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Obesity And Physical Activity

P.S. Shetty

Obesity is becoming an increasingly important public health problem. It is now estimated that worldwide, about 100 million people are obese. Obesity is associated with an increased likelihood of non-insulin dependent diabetes mellitus (NIDDM), hypertension, hyperlipidaemia and cardiovascular disease. It is also associated with increased rates of breast, colo-rectal and uterine cancers. Obesity is thus an important factor in the increasing morbidity and mortality due to chronic, non-communicable diseases.

The practical and clinical definition of obesity is based on the Body Mass Index [BMI; weight (kg)/height (m²)]¹. It is generally agreed that a BMI of greater than 30 is indicative of clinical obesity while a BMI of 25.0-29.9 is suggestive of overweight in an individual. The recommended cut-offs are appropriate for the identification of the extent of overweight or obesity in individuals and population groups. The WHO Expert Committee in its Report¹ concluded that weight gain and overweight or obesity is associated with increased morbidity and mortality and that weight cycling may also be associated with increased morbidity and mortality. The Committee was of the opinion that weight loss in obesity is difficult to sustain, is of uncertain benefit to health in the long-term and may lead to weight cycling and hence the primary prevention of obesity must be our main concern.

SECULAR TRENDS IN OBESITY

The prevalence of obesity is increasing both in developed and developing countries. Industrialised, developed countries are showing increasing trends in prevalence of obesity over the last two or more decades while developing countries are showing a rise in overweight and obesity among their populations along with economic development and urbanisation. Two critical factors that have influenced this explosion in the prevalence of obesity are changes in dietary intake and levels of physical activity. Obesity is the result of energy intake being chronically in excess of energy expenditure, resulting in a positive energy balance and weight gain.

In the developed countries, despite the steady decline in per capita energy intake over the last three to four decades, levels of physical activity have also declined with the move towards more sedentary lifestyles. Occupational activity levels have declined, and in spite of an increased participation in leisure time activities at most ages, energy expenditure levels have declined. The growing concern of industrialised affluent societies about secular trends in the prevalence of obesity, particularly among children², is also mirrored in industrialising, developing economies in rapid transition. Repeat surveys in developing countries have shown an association between a dramatic increase in mean Body Mass Index of the population

and acculturation indices³ or modernity scores^{4,5}.

Changes in dietary intake, food consumption patterns and physical activity levels have also contributed to the problem of increasing obesity in developing countries.

PREVALENCE OF OBESITY

Europe and USA: Prevalence of obesity is high in the USA and in Europe; particularly in eastern Europe and the Mediterranean countries. In the USA the prevalence of obesity is as high as 32 and 33.5 per cent in males and females respectively⁶, and this is despite the fact that surveys in the USA have used a BMI cut-off of 27.8 for males and 27.3 for females to define obesity. It is even higher among American blacks as compared to whites, and also among the indigenous population of American Indians as well as Hispanic Americans⁷.

Obesity is relatively common in southern and eastern Europe, especially among the women⁸. Apart from the Netherlands, where the prevalence of obesity has remained stable

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between 1974 and 1986⁹, in most other countries of Europe the trends are indicative of an increase in obesity among the adult population. For instance, the prevalence doubled from 6 per cent and 8 per cent in 1980 to 13 per cent and 15 per cent in 1991, in England¹⁰. Increases in the prevalence of obesity are also seen in most countries of Europe over the last decade. The prevalence of obesity has increased also in Scandinavian countries and in Australia, Canada and Israel.

Africa and Asia: The prevalence of obesity is much lower in African and Asian countries. However, obesity is increasing in several countries of the developing world, particularly those in economic transition, and in some of them high rates of obesity are already evident in children as well as adults. The present prevalence of obesity is highly variable between developing countries and within populations of a country although, in general, the prevalence of obesity is higher in women, as compared to men. Table 1¹¹ shows the problem of adult obesity in some countries of Africa, Asia and Latin America. In Brazil, between the years 1974 and 1989, the prevalence of overweight increased from 3.1 to 5.9 per cent in males and from 8.2 to 13.3 per cent in females¹².

In the Asian region, recent data from the China Health and Nutrition

Surveys show that the percentage of overweight in the study population increased from 5.3 to 6.5 per cent (severely overweight from 2.3 to 2.9 per cent) in rural areas and from 8.2 to 9.8 per cent (severely overweight from 4.9 to 5.4 per cent) in urban residents between the survey years 1989 and 1991¹³.

Over this short period of time, an increase of 2.7 and 2.4 per cent was noticed in the numbers of the overweight alone, in the middle and upper tertiles of household incomes respectively.

