

Recommendations For A National Plan of Action For the Implementation of WHO's Global Strategy on Diet, Physical Activity and Health in India



Developed by

**National Consultation on WHO's Global Strategy on
Diet, Physical Activity and Health***

Organized by

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And

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***Experts, Policy Makers and Stakeholders Constituting the National Consultation are enlisted on pages 33–35.**

PREFACE

This document provides the rationale and key elements of a proposed national plan of action for the implementation of WHO's Global Strategy on Diet, Physical Activity and Health, in India. The recommendations are mainly based on the deliberations and conclusions of a national consultation that was conducted at the All India Institute of Medical Sciences, New Delhi during April 26-27, 2005. The recent WHO report entitled, "Preventing Chronic Diseases: A Vital Investment" and a Regional Consultation on Networking for NCD Prevention and Control in South East Asia Region of WHO (Maldives, November 7-10, 2005) also provided information and strategic directions which have been incorporated into this plan.

INTRODUCTION

Rising Burden of Chronic Diseases in India

The huge health and economic burdens that the low and middle income countries (LMIC) are currently bearing and the projected escalation of those burdens over the next 10-15 years have been clearly profiled by the World Health Report (2002) and the World Health Organization's (WHO's) landmark report entitled 'Preventing Chronic Diseases: A Vital Investment' released in October 2005(1-2). These reports also provide estimates of the current and future death and disability burdens that countries of the South East Asia Region (SEAR) of WHO will experience due to chronic diseases.

The World Health Report of 2002 states that cardiovascular diseases (CVD) will be the largest cause of death and disability in India by 2020. In a review published in 1996, it was reported that the prevalence of coronary heart disease (CHD) increased from 1% in 1960 to 9.6% in the year 1995 among urban Indian residents. Similarly, the prevalence in rural residents rose from 2% in 1974 to 3.74% in 1995. The prevalence of CHD is now reported to be 3-4 % in rural areas and 8-10% in urban areas among adults (3).

Based on these data, it is estimated that there were approximately 29.8 million patients with CHD in the year 2003. With an estimated 10% attrition and event rates they projected an annual new event or death to occur in 2.9 million persons per year with nearly 1.5 million people dying due to CHD every year.

The World Health Organization projected that in India in 2005, chronic diseases attributed to 53% of total deaths and 44% of DALYs lost. Cardiovascular diseases are estimated to have attributed to 29% of the deaths (Figure 1).

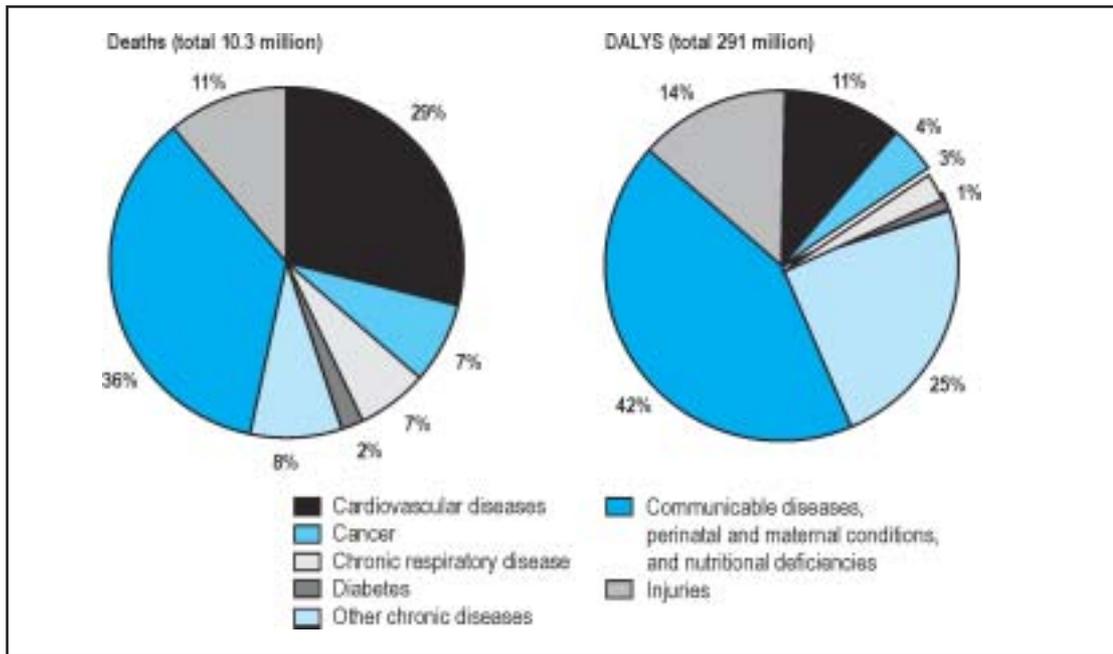


Fig.1: Estimated proportions of total death and DALYS lost by cause in India (all ages, 2005)

India has been declared as the country with the largest number of people with diabetes in the world. Modeled data project that 57.2 million individuals will have clinical diabetes by the year 2025. The prevalence of type 2 diabetes in urban Indian adults has been reported to have increased from less than 3.0% in 1970 to about 12.0% in 2000. On the basis of recent surveys, the ICMR estimates the prevalence of diabetes in adults to be 3.8% in rural areas and 11.8% in urban areas (3).

Compared with all other countries, India suffers the highest loss in potentially productive years of life, due to deaths from cardiovascular disease in people aged 35–64 years (9.2 million years lost in 2000). By 2030, this loss is expected to rise to 17.9 million years- 940% greater than the corresponding loss in the USA, which has a population a third the size of India's (2).

