

Dietary Guidelines for the Elderly

Cho-Il Kim[†]

Korea Health Industry Development Institute, Seoul, Korea

ABSTRACT

Dietary guidelines are a distillation of dietary advice from health professionals to the general public. They are based upon current scientific knowledge about the relationships between diet and disease, nutrients available in the food supply of a country, and the profile of morbidity and mortality in that country. With two different sets of dietary guidelines used for more than a decade in Korea, the necessity of revising dietary guidelines has been raised continuously from academia and research. Funded by a grant from the Health Technology Planning and Evaluation Board, dietary guidelines for each age group were drafted as a research project and the one for the Korean elderly is as follows :

Dietary Guidelines for the Korean Elderly(draft) – Have a variety of easily digestible foods on time ; at least 3 meals a day and some snacks. – Be physically active to maintain appetite and/or ideal body weight. ; maintain a balance between activity and what you eat. – Increase consumption of bean-and dairy-products. – Consume enough amounts of fresh dark-green and yellow vegetables and fresh fruits. – Consume adequate amounts of assorted kind of animal foods including fish, meat and poultry. – If you drink alcoholic beverages, limit your intake and, drink enough water and other beverages ; alcohol may interact with your medication and affect your appetite. Aforementioned draft and related contents are expected to be utilized as a neat base in formulating(or revising) dietary guidelines for Koreans by the Government in near future. (*J Community Nutrition* 2(1) : 50~61, 2000)

KEY WORDS : dietary guidelines · elderly · government · food guide.

Introduction

Optimal health for people can only be achieved when greater efforts are made in health promotion and prevention of illness and when nutrition is an integral part of these efforts. A healthier population opts for a diet that promotes good health and that lowers the risk of chronic disease. While some controversy still exists about what constitutes a healthful diet, the nutritionally optimum diet is a concept that is more understood. Most country has a Scientific Review Committee(SRC) which epr-

vides an updated interpretation of the scientific evidence that defines a healthful diet for their people in the form of updated nutrition recommendations, including recommended dietary allowances(RDA). The Nutrition Recommendations are intended to help people select a dietary pattern that will supply recommended amounts of all essential nutrients while reducing the risk of chronic diseases.

In most countries, many gaps between estimated current consumption patterns of food and/or nutrient and those recommended by a Scientific Review Committee are identified. These gaps indicate nutrition problems for that population whose dietary practices place them at greater risk of diet-related chronic diseases, such as heart disease and some types of cancer. To close these gaps, and thereby lower the risk of such diseases, people should make ch-

[†]Corresponding author : Cho-Il Kim, Korea Health Industry Development Institute, 57-1 Noryangjin-dong, Dongjak-ku, 156-800, Korea
Tel : (02) 2194-7311, Fax : (02) 824-1767
E-mail : kimci@khidi.or.kr

anges in their diet, including lowering total and saturated fat, increasing complex carbohydrates and fiber, and reducing sodium, alcohol, caffeine, etc.

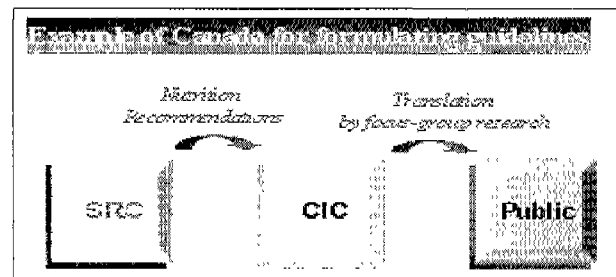
How Dietary Guidelines are Formulated?

Nutrition is a complex science and communication of its messages demands more information and explanation than can be given in brief statements. Nonetheless, **dietary guidelines** provide advice to the general population about healthy food choices and possibly healthy dietary habits, so that their usual diet contributes to a healthy life-style and is consistent with minimal risk for the development of diet-related diseases. The guidelines summarize current nutrition knowledge and act as triggers to other, more comprehensive education programs for consumers.

