE
WORLD NUTRITION SITUATION
January 2000

UN Administrative Committee on Coordination /
Sub-Committee on Nutrition (ACC/SCN)*,
In collaboration with
International Food Policy Research Institute
(IFPRI) / CGIAR**

*UN "focal point for harmonizing nutritional policies and strategies throughout UN system."
**Consultative Group on International Agricultural Research (16 world-wide centers: Rice, Wheat & Corn, Potatoes, etc) = Future Harvest centers (www.futureharvest.org)

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4th Report ... (Jan.'00)
"NUTRITION THROUGHOUT THE LIFE CYCLE"

Chap.1. Deals with nutritional status of different age groups [observed aspects of **Protein Energy Malnutrition** (PEM) - not enough food].

FOETAL (FETAL) UNDERNUTRITION:

30 million infants born each year in developing countries with impaired growth...low birth weight.

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4th Report... (Jan,'00)
Chap. 1. PEM-related situations (cont.)

STUNTING. estimated that 182-million pre-school children (33%) are stunted [-2 SD height-for-weight], or chronically undernourished (drop from 47% in 1980).

prevalence: Eastern Africa 48%
South Central Asia 44%
...1/2 of global problem

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4th Report... (Jan.'00). Chap.1 PEM

UNDERWEIGHT [-2 SD weight-for-age]

...due to chronic under-nutrition, or "wasting", or both...

prevalence: 27% of pre-school children in developing countries:

South Central Asia 44% (79 million),
Western and Eastern Africa 37%, but
"situation is deteriorating"

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4th Report (Jan.'00)... Chap.1 **PEM**

SCHOOL-AGE CHILDREN

(information difficult to find)

Stunting common in school-age children - Latin American Survey's:
1/3 of children; highest Peru, Guatemala 50%

ADULTS. Both *under-* & *over-*nutrition (African,Caribbean, Latin America "25%" ... (in general, information scarce...)

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4th Report...(Jan.'00) Chap. 2.
Micronutrient Deficiencies Update

IRON DEFICIENCY: 3.5 BILLION people; blood disorder = **anaemia /anemia** (hemoglobin is Fe containing), due to both Fe deficiency and/or non-dietary causes – infectious and parasitic diseases. ...also common with other nutrient deficiencies (folate, B12, Cu, Zn...)

	developing vs. developed (%)	
pregnant women	56	18
school-age children	53	9
older adults	51	12
men	34	5

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(cont...)**IRON DEFICIENCY ANAEMIA** :

Region-	incidence(%):
SE Asia (India, Sri Lanka...)	68
Africa (Sub-Sahara)	44
W.Pacific (China, Phil..)	25
Americas (not US, Can.)	20

foods: rich in meats, but iron bioavailability
problem in **plants**; prevention through fortification of food staples (flour) ...possible "corrections" with GM plants

summary: understanding consequences and knowledge of what to do has advanced significantly **but how to do it on a large scale...still limited. Education/Research...urgently required.**

4th Report...(Jan.'00)

IODINE DEFICIENCY DISORDERS (IDD'S)

deficiency of hormone thyroxine (I₂ containing), controls animals basal metabolism.

goitre / goiter - thyroid enlargement; can develop in foetal state (due to mothers diet) resulting in impaired brain development- "endemic cretinism" impaired mental / physical development.

"...the most common cause of preventable mental impairment worldwide."

IODINE DEFICIENCY DISORDERS (IDD'S)
(cont.)

Soils and resultant foods - can be iodine deficient (problem with high-altitude soils)

Some plants **goitrogenic** (goiter causing) i.e. cassava.

prevention: iodine fortification (iodized salt)

...**scale of global problem is immense**...
...740 million =goitre, 2 billion at risk, but prevalence decreasing /... elimination??

Vitamin A (Retinol)

Vitamin A deficiency: xerophthalmia / night blindness, ...increased mortality from respiratory and gastrointestinal disease...role in immune system...and in preventing cancer...

4th Report (Jan.'00) "Severe deficiency (which causes blindness) is declining. **subclinical** deficiency ...affects 250 million preschool children...*many more* school-age children, pregnant women, and others are affected. ...contributes significantly to raised morbidity and mortality in at-risk populations. ...Effective, low-cost approaches to the control of Vitamin A deficiency are available and are being controlled in many countries."