Much of this enormous burden is already evident in urban as well as semi-urban and slum dwellings across India, where increasing lifespan and rapid acquisition of adverse lifestyles related to demographic transition are thought to have contributed to rising prevalence of chronic disease determinants like smoking, physical inactivity, improper diet, stress and their ensuing outcomes such as obesity, hypertension, and type 2 diabetes. This accelerated epidemiological transition has resulted in urban Indians experiencing heart attacks, strokes and type 2 diabetes at least a decade earlier than the western

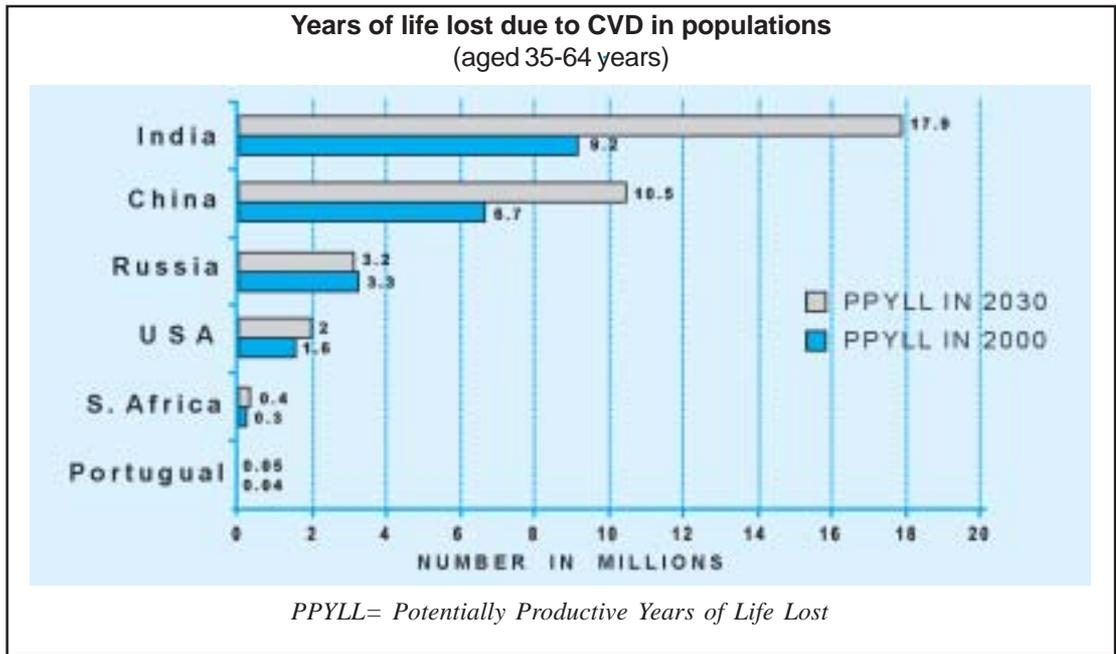


Fig. 2 Potentially productive years of life lost due to CVD related premature deaths in age range 35-64 years

population, with nearly a fifth of hospital-based patients being less than 40 years of age.

There is an increasing trend for reversal in the socio-economic gradient for CVD and DM (as already manifest in developed nations), with the poor and disadvantaged having an equal, sometimes higher, burden of CVD and its risk factors. Added to this is the lack of awareness and understanding regarding CVD, resulting in a large proportion (one-third to a half or more) of those with risk factors like hypertension and diabetes remaining undetected and even a lesser fraction achieving adequate control.

While most people with diabetes in developed countries are aged 65 years or more, in developing countries most are in the 45-64 year age group and therefore afflicted in their most productive years. The worldwide economic impact of diabetes, as estimated by the WHO, is thus substantial with 2.5-15% of the annual health budgets of countries being spent on diabetes-related illnesses.

In this scenario, prevention and control of NCDs will require a comprehensive prevention programme comprising policies and measures for promoting awareness and healthy lifestyles in the general population as well as strategies for cost-effective identification and treatment of high-risk individuals. Integrated prevention programmes incorporating health promotion, surveillance and risk reduction instruments prevent premature death and avert diversion of

resources to expensive and technology-intensive treatment for established vascular disease, and have been successful in developed as well as developing country settings (e.g. Finland and Mauritius).

Risk Factors of NCDs

The World Health Report 2002 describes in detail how, in most countries, a few major risk factors account for much of the morbidity and mortality. The important risks included *high blood pressure, high concentration of cholesterol in the blood, inadequate intake of fruits and vegetables, overweight and obesity, physical inactivity and tobacco use*. All of these are casually linked to chronic diseases (non-communicable diseases). *Five of these six major risk factors are closely related to diet and physical activity.*

Unhealthy diets and physical inactivity are thus among the leading causes of the major non-communicable diseases, including cardiovascular disease, type2 diabetes and certain types of cancer. Other diseases related to diet and physical inactivity such as dental caries and osteoporosis are also widespread causes of morbidity. The absolute burden of mortality, morbidity and disability attributable to non-communicable disease is currently greatest and is continuing to grow in the developing countries, where those affected are on average younger than in developed countries. 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 poorest countries, even though infectious diseases and under nutrition dominate their current disease burden, the major risk factors for chronic diseases are spreading. Even as the unfinished agenda of communicable diseases and nutritional deficiencies is being addressed, action must commence to tackle the emerging diseases and to ensure that one public health problem is not substituted for another. The prevalence of overweight and obesity is increasing in developing countries, and 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 non communicable diseases.

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. Currently scientific evidence suggest that healthy eating habits and increased physical activity can :

- reduce the risk of developing diabetes by 58%
- reduce the risk of developing high blood pressure by 66%
- reduce the risk of developing heart attacks and stroke by 40-60%

One third of all the cancers can be avoided by embracing healthy lifestyles, increasing activity levels and decreasing the quantity of saturated fat in the diet.

Framing the Response: Global Strategy and National Action

Non-communicable diseases impose a significant economic burden on already strained health systems, and inflict great costs on society. Health is a key determinant of development and a precursor of economic growth. The WHO Commission on Macroeconomics and Health has demonstrated the disruptive effect of disease on development, and the importance for economic development of investments in health. Programmes aimed at promoting healthy diets and physical activity for the prevention of NCDs should be regarded as key components of policies to achieve development goals. To stimulate such policies and programmes, WHO has developed a Global Strategy on Diet, Physical Activity and Health, which was adopted by the World Health Assembly in 2004 (Box 1).

Governments have a central role, in cooperation with other stakeholders, to create an environment that empowers and encourages behaviour change by individuals, families and communities, to make positive, life-enhancing decisions on healthy diets and patterns of physical activity.

Box 1.

WHO Global Strategy on Diet, Physical Activity and Health

- World Health Assembly 2004 adopted the *WHO Global Strategy on Diet, Physical Activity and Health* (May 2004).
- This strategy was framed in response to a WHO resolution expressing concern at the rising global burden of *non-communicable diseases*.
- The strategy calls for national actions to adopt multi-sectoral policies for promoting healthy foods and physical activity.

A comprehensive public health response should integrate the following cardinal elements into a national action plan for implementing the WHO's global strategy.