The guidelines are a distillation of dietary advice from health professionals to the general public. They are based upon current scientific knowledge about the relationships between diet and disease, nutrients available in the food supply of a country, and the profile of morbidity and mortality in that country. And they are developed for use by healthy people, usually adults, unless specified for certain group of people.

Here, we are going to have an example of Canada for formulating guidelines for her own people.

In Canada, the Nutrition Recommendations forwarded to the Communications/Implementation Committee from the Scientific Review Committee were translated to make them more accessible to the public. The translation was based on focus-group research at the consumer level and advice from nutrition educators. The Communications/Implementation Committee recommends the following translation for communication and implementation to pro-



professionals and the public :

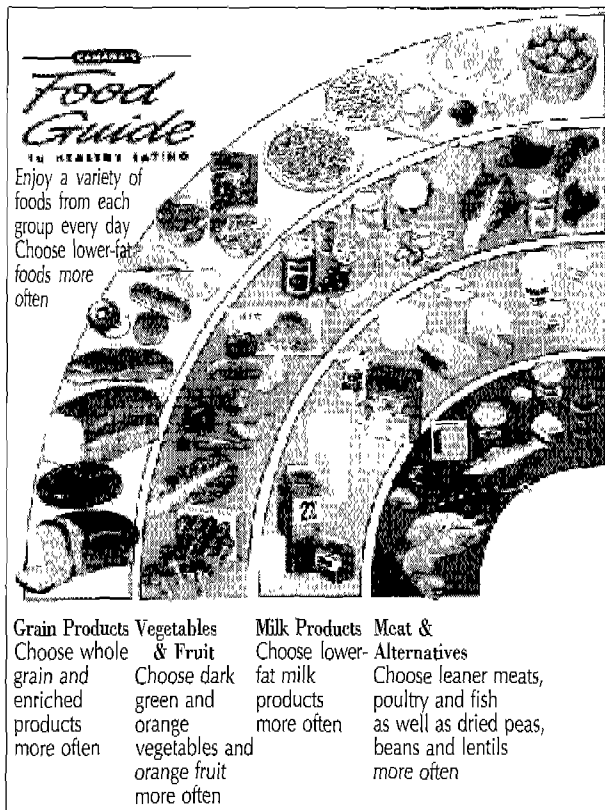
1. Canada's Guidelines for Healthy Eating (1991)

- 1) Enjoy a VARIETY of foods.
- 2) Emphasize cereals, breads, other grain products, vegetables and fruits.
- 3) Choose lower-fat dairy products, leaner meats, and foods prepared with little or no fat.
- 4) Achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating.
- 5) Limit salt, alcohol and caffeine.

The Guidelines are directed at healthy Canadians over two years of age as in the case of the United States.

Collectively, these statements make up the key nutrition message for healthy Canadians. The Communications/Implementation Committee recommends that further research be done to refine these messages for **targeted subgroups of the population** such as low-literacy groups and ethnic groups.

On the other hand, the Communications/Implementation Committee recommends that many strategies be used for implementing Canada's Guidelines for Healthy Eating. And most of these strategies are applicable to other countries, also. There is a need to go beyond providing nutrition information to people about what constitutes a healthy diet. **Comprehensive and coordinated efforts** must be made using a range of strategies. These strategies include :



Food guide from Canada

- Development of food and nutrition policies ;
- Collaboration and coordination among many partners ;
- Development of multisectoral, community-based nutrition intervention programs ;
- Creation of supportive environments in locations such as schools, worksites, restaurants and supermarkets, and through legislation and policy changes where appropriate ; and
- Increased efforts in nutrition research and surveillance.

The communication and implementation of dietary guidelines depends mostly on commitments and partnerships at many levels, including governments, food and related industries, nutrition and other health professionals, non-governmental and community health organizations and the public.

Dietary Guidelines and Food Guide from Different Countries

Now, we are going to review some dietary guidelines from several countries for their own people in their own environment and situation.

1. Dietary Guidelines for Americans, 2000 (released for public comment on February 2, 2000)

1) Aim for fitness : Choose a lifestyle that combines sensible eating with regular physical activity

(1) Aim for a healthy weight.

(2) Be physically active each day.

