

21 *Global Strategies for Diet and Physical Activity to Control Noncommunicable Diseases*

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Abstract: Lifestyle diseases, diabetes, hypertension, obesity and cardiovascular diseases are taking a heavy toll of morbidity and mortality in the present day context. These diseases are not only prevalent in the developed world but are a source of constant and increased economic burden on the developing countries. The silver lining to this is the fact that these diseases could be prevented, controlled and in some cases be averted by following simple lifestyle measures especially focusing on physical activity and the nutritional uptake by the individuals as also by reducing the use of tobacco and alcohol. WHO and other member countries who are seized of the problem have formulated a series of guidelines to be practiced at the community level for the control of these diseases and the same are discussed and highlighted in this chapter with special reference to India.

INTRODUCTION

WHO developed the Global Strategy on Diet, Physical Activity and Health (DPAS) at the request of the WHO member states (World Health Assembly, May 2002, resolution WHA 55.23). The DPAS was endorsed by the 57th World Health Assembly in May 2004 (resolution WHA 57.17). This prevention-based strategy aims to reduce risk of chronic noncommunicable diseases across populations by addressing two of the main risk factors, diet and physical activity.

The overall goal of DPAS is to promote and protect health by guiding the development of an enabling environment for sustainable actions at individual, community, national and global levels that, when taken together, will lead to reduced disease and death rates related to unhealthy diet and physical inactivity. The proposed framework and indicators aim to assist Ministries of Health, other government offices and agencies, as well as other stakeholders to monitor the progress of their activities in the area of promoting a healthy diet and physical activity, in particular, as carried out to implement DPAS. Figures 21.1 to 21.2, depict the crippling effect of chronic diseases globally.

NONCOMMUNICABLE DISEASE—THE CURRENT SCENARIO

A profound shift has occurred in the balance of the major causes of death and disease in developed countries and is under way in many developing countries. Globally, the burden of noncommunicable diseases has rapidly increased.

In 2001, noncommunicable diseases accounted for almost 60% of the 56 million deaths annually and 47% of the global burden of disease. In view of the predicted future growth in this disease burden, the prevention of noncommunicable diseases presents a major challenge to

global public health. According to the *World Health Report 2002*¹ in most countries, a few major risk factors account for much of the morbidity and mortality.

For noncommunicable diseases, the most important risks included high blood pressure, high concentrations of cholesterol in the blood, inadequate intake of fruit and vegetables, overweight or obesity, physical inactivity and tobacco use. Five of these risk factors are closely related to diet and physical activity and are modifiable. Unhealthy diets and physical inactivity are, thus, among the leading causes of the major noncommunicable diseases, including cardiovascular disease, type 2 diabetes and certain types of cancer, and contribute substantially to the global burden of disease, death and disability. Other diseases related to diet and physical inactivity, such as dental caries and osteoporosis, are widespread causes of morbidity.

DISEASE BURDEN AND MORTALITY BURDEN OF NONCOMMUNICABLE DISEASES

The burden of mortality, morbidity and disability attributable to noncommunicable diseases is currently greatest and continuing to grow in the developing countries, where those affected are on average younger than in developed countries, and where 66% of these deaths occur. Rapid changes in diets and patterns of physical activity are further causing rates to rise. Smoking also increases the risk for these diseases, although largely through independent mechanisms.

In the developing countries, even though infectious diseases and undernutrition dominate their current disease burden, the major risk factors for chronic diseases are spreading. The prevalence of overweight and obesity is increasing in developing countries, and even in low-income groups in richer countries. An integrated approach to the causes, of unhealthy diet and decreasing levels of physical activity would contribute to reducing the future burden of noncommunicable diseases.

For all countries for which data are available, the underlying determinants of noncommunicable diseases are largely the same. Factors that increase the risks of noncommunicable disease include elevated consumption of energy-dense, nutrient-poor foods that are high in fat, sugar and salt; reduced levels of physical activity at home, at school, at work and for recreation and transport; and use of tobacco. Variations in risk levels and related health outcomes among the population are attributed, in part, to the variability in timing and intensity of economic, demographic and social changes at national and global levels. Of particular concern are unhealthy diets, inadequate physical activity and energy imbalances in children and adolescents.

Maternal health and nutrition before and during pregnancy, and early infant nutrition also play an important role in the prevention of noncommunicable diseases throughout life. Exclusive breastfeeding for six months and appropriate complementary feeding contribute to optimal physical growth and mental development. *Infants who suffer prenatal, and possibly postnatal, growth restrictions appear to be at higher risk for noncommunicable diseases in adulthood.*

Most elderly people living in developing countries, and the ageing of populations, have a strong impact on morbidity and mortality patterns. Many developing countries will, therefore, be faced with an increased burden of noncommunicable diseases at the same time as a pre-existing burden of infectious diseases. In addition to the human dimension, maintaining the health and functional capacity of the increasing elderly population will be a crucial factor in reducing the demand for, and cost of, health services.