1. **A life course perspective:** A life course perspective is essential for prevention and control of non-communicable diseases in populations. This approach starts with maternal health, prenatal nutrition, pregnancy outcomes and exclusive breast feeding for infants up to 6 months, and child and adolescent health and through reaching children at school, youngsters at college, adults at worksites and other settings and the elderly; and by encouraging healthy diet and regular physical activity from youth into old age.

2. **The Power of Policy:** Well designed policy measures can be very powerful tools in affecting changes in diet and physical activity. It has been seen that even a single policy change can be extremely effective with far reaching effects in reducing risks not only at the individual level but more importantly at the population level. Appropriate and well designed policies can thus have powerful, far reaching and long-term effects at the population level.

3. **Multi-Sectoral, Multi-Disciplinary and Multi- Level interventions:** These are an essential prerequisite to effective implementation of the global strategy. This would involve setting up a suitable institutional mechanism to enable active partnership of the following Governmental Ministries such as:

- 1) Ministry of Health & Family Welfare
- 2) Ministry of Human Resource Development
- 3) Ministries of Industry & Commerce
- 4) Ministry of Urban Development
- 5) Ministry of Rural Development
- 6) Ministry of Women and Child Development
- 7) Ministry of Food and Agriculture
- 8) Ministry of Food Processing
- 9) Ministry of Environment and Forest
- 10) Ministry of Roads and Transport
- 11) Ministry of Labour
- 12) Ministry of Social Welfare
- 13) National Commission for women and State Commissions for Women in different states
- 14) Ministry of Home Affairs
- 15) Ministry of Information Technology
- 16) Ministry of Science & Technology

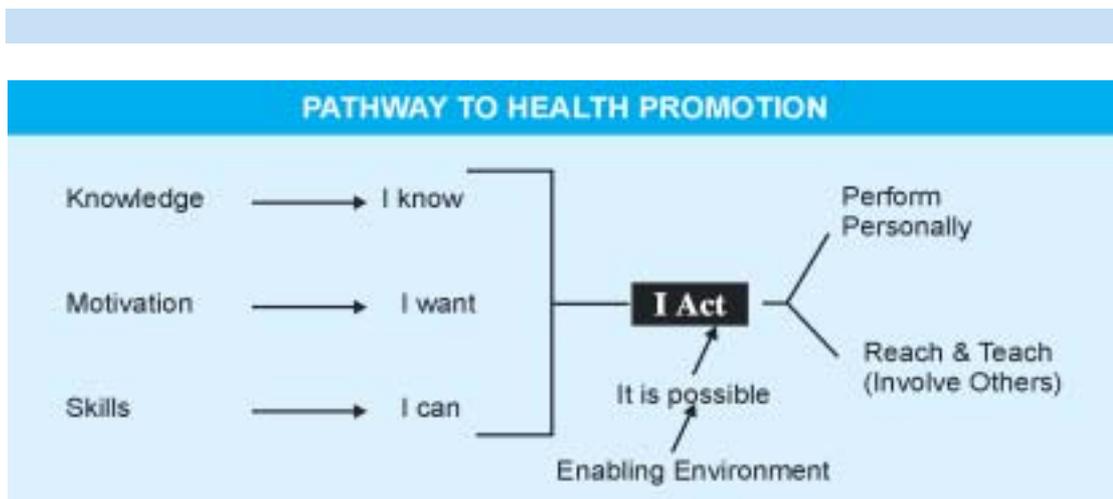


Fig. 3 Pathway for health promotion; Determinants of behaviour change at the individual level

Institutional mechanisms also need to be set in such a manner that it can actively involve **the private sector** and also **civil society** as represented by the industry, the media, NGOs, consumer groups, labour unions, schools, colleges and technical experts from various fields.

4. **Empowerment of the people:** Health education, skills enhancement and provision of a supportive environment are essential ingredients for empowering communities as a whole as well as individuals who are their members. The pathway to health promotion involves upscaling of knowledge, motivation and skills as well as the provision of environmental assists which can help people to make and maintain healthy choices (Fig.3).

Implications for Policy

The rising global burden of NCDs requires a rapid response that integrates policies and programmes which enable effective prevention and control in diverse geographical and resource settings. Diet and nutrition play a critical role in the causation of major NCDs and, alongwith physical activity, influence many of the biologic variables that mediate the risk of those diseases. There is, therefore, an opportunity to alter the direction and dimensions of the global NCD epidemics through policy interventions (at the local, national and global levels), which promote the availability, affordability and acceptability of health promoting diets and restrain the marketing and consumption of unhealthy foods.

Currently available evidence strongly indicates that risk of chronic diseases (NCDs) 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 NCD, these remain the principal determinants of diet related NCD risk. Whether the evidence is derived from demonstration projects, controlled clinical trials or an ecological study of reasons for sharp decrease in coronary mortality in Poland since 1991, the evidence suggests that dietary changes can substantially alter the risk of NCD⁽⁴⁾. Policies must, therefore, address these directly and decisively.

These measures must encompass a wide range of educational as well as regulatory measures, acting through price and non-price mechanisms. That success in reducing NCD risk factor levels as well as NCD mortality is achievable through such measures that influence usual diet patterns is clear from the experience of developed countries⁽²⁾. Developing countries like Mauritius too have shown that population levels of NCD risk factors can be altered by a combination of community education and regulatory interventions related to the price of edible oils⁽⁵⁾. Measures to influence the quality of dietary fat (as well as the total quantity) consumed must address the elimination of trans-fats and reduction of saturated fats from the daily diet. Governments must work with the food industry to influence production, processing, pricing and labeling of food products so that these goals can be met. Consumer education must be enhanced so that informed choices can be made, even as the availability of healthier foods is promoted through such measures. As market economy becomes a globally pervasive economic model, it must be recognized that markets are not autonomous entities and should be moulded, for public good, by consumer consciousness as well as enlightened regulatory measures.

Edible oil production and pricing is a case where such policy measures are strongly indicated. Global nutrition transition is being propelled by the increasing availability and utilization of vegetable oils in developing countries⁽⁶⁾. The production of oils for mass consumption, with respect to Saturated Fatty Acids (SFA), Mono-unsaturated Fatty Acids (MUFA) and PUFA content as well as preferential pricing of low-SFA oils are areas of policy which need early attention and action. Mixture of edible oils for marketing and genetic modification of crops, for attaining optimal fatty acid ratios are options to consider^(7, 8).