2) Build a healthy base

(3) Let the Pyramid guide your food choices.

(4) Eat a variety of grains daily, especially whole grains.

(5) Eat a variety of fruits and vegetables daily.

(6) Keep food safe to eat.

3) Choose sensibly

(7) Choose a diet that is low in saturated fat and cholesterol and moderate in total fat.

(8) Choose beverages and foods that limit your intake of sugars.

(9) Choose and prepare foods with less salt.

(10) If you drink alcoholic beverages, do so in moderation.

2. Dietary Guidelines of the United Kingdom

1) Enjoy your food

2) Eat a variety of different foods

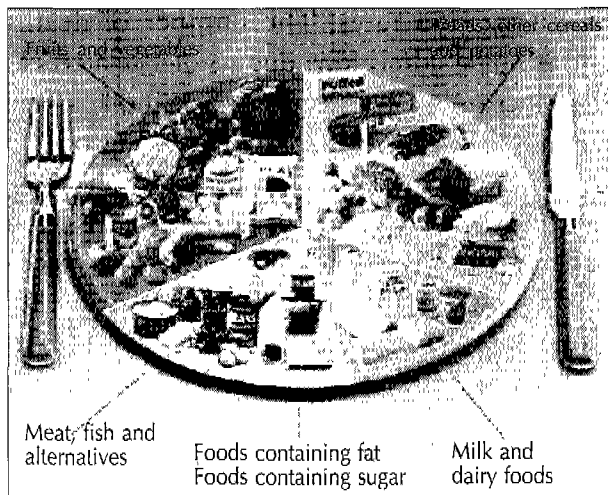
3) Eat the right amount to be a healthy weight

4) Eat plenty of foods rich in starch and fiber

5) Don't eat too much fat

6) Don't eat sugary foods too often

7) Look after the vitamins and minerals in your food



Food guide from the United Kingdom

- 8) If you drink alcohol, keep within sensible limits

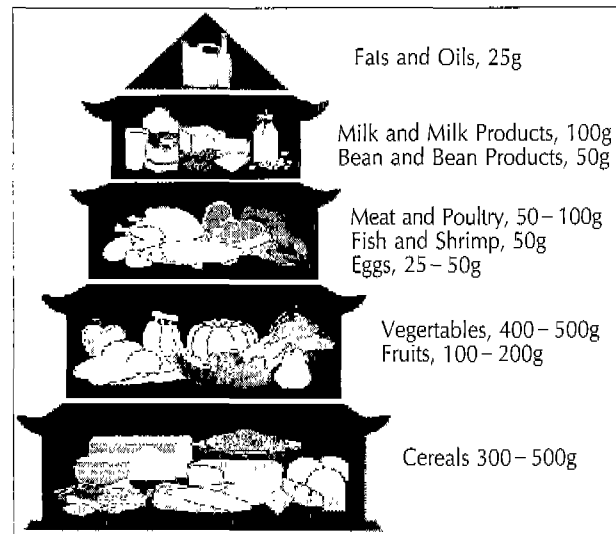
3. Dietary Guidelines from the Federal Republic of Germany

Ten guidelines for sensible nutrition

- 1) Use variety in the choice of foods.
- 2) Eat not too much and not too little.
- 3) Eat small meals more often.
- 4) Eat sufficient protein.
- 5) Avoid too much fat.
- 6) Eat sweets seldom.
- 7) Eat fresh food (fruits, juices, vegetables, milk) and whole-grain products daily.
- (8) Prepare foods properly.
- (9) Use salt sparingly.
- (10) Use restraint with alcohol.

4. Dietary Guidelines for Chinese Residents : Balanced Diet, Rational Nutrition, and Health Promotion (Revised from 1989 guidelines and Adopted by the Standing Board of the Chinese Nutrition Society, April 10, 1997)

- 1) Eat a variety of foods, with cereals as the staple.
- 2) Consume plenty of vegetables, fruits, and tubers.
- 3) Consume milk, beans or dairy- or bean-products every day.