Methods used to combat Vitamin A deficiency (VAD):

National Immunization Days (NADS).

In 1998, NIDS-Vit.A "benefited more than 24 million at-risk children ...conducted in 88% of countries where VAD was moderate to severe." (by UNICEF, WHO, NGO's etc)

...**but** once a year program limiting - as children need to receive supplements at least twice-a-year.

Methods used to combat Vitamin A deficiency (VAD): (continued)

..."**new approaches must be pursued**"... Being implemented with promising results: fortification of maize in Zimbabwe ...sugar fortification in Zambia...promotion of egg consumption by small children in Indonesia... promotion of "red palm oil".

Suggested: "... improved availability of Vitamin A-rich foods...but recent findings indicate bioconversion of pro-Vit. A in dark green vegetables less than ¼ than previously thought. ... possible genetic modification of staple foods..."

4th Report... (Jan.'00) Other Chapters:
BREASTFEEDING “rates very high in developing countries (95%) ; helped by international / national efforts (Int. Code of Marketing Breastmilk Substitutes).”
“NUTRITION AND HUMAN DEVELOPMENT”
(education) “...crucial contribution of good nutrition to human development.”
 “ ...growing dissatisfaction with an exclusive reliance on economic growth as a means to improved human welfare. ...challenge now is to operationalize the principles of human rights in nutrition programming.”

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4th Report... (Jan.'00) Other Chapters:
REFUGEES AND DISPLACED PEOPLES (DP'S). ... at end of '98 there were 12 million refugees and 20 million dp's.
Level of “wasting” in Angola dp's = 20%, but with Balkans dp's no increase. why? huge imbalance in aid / assistance given (europe vs. africa).

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SUMMARY: ENDEMIC NUTRITIONAL DISEASES
 (specific malnutrition conditions - particularly in developing countries).
PROTEIN ENERGY MALNUTRITION (PEM) –not enough food. extreme: **Marasmus** (wasting), **Kwashiorkor** (edema).
 4th Report (UN, 2000): **fetal undernutrition** (low birthweight), children: **Stunting** (height), **underweight**. adults: **underweight** or **overweight** (obesity).
PANDEMIC MICRONUTRIENT DEFICIENCIES:
Iron deficiency anemia - (3.5 billion people),
Iodine deficiency disorders - (decreasing, use of I₂ salt),
Vitamin A deficiency – (250 million pre-school children +)

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OTHERS... a classic deficiency syndrome **“rickets”** (poor bone development in growing children, “bowed legs”)
 causative factor related to low **Calcium** and **Phosphorus** dietary intake, and low **Vitamin D** intake or mn ultra-violet exposure. Although no longer considered endemic, still problem with poverty and poor diet.
 Newer calcium-related disease is **“osteoporosis”** –particularly with older women. Illustrates problem in finding foods rich in calcium content (primary sources are dairy products, Ca supplements)

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NIACIN (B-VITAMIN). chemical isolated in 1897 (nicotinic acid) but function only identified in 1937 as **anti-pellagra vitamin**.
 Pellagra appeared in Southern Europe as endemic disease after 16th century. Identified of dietary origin in Southern U.S. (corn/maize) in 1920's —1937 discovery of curative role of niacin. Why Native Americans did not develop pellagra was **answered in 1981**, when alkaline-treatment of maize shown to release bound-niacin.
 no longer considered endemic, disease still exists, related to poverty (corn/maize staple food), and sometimes alcohol abuse.

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CURRENT MICRONUTRIENT RESEACH
ZINC.. Required microelement is component of over 60 enzyme systems Human deficiency symptoms only recently recognized.
[IFPRI, 1995. Zn absorption enhanced in presence of animal-source protein and diminished by the presence of phytate in seeds [milling and refining of cereals reduces content of phytate] Possible combined Fe/Zn deficiency..
Lancet, June, 2000. Zinc supplementation and stunted infants in Ethiopia. Growth of breastfeed infants increased with supplemental Zn, when protein-energy not limiting.]
continuing nutrition research.....

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