The production, preservation, processing, distribution and pricing of fresh fruits and vegetables (especially green leafy vegetables) require agricultural and trade policies that ensure their availability for universal consumption in adequate quantities. The ambit of policy change has to encompass and integrate a variety of local and global responses, from community based programmes for increasing local production and self-sufficiency to national programmes that usher in a ‘rainbow revolution’ to global trade policies that do not promote polarised consumption of these essential foods only in some countries

The goals of cardiovascular health need to be reconciled with other public health objectives, as in the case of salt. Reduced salt consumption must be promoted through a combination of community education, altered production

practices in food manufacturing and labeling of marketed food products for their salt content. At the same time, it must be recognized that salt is now being widely used and advocated as a vehicle for iodine delivery through diet. There is a clear need for ensuring that these two public health programmes do not collide in their intent and operations, perhaps by increasing the iodine concentration in salt or choosing alternate modes of iodine delivery.

Globalization offers a formidable challenge to the implementation of nutritional policies at the national level, as relevant to the needs of cardiovascular health. From documented evidence of the extensive diversion of fruits from domestic to export markets ⁽⁹⁾ to the recent UNEP caution on the consequences of selling fishing rights ⁽¹⁰⁾, it is a matter of concern that developing countries are increasingly losing nutrient rich food resources, which adversely affect local consumption. At the same time, the growth of the global fast food industry and the rapid penetration of high-salt, high-SFA, high-energy processed foods into developing country markets is promoting the consumption of foods detrimental to cardiovascular health. Global and national policies, in agriculture and trade, must speedily address these concerns and find sustainable solutions.

Even in clinical practice, the role of diet as an effective instrument of primary and secondary prevention of NCD must be emphasized. National and international guidelines must accord this component due prominence and provide clarity of content. In terms of implementation of these guidelines, health professionals must be trained to comprehend and communicate dietary advice through counseling contacts with individuals and groups. Dietary advice must not be regarded merely as a ‘politically correct’ adjunct to a pharmacologic prescription but must be treated as an effective pathway to risk reduction. Food based dietary guidelines too need to be developed, as appropriate to local, regional or national context to enable people, patients, professionals and policy makers to clearly identify the practical dietary measures required to promote cardiovascular health.



Figure 4: Key scientific recommendations for action in the area of diet

PHYSICAL ACTIVITY

- 30 mts/day (accumulated) for CV protection
- 45 mts/day (accumulated) for fitness
- 60 mts/day (accumulated) for weight reduction

Regular (moderate to vigorous) 5–7 days/week

Figure 5: Key scientific recommendations for action in the area of physical activity

Such proactive policy and programme initiatives to promote and protect global cardiovascular health through diet and nutrition need to be brought onto the national and global health agenda through multi-institutional collaboration and implemented through inter-sectoral coordination. It would require wide ranging public-private partnerships as well as a strong participation by the voluntary sector to advance this agenda.

Scientific Basis for Action

The scientific recommendations provided by WHO's technical report on Diet, Nutrition and the Prevention of Chronic Disease ⁽¹¹⁾ should provide the framework for the initiating action in the area of Diet and Nutrition. With regard to Physical Activity, recommendations provided in the US Surgeon General's report on Physical Activity should provide basis for action. ⁽¹²⁾ These principles are summarized in figures 4 & 5. While developing the strategic approach the principles enunciated in the WHO's recent report on chronic disease ⁽²⁾ should be followed.

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SECTION II

Evolving and Implementing a National Action Plan

Activities which need to be undertaken to develop and effectively implement a national action plan for promoting healthy diet and regular physical activity are detailed below.

1. Developing a consensus on a national action plan for promotion of healthy diet and physical activity

India needs to develop a national plan of action as part of the global strategy on diet, physical activity and health. Subsequently state-level action plans need to be developed, to facilitate for context-specific implementation. Given India's wide cultural and economic diversity, 'one-size-fits-all' will not be effective, and interventions need to be context- and culture-specific, as well as resource-sensitive.

The action plan and related interventions need to be developed with the national government leading the way in organizing multiple stakeholder partnerships with the community, media, civil society groups, youth groups and international agencies. Governments have a central role, in cooperation with other stakeholders, to create an environment that empowers and encourages behaviour change by individuals, families and communities, to make positive, life-enhancing decisions on healthy diets and patterns of physical activity.

The Ministry of Health needs to initiate this process by conducting a multi-stakeholder consultation with the help of academic institutions and technical guidance provided by the World Health Organization. This consultation should engage and elicit active participation of different government departments and agencies, technical experts, civil society groups (representing health NGOs, consumer groups, women's associations, youth groups and other relevant sections), the media and, wherever appropriate, sections of the food industry.

The outcomes of these consultations need to be widely disseminated to the media and the public to mobilize support and generate a consensus. Parliamentarians and opinion leaders too need to be involved in this process. An implementation plan incorporating recommendations of these consultations is a crucial next step. Community mobilization is an important component that can ensure effective implementation.

Effective enforcement of these recommendations would require multisectoral, multidisciplinary, multilevel and multimethod collaborations. Partnerships and ownerships are required with appropriate contextual and cultural adaptations for a comprehensive public health response to prevent chronic and nutrition-related diseases.

2. Creating an appetite for a healthy diet

Promotion of the concept of a healthy diet requires measures to be taken at different levels of the food chain, from production to consumption. These include production, processing, distribution and pricing of food items as well as the processes that guide consumer choices such as awareness, affordability, cultural preferences and industry trade practices for advertising and promotion of food products. Measures to influence these require the active engagement of multiple stakeholders in the government and civil society, with the objective of empowering the community and influencing the food industry to promote healthy dietary practices.

2.1 Strategic pathways and action areas for countries

- The consumption of fresh fruits and vegetables, whole grains and whole pulses, nuts and fruit seeds should be encouraged by creating awareness about their beneficial health effects, and by improving their accessibility, availability and affordability.
- People should be motivated to increase the consumption of nutritious foods using strategies of social marketing and behaviour modification. These strategies can be delivered through the media, other mechanisms, 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.
- Trans-fatty 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 trans-fatty acids. A shift to the use of a healthier fat should be made mandatory for food processing industries, bakeries, restaurants and hotels.
- Salt industry should be encouraged to produce low sodium products.
- Food labeling to be enforced to appropriately inform the consumers.