Food guide from China

- 4) Consume appropriate amounts of fish, poultry, eggs and lean meat ; reduce fatty meat and animal fat in the diet.
- 5) Balance food intake with physical activity to maintain a healthy body weight
- 6) Choose a light diet that is also low in salt.
- 7) If you drink alcoholic beverages, do so in limited amounts.
- 8) Avoid unsanitary and spoiled foods.

Recommendations for the aged (China)

- A. Take easily digestible foods along with some foods made of coarse grains.
- B. Participate in moderate physical activities to keep intake and output of energy in balance.

5. Guidelines from the Philippines

- 1) Eat a variety of food everyday.
- 2) Promote breastfeeding and proper weaning.
- 3) Achieve and maintain desirable body weight.
- 4) Eat clean and safe food.
- 5) Practice a healthy lifestyle.

6. Dietary Guidelines from Australia (1979, Revised 1992)

- 1) Enjoy a wide variety of nutritious foods.

- 2) Eat plenty of breads and cereals (preferably wholegrain), vegetables (including legumes) and fruits.
- 3) Eat a diet low in fat and, in particular, low in saturated fat.
- 4) Maintain a healthy body weight by balancing physical activity and food intake.
- 5) If you drink alcohol, limit your intake.
- 6) Eat only a moderate amount of sugars and foods containing added sugars.
- 7) Choose low salt foods and use salt sparingly.
- 8) Encourage and support breast feeding.

Guidelines on specific nutrients

- 9) Eat foods containing calcium. This is particularly important for girls and women.
- 10) Eat foods containing iron. This applies particularly to girls, women, vegetarians and athletes.

In Australia, they have done something special in 1999, the International Year of the Older Person. As so in other countries all over the world, health care costs increase steeply with age, with many of these costs being associated with diet related problem in Australia. Hence, as always had, appropriate nutrition has the potential for reducing the numbers of hospital admissions, shortening hospital stays and of improving outcome from community managed care.

The proportion of older Australians (above 65 years) is increasing as shown below :

- 1976 ; 9%(1.2 million), 16% of elderly over 80 years(1.4% of total population)
- 1996 ; 12%(2.2 million), 20% of elderly over 80 years(2.4% of total population)
- 2016 ; 16%(3.5million), 25% of elderly over 80 years(4.0% of total population)

The Australian government realized that these demographic changes have serious implications for health care costs, unless there is an improvement in health and a decline in morbidity and

hospitalization rates. The number of deaths and hospital admissions due to diet-related causes increases with age and, nutrition is one of the most important factors impacting on the health of older Australians. Therefore the Australian Dietary Guidelines of 1992 have been reviewed and redeveloped to meet the needs of older Australians as a project directed by Dr. Colin Binns on behalf of the National Health and Medical Research Council of Australia.

7. Dietary Guidelines for Older Australians

- 1) Enjoy a wide variety of nutritious foods.
- 2) Keep active to maintain muscle strength and a healthy body weight.
- 3) Eat plenty of vegetables (including legumes) and fruit.
- 4) Eat plenty of cereals, breads and pastas.
- 5) Eat a diet low in saturated fat.
- 6) Drink adequate amounts of water and/or other fluids.
- 7) If you drink alcohol, limit your intake.
- 8) Choose foods low in salt and use salt sparingly.
- 9) Include foods high in calcium.
- 10) Use added sugars in moderation.
- 11) Eat at least three meals every day.
- 12) Care for your food ; prepare and store it correctly.

Changes in physiology related to aging are certainly important in elderly nutrition and in some cases allowance will have to be made for degrees of dysfunction. Therefore, examples of issues that may need to be considered were suggested as follows by the Working Party of the above project "Dietary Guidelines for Older Australians" :

Slowing of the metabolic rate. Thus overall food intake is less and nutrient density will need to be higher to meet requirements for micronutrients.

Dentition : Loss of dentition makes eating of food more difficult and highly prepared fo-

ods may not have the same nutrient content or availability.

Poverty : The elderly are the least affluent group in our community.

Loss of partner - differential in life expectancy between males and females.

Mobility : Loss of mobility may cause difficulty with food preparation or with food purchasing.