DIETARY CHANGES

Energy intakes and food consumption patterns have changed in the developed world. In the UK, for instance, there has been a steady decline in per capita energy intake from the 1950s to the present. Over the same 50 years, there has been an increase in the proportion of fat in the diet and a consequent decrease in the carbohydrate content of the diet. The energy density and the fat content of the diet appear to have an important effect on the overall intake of food energy. Reducing the energy density of the diet by reducing fat has repeatedly been shown to lower energy intakes¹⁴, while increasing fat energy of a diet has been shown to increase food intake and at the same time interacting quite strongly with the level of physical activity¹⁵.

In developing countries, the rapid changes in dietary intake have been indicative of an increase in per capita availability of food. Food balance data from FAO (1993) shows that in Asian countries such as China, Indonesia, Malaysia and Thailand, the change in energy intake has been small but there have been large changes in consumption of animal products, sugars and fats. National food consumption data for China for the period 1978 to 1987, collected by the State Statistical Bureau show that per capita total cereal and vegetable consumption had increased and stabilised by 1984 while the consumption of meat, edible oils, sugar, eggs and fish increased throughout this period¹⁶. The net effect has been a marked shift in the diet with energy from fat (both animal and vegetable) increasing year by year. Countries such as China have thus not only altered overall dietary adequacy but have also seen a marked change in dietary composition, with increasing proportions of the population consuming more than 30 per cent of energy from fat. Data from Delhi also showed that higher income groups consumed a diet with 32 per cent energy from fat while in the lower income groups only 17 per cent of the energy was from fat¹⁷. More recent dietary surveys in Delhi also confirm that the higher income groups in urban India consume higher levels of energy and fat as compared to the urban poor or rural populations¹⁸.

SECULAR TRENDS

In the industrialised world, physical activity has declined as a result of the increasing mechanisation of life¹⁹. The time dedicated to employment or paid work in a single day or week has declined in several industrialised countries since the early 1960s and is the result of shorter work shifts, shorter weeks and longer vacations. This is compounded by the fact that the decline in time dedicated to productive work has been accompanied by a reduction in energy spent at work as a result of the increasing mechanisation of occupational work. Concurrent with this decrease in the energy expenditure due to occupational activities, increased urbanisation, universal use of motor cars, mechanisation of most manual jobs outside the occupational sphere and increased leisure time, has aggravated this trend. The

TABLE 1
Proportion of Adults with Overweight/Obesity
in some Countries of Africa, Asia and Latin America

Country	Year	Proportion (%) of population	
		BMI=25-29.9	BMI=>30
Africa			
Congo (women)	1986/87	11.8	3.4
Ghana	1987/88	17.1	0.9
Mali	1991	6.4	0.8
Morocco	1984/85	18.7	5.2
Tunisia	1990	28.6	8.6
Asia			
China	1982	7.2	1.0
India	1988/90	3.0	0.5
Latin America			
Brazil	1989	25.1	8.6
Cuba	1982	26.9	9.5
Peru	1975/76	24.8	9.0

Adapted from Shetty and James, 1994¹¹

increased leisure time is more often than not dedicated to television viewing, thus altering the structure of leisure time and encroaching on time normally allocated to other activities including weekday sleep^{20,21}. In the US, television viewing has increased, leading to a steady decline in regular physical activity and undesirable levels of sedentariness²². In the UK, the increasing hours of television viewing have been shown to have a strong social class effect, with the lower social classes showing higher hours of television viewing per week, associated with a higher prevalence of obesity²³.

Computer games and videos further contribute to inactivity in children and together with television watching has been identified as one of the most important determinants of childhood and adolescent obesity²⁴.

During the process of economic development, communities often evolve from rural societies where physical activity is needed for agricultural production into urbanised, industrialised communities where the demand for physical labour and activity declines. There is little, if any, information on secular trends in patterns of physical activity in developing countries. The exception is China where the changes in the diet and the prevalence of obesity has been shown to be associated with marked changes in physical activity patterns. Data from China show that urban residents in all income groups demonstrated a trend towards increased levels of sedentary activities in 1991 as compared to 1989. In contrast, rural Chinese show a significant increase from low and moderate activity patterns to high activity patterns (Table 2)²⁵. Corresponding data on activity patterns of urban or rural residents of developing countries are not currently available and need to be collected.

PHYSIOLOGICAL RESPONSES TO PHYSICAL EXERCISE

The human body's physiological responses to episodic physical exercise (both aerobic and resistance) are seen in the cardio-respiratory, musculo-skeletal, endocrine and immune systems.