2.2. Policy measures required

- Neighbourhood availability of fresh fruits and vegetables and whole grain cereals should be ensured so as to promote easy access.
- 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 ban advertisements which promote unhealthy food and unhealthy habits.
 - (a) Measures must be taken to discourage advertisements of foods with unhealthy ingredients such as biscuits, beverages, instant noodles, etc. from targeting children.
 - (b) 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, regional 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 labelling policies based on the following principles should be promoted:
 - Validated and reliable mechanisms to categorize foods which contain healthy and/or unhealthy ingredients through laboratory testing as well as a panel of experts.
 - Misleading nutrition labeling to be strictly monitored and dealt with (e.g. zero cholesterol claims on packages of vegetable oil).
 - Food labels should indicate the total calories, salt content, type of fat, type and quantity of food additives, preservatives, unhealthiness of the food (absence of fibre, absence of antioxidants) and micronutrients.
 - Nutritional labeling can be converted into effective nutritional communication.
 - Bakeries should be instructed to declare the type of fat used in their breads, biscuits, pastries, patties, etc. in clear language on the labels. There should be simple health warnings along with the label as many people may not know the harmful effects of trans-fatty acids.
 - In order to overcome literacy related barriers, nutritional labeling should include colour coding to indicate high, moderate and low levels of food constituents such as unhealthy fats and salts.

- Policies to increase the consumption of nutritious food need to be integrated into the ongoing and proposed health, social and labour programmes.
- 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 colour 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.

3. Setting in motion a programme of physical activity

Physical activity should be promoted in different settings such as schools, colleges and at worksites. Efforts need to be directed towards the objective of making physical activity an every day norm for the people.

3.1 Action areas

- The beneficial effects of physical activity should be highlighted through policies to increase awareness, and improve access to the availability of and time for physical activity.
- Activities to motivate people to be more physically 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 physical activities should be increased in the community, public places, educational institutions, worksites, etc.
- Open spaces (in proportion to built-up area) should be made mandatory in residential areas, schools, hospitals and the industry. This will promote physical activity, vegetation and better drainage of rain water, thereby raising the water table.

- 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 adequate 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 physical activity through media advocacy, direct and indirect reinforcements through NGOs, self-help groups, and through messages integrated into the presently functioning and proposed national programmes.

3.2 Policy measures required

- Policies measures must be implemented to ensure allocation of uncemented green open spaces while planning.
- Policies enforcing differential tax regime for green spaces need to be implemented. 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.
- Penalties can be imposed for people not complying with the guidelines.

3.3 Organizing national campaigns

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 physical activity. In India, this day falls during the peak of summer when the weather is hot and the schools are closed. Since this is a barrier for optimal utilization of the global 'Move for Health' day, India may choose another date to organize an additional national 'Move for Health' day every year.

4. Reaching out to the people: The role of the media and role models

Media is an important channel for reaching out to a larger population in the most effective way. Media involvement and celebrity endorsements should be sought for promoting healthy lifestyle in everyday life. Media plays a key role in determining the likes, dislikes, wants, desires and social awareness of the population at large, and can generate an entire social movement.

4.1 Strategies for health awareness

Partnership with the media (both print and audio-visual) is critical for the successful implementation of the global strategy. Adequate media coverage and sensitization of the target audience to the key issues will be required. These can be done through the medium of debates, talk-shows and awareness programmes. Flashing success stories can be effective. Organized media efforts (counter-advertising, debates, editorials, etc.), covering the following issues, need to be made: banning misleading junk food advertisements, emphasizing the importance of trees, highlighting the absence of cycling paths and footpaths as a health hazard, stressing the affordability and accessibility of healthy foods, banning restaurants serving foods with unhealthy components, etc. In addition, yoga, traditional sports and folk dances need to be popularized. The media can popularize traditional food habits and deglamorize junk food and carbonated drinks, and act as a counter to misleading advertisements.

4.2 Partnership with television production houses

Creative weaving of health education messages in individual episodes within an appropriately created context will have a wide impact and result in immense social benefits without causing much harm to the commercial interests of soap operas. The visual media should be requested to allocate prime-time viewing slots free of cost for messages on healthy diets and physical activity.

4.3 Partnership with the film industry

Films and film stars are the idols of the majority of the youth and population. Sensitive portrayal of the lifestyle of heroes of films and reinforcement of healthy behaviour can be an effective mechanism to instill and create the desire for a healthy lifestyle among the population. Product placement of unhealthy food products, in films, is a mode of promotion that should be discouraged as it has an undesirable effect on vast numbers of people. Tax concessions could be given to films which promote healthy behaviours in the social fabric of their story-board.

4.4 Celebrity endorsements

Celebrity endorsements of a high consumption of fresh fruits and vegetables, adoption of the simple joys of life such as walking, cycling and other health messages can be a powerful tool for changing social norms and creating a demand for a healthy lifestyle. Celebrities can popularize healthy lifestyles, which will have a high uptake in all sections of society. This will also prevent people from giving up healthy activities, e.g. a person who cycles to work gives up cycling when he climbs up the economic ladder. Celebrities (film

stars, sport personalities, television stars, etc.) should be persuaded to refrain from endorsing false claims of the food industry.

4.5 Advertising industry

The advertising industry, in India, is highly creative and advertisements have a strong and powerful impact on the behaviour of people. This industry's services can be utilized for social marketing of health education messages and to design effective health educational and motivational packages for dissemination. They could also play a responsible role and refrain from advertising unhealthy food products through a voluntary code of conduct.

4.6 Media's role in promulgation and implementation of policy

The role of the media is critical in raising awareness as well as in acting as watchdogs to ensure adequate implementation of policies. This will prompt various governmental ministries to promulgate policies to enable healthy living.

4.7 Public awareness programmes

Using multimedia and other powerful communication media, context and culture-specific health awareness initiatives need to be conceptualized, developed and broadcast. Translation of research-related information into simple dos and don'ts for the community is required. Behavioural modification strategies and social marketing strategies need to be used. Messages can also be placed at strategic locations on highways, hospitals and industries, educational institutions, etc. and reinforced through celebrity endorsements.