Depression is common in this age group

Declining taste.

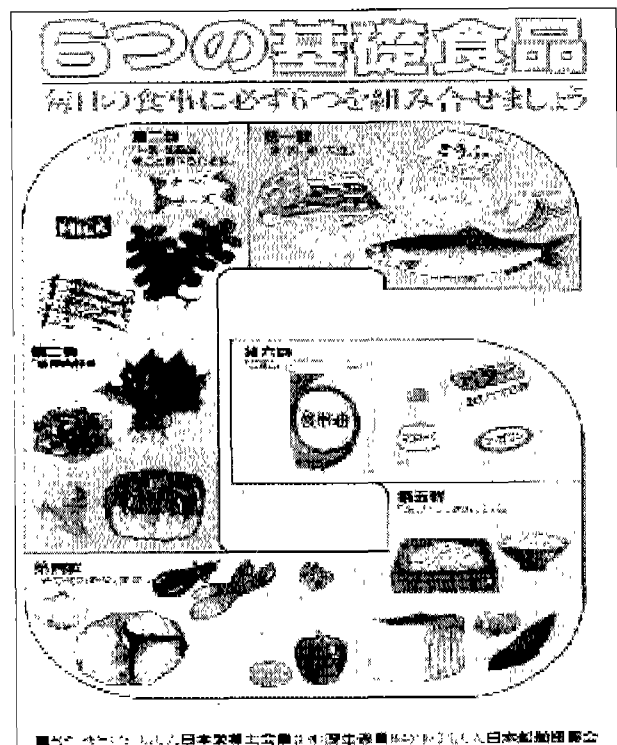
Preparation and storage problems due to inadequate facilities

Access to food(food security)

Institutionalization : A greater proportion of the elderly live in institutions.

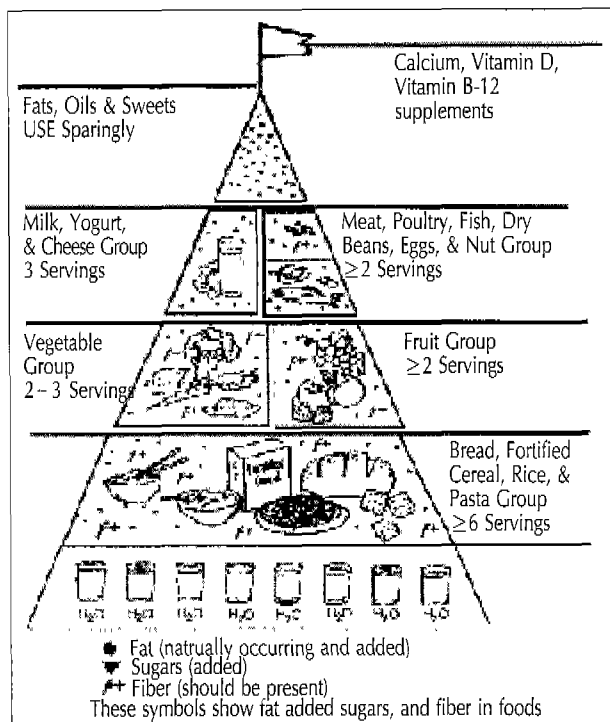
Time. For the elderly time is not a factor. But in institutionalized situation food is often placed in front of an elderly person and then whisked away before it can be consumed.

Here is another example of dietary guidelines with recommendations specifically set for



Food guide from Japan.

the elderly.



Food guide pyramid for elderly

8. Dietary Guidelines from Japan(1985)

- 1) Obtain well-balanced nutrition with a variety of foods ; eat 30 foodstuffs a day ; take staple food, main dish and side dish together.
- 2) Take energy corresponding to daily activity.
- 3) Consider the amount and the quality of the fats and oils you eat : avoid too much ; eat more vegetable oils than animal fat.
- 4) Avoid too much salt, not more than 10 g a day.
- 5) Happy eating makes for happy family life ; sit down and eat together and talk ; treasure family taste and home cooking.