Cardio-respiratory systems respond to exercise in order to meet the metabolic demand for oxygen and nutrients and for the disposal

Residence	Household income tertiles					
	Low		Middle		High	
	1989	1991	1989	1991	1989	1991
Urban						
Low level activity	34	49	42	54	38	57
Middle level activity	43	33	43	36	53	33
High level activity	23	18	15	10	9	10
Rural						
Low level activity	18	6	17	16	17	13
Middle level activity	23	7	29	13	28	14
High level activity	59	87	54	71	55	73

Adapted from Popkin, 1994²⁵

of metabolic waste products. Heart rate and cardiac output increase with increase in exercise, arterial blood pressure increases (largely seen as a rise in systolic blood pressure) and the pattern of blood flow changes dramatically in favour of increasing blood supply to the active skeletal muscles and to the skin for disposal of heat as body temperature rises with exercise. The coronary blood flow increases as a result of increase in coronary perfusion pressure and from coronary vasodilation. The arterio-venous oxygen difference increases with increasing work due to exercise and is due to the increased oxygen extraction from arterial blood as it passes through exercising muscle. The respiratory system also responds by increasing pulmonary ventilation both by increasing the rate and depth of respiratory movements.

Endocrine responses are aimed at integrating the various physiological changes and are essential to maintain homeostasis during exercise. Table 3 summarises some of the important endocrine changes that accompany physical exercise.

Immune response to exercise depends upon the intensity and duration of exercise. Moderate exercise bolsters the function of certain components of the immune system which include natural killer cells, circulating T and B lymphocytes as well as the cells of the monocyte-macrophage system and may thus help avert infections. However, high intensity

exercise and exercise of long duration may have adverse effects on the body's immune function and may be related to the fall in plasma glutamine levels that accompany such exercise.

Exercise training over a long period may result in long-term adaptations in skeletal muscle, bone as well as in the cardio-respiratory systems.

PHYSICAL ACTIVITY AND HEALTH

The effects of physical activity on health and disease include the following:

Overall mortality — Higher levels of regular activity are associated with lower mortality rates among adults and even moderate activity on a regular basis results in lower mortality rates as compared with the rates for those who are least active.

Cardiovascular diseases — Regular physical activity decreases the risk of cardiovascular disease mortality particularly that due to coronary heart disease (CHD). The level of reduced risk of CHD attributable to regular physical activity is similar to that from not smoking. Exercise reduces blood pressure in hypertensives while regular physical activity prevents or delays the development of high blood pressure.

Non-insulin dependent diabetes mellitus — The risk of developing NIDDM is lowered with regular physical activity.

TABLE 3
Endocrine Changes During Physical Exercise

Hormone	Exercise response	Probable significance
Catecholamines	Increases	↑ Blood glucose ↑ Glycolysis (muscle, liver) ↑ Lipolysis
Growth Hormone	Increases	Unknown
ACTH-Cortisol	Increases	↑ Gluconeogenesis (liver), ↑ FFA mobilisation
Insulin	Decreases	↓ Stimulus to use blood glucose
Glucagon	Increases	↑ Blood glucose by glycogenolysis + gluconeogenesis
ADH	Increases	Water retention
Renin-Angiotensin-Aldosterone	Increases	Sodium retention

} To maintain plasma volume

Cancer — Regular physical activity is associated with decreased risk of colon cancer while the association between physical activity and other cancers such as ovarian, endometrial, testicular and breast or prostate are largely unproved.

Osteoporosis — Although weight-bearing physical activity is essential for normal skeletal development as well as for achieving and maintaining peak bone mass during childhood and adolescence, it is unclear whether physical activity can reduce the accelerated bone mass loss that occurs in post-menopausal women.

Obesity — Low levels of physical activity contribute to the development of obesity while physical activity may favorably affect body composition and body fat distribution.

Mental health — Physical activity appears to relieve the symptoms of depression and anxiety and is a mood enhancer; it may also reduce the risk of developing depression.

Health-related quality of life — Physical activity appears to improve the health-related quality of life by enhancing psychological well-being and by improving physical functioning in persons affected by poor health.

Adverse effects — Physical activity of a competitive nature may have adverse effects which include sports-related injuries, musculo-skeletal

injuries and the development of osteoarthritis in later life.

CHRONIC DISEASES

Obesity is a major risk factor for several non-communicable diseases. There is a large body of epidemiological evidence that links obesity to increased mortality and increased risk of chronic disease such as cardiovascular disease, diabetes, hypertension, certain cancers, gall bladder disease, osteoarthritis and osteoporosis^{26,27}.

