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## Eat Well for Better Ageing

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*Siriraj Med J* 2007; 59: 86-88

E-journal: <http://www.sirirajmedj.com>

### Introduction

Aging probably begins before birth. The phenomenon of aging probably results from automatic cellular changes and environmental influences, such as DNA damage, free-radical reactions, hormonal changes, alterations in immune function, elevated blood glucose, and excess energy intake. Eating is one of our great pleasures, eating well is also a means to get healthy. Most of us want a long, productive life and free of illness. The World Health Organization defined older persons as people over 60 years of age. As we age, our appetites may decline but our nutritional needs do not. We can slow the development of coronary heart disease, hypertension and strokes, type 2 diabetes, osteoporosis, and other chronic diseases, and in some cases even prevent these diseases by taking a diet that works against them.<sup>1</sup> Much can be learned from healthy older people whose attention to health and physical activity-along with retirement years.<sup>2</sup> Delaying the symptoms of disabilities from chronic disease for as many years of life as possible is a successful aging life goal.

### Ageing in Thailand

The age profiles depict changes in population structure from a pyramid in 1960 towards a bell shape in the twenty-first century. The aging population are increasing as shown in Table 1. Fifty-five percent of the elderly Thais are women. In addition, the majority (81.1%) of the elderly Thais live in the rural areas. A high proportion of the elderly males live with their spouses. Life expectancy has increased dramatically in the 20<sup>th</sup> century. These gains were largely due to the eradication and control of numerous infectious diseases, improvements in medicine, public health, and nutrition.

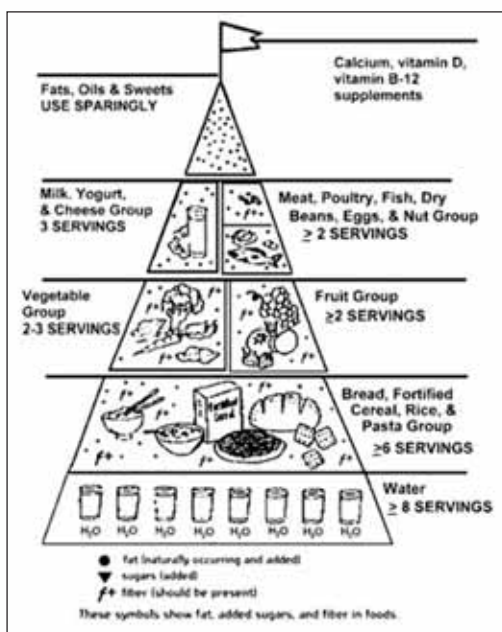
**TABLE 1.** The population of aging Thais.

	2000	2005	2010	2015	2020
Total population	62.1	64.8	67.0	68.6	69.9
Aged 60years and over	5.6	6.3	7.4	9.1	11.3
Aged 80years and over	0.4	0.5	0.7	0.9	1.0

### Nutrients and aging

The latest Dietary Reference Intakes for nutrients and energy include a category for both men and women who are 51 to 70 years of age and more than 70 years of age are shown in Table 1. Because DRIs apply only to the healthy people, many older people-for example, those who have ulcers or are heavy aspirin users- are not covered by these standards. Indeed, it is particularly tricky to develop nutrient standards that are valid for most older people because so many are ill and/or regularly take medication. Because the lifestyle of an active older person can differ considerably from that of a nursing home resident, establishing nutrient needs during these wide age ranges is problematic.

A well-planned diet that follows the Food Guide Pyramid<sup>3</sup> can meet all nutrient needs for older people within about 1600 to 1800 kcal, except for probably vitamin D, vitamin B-12, folate and calcium. (Fig 1) As we age, our nutrient needs change. For example, calcium needs increase after age 50 for males and females. It would take at least three servings from milk, yogurt and cheese group for calcium - a recommendation that most older people would find difficult to meet. Calcium-fortified foods can help when necessary. Vitamin B-12 needs also change after age 50, about 10 to 30% of older people may malabsorb food-bound vitamin B-12 because of reduced



**Fig 1.** New Food Guide Pyramid specifically for aging people.

acid production by the stomach. Adults over age 70 need three times more vitamin D than they did when they were ages 19 to 50, and they need 50% more than they did during ages 51 to 70. The use of a balanced nutrient supplements is especially helpful for meeting vitamin D needs, but it should be low in or free of iron. Women after menopause have iron needs that are the same as men, as they no longer lose iron in menstruation, men should not take a supplement containing iron unless they have evidence of iron-deficiency anemia, as they consume enough iron and it can easily accumulate to toxic amounts in the body. This now applies to women, as they experience minimal iron loss in the postmenopausal state.

Nutrition experts at Tufts University recently suggested a modification of the Food Guide Pyramid to include vitamin D, vitamin B-12 and calcium supplements for adults over 70 years of age.<sup>24</sup> The use of a supplement to help meet vitamin D, vitamin B-12 and calcium needs is especially helpful for older people who require such a low energy intake that they are not able to consume enough food to supply these nutrients.

### Energy and aging

To supply energy needs for males age 51 and older, the 1989 RDAs suggest 2300 kcal; for females, the recommendation is 1900 kcal. (These values are based on a 170-lb, 68-in tall man and a 143-lb, 63-in tall woman) Studies show that older men eat closer to 1800 to 2100 kcal, whereas women eat about 1300 to 1600 kcal. Furthermore, surveys indicate that many older adults are consuming more fat than recommended and less calcium than is needed.