Diet and physical activity influence health both together and separately. Although the effects of diet and physical activity on health often interact, particularly in relation to obesity, there are additional health benefits to be gained from physical activity that are independent of nutrition and diet, and there are significant nutritional risks that are unrelated to obesity. Physical activity is a fundamental means of improving the physical and mental health of individuals. Governments have a central role, in cooperation with other stakeholders, to create an environment that empowers and encourages behavior changes by individuals, families and

communities, to make positive, life-enhancing decisions on healthy diets and patterns of physical activity.^{2,3,4}

GLOBAL STRATEGY FOR DIET

Currently available evidence strongly indicates that health is strongly influenced by the quality of dietary fat and the quantity of fruits and vegetables as well as salt consumed daily. While several other food items also contribute to enhanced or decreased risk of several NCDs, these remain the principal determinants of diet related NCD risk. Policies must, therefore, address these directly and decisively.

Diet, recommendations for populations and individuals should include the following factors:

- *Achieve energy balance and a healthy weight.*
- *Limit energy intake from total fats and shift fat consumption away from saturated fats to unsaturated fats and towards the elimination of trans-fatty acids.*
- *Increase consumption of fruits and vegetables, and legumes, whole grains and nuts.*
- *Limit the intake of free sugars.*
- *Limit salt (sodium) consumption from all sources and ensure that salt is iodized.*

People should be motivated to increase the consumption of nutritious foods using strategies of social marketing and behavior modification. These strategies can be delivered through the media, celebrity endorsements, etc. to change social norms, desires and preferences. The consumption of unhealthy fats and oils should be discouraged by creating awareness about their harmful effects and by restricting their availability by policy measures such as taxation. Provision of affordable healthier oils and information about cooking methods should also be provided. Transfatty acids such as hydrogenated oils have been shown to be harmful to health. Biscuits, ready-to-eat noodles, breads and similar foods, as well as commercial sweetmeats are the largest sources of transfatty acids. A shift to the use of a healthier fat should be made mandatory for food processing industries, bakeries, and restaurants. Salt industry should be encouraged to produce low sodium products. Food labeling should be enforced to appropriately inform the consumers.

Interventions to promote healthy diet as advocated by WHO⁵⁻⁷ include:

- Promoting neighborhood availability of fresh fruits and vegetables and whole grain cereals.
- Nuts and fruit seeds should be made affordable and easily available. The benefits of consuming inexpensive nuts and seeds need to be advocated and their use promoted.
- Policies and a code of conduct for advertising should be in place to limit advertisements which promote unhealthy food.
- Measures must be taken to discourage advertisements of foods with unhealthy ingredients such as biscuits, beverages, instant noodles, etc. from targeting children.
- Misleading advertisements need to be banned.
- Determinants influencing dietary patterns should be assessed by using a combination of qualitative and quantitative research.
- National laboratories must be established to assess the nutritive value of foods. Apart from a national laboratory, state laboratories may need to be established in case of wide regional variations in dietary patterns.
- Restaurants should be discouraged from promoting supersize meals of junk food at lower costs that tempt people to eat more.
- Stringent food labeling policies based on the following principles should be promoted:
 - Reliable mechanisms to categorize foods which contain healthy and/or unhealthy ingredients through laboratory testing as well as a panel of experts.
 - Misleading nutrition facts to be strictly monitored and dealt with.
 - Food labels should indicate the total calories, salt content, type of fat, type and quantity of food additives, preservatives, and micronutrients.

- Nutritional labeling can be converted into effective nutritional communication.
- Bakeries should declare the type of fat used in their breads, biscuits, pastries, patties, etc. on the labels. There should be simple health warnings along with the label as people may not know the harmful effects of trans-fatty acids.
- To overcome literacy barriers, labeling should include color coding to indicate high, moderate and low levels of food constituents such as unhealthy fats and salt.
- Policies to increase the consumption of nutritious food need to be integrated into the ongoing and proposed health, social and labor programs.
- Foods containing high levels of salt, sugar or undesirable fats should be taxed at a higher rate. Subsidies and tax benefits can be offered for healthy food. The higher taxes on unhealthy food items can be used to subsidize healthy food items. Policy initiatives must ensure that healthy food and healthy ingredients in food are always cheaper than unhealthy foods and unhealthy ingredients in foods.
- Strict policies should be enforced to decrease the consumption of salt, preservatives, additives, food color and empty calories devoid of nutrition. The food processing industry should be encouraged to move towards low salt products through progressive realization of preset goals mutually agreed upon by the government and the industry.
- Production and availability of whole grain cereals (such as whole wheat and partially polished rice) should be ensured.
- Principles of healthy nutrition, as relevant to the prevention of NCDs, should be integrated into WHO's Infant and Young Child Feeding (IYCF) strategy.
- SEAR countries should continue to implement National Nutrition Plans (NNPs) and Food-based Dietary Guidelines (FBDGs) or other policy, plans and programs designed to improve national diets and reduce the occurrence of nutrition-related disorders, including NCDs. For countries with established NNPs or FBDGs, evaluation of the impact of these interventions should be considered and findings used to improve national programs.