The link between obesity and CHD²⁸ is strong although much if not all of this relationship is ascribed to increases in blood pressure and cholesterol levels and the independent effect of obesity is either very small or non-existent. Nevertheless, it is important to recognise that weight loss in these individuals has a beneficial effect on both blood pressure and cholesterol levels (with HDL cholesterol levels rising), hence from a policy point of view it is useful to include overweight and obesity as a risk factor for heart disease. Obesity is a major risk factor for NIDDM and the risk appears to be related both to the duration and degree of obesity.

PUBLIC HEALTH ISSUES

It is important that developing countries, especially those in rapid transition, make immediate efforts to

collate data on the prevalence of obesity in their populations and then set goals or targets to reduce its prevalence. Two subgroups within populations can be defined and these consist of: (i) those who are already obese and who need help to reduce weight successfully to maintain it and (ii) those who are at increased risk of becoming obese and who need help to avoid it. In addition a strategy has to be developed to prevent the population in general becoming obese and the median BMI of the country rising since an upwardly shifting mean would imply an increase in deviant numbers²⁹. While those who are obese need to be treated, public health measures which are preventive in nature are addressed to those who are at increased risk and also the population in general. The two major arms of any preventive public health strategy to reduce obesity in the population would be to reduce the food energy from fat and to increase the levels of physical activity³⁰.

Reducing food energy from fat can be achieved by:

- Improving the nutrition knowledge of the public through education and information,
- Increasing availability and access to foods with lower fat content,
- Enhancing healthier food choices especially outside the home, and
- Ensuring that health professionals/systems promote dietary change.

Increasing the levels of physical activity can be promoted by:

- Disseminating the positive health benefits of physical fitness,
- Encouraging physical activity in educational institutions, for eg, schools, colleges, etc,
- Providing opportunities for physical activity in work places and industrial setups,
- Increasing public facilities for physical activity.

Each national group has to devise strategies which are culturally and socially relevant to their population but the broad aims would be to reduce dietary excess, decrease fat proportion of energy and increase levels of energy expenditure by promoting physical activity and discouraging sedentariness. The benefits are

not only confined to reducing the problem of obesity but will also help reduce many other chronic non-communicable diseases and improve the health and well-being of the populace.

CONCLUSIONS

Developing countries have to learn from the experience of industrialised and affluent countries to tackle the emerging crisis of chronic diseases which include the burgeoning problem of obesity among their populations. They have hitherto had to deal with the problems of undernutrition and malnutrition and provide sufficient outlays of resources to tackle these. The emerging health burden of chronic disease, affecting mainly the economically productive adult population, will consume even more of their scarce resources. However, it is important to realise that poor countries will be hurt even further in the long run if strategies are not developed to address these emerging health problems on an urgent basis.

The traditional focus on undernutrition has to be widened to encompass all aspects of malnutrition including overnutrition. Rather than separate issues of deficit and excess, we need to create health and nutrition messages that broadly address the concerns of unbalanced nutrition in the community — both under and overnutrition. It is important to emphasise the need for primary prevention of diet- and lifestyle-determined health problems such as obesity in countries where resources are scarce and limited. The need for a nutrition-driven policy that encompasses the cooperation of all sectors that influence dietary and food practices and life styles related to physical activity is essential to generate changes in health-related behaviour that will address both the problems of dietary deficiency and dietary excess.

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The present excerpt is based on his presentation at the ANF symposium. The full text will be published in the proceedings of the symposium.

References

1. WHO Expert Committee Report: Physical status — the use and interpretation of anthropometry. WHO Technical Report Series 854. Geneva, World

Health Organisation, 1995.

2. Murata, M. and Hibi, I.: Nutrition and the secular trend of growth. *Hormone Research*, 38:89-96, 1992.

3. Byers, T. and Marshall, J.A.: The emergence of chronic diseases in developing countries. *SCN News*, 13:14-19, 1995.

4. Hodge, A.M., et al: Prevalence and secular trends in obesity in Pacific and Indian Ocean island populations. *Obesity Research*, 3(Suppl 2):77-87, 1995.

5. Hode, A.M., Dowse, G.K., Koki, G., Mavo, B., Alpers, M.P. and Zimmet, P.Z.: Modernity and obesity in coastal and highland Papua New Guinea. *International Journal of Obesity*, 19:154-161, 1995.

6. Health, United States: US Department of Health and Human Services. Washington DC, 1994.

7. Kumanyika, S.K.: Special issues regarding obesity in minority populations. *Annals of Internal Medicine*, 119:650-654, 1993.