A good practice would be to decrease fat and sugar consumption to increase the diet's nutrient density and to make sure dietary fiber intake is adequate.<sup>31</sup> In addition, some protein should come from lean meat to help meet vitamin B-6 and zinc needs, two nutrients of additional concern.

Fluid needs are about 8 cups (about 2 L) pre day. A high-fiber diet especially requires attention to fluid needs. Fiber intake should be slowly increased to about 35 g/day,

with each serving of fiber accompanied by a glass of water (or other fluid).

### Nutritional deficiencies and aging

A nutritional health screening for older persons should consider whether an illness or a condition has made the person change that type or amount of food consumed. Other problems include eating fewer than two meals a day, consuming few fruits, vegetables, or milk products; consuming three or more alcoholic drinks a day; experiencing tooth loss; not having enough income to buy the food needed; eating alone most of the time; taking three or more different prescription drugs daily; losing or gaining 10 pounds in the past six months without particularly trying to do so; and not always being physically able to shop and feed oneself.<sup>4</sup>

Nutritional deficiencies and protein-energy undernutrition have been identified among some aging populations, particularly those in nursing homes or long-term care facilities and those who are hospitalized. These nutritional problems increase the risk for many diseases, including bed sores (pressure ulcers), and compromise recovery from illness and surgery. Nutritional problems of older adults are related to the presence of chronic diseases and to the normal decreases in organ function that occur with time. These include loss of teeth, lessened sensitivity to taste and smell, changes in gastrointestinal tract function and deterioration in cardiovascular and bone health. Although disease affects nutritional state, the reverse is also true. Under nutrition adversely affects immune function and allowing infection. Alzheimer's disease is a progressive and irreversible brain disorder. Its causes are only beginning to be understood. It differs from other types of senile dementia in that the brain tissue accumulates abnormal protein plaques and tangled nerves (observable by autopsy). Nutritional health for people in advanced stages of disease is often complicated by special feeding problems.

Multiple factors that influence nutritional status in older adults include medical problems, medications, housing, and availability of transportation, dental health, current diet modifications and income.<sup>5</sup> Meeting the nutrient needs delays the onset of some diseases, improves the management of some existing diseases, hastens recovery from many illnesses and can increase mental, physical and social well-being and often decreases the need for and length of hospitalization.<sup>1</sup>

### Diet recommendation

Now scientists are beginning their extensive study on specific nutrient needs for older people. Diet plans should be based on a nutrient-dense approach and individualized for existing health problems, decreased physical abilities, and presence of drug-nutrient- interactions, possible depression and economic constraints. Specific nutrients, such as protein, vitamin D, vitamin E, vitamin B-6, folate, vitamin B-12, zinc, and calcium, along with dietary fiber, often deserve special attention in diet planning. Careful supplementation can help meet needs, especially for adults 70 years of age and older.

Surveys show that the majority of older adults like most vegetables, despite misconceptions that they do not like broccoli (because it forms gas) or tomatoes (because they contain too much acid). Overall, good nutrition benefits older adults in many ways: eat a variety of foods; balance the food eaten with physical activity to maintain or improve weight; choose a diet with plenty of grain

products, vegetables, and fruits; choose a diet low in saturated fat and cholesterol; choose a diet moderate in sugars; choose a diet moderate in sodium (salt); and moderate or avoid alcoholic beverage intake. In addition, recommendations to reduce cancer risk emphasize moderation in the use of cured and smoked meats. Drinking about eight glasses of water and other fluids each day is beneficial. If one drinks alcohol, one should do so in moderation. Overall, one should make sure the food eaten is full of the nutrients needed for a healthy body.<sup>6</sup>

### Exercise and aging

Participation in regular exercise is an effective intervention to reduce and/or prevent a number of functional declines associated with aging. Older people should be shown to readily adapt and respond to endurance and strength-training activities. Together, these adaptations greatly improve the functional capacity of older men and women, thereby improving the quality of life for this population.<sup>7</sup> The goal for older persons is to exercise for 30 minutes with moderate intensity, everyday or more days in a week than never. Stretching and warm-up activities are particularly important in this age group. Also, strength training<sup>8</sup> on a regular basis further contributes to physical health.

### Summary

Men and women who are healthy at ages 90 and 100 years typically have many characteristics in common, including daily exercise, excellent nutrition, ongoing learning, a spiritual dimension of their lives, lots of friends and an excellent sense of humor. These habits are long-standing and are should be organized each day.<sup>9</sup> Weight gain, hypertension and chronic illness are not necessarily normal parts of aging. A person is, to a large extent,

responsible for his or her own longevity. A person is never too old to start taking steps toward living longer and healthier, such as eating a balanced diet, exercising regularly and investing time in relationships.<sup>10</sup> including daily exercise, excellent nutrition, ongoing learning, a spiritual dimension of their lives, lots of friends and an excellent sense of humor. These habits are long-standing and are should be organized each day.<sup>9</sup> Weight gain, hypertension and chronic illness are not necessarily normal parts of aging. A person is, to a large extent, responsible for his or her own longevity. A person is never too old to start taking steps toward living longer and healthier, such as eating a balanced diet, exercising regularly and investing time in relationships.<sup>10</sup>

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