

## Public health nutrition in Singapore

Tan Wei Ling

*Deputy Director/Senior Nutritionist, Food & Nutrition Department, Ministry of Health, Singapore.*

In the early 1960s and 1970s, as a result of surveys and assessments indicating special needs among young children and low-income population groups, the Government of Singapore expanded its public health programme to include direct delivery of food and nutrition services.

A small-scale food assistance programme was implemented to meet the immediate needs of undernourished young school children. The programme included the School Feeding Scheme in which a wheat-soy-blend drink was served free to each underweight primary school child on every school day, and the Tuberculosis Food Ration Scheme in which a two-week ration of food was distributed to parents of deserving children to supplement the meals served at home.

A register was kept of undernourished pre-school children for follow-up in the maternal and child health clinics. The severely undernourished were followed-up at home with regular home visits. Weekly talks and demonstrations on preparation of weaning diets and on young child feeding, initiated in the early 1970s, are still being conducted in the maternal and child health and school health clinics, though somewhat modified to address today's health concerns and adapted to today's eating patterns.

Nutrition services began to extend beyond maternal and child health and school health during the mid 1970s to the whole population. The 'Better food for better health' campaign was conducted in 1975. The emphasis was on messages targeted at low-income families, messages such as low-cost protein sources, the cheaper locally available vitamin C-containing fruits and ways to increase the energy content of meals. The campaign also dealt with food hygiene and proper food handling practices.

Towards the latter half of the 1970s, obesity among school children began to emerge as a public health concern. The major focus of attention in nutrition then began to shift away from protein energy malnutrition and growth retardation due to undernutrition, to the effects of overeating and leading a sedentary lifestyle, and of specific nutrients and dietary factors, on the long, slow development of chronic degenerative diseases. A weight management programme for overweight school children was started in 1977. It has been revamped several times, the latest just last month to cope with the 13% obese children 6-16 years old. An obesity prevention programme due to start later in the year, is being planned for preschool children.

Several national health campaigns and major health education and promotion programmes in the past 12 years had nutrition education as a component. In the 1979 'Combat diseases due to harmful lifestyle' national health campaign, obesity and poor eating habits were featured as major health risk factors. The 1986 'Healthy heart, healthy life' education programme cited nutrition in several of its 13-part series in which 'Hearty' went on mass media using the television, radio and local newspapers to promote heart health. 'Hearty' even went to the Bird Park, bringing the heart health message to school children in a fun way. The 'Eat healthy, choose wisely' theme of the Nutrition Week in 1989 was imaged by a smiling 'Hearty' armed with a fork and spoon. The programme placed nutrition in the forefront of disease prevention and health promotion. Interest was generated well ahead of the 'week' with a seven-part weekly TV quiz series entitled 'You've got the choice' involving pre-university students. 'Hearty' had a busy time then. He was in the supermarkets, at hospital beds, and even at the 1989 National Day celebration.

In 1989, after 10 years of healthy lifestyle promotion, the Ministry of Health organized a gigantic national health fair with the theme 'Your health in your hands'. The 2-week fair drew an estimated 390 000 visitors. The nutrition sector at the fair was a massive crowd puller and was judged the best area. Many had hands-on experience at the participatory exhibits whilst others queued to measure their body fat level. Hearty's Cafe was well-patronized by all, old and young. It not only served healthy meals and snacks, but also had computers to give the nutritional value of the food sold. The more recent cancer education programme in 1990 featured diet in its 'Check early, check cancer' list of suggested activities to reduce cancer risk.

To ensure an enlarged pool of nutrition educators to serve the population, the then Nutrition Unit of the Ministry of Health started extensively and intensively the training of nurses in the public health sector. This was in the early 1970s. Similar training was extended to home economics teachers in the second half of the 1970s to prepare them to teach the revised nutrition component of the home economics syllabus which was made compulsory for all lower secondary school girls in the early

Correspondence: Mrs Tan Wei Ling, Food and Nutrition Department, Block 3, Level 4, Institute of Health, 226 Outram Road, Singapore 0316.

1980s. Since then, nutrition has been built into the training curriculum of both basic and post-basic nurses, home-economics, human and social biology teachers, doctors and pharmacists.

Towards the end of 1990, there were 30 nutritionists and dietitians practising in Singapore. This number did not include medical nutritionists. A good number (20 out of the 30) were in the therapeutic dietetics and hospital meal service sectors. It has been projected that by the year 2000, Singapore will need 148 nutritionists and dietitians, a five-fold increase, to provide for its expanding nutrition and dietetics services. There is thus an urgent need to consider providing training of these professionals.

The 1950s and 1960s saw a drastic decline of the prevalence of breast-feeding among both the lower and higher socioeconomic groups in Singapore. An education programme was put into action to reverse the declining trend. A committee was later formed to oversee the marketing practices of the infant milk industry. The Sale of Infant Foods Ethics Committee, Singapore, SIFECs in short, finally formulated the Code of Ethics on the Sale of Infant Formula Products in Singapore. Implemented since 1979, adherence to the code is obligatory on the entire infant food industry operating in Singapore.

Dietary recommendations on eating wisely have been publicized since the early 1970s. The early guidelines advised the public to 'Choose some foods from the three basic food groups — go, grow, and glow'. Later, as more foods became available, the principle of variety was introduced, still within the confines of the three food groups.