8. Seidell, J.C.: Obesity in Europe — scaling an epidemic. *International Journal of Obesity*, 19(Suppl 3): 51-54, 1995.

9. Blokstra, A. and Kromhout, D.: Trends in obesity in young adults in the Netherlands from 1974-1986. *International Journal of Obesity*, 15:513-521, 1991.

10. Department of Health: The Health of the Nation: one year on... A report on the progress of the health of the nation. Department of Health, London, HMSO, 1993.

11. Shetty, P.S. and James, W.P.T.: Body Mass Index — a measure of chronic energy deficiency in adults. Food & Agricultural Organization. Food and Nutrition Paper No 56, Rome, 1994.

12. Monteiro, C.A., Mondini, L., Medeiros de Souza, A.L. and Popkin, B.M.: The nutrition transition in Brazil. *European Journal of Clinical Nutrition*, 49:105-113, 1995.

13. Popkin, B.M., Paeratakul, S., Ge, K. and Fengying, Z.: Body weight patterns among the Chinese. Results from 1989 and 1991. China Health and Nutrition Surveys. *American Journal of Public Health*, 85:690-694, 1995.

14. Lissner, L.L., Levitsky, D.A., Strupp, B.T., et al: Dietary fat and the regulation of energy intakes of human subjects. *AmJ Clin Nutr*, 46:886-892, 1987.

15. Stubbs, R.J. and Prentice, A.M.: The effect of covertly manipulating the dietary fat to carbohydrate ratio of isoenergetically dense diets on ad libitum food intakes in free living humans. *Proceedings Nutrition Society*, 52:351, 1993.

16. Chen, C.: Dietary guidelines for food and agricultural planning in China. In: Proceedings of the International Symposium on food, nutrition and social economic development, Beijing. Chinese Academy of Preventive Medicine, 40-48, 1991.

17. Padmavati, S.: Epidemiology of cardiovascular diseases in India. II. Ischaemic heart disease. *Circulation*, 25:711-717, 1962.

18. Chadha, S.L., Gopinath, N. and Shekhawat, S.: Dietary factors and urban rural incidence of coronary heart disease. *The Cardiothoracic Journal*, 2:5, 1996.

19. Gortmaker, S.L., Deitz, W.H. and Cheung, L.W.: Inactivity, diet and fattening of America. *Journal of the American Dietetic Association*, 1247-1252, 1990.

20. Gershuny, J.: Economic activity and women's

time use. Time use of women in Europe and North America (Ed: Neimi, I.A.) United Nations, Geneva, 23-54, 1995.

21. Neimi, I.A.: General view of time use by gender. Time use of women in Europe and North America, (Ed: Neimi, I.A.) United Nations, Geneva, 1-22, 1995.

22. Schlicker, S.A., Borra, S.T. and Regan, C.: The weight and fitness of United States children. *Nutrition Reviews*, 52:11-17, 1994.

23. Prentice, A.M. and Jebb, S.A.: Obesity in Britain. Gluttony or sloth. *British Medical Journal*, 311:437-439, 1995.

24. Dietz, W.H. and Gortmaker, S.L.: Do we fatten our children at the television set. Obesity and television viewing in children and adolescents. *Paediatrics*, 75:807-812, 1985.

25. Popkin, B.M.: The nutrition transition in low income countries: an emerging crisis. *Nutrition Reviews*, 52:285-298, 1994.

26. Royal College of Physicians Obesity Report. *Journal of the Royal College of Physicians of London*, 17:3-58, 1983.

27. National Research Council of USA: Diet and Health. implications for reducing chronic risk. National Academic Press, Washington, 1989.

28. Manson, J., Colditz, G.A., Stampfer, M.J., Willett, W.C., et al: A prospective study of obesity and risk of coronary heart disease in women. *N Engl J Med*, 322:882-889, 1990.

29. Rose, G. and Day, S.: The population mean predicts the number of deviant individuals. *British Medical Journal*, 301:1031-1034, 1990.

30. Department of Health: Obesity — Reversing the increasing problems of obesity in England. Report from Nutrition and Physical Activity Task Forces. Department of Health, London, 1995.

NUTRITION NEWS

● **ANF / WHO Symposium on 'Nutrition Related Chronic Diseases in Asia'** (February 10-12, 1997): This Symposium was organised by the Nutrition Foundation of India at the India International Centre. In all, 75 scientists participated, including physicians, dietitians, public health workers and epidemiologists. A report on this Symposium appears elsewhere in this Bulletin. The proceedings of this symposium will be published shortly.