4.8 Role of Health Professionals

Health professionals from various disciplines are important sources of information and motivation to people, with respect to awareness and adoption of healthy behaviours related to diet and physical activity. Both at the individual level and through professional associations, health professionals should play an active role in disseminating information on diet and physical activity to the members of the community. Clinicians should especially become more actively involved in imparting such health education to patients, family members of patients and to people at large. In addition, other groups of non-medical health professionals such as nutritionists, nurses, multi-purpose health workers, anganwadi workers and exercise therapists should actively engage in health education related to diet and physical activity.

5. Setting-based approach: educational institutions

5.1 Interventions in schools

The key focus here has to be on engaging school teachers and peer leaders in adopting health promotion as their own campaign. One example of such a successful health promotion endeavour is the *Health Related Information Dissemination Amongst Youth (HRIDAY)—Student Health Action Network (SHAN)* programme being run in schools and colleges of India.

- Information on healthy lifestyle can be disseminated to school children so that they become ‘agents of change’. This would help to harness the considerable influence they have on the choices of their parents and societies.
- Measures must be taken to modify the current health and nutrition education packages in the curriculum to make them more context and culture-specific using pictorial messages/cartoons/photos and modern-day effective communication strategies.
- The concept of ‘diet causing specific diseases’ should be developed by nutrition and health experts, and adapted by communication and creative experts to be introduced in the school curriculum.
- Health education could be imparted through audiovisual aids including multimedia and real-time films. Interactive workshops promoting health and nutrition could be conducted for teachers, counsellors and students.
- The content and terminology of the training curriculum for both students and teachers need to be made region-specific and resource-sensitive.
- Co-curricular activities which promote awareness and adoption of healthy dietary habits should be encouraged. Innovative programmes, which appeal to young students and effectively deliver key messages in an interesting manner, must be designed, as culturally appropriate to each national setting.

5.1.1 Strategies to promote healthy habits

- Experiences, successes and failures can be shared through regular health meets among schools. This will enable the development of newer and more effective strategies. This model can then be replicated in other schools.
- Measures must be taken to systematically train teachers and peer leaders in implementing school health programmes.

- Facilitate interactive and continuous learning of healthy messages in schools. Posters with culture-specific messages should be designed and displayed at various locations in the school (e.g. classrooms, canteens, assembly hall, etc.).
- A nutrition and sports week could be organized twice a year in schools.
- Inter-school contests could be organized among school canteens to award the canteen that serves the most nutritious and hygienic food.
- Debates and elocution competitions on healthy living should be conducted regularly to reinforce health and nutrition-related messages, as well as sustain the initiatives taken.
- Schools should not accept sponsorship from industries manufacturing unhealthy food.
- During parent–teacher interactions, apart from the child’s curriculum, his/her eating habits could also be discussed, and healthy food and physical activity encouraged.
- Schools could utilize their wastelands to promote kitchen gardens, the produce of which can be used in school canteens or in the mid-day meal programme. Development of skills to tend to kitchen gardens and rainwater harvesting should be a part of the curriculum. Children should take participatory ownership of such lands. This will also increase their physical activity and they can carry this expertise and skills to their homes and the neighbourhood.
- Measures must be taken to discourage the availability of “fast food”, unhygienic food and foods with unhealthy ingredients within 200 meters of the school.
- School teachers should discourage children from bringing junk/unhealthy food in their lunch / snack boxes and educate parents to send healthy and hygienic food for their children.
- Parents should be influenced, through Parent-Teacher Association meetings and other communications from the school, to provide healthy diets to their children both at home and packed school meals.

5.1.2 Canteens

School canteens have a social responsibility towards the health and growth of children, and in inculcating healthy eating behaviours. They should not be treated as commercial outlets. They could be used as places to motivate children to consume healthy and hygienic food. When a child sees other children consume healthy foods and such options are available for him/her to choose from, then healthy food choices get reinforced and are also transmitted to the family at home.

Quality control measures to be observed in school canteens

- Local governments should develop a school canteen policy, which emphasizes healthy nutrition.
- Stringent hygiene regulations should be strictly implemented in the cooking and serving area.
- Iodized salt should be used for cooking.
- The quality of fats/oils used for cooking should be monitored. Foods containing trans-fatty acids should be discouraged.
- Strict control should be exercised to prevent leftover food from being used the next day (healthy foods have a shorter shelf-life, especially when the environmental temperature is high).
- Use of whole grains and pulses should be encouraged wherever possible.
- Seasonal, inexpensive, uncut fruits and locally available nuts/fruit seeds should be made available in canteens.
- The use of preservatives, colours and additives in food preparations should be strongly discouraged.
- Sale/serving of 'junk' food such as burgers, readymade noodles, chips, fried snacks, carbonated cold drinks should not be allowed.
- Freshly made food items with desirable combinations of cereals, pulses and vegetables should be served, along with non-carbonated beverages that do not have high levels of simple sugars.

Attractive pictorial stickers or posters that communicate nutritional messages can be put up in sections selling nutritious foods with healthy components. Short, attractively made promos can help reinforce nutrition-related messages.

5.1.3 Mid-day meal programmes

Many states in India have programmes that provide free food in government (public) schools to children who belong to the low socioeconomic stratum. Mid-day meals provided in government schools are the chief source of adequate nutrition for millions of children. These programmes provide a very important vehicle for delivering foods with healthy components and also help in inculcating a taste for healthy foods among children.

Agencies delivering these mid-day meals should be issued contracts based not only on the criteria of cost but also on the hygiene levels, nutritional content

and healthy components of the food provided. Samples of the food to be provided need to be tested through accredited/certified laboratories at the time of awarding the contract as well as through periodic and random checks. Stringent regulations are required for the maintenance of hygiene and nutritional content of the food.

Mid-day meal schemes should use: whole grains; whole pulses; jaggery (instead of sugar); healthy fats; locally available and inexpensive vegetables; fruits, fruit seeds (melon seeds) and nuts. Cooking methods that preserve and enhance the nutritional content of the food need to be used. Mid-day meal programmes need to be adapted according to region and season. Wherever possible, a qualified nutritionist may be involved to direct the nutrition and hygiene of food. Innovations that are nutritionally better and tastier should be introduced in the menu on a periodic basis. This should be an ongoing process. Such initiatives by the concerned contractors need to be rewarded.