Recommendations for health promotion of the elderly(1990)

- 1) Avoid undernutrition : decrease in body weight is a yellow(warning) sign.
- 2) Enjoy varied diet with assorted ways of

cooking : eat anything with caution not to eat too much.

- 3) Eat side dishes first : side dishes are more important for the aged.
- 4) Make having meals into a rhythm : take your time and get enough when you eat.
- 5) Exercise your body : hunger gives the best appetite.
- 6) Put knowledge and information on healthful diet into practice : knowledge and information on healthful diet is a key to health.
- 7) Enjoy meals with gusto : healthy elderly with generosity and satisfaction.

(Submitted to the Minister of Health and Welfare by the Public Health Council)

Food-Based Dietary Guidelines

Meanwhile, there has been a movement for setting up general dietary guidelines at the level of worldwide organization, FAO. The International Conference on Nutrition(ICN), convened by the Food and Agriculture Organization(FAO) and the World Health Organization (WHO) in Rome in 1992, identified strategies and actions to improve nutritional well-being and food consumption throughout the world. The **World Declaration and Plan of Action for Nutrition** adopted during the Conference includes a section on "Promoting appropriate diets and healthy lifestyles." Governments are called upon, ... "to provide advice to the public by disseminating, through use of mass media and other appropriate means, qualitative and/or quantitative dietary guidelines relevant for different age groups and lifestyles and appropriate for the country's population." It also states that attaining these goals will require that each nation formulate a plan of action appropriate to its culture : identify public health problems and trends related to local dietary patterns ; and adopt local strategies for

their resolution. The ICN Plan of Action for Nutrition is notable for the absence of numerical targets for food and nutrient intakes. This indicates broader thinking among nutritionists, away from policies dictated by nutrient recommendations toward ones defined by prevailing public health issues.

Pursuing these goals and strategies, FAO and WHO jointly convened an international consultation of 22 experts to discuss the preparation and use of **food-based dietary guidelines (FBDG)** on March 1995. The experts reviewed scientific evidence on diet-related health problems including non-communicable diseases and other forms of malnutrition. The literature on recommended nutrient intakes was reviewed as well and a synthesis of current nutrient recommendations was made. They discussed dietary assessment methodologies in relation to the development of food-based dietary guidelines. Finally, they examined existing national dietary guidelines and their use in countries and made recommendations for the development and implementation of food-based dietary guidelines. However, one thing we have to keep in mind at this point is that FBDG can be effective only in the countries with one or one major ethnicity. In multicultural society, it's rather difficult to implement food-based dietary guidelines.

Many countries have dietary guidelines expressed in **scientific terms**, with quantitative recommendations of nutrients and food components. These references are used by policy makers and health professionals and include such goals and recommendations as Recommended Dietary Allowances(RDAs), Reference Nutrient Intakes(RNIs) and Dietary Reference Values (DRVs). However, such recommendations are frequently misunderstood and applied inappropriately by the public and sometimes, by nutritionists, also. The problem is twofold : individuals do not know their true nutrient requ-

irements and their information about the actual nutrient content of the foods they eat is incomplete. Here is one example of such number-oriented guidelines.

Dietary Guidelines for Canadians(1990)

- 1) Provide energy consistent with maintenance of body weight within the recommended range.
- 2) Include essential nutrients in amounts recommended.
- 3) Include no more than 30% of energy as fat and no more than 10% as saturated fat.
- 4) Provide 55% of energy as carbohydrate from a variety of sources.
- 5) Contain reduced sodium.
- 6) Include no more than 5% of total energy as alcohol, or two drinks daily, whichever is less.
- 7) Contain no more caffeine than the equivalent of four regular cups of coffee per day.
- 8) Ensure fluoridation of community water supplies containing less than 1mg/L fluoride to that level.

Food-based dietary guidelines are intended for use by the general public to provide nutrition education and dietary guidance in terms that are understandable to most consumers. Food-based dietary guidelines are a practical way to assist people to reach appropriate nutritional goals. Such guidelines take into account customary dietary patterns and indicate modifications needed to address particular concerns. They should be appropriate for each population group, thus, they may vary among population groups.