GLOBAL STRATEGY FOR PHYSICAL ACTIVITY

Physical activity is a key determinant of energy expenditure, and thus is fundamental to energy balance and weight control. Physical activity reduces risk for cardiovascular diseases and diabetes and has substantial benefits for many conditions, not only those associated with obesity. The beneficial effects of physical activity on the metabolic syndrome are mediated by mechanisms beyond controlling excess body weight. For example, physical activity reduces blood pressure, improves the level of high density lipoprotein cholesterol, improves control of blood glucose in overweight people, even without significant weight loss, and reduces the risk for colon cancer and breast cancer among women.

For physical activity, it is recommended that individuals engaged in adequate levels throughout their lives. Different types and amounts of physical activity are required for different health outcomes: at least 30 minutes of regular, moderate-intensity physical activity on most days reduces the risk of cardiovascular disease and diabetes, colon cancer and breast cancer. Muscle strengthening and balance training can reduce falls and increase functional status among older adults. More activity may be required for weight control.

Physical Activity (PA) should be promoted in different settings such as schools, colleges, at worksites, and during leisure and recreation. Efforts need to be directed towards the objective of making PA an every day norm for the people. Government agencies involved in the development of transport policies and urban plans should be encouraged and supported to develop policy options that encourage the use of non-motorized transport and create opportunities for PA. The beneficial effects of PA should be highlighted through policies to increase awareness, and improve access to the availability of and time for PA.

Activities to motivate people to be more active can be put in place through strategies of social marketing, provision of incentives, celebrity endorsements, etc. This would help to change social

norms and encourage people to be more physically active. Facilities for safe and pleasurable PA should be increased in the community, public places, educational institutions and worksites.

Open spaces (in proportion to built-up area) should be made mandatory in residential areas, schools, hospitals and the industry. This will promote PA, vegetation and better drainage of rain water. The presence of trees on both sides of the roads and highways will promote walking and cycling, and make these activities both feasible and pleasurable.

Provision of footpaths and protected cycle lanes is an important action area. These should be decided at the planning stage itself. These paths should not be encroached upon and penalties should be imposed on those doing so (e.g., encroachment by vendors, parking space for cars, extension of shops). People in rural areas should be encouraged to maintain their high level of PA through media advocacy, direct and indirect reinforcements through NGOs, self-help groups, and through messages integrated into national programs.

WHO has designated 10th May as the global 'Move for Health' day. National campaigns should be organized, on this day, to encourage people to participate in outdoor events involving PA. In some countries of SEAR, this day falls during the peak of summer when the weather is hot and the schools are closed. Countries, where this may be a barrier for optimal use of the 'Move for Health' day, may choose another date to organize an additional national 'Move for Health' day.

Interventions as advocated by WHO⁴ include:

- Allocation of uncemented green open spaces while planning. Legislative support may be necessary in some cases.
- Developing policies enforcing differential tax regime for green spaces. Concessions in taxes (e.g., house tax, land tax) can be given to leave more open spaces for kitchen gardens, farms and for physical activity.
- New transport policy options should encourage the use of non-motorized forms of transport and transit type transport that involve walking instead of policies that encourage the use of motor vehicles.

EXPERIENCE FROM SOUTH-EAST ASIAN COUNTRIES—THAILAND

Experience

Estimated Problem

<i>Prevalence of CVD/100</i>	<i>Urban</i>	<i>Rural</i>
1. Hypertension (140/90 mmHg)	22%	21%
2. Coronary heart disease	13%	8%
3. Rheumatic heart disease	0.3%	1.6%

The daily salt intake of an average person in Myanmar declined from 8.4 gm, in 1984, to 7.0 gm in 2001 (still higher than WHO recommendation of 6 gm for control of hypertension).

The prevalence of diabetes was found to be 12.14% as in other SEAR countries. The fruits and vegetables intake less than recommended was nearly cent percent and the average time spent sitting was found to be highest compared to average time spent in moderate and vigorous activities.

The No Sugar Initiative

Thailand produces 74,071,951 metric tons of sugar (2005) and is the third leading exporter of sugar in the world. Average kg/person/year of sugar consumed by a Thai is equal to 80 gm/person/day or 20 teaspoons.