5.1.4 Physical activity in schools

- Each school should have a playground or an identified area for exercise. This should be a part of the accreditation criteria.
- A minimum of five periods a week should be allotted for physical activity. Traditional games, folk dances and other forms of physical activity should be promoted in schools, in preference to expensive games that involve only a few students.
- A qualified physical instructor should be appointed for training students and motivating them to get involved.
- Mass physical training sessions should be encouraged in schools (already existent in many schools).
- A ‘sports week’ can be conducted twice a year. More emphasis should be given on being physically active and enjoying physical activity rather than on merely winning competitions and excelling.
- Ensure safe cycling and walking pathways in the approach roads to schools.
- Encourage informed advocacy by school students for health promotion policies in the school and community. Media help to advocate for physical activity can be sought by such students.

5.2 Intervention in colleges

Health education for having a healthy lifestyle must begin at an early age when children are in school but the messages should keep getting reinforced even at college level. The need to eat a healthy diet and be physically active is important for students in this age-group as they aspire to look like their role models and other popular personalities.

5.2.1 Action Steps

- Health clubs can be formed in colleges under the leadership of youth health advocates. This health club can coordinate various health activities at college level.
- College canteen's menu can be developed by the college level health club.
- Health messages can be promoted innovatively during college festivals.

5.2.2 Physical activity in colleges

In India, physical activity in colleges is not mandatory. Physical activity in colleges must be encouraged.

- A compulsory subject on physical activity should be introduced in the curriculum (e.g. dance, aerobics, games, various sports may be considered as options).
- Walking or cycling to college should be promoted. Safe walking and protected cycling lanes to colleges should be constructed and planned for.

6. Setting-based approach: Worksites

6.1 Increasing the consumption of nutritious food and encouraging physical activity

Policies and initiatives towards the above should include the following:

- Qualitative assessment of the specific factors operating at personal level and at worksites related to diet and physical activity need to be initiated. These qualitative techniques would also yield strategies for their modification and implementation.
- Employees' capacity building: A brief training on health education should be a mandatory part of induction of employees and should be reinforced every year (either through materials or periodic workshops, or both).
- Time, space and facilities for recreational physical activity and yoga should be allocated. In a multistorey building, the terrace could be used for recreational purposes. Alternatively, employees' access to gymnasium, sports clubs, etc. could be subsidized.
- Health promotion materials should be displayed at strategic locations in the workplace.

- Canteens should be encouraged to prepare and serve healthy foods such as freshly made cereal–vegetable and cereal–rice preparations, lightly flavored milk unsweetened or lightly sweetened milk, lime water, fruit juices, etc. Advice from a nutritionist could be sought for a healthy menu.
- Canteens should implement quality control measures with regard to hygiene and quality of fats and oils used. Iodized salt, and whole grains and pulses should be used whenever possible. Leftover food should not be carried over to the next day, and colours, readymade noodles and additives should not be used. The sale of junk foods such as burgers, chowmein, chips, fried snacks, carbonated drinks should be discouraged; instead, seasonal, inexpensive and uncut fruits can be sold.
- Governments are major purchasers of food for their employees (such as army or police) or for providing food in facilities managed by them (such as public hospitals). Governments should modify the purchase process to promote greater consumption of healthy foods through such distribution channels.

6.2 Improving working conditions

Policy initiatives for this should include the following:

- Employee wellness programmes should be part of human resource management. The focus should be shifted from employee health check-ups to employee health maintenance. Special incentives can be given to health-conscious employees.
- Suggestion boxes could be kept at the worksite. This would enable the management to formulate context- and culture-specific strategies that would be resource-sensitive and come from the employees themselves (stakeholders).
- Families need to be involved to ensure greater compliance and better implementation of health interventions.
- Employees should be motivated to minimize the use of mechanized aids (such as lifts) during daily work.
- A healthy environment should be ensured in the workplace. If possible, open spaces should be left for planting vegetables and/ or for organizing physical activity, with active employee participation and ownership.
- Facilities for pleasurable physical activity (such as sports or gym) should be provided at worksites.

7. Agencies for action: The private sector

The private sector should be an equal and important partner and stakeholder in facilitating and promoting healthy diets and physical activity. The social responsibility of the private sector needs to be looked into, promoted, legitimized and recognized.

7.1 Measures for the processed food products industry

- The type of fat/oil used to manufacture the product should be healthy.
- The use of preservatives, colour and other additives should be avoided, and the salt content of foods minimized.
- Misleading advertising or those making false claims should be abandoned.
- Responsible labelling in clear, large type and in the regional languages with the help of pictorial representation is desirable. All ingredients, additives, colour, and type of fat used should be declared.
- Private industries can play a crucial role in the fortification of food items, wherever required.
- Food products should be prepared hygienically with strict control on the expiry date and shelf-life of the product.
- Children and other vulnerable groups such as women and poor rural people should not be targeted in advertising and marketing strategies, for promotion of unhealthy foods.
- Effective complaint redressal mechanisms should be in place.

7.2 Measures by the beverage industry and fast food chains

- Larger portion sizes and extras (free food items) that are known to promote greater intakes should be discouraged. Portion sizes should be reduced and supersize offers restricted. Discounts and ‘freebies’ of junk food and beverages in restaurants and food chains should be strongly discouraged.
- Fast foods should not to be made cheaper than their healthy equivalents (for example, carbonated drinks compared with milk, ‘energy drinks’ compared with fruits).
- The type of fat used and the salt as well as sugar content should be declared on food packets.

7.3 Measures by street vendors

In urban and semi-urban areas of India, street vendors provide freshly made ethnic food at low cost, which is accessible to the majority of people. These, however, are usually not hygienically prepared and served, which acts as a major deterrent to the consumption of such food. People consuming such food items are prone to infections. Street vendors also tend to use leftover food and foods containing high levels of trans-fatty acids. An awareness drive among the providers (the vendors) and consumers is required through the media, NGOs, women's groups and educational institutions. Vendors need to be trained to prepare and serve their food/beverages with hygienic precautions and use healthy ingredients. Strict vigilance and control is required by the government. NGOs, the media, consumer groups and the government are key to the implementation of this policy.

8. Agencies for Action: Role of NGOs

In India, NGOs have widespread contact, outreach and the organizational capability to effectively deliver services and implement policies at the grassroots level. They can be the key players in catalyzing policy and also serve as the vehicles for delivery and implementation of these strategies.

Similar to the National Consultation, multisectoral, multidisciplinary consultations should be conducted within each local target group itself (urban clusters/villages), with the involvement of experts and local policy-makers to evolve viable implementation strategies. Clear aims and objectives, and intended outcomes for such an event should be defined. NGOs can take a lead in organizing such consultations.