● **The Scientific Report on 'Food, Nutrition and Prevention of Cancer — a Global Perspective'** prepared by the World Cancer Fund will be launched in India on October 15, 1997, at the India International Centre, New Delhi.

Reviews and Comments

XVI International Congress Of Nutrition — Montreal

C. Gopalan

The Scientific Programme that has been circulated by the organisers of this Congress makes strange reading. As the programme now stands, the Congress will be predominantly an American/Canadian meeting. An eminent European scientist has carefully analysed the programme and has pointed out its glaring imbalances.

According to his analysis, out of a total of 177 invited participants, as many as 90 will be from just two countries of the world — the USA (52) and Canada (38). Nearly 53 per cent of all chairmen of different scientific sessions will again be from the USA (23 per cent) and Canada (30 per cent). As against 38 participants from Canada alone, there will be a total of 16 participants from all Asian countries put together including China, India, Japan, Indonesia, Thailand, Philippines, Korea, Bangladesh, Pakistan, etc. The total number of participants from all African countries is just three (one of these actually works in the USA); and the total number from all of Latin America (including central America and Mexico) is nine. Thus invitees from all developing countries of Asia, Africa and Latin America (28) number less than the invitees from a single country, Canada (38).

To be sure, the invitees include some eminent scientists and we mean no disparagement to them. What is surprising, however, is that the organisers found the developing countries so devoid of talented nutrition scientists that the total number of scientists who could be invited from all developing countries of the world (which today account for more than two-thirds of mankind) turns out to be even less than the invitees from a single 'developed' country — Canada!

We realise that the selection of speakers for an international scientific conference cannot be based on strict regional and population considerations; and we are not pleading for it. Scientific merit and actual experience with problems must be the major considerations, while keeping in mind the need for a broad regional

representation. This is especially true of an international nutrition congress. Nutrition is a subject of concern to all mankind. Currently some of the major nutritional problems of the world are to be seen in developing countries. There is a great deal of good scientific work on nutrition being done in several nutrition research centres in developing countries; and several nutrition scientists from developing countries have first hand (not arm-chair) experience of major nutritional problems. Some of these scientists could have made valuable contributions to quite a few subjects included in the Scientific Programme, which directly relate to problems of immediate relevance to developing countries, based on knowledge gained from first-hand experience — not 'instant knowledge', derived from peripatetic visits.

Judged on the basis of scientific merit and actual first-hand field experience with nutritional problems alone (and not on the basis of regional representation), there can be no doubt that the present Scientific Programme is utterly lopsided. Apparently the organisers of the Congress couldn't see beyond their own country and its immediate neighbour. Such acute myopic vision in the organisers of an international congress is unfortunate. We are now on the verge of the 21st century. Nineteenth century mind-sets are clearly out of place.

It is clear that the developing countries have been totally marginalised and have been offered a few crumbs. And this is supposed to be an INTERNATIONAL congress organised under the auspices of the International Union of Nutritional Sciences (IUNS).

When a country bids for hosting an international congress, the implicit moral understanding is that it will ensure balanced representation of competent scientists from all parts of the world. This moral commitment has obviously been reneged in this case. What has emerged as a result

is a 'provincial' conclave and, by no means, an international congress. Even purely regional congresses — such as the Asian Congress of Nutrition had provided a far better representation to scientists of other regions.

WORLDWIDE REACTIONS

It is not surprising that this lopsided programme has generated a great deal of disappointment and criticism not only from scientists of developing countries but from conscientious scientists from parts of Europe as well. There have been numerous representations to the organisers of the Congress from Asian, African, Latin American and European countries, but these have apparently been ignored by the organisers.

The three Past Presidents of the IUNS from Africa, Latin America and Asia — Dr M. Gabr, Dr Dutra de Oliveira and Dr C. Gopalan — have addressed a joint communication to the organisers of the Congress and the IUNS Council members expressing their strong disapproval and asking for a change. The Asian Nutrition Forum comprising leading nutrition scientists from different Asian countries has unanimously passed a resolution expressing its unhappiness and again asking for a change (see box on page 7).

The President of the IUNS, the three Vice Presidents, and members of the Council from developing countries, have all expressed their unhappiness. From available correspondence it would appear that the two members of the IUNS Council who were involved in drawing up the Scientific Programme were again, predictably, the one from the USA and the one from Canada. The IUNS Council as a whole has allowed itself to be bypassed and ignored.