In the 1980s however, the focus of nutrition objectives expanded to encompass the role of over-consumption of fat, cholesterol, salt and sugar, and dietary factors associated with chronic diseases. The words variety, moderation and balance began to appear in nutrition messages. Earlier, guidelines were qualitative or directional, suggesting that people eat more of or less of certain foods. In response to public demand as the people became more health conscious, efforts have now been made to quantify the guidelines, naming individual nutrients, food components and certain foods, and to recommend average daily intakes. Also, dietary guidelines have been designed increasingly to translate the RDAs into terms usable by consumers, as in the daily food guide.

Dietary adequacy today includes consideration of the most reasonable proportion of dietary factors for prevention of chronic disease, as well as for the promotion of health and wellbeing. This new prospective was reflected in the 'Guidelines for a healthy diet', recommended by the National Advisory Committee on Food and Nutrition in 1988, for all healthy Singaporeans over the age of two years. The Committee established quantitative targets for consumption of total fat, saturated, monounsaturated and polyunsaturated fats, cholesterol, complex carbohydrates, refined and processed sugar, salt and alcohol, and for breast-feeding.

The first guideline emphasizes the need to consume a variety of foods from the three basic food groups to provide essential nutrients. It proposes the number of servings of each food group for various population groups, and provides examples of serving sizes. On food

energy, the guidelines emphasize that it is important for individuals to maintain body weight and if overweight, to gradually reduce to achieve desirable weight. The recommendation is to follow a long term plan involving sensible eating habits and a programme of increased physical activity. For determining healthy weight, the body mass index (BMI) has been recommended for adults.

Specific recommendation about desirable level of fat in the diet is made in the guidelines. It suggests 20–30% of total energy intake from fat as a target. Besides the avoidance of too much fat, the nutritional guidelines recommend modification of the composition of the fat in the diet. It is to consist of equal portions of polyunsaturated, monounsaturated and saturated fat. Dietary recommendations for the general public include a reduction of dietary cholesterol to less than 300 mg a day.

The guidelines recommend an adequate amount of starch and dietary fibre in the form of complex carbohydrates. This can be achieved through increased consumption of foods like fruit, vegetables, legumes and breads and cereals especially wholegrain types so that these supply about 50% of daily dietary energy. This supports other objectives related to increasing the intake of nutrients like vitamins A and C, and avoiding too much fat and sugar.

On salt intake, moderation is recommended for the general population. The aim is to suggest diets at the 'safe and adequate' level of about 4.5g a day for adults. Nutritional recommendations include reducing the intake of salt cured, preserved and smoked foods. Particular emphasis is placed on commonly eaten local food products like barbecued meat, smoked fish and fish roe, cured meat and pickled food.

Like salt, moderation of refined and processed sugar is also recommended for the whole population. A goal of less than 10% of total energy intake from these sugars is proposed. For those who drink alcoholic beverages, the principle of moderation is again applied. The nutritional guidelines for Singaporeans conclude with a special recommendation on breast feeding. It encourages breast feeding of infants until at least 6 months of age.

Strategies for promoting the adoption of the dietary guidelines include increasing the awareness of the people of the relationship between diet and health. This is done through the mass media like TV, radio and newspapers. Publicizing the guidelines to those responsible for health and nutrition education. And by including it in the curriculum of related health professionals and teachers, providing simple, relevant and consistent nutrition information to the general public at talks and exhibitions, and in print and audio-visual materials.

To facilitate the adoption of a diet in line with the nutritional goals and recommendations, the Ministry has started consultation with the food industry and caterers to increase the availability of healthier food choices in the marketplace and at eating outlets. Food service personnel and caterers in hospitals and other health care institutions, school and college canteens, child care centres, workplace canteens and fast food outlets and hawker centres are encouraged to modify food preparation and catering practices and to offer a wider range of healthier food choices. For example, our Department has just completed a 6-month pilot project in selected schools.

The objective was to promote healthier food choices in school canteens as part of the school's effort in encouraging good eating habits among school children. The project took a four-prong approach, involving principals and teachers, food stall holders, students and their parents. We are now preparing a set of guidelines for all schools on foods to be sold in school canteens. Effort is also being directed at encouraging energy and nutrient labelling of food and responsible advertising and product claims to enable consumers to make informed decisions in food selection and purchase. Progress in this area will be slow as food composition and dietary consumption data are very much lacking and will take time to collect.

The Ministry of Health, in its National Health Policy for the 1990s has prioritized 'Enhancing health promo-

tion through health education and better nutrition' as one of its five major national programmes to significantly improve the level of health of Singaporeans. With this national directive and nationwide co-operation among health and nutrition professionals, the food industry and the government, Singaporeans can look forward to having a 'healthier' nation. There are plans for a more coherent programme of intensive nutrition education for the general public and for the establishment of closer liaison with the food industries to ensure the increased availability of a healthy food supply.

#### References

Annual reports - Ministry of Health, Singapore

---

### Public health nutrition in Singapore

Tan Wei Ling

*Asia Pacific Journal of Clinical Nutrition* 1992; 1: 61-63

副主任 / 高級營養師

新加坡衛生部、食物營養系

在1960年與1970年代，公共衛生計劃已擴大包括食物與營養服務的直接投遞。這些服務包括食物援助計劃和營養不良兒童的登記，以便繼續進行保健工作。70年代中期以來，一些國家的保健活動和主要計劃是指導健康的飲食習慣和選擇健康食物。

過去30年來，營養研究的焦點已從營養不良轉移到與膳食有關的慢性稟退性疾病，營養教育已相應地轉變了重點與方向。膳食指南已從質轉變成量，作為每日平均進食的目標。

為了方便採用國家推荐的膳食，正在與食品工業連系，以保證健康食物的供應和營養成份的標籤紙。目前國家1990年代的方針是明顯改進新加坡人的健康水平，並將通過較好的營養水平給于營養計劃以動力。