The Study of Sweet Consumption Pattern of Thai children aged < 5 (2005) by Vongkong-kathep et al 2005⁸ showed an average sugar intake (from snacks, soft drinks, and sweet milk) = 30.4 ± 23.7 gm/person/day. The various reasons include:

- Insufficient, inappropriate parental care.
- Easy availability of candies and non-nutritious foods.
- Unhealthy environment.

Health personnel alone cannot do much in this situation but families and communities can be the backbone. In the people-personnel partnership (PPP) program:

- The community identifies problems and finds the best solutions on their own.
- They proceed on their own.
- Professional services are put at people's disposal

This has led to a:

- Decrease in consumption of candies and junk food.
- Increase in weight and height.
- Better oral hygiene.

The program and practices expand from one community to another.

For all the countries for which data are available, the underlying determinants of NCDs are largely the same. Factors that increased the risks of NCDs include elevated consumption of energy-dense, nutrition—poor food that are high in fat, sugar and salt, reduce levels of physical activity at home, at school, at work and use of tobacco.

Programs aim at promoting healthy diet and physical activity for the prevention of diseases are key instruments in policy to achieve development goals.

ACTION PLAN

Principles of Action

Strategies need to be based on the best available scientific research and evidence; comprehensive, incorporating both policies and action and addressing all major causes of noncommunicable diseases together; multisectoral, taking a long-term perspective and involving all sectors of society; and multidisciplinary and participatory, consistent with the principles contained in the Ottawa Charter for Health Promotion and confirmed in subsequent conferences on health promotion, and recognizing the complex interactions between personal choices, social norms and economic and environmental factors.

Priority should be given to activities that have a positive impact on the poorest population groups and communities. Such activities will generally require community-based action with strong government intervention and supervision.

The prevalence of noncommunicable diseases related to diet and physical activity may vary greatly between men and women. Patterns of physical activity and diets differ according to sex, culture and age. Decisions about food and nutrition are often made by women and are based on culture and traditional diets. National strategies and action plans should, therefore, be sensitive to such differences.

Dietary habits and patterns of physical activity are often rooted in local and regional traditions. National strategies should, therefore, be culturally appropriate and able to challenge cultural influences and to respond to changes over time.

Responsibilities for Action

- 1. The role of government is crucial in achieving lasting change in public health.**
- 2. Governments are encouraged to build on existing structures and processes that already address aspects of diet, nutrition and physical activity.**
- 3. Health ministries have an essential responsibility for coordinating and facilitating the contributions of other ministries and government agencies.**

4. **National dietary guidelines:** Governments are encouraged to draw up national dietary guidelines, taking account of evidence from national and international sources. Such guidelines advise national nutrition policy, nutrition education, other public health interventions and intersectoral collaboration. They may be updated periodically in the light of changes in dietary and disease patterns and evolving scientific knowledge.
5. **National physical activity guidelines:** National guidelines for health-enhancing physical activity should be prepared in accordance with the goal and objectives of the Strategy and expert recommendations.
6. **National food and agricultural policies should be consistent with the protection and promotion of public health.**
7. **School policies and programs should support the adoption of healthy diets and physical activity.**

Schools influence the lives of most children in all countries. They should protect their health by providing health information, improving health literacy, and promoting healthy diets, physical activity, and other healthy behaviors. Schools are encouraged to provide students with daily physical education and should be equipped with appropriate facilities and equipment. Governments are encouraged to adopt policies that support healthy diets at school and limit the availability of products high in salt, sugar and fats. Schools should consider, together with parents and responsible authorities, issuing contracts for school lunches to local food growers in order to ensure a local market for healthy foods.

SUMMARY

Actions, based on the best available scientific evidence and the cultural context, need to be designed, implemented and monitored with WHO's support and leadership. Nonetheless, a truly multisectoral approach that mobilizes the combined energy, resources and expertise of all global stakeholders is essential for sustained progress. Changes in patterns of diet and physical activity will be gradual, and national strategies will need a clear plan for long-term and sustained disease-prevention measures. However, changes in risk factors and in incidence of noncommunicable diseases can occur quite quickly when effective interventions are made. National plans should, therefore, also have achievable short-term and intermediate goals.

The implementation of the strategy by all those involved will contribute to major and sustained improvements in people's health, life-styles, facilitation of healthier environments, provision of public information and health services, and the major involvement in improving the life-styles and health of individuals and communities of the health and relevant professions and of all concerned stakeholders and sectors committed to reducing the risks of noncommunicable diseases.

Recognizing that for the implementation of this global strategy, capacity building and financial and technical support should be promoted through international cooperation in support of national efforts in developing countries.

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