The thrust of the initiatives by each NGO could be in the following directions:

- Endorse good, healthy eating practices in their vision statement in addition to their primary goals.
- Empower the community, especially the weak and needy sections.
- Use their present programmes and outreach to disseminate culturally and contextually appropriate messages (such as the use of inexpensive fruits like wild berries and locally available fresh vegetables). Their field staff and coordinators would need to receive prior training and sensitization on these issues.
- Implement the national dietary guidelines at the community level (after local, cultural and contextual modifications), provide information on what food items should be used and why, and promote region-specific diets and recipes with demonstrations.

- Advocate, impart and inculcate strict hygiene habits among street vendors in a highly effective manner.
- Advocate against the promotion of unhealthy foods, especially among vulnerable groups.
- Undertake social marketing initiatives in partnership with the media, advertising agencies, health associates and sociological and anthropological institutes.
- Form pressure groups in the community as well as at their organizational level and facilitate consumer forums to reduce advertisements of unhealthy food by the corporate sector.
- Sensitize consumers and create awareness among target communities to avoid shops with poor cooking practices and those serving non-nutritious and non-hygienic food.
- Help community groups to develop and disseminate their own innovative (culturally and contextually appropriate and resource-sensitive) information, education and communication (IEC) material, in association with technical experts. All IEC material should target and use behavioural change strategies.
- Promote the formation of adolescent health groups to advocate and encourage the provision and use of open spaces, parks, gardens, sports grounds in their communities. Traditional games should be encouraged.
- Conduct healthy living camps at the community level.
- Raise community awareness to bring forward health as an issue in local elections. For example, the lack of availability of open, green spaces can be raised as an issue during the elections.
- Approach celebrities and persuade them to refrain from participating in promotional campaigns of unhealthy beverages and food practices. They should be requested to promote healthy lifestyle practices.
- NGOs should act as effective watchdogs to ensure the formulation and implementation of appropriate government policies.
- NGOs should act as communication channels and coordination bridges between community groups and governments.

9. Gender-based strategies: Empowering women

Women play an influential role in determining social norms and cultural practices related to diet and physical activity, especially in family settings. They are the progenitors and have a major impact in nurturing and consolidating families. Their likes, dislikes, desires, habits and behaviours have a major role in weaving

the social fabric, education, health and economic development of the family, community, society and nation. With more and more women working both inside and outside the home, they are performing double duties. However, the physical activity levels of women in India are known to decrease as they advance into middle age. Cultural barriers in some countries or segments of society also prevent them from undertaking outdoor physical activity.

Currently prevailing social norms in individual societies at the community and village level need to be studied in depth, through methods of qualitative research on lifestyle, cooking and eating practices, preferences, accessibility and affordability of nutritious food, fresh fruits and vegetables, etc. Based on the information elicited, appropriate culture- and context-specific intervention strategies can be formulated to improve nutrition, health and physical activity among women in different settings and regions.

Policy measures and media advocacy are required to achieve the empowerment of women to become fully capable of catering to their own health needs, mobilizing and positively influencing other women and acting as agents of change in family settings.

- Advocate and encourage nutritional foods and healthy eating habits during pregnancy and lactation. Supplementary nutrition, especially for iron, calcium and folic acid, is required.
- Ensure that daily diets of women have plenty of fruits and vegetables, as part of all main meals and preferably as part of all snacks.
- Encourage healthy child-rearing practices.
- Breast feeding should be encouraged as a practice which promotes the health of both mother and child.
- Families should advocate and promote women's health and nutrition. Social norms need to be addressed through the media and social networks, and accordingly modified.
- Educate women through the media, health clinics, gynaecologists, physicians, *anganwadi* workers, women leaders, etc. about healthy foods, the importance of eating locally available, inexpensive fresh fruits and vegetables 5 times a day, as well as nuts and fruit seeds.
- Provide regular education programmes on radio and television for housewives to enable them to get full information on the interpretation of food labels and tactics of advertising. Housewives should be empowered so that they are not influenced by misleading advertisements on television, in magazines, etc.
- Promote and popularize traditional, healthy, freshly made foods among women and families.

- Promote healthy cooking practices among women through NGOs, the media, self-help groups, etc. Active demonstrations should be conducted of hygienic cooking practices that enhance and preserve the nutritional content and cost-effectiveness of the food. Cooking procedures should be adapted to include more of steaming, broiling and roasting instead of frying.
- Address gender discrimination in a culturally appropriate and sensitive manner with special emphasis on a healthy diet, education and physical activity for the girl child.
- Ensure adequate intake of iron, calcium and folate from early childhood with a special focus during puberty, pregnancy, lactation and the menopause.
- Encourage leisure-time physical activities among sedentary women (usually urban).
- Ensure women's safety so that they feel secure if they plan any outdoor recreational pursuits on their own.
- Educate women regarding how to provide varied nutrients to meet the requirements of different members of the family.
- Remove cultural barriers that prevent women from adopting healthy lifestyles. Special programmes need to be developed to encourage women to participate in individual or group physical activity programmes in a culturally acceptable and personally comfortable manner.

10. Mobilizing resources for implementation

Governments need to find avenues to generate sufficient funds for developing and implementing healthy nutrition and physical activity promotion programmes. Some suggestions for mobilizing financial resources are listed below.

10.1 Financial resources

- The government can allocate funds to support these activities in the health sector as well as in other relevant government sectors. A specific budgetary allocation needs to be made from both Plan and non-Plan funds.
- Taxes can be imposed on automobiles, especially on highways. This will generate resources for building pathways, cycling lanes and community recreational centres. These measures will reduce vehicle use and thereby environmental pollution. Reduction in vehicle use would promote cycling and walking activities and would encourage people to use the public transport system.

- Increasing taxes on unhealthy foods will generate funds, which can be effectively used for subsidizing healthy foods. These resources can be diverted towards providing low-cost, nutritious food to schoolchildren and children belonging to the low socioeconomic groups of society. Fruits should essentially be provided to these vulnerable groups as part of government-funded meal programmes. Mid-day meal programmes for schoolchildren should include fruits.

10.2 Human resources

Community mobilization is an important component of human resources. Policy makers and programme managers need to ensure that NGOs, including associations of health professionals, play a positive role in health education campaigns to enhance public awareness on health and physical activity. The value of health advocacy by the youth and the potential of using schools as portals for neighbourhood community health education should be recognized.

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