The IUNS Council while recognising its mistake, pleads helplessness. The excuse appears to be that it is just "too late to change". What must not be forgotten is that there were four years of preparation for the Congress; and objections to the proposed programme were voiced well over a year ago, long before the second circular was issued — plenty of time to change. A meeting called for by the President of the IUNS to discuss the issue, originally scheduled for March, has now been post-

poned to June — which will of course conveniently make it “too late to change”!

All this bodes ill for the IUNS and for the International Nutrition Congress movement as it now stands. The sad experience with this Congress has led to the feeling that the IUNS has lost its relevance, influence and credibility. As a Past President of the IUNS, and still one of its Honorary Presidents, I deeply regret this development. It was with great hopes that some of us had undertaken (in the 1960s) the task of ‘internationalising’ the IUNS so that it truly represents the world. As a result, the IUNS flourished. Four Past Presidents have been from the developing countries. But the clock has now been set back. It is sad that this is happening just as the IUNS is set to celebrate its 50th anniversary. If present trends continue, the IUNS will not have much to celebrate in future!

Under the new emerging dispensation of the IUNS and with a truncated council as is now being canvassed, developing countries would be further marginalised and provided

even less opportunities to participate in future congresses. In the circumstances, right-thinking scientists of the world will do well to explore alternatives to the present arrangements for hosting international congresses of nutrition. What they must strive for is a truly ‘international’ congress of nutrition which will provide equal opportunities for the best nutrition scientists of the world — irrespective of race, colour or creed.

Several alternatives could be suggested in this regard by those of us who would still like to save the IUNS. The IUNS could set up an International Congress Committee of five members — one each from Africa, Asia, Latin America, Europe and North America. Such a committee could be composed of representatives designated by such affiliated regional organisations as FANS (Asia), SLAN (Latin America), GEN (Europe) and their African and American counterparts. This committee will become an integral part of the Scientific Programme Committee of the International Congress and will be jointly responsible with the local organisers for finalising

the Scientific Programme and for deciding upon the panel of speakers.

The members of the above committee need not be the members of the Council. The Council can be kept informed of developments from time to time. This will be a far better arrangement than letting the organisers pick one or two Council members of their choice and persuasion for the purpose of consultation.

If the organisers of the 16th Congress of Nutrition finally succeed in getting away with a *fait accompli* in spite of worldwide protests, they would have destroyed the very spirit of the IUNS movement. It is to be hoped that wise counsel will ultimately prevail and that this will not be allowed to happen.

FOUNDATION NEWS

● **The Annual General Body Meeting** of the Foundation was held on March 31, 1997.

● **Study Circle Lectures**

Dr K. Srinivasan (Executive Director, Population Foundation of India, New Delhi) spoke on: ‘Population Issues — New Insights From the National Family Health Survey’ on January 18.

Dr Subhadra Sheshadri (Prof and Head, Department of Foods and Nutrition, M.S. University, Baroda) spoke on: ‘Use of Plant Foods for Combating Micronutrient Deficiencies’ on March 27.

● **Fund Raising**

The Foundation is grateful to Dr Mrunalini Devi Puar, SmithKline and Beecham Consumer Healthcare Ltd, Helpage India, Protein Technologies India Ltd and Dr Judith A. Beto, USA, for their generous contributions.

● **President’s Engagements**

— WHO Consultative Meeting on: ‘Health Development in South-East Asia in the 21st Century’, March 25-27, 1997.

— Will participate in: the Meeting of the Advisory Committee on ‘Medical Research of SEARO’ in Thailand on April 27.

Resolution Unanimously Adopted by the Asian Nutrition Forum

The Asian Nutrition Forum at its meeting on February 10, 1997, in New Delhi, considered the Scientific Programme of the 16th International Congress of Nutrition in Montreal. After detailed discussions, the Forum unanimously adopted the following resolution:

“This meeting of the Asian Nutrition Forum hereby expresses its disappointment over the poor representation of Asian scientists at the International Congress at Montreal. As per the scientific programme the scientists of developing countries in general and parts of Europe have been denied opportunities to participate in the Congress.

The scientific agenda of the International Congress, as it now stands, is largely dominated by Canada and North America and does not reflect a truly international character.

Considering that nutritional problems are worldwide, and a vast

amount of work is being carried out in Asia and the developing countries, it is unfortunate that Asian scientists and scientists from the developing world and parts of Europe are not being provided adequate representation in the proposed Scientific Programme.

The Forum strongly recommends a modification of the current Scientific Programme in order to correct this glaring imbalance in the scientific agenda of the Congress.”