Although the following key concepts are summarized by FAO to be considered in developing food-based dietary guidelines, these can be used as well in developing not necessarily food-based, but more user-friendly, dietary guidelines.

1. Key Concepts for Developing Food-based Dietary Guidelines

1) Dietary patterns

- ▷ Total diet, rather than nutrients or individual foods should be addressed.
- ▷ Dietary guidelines need to reflect food patterns rather than numeric nutrient goals.
- ▷ Various dietary patterns can be consistent with good health.

2) Practical

- ▷ The recommended foods or food groups should be affordable, widely available and accessible to most people.
- ▷ Recognize the social, economic, agricultural and environmental conditions affecting foods and eating patterns.
- ▷ Food-based dietary guidelines should be flexible for use by people with different lifestyles as well as people of different ages and with different physiological conditions.

3) Comprehensible

- ▷ Food-based dietary guidelines should be easily understood by the general public, taking into account levels of literacy. The terminology used must be simple and refer to foods wherever possible, rather than nutrients.
- ▷ Food groups should be chosen which make sense to the public.
- ▷ Visual presentation must be easily understood.
- ▷ Testing of the Food-based dietary guidelines is essential before dissemination.

4) Cultural acceptability

- ▷ The choice of foods and colours used in illustrations should be culturally appropriate.
- ▷ Be sensitive to religious and other cultural considerations, especially those of minority groups.
- ▷ Avoid radical changes in current dietary practices.
- ▷ Wording and presentation should be use

of appropriate dialects and language.

▷ Food-based dietary guidelines should be positive and encourage enjoyment of appropriate diets.

2. Key Nutrition Concepts for Developing Food-based Dietary Guidelines

1) Energy

▷ Nutritional guidelines should aim to prevent the consequences of either energy deficit or excess.

▷ Food-based dietary guidelines should promote appropriate energy intakes of people by encouraging adequate food choices, including a good balance of foods containing carbohydrates, fats, proteins, vitamins and minerals.

▷ The role of physical activity in the energy balance equation should also be addressed.

2) Protein

▷ For high quality proteins, requirements for most people can be met by providing 8–10% of total energy as protein.

▷ For predominantly vegetable-based, mixed diets which are common in developing country settings, 10–12% of total energy is suggested to account for lower digestibility and increased incidence of diarrhoea disease.

▷ In the case of the elderly where energy intake is low, protein should represent 12–14% of total energy.

3) Fat

▷ In general, adults should obtain at least 15% of their energy intake from dietary fats and oils.

▷ Women of childbearing age should obtain at least 20% of their energy intake from dietary fats and oils to better ensure an adequate intake of essential fatty acids needed for fetal and infant brain development.

▷ Active individuals who are not obese may consume up to 35% fat energy as long as saturated fatty acids do not exceed 10% of en-

ergy intake.

▷ Sedentary individuals should limit fat to not more than 30% of energy intake

▷ Saturated fatty acids should be limited to less than 10% of energy intake.

4) Carbohydrate

▷ Carbohydrates are the main source of energy in the diet (> 50%) for most people.

▷ Grain products, tubers, roots and some fruits are rich in complex carbohydrates. Generally, they need to be cooked before they are fully digestible.

▷ Sugars usually increase the acceptability and energy density of the diet and total sugar intake is often inversely related to total fat intake. Moderate intakes of sugar are compatible with a varied and nutritious diet and no specific limit for sugar consumption is proposed.

5) Micronutrients

▷ Vitamins and minerals include compounds with widely divergent metabolic activities and are essential for normal growth and development and optimal health.

▷ Micronutrients may also be important in preventing infectious and chronic diseases.

Dietary Guidelines for Koreans

Meanwhile, dietary guidelines have been used worldwide as an essential tool for the implementation of nutrition policy, and were so in Korea. However, with two different sets of guidelines (one from the Korean Nutrition Society and the other from the Ministry of Health and Welfare) used for more than a decade in Korea, it has not been always easy for people to decide which one to follow.

1. Dietary Guidelines from the Korean Nutrition Society(1986)

- 1) Eat a variety of foods.
- 2) Maintain ideal body weight.

- 3) Consume enough protein.
- 4) Bring fat consumption up to 20% of energy intake.
- 5) Drink milk every day.
- 6) Reduce salt intake.
- 7) Maintain good dental health.
- 8) Moderate alcohol and caffeine consumption.
- 9) Balance between diet and daily life.
- 10) Enjoy meals.

2. Dietary Guidelines from the Ministry of Health & Welfare, Korea(1991)

- Enjoy a variety of foods
- Eat the right amount of food to be a normal weight
- Enjoy foods with less salt
- Avoid heavy drinking
- Enjoy and keep to mealtimes

Furthermore, the **Health Promotion Act of 1995** was promulgated on January 1995 and put in operation from September 1995 in Korea. Nutrition intervention and/or nutrition education is emphasized for health promotion of the public in that law along with an obligation of the Ministry of Health and Welfare to conduct National Nutrition Survey every 3 years. Therefore, our group of researchers from the academia and research institute was gathered and started to work on the project funded by the Health Technology Planning and Evaluation Board(HPEB), Ministry of Health and Welfare to collect necessary information to prepare new sets of dietary guidelines in 1995. At the first stage of 3 years, we gathered information and conducted surveys to assess nutritional status and localize nutrition related problems characteristic to each age group of Korean population. And at the second stage, we have worked on dietary guidelines to prepare a draft for each age group based on the fore-gathered information and results from survey on nutrition-related knowledge, attitude

and practice of people at each age category. At present, as a final stage, we have been reviewing the data from the **1998 National Health and Nutrition Survey** to verify the problems identified before and a **Workshop**(or public hearing) on our draft guidelines is scheduled for this coming March.

3. Dietary Guidelines for the Korean Elderly

1) Nutritional status assessment

Five hundred and fifty elderly residing in Seoul and Daegu area volunteered to participate in the study.

All of the subjects were interviewed by a trained interviewer for demographic information and 1-day 24-hour recall. Then, 24-hour recalls were analyzed for nutrient intake using the Korean Food Composition Table(4th revision).

2) Nutrition-related knowledge, attitude and practice

One hundred and fifty elderly in Daejun area volunteered to participate in the survey. They were asked for the demographic characteristics, knowledge of diet and nutrition, dietary habits, attitude and practice. Answered questionnaires were reviewed and analyzed for the distribution of answers to find out problems in nutrition-related knowledge, attitude, practice and behavior of elderly.

3) Drafting dietary guidelines

We proposed a set of dietary guidelines(draft) for Korean elderly based on the problems in nutritional status and diet and nutrition-related knowledge, attitude and practice noted from the aforementioned studies and literature review.

The draft of dietary guidelines presented here have been reviewed and modified to reflect most recent information on the nutritional status, food frequency and dietary habit of elderly.

erly(65 years and older) from the results of the '1998 National Health and Nutrition Survey' which covered 1,050 elderly subjects from nationwide sampling of 4,000 households.

4. Nutrition Related Problems Noted Among the Korean Elderly

- Drug-nutrient interaction and decrease in appetite due to polypharmacy
 - Inadequate meal due to drinking alcoholic beverages
 - Decrease in appetite and aggravation of chronic degenerative diseases due to reduced physical activity.
 - Limited variety of foods taken
 - Considerably low intake of vitamin A, riboflavin, and calcium
 - Limited amount of total food intake due to poor dentition
 - Poor quality and habit of snacking
 - Skipping meals(socio-economic factors)

5. Dietary Guidelines for the Korean Elderly(draft)

- Have a variety of easily digestible foods on time : at least 3 meals a day and some snacks
 - Be physically active to maintain appetite and/or ideal body weight : maintain a balance between activity and what you eat
 - Increase consumption of bean- and dairy-products.
 - Consume enough amounts of fresh dark-green and yellow vegetables and fresh fruits.
 - Consume adequate amounts of assorted kinds of animal foods including fish, meat and poultry.
 - If you drink alcoholic beverages, limit your intake and, drink enough water and other beverages : alcohol may interact with your medication and affect your appetite.

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