The members who attended the meeting and unanimously voted for the above resolution were:

Dr Cecilia A. Florencio (Philippines),
Dr Rajammal P. Devadas (India),
Prof Ge Ke-you (China),
Dr C. Gopalan (India),
Dr Darwin Karyadi (Indonesia),
Dr Sook He Kim (S Korea),
Dr Florentino S. Solon (Philippines),
Prof Priyani Soysa (Sri Lanka),
Prof M.Q.K. Talukdar (Bangladesh),
Dr Kraisid Tontisirin (Thailand).

Nutrition Related Chronic Diseases In Asia

Florentino S. Solon

The symposium on 'Nutrition Related Chronic Diseases in Asia', organised by the Nutrition Foundation of India, was held at the India International Centre in New Delhi, India, from February 10-12, under the joint sponsorship of the Asian Nutrition Forum and the World Health Organisation.

The Asian Nutrition Forum (ANF) is a small catalytic group of experienced Asian nutrition scientists dedicated to the upliftment of the nutritional status of Asian populations. Organised, through the initiative of Dr C. Gopalan, President of the Nutrition Foundation of India, ANF provides a standing, unofficial machinery for the review of major nutritional policies affecting Asian people in order to ensure that these policies will really benefit them. Although actively involved in their respective national nutrition efforts, the members of the ANF act in their individual capacities to work for common objectives.

The symposium on 'Nutrition Related Chronic Diseases in Asia' was part of the effort of ANF members to seek effective approaches to major common nutrition-related problems in Asia, for application in their respective countries. These problems are now known to show disturbing signs of escalation in Asian countries.

OBJECTIVE

The symposium sought to address a major public health problem in the developing world, namely, the rising incidence of degenerative diseases and cancers brought about by changing lifestyles and dietary practices and the toxic and other harmful effects of modern technologies on the environment.

The Symposium began with an overview of the spectrum of problems ranging from undernutrition to overnutrition in a developing country, presented by Dr Gopalan in his opening address. Dr Gopalan emphasised the significance of the changing profile of malnutrition. While undernutrition in its severe forms was

on the decrease, other diseases related to affluence were showing disturbing trends of escalation. The deleterious effects of intensive agricultural technologies, such as the use of high analysis fertilisers and pesticides and the possible role of air pollution arising from automobile emissions in big cities were discussed. The possibilities of genetic engineering were stressed, as also the need to handle this area with circumspection and caution.

The symposium was intended to undertake a closer examination of the factors affecting the health and nutrition problems experienced by countries in the agonising process of development. Specifically, it discussed issues concerning the status of degenerative diseases such as coronary heart disease, diabetes mellitus, hypertension, osteoporosis, obesity and the cancers now afflicting Asian countries at an increasing rate. The Symposium attempted to establish guidelines for the prevention and control of these diseases, through modifications in dietary, environmental and sociological practices and preferences.

PRESENTATIONS BY PARTICIPANTS

Nutrition scientists from 10 Asian countries participated in the symposium and presented studies on their experience with the chronic diseases emerging in their countries — specifically, the patterns, magnitude and risk factors of these diseases and the remedial measures taken or recommended (see insert 8a and 8b).

FINAL REPORT

The Symposium's Drafting Committee, with Dr P.S. Shetty as its convener, held two separate sessions at which several observations made in the course of the Symposium were discussed in detail.

The Drafting Committee stressed that guidelines must be developed not only to prevent and ameliorate deficiency diseases (protein-energy

malnutrition and micronutrient deficiencies) but also avert diet-related chronic degenerative or non communicable diseases (cardiovascular diseases, diabetes mellitus, obesity, cancer and osteoporosis). The Committee developed a framework of dietary guidelines for the whole region, and it was expected that appropriate adaptation to meet the needs of different population sub-groups within the region will be made by the different countries. The following are among the points made in the Report:

- Realistic assessment and quantification of diet-related health problems in the Asian region as an important research priority, together with identification of risk factors amenable to intervention by primary prevention strategies.
- Development of dietary methodologies for the assessment of dietary intakes (past and present).
- Strengthening of training in nutritional epidemiology in the region.
- Development of research protocols and investigations using molecular biology tools to study genetic diversity and polymorphism of the region's populations.
- More research on traditional diets and food consumption among populations in the region, on consumer attitudes and risk perceptions related to food and social marketing strategies, and on health promotion and health related behaviour, including the role of media in enhancing health; and
- Provision of product information, including nutrient labeling of foods, to consumers.

The proceedings of the Symposium will be published soon.

The author is Executive Director, Nutrition Centre of the Philippines, Manila.

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