DIET AND LIFESTYLE GUIDELINES FOR PREVENTION OF CARDIOVASCULAR DISEASE AND DIABETES AMOG ELDERLY PERSONS

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Elderly subjects have unique nutrient needs with revised recommended dietary reference intakes based on age, sex, ethnicity and special vulnerability to compromised nutrient status. The food intake tends to decrease with advancing age due to decreased physical activity and metabolic rate. However vitamin; A, E, C, B vitamins and beta-carotine and minerals magnesium, calcium, selenium, chromium, zinc and copper as well as w-3 fatty acids needs either remain constant or increase. Omega-3 fatty acid, calcium, vitamin D and magnesium and antioxidant intakes are inversely associated with ageing and other complications like cardiovascular diseases, diabetes and dementia as well as cancers. It is pertinent to advise to eat 400 g/day of fruits, vegetables and nuts and another 400 g/day of whole grains in conjunction with 25—40 g/day of canola oil or mustered oil, depending upon energy requirement, for prevention of cardiovascular disease and type 2 diabetes mellitus.

Key words: ageing, older population, foods, nutrition, chronic diseases.

Background

The United Nations (UN) recently stated that "The number of persons aged 60 years or older is estimated to be 629 million in 2002 and is projected to grow to almost 2 billion by 2050, at which time the population of older persons will be larger than the population of children (0—14 years) for the first time in human history.1 The World Health Organization (WHO) also released the Healthy Life Expectancy (HALE), a healthy life expectancy indicator based on the estimates of the number of years to be lived in 'full health'. Japan, Australia, Sweden and Greece are amongst the leading HALE nations. Increasing longevity establishes the need for more attention to problems of nutrition and how it might influence disability and health in the elderly.

The '*Food Habits in Later Life*' (FHILL) is a cross-cultural study conducted under the auspices of the International Union of Nutritional Sciences (IUNS) and the World Health Organization (WHO). The FHILL studies have concentrated on food intake and food intake patterns as differentiators and common denominators in health susceptibility and for survival within and between cultures (people of different ethnicity living in different localities).

Objectives. To analyze basic diets with cardiopreventive properties and to create a diet for elderly people.

Methods. Based on the availability of data, 7 types of diets in our study were selected for analysis. Data were obtained from the World Health Organization, Demographic

and Health Surveys and the Food and Agriculture Organization of the United Nations. Multiple linear regression analysis (MLRA) was used to explore the determinants of infant mortality. A six point score was developed to identify each country's stage in the nutrition transition. The most recent data (2000—2008) we took from the WHO Global Health Observatory Database [4]. Multiple linear regression analysis (MLRA) was used to explore.

Results. Non-communicable diseases (NCD) such as cardiovascular diseases (CVD), diabetes mellitus, metabolic syndrome and cancer have become a major health problem in the Western world and these are rapidly increasing in the developing world with ageing of the population [1, 2, 3].

The overconsumption of energy and nutrients must be avoided. Specific nutritional needs of elderly people were addressed in the Food Guide Pyramid for Older Adults, a modification of the 1990 Food Guide Pyramid for Americans. In 2005, the US Department of Agriculture (USDA) released MyPyramid Figure 1), which includes an Internet-based program allowing individuals to calculate food-based dietary guidance based on their specific clinical variables. However, older adults tend to be less comfortable with Internet use, so a graphic representation for a Modified MyPyramid for Older Adults is intended for use in this age group as an adjunct to the current Web-based MyPyramid. Such approaches are no good for the developing world where most elderly do not use internet. Singh et al have published several diet and lifestyle guidelines for prevention of cardiovascular diseases and diabetes among adults [5, 6]. These guidelines may be modified in context of their lower food intake and increased requirement of nutrients in the elderly population. It seems that elderly need more fruits, vegetables, nuts and whole grains as well as more w-3 fatty acid rich oils for prevention of chronic diseases in general and brain degeneration in particular.

HOW TO PROVIDE NUTRIENT RICH FOODS TO ELDERLY?

Recent studies indicate that Mediterranean diet, Indo-Mediterranean diet and Japanese diet are rich sources of protective nutrients as well as are known to decrease morbidity and mortality among various population groups [7—28]. Apart from these diets, consumption of nuts, chocolates, Mediterranean soups, fish as well as fish oil have been found to reduce the risk of cardiovascular diseases and diabetes [10—20].

From 4576 references seven studies met the inclusion criteria (including 114 009 participants). None of the studies was a randomized trial, six were cohort studies, and one a cross sectional study. Large variation was observed between these seven studies for measurement of chocolate consumption, methods, and outcomes evaluated. Five of the seven studies reported a beneficial association between higher levels of chocolate consumption and the risk of cardio metabolic disorders.

There is evidence that Western diet may be important in the pathogenesis of non-communicable diseases and all-cause mortality [21—28].

Chronobiology establishes a strong relation of mind with brain and their effects on body functions and dysfunctions. The Modified MyPyramid for Older Adults is a graphic intended to improve understanding and use of MyPyramid by the elderly population, who may be less comfortable with obtaining Web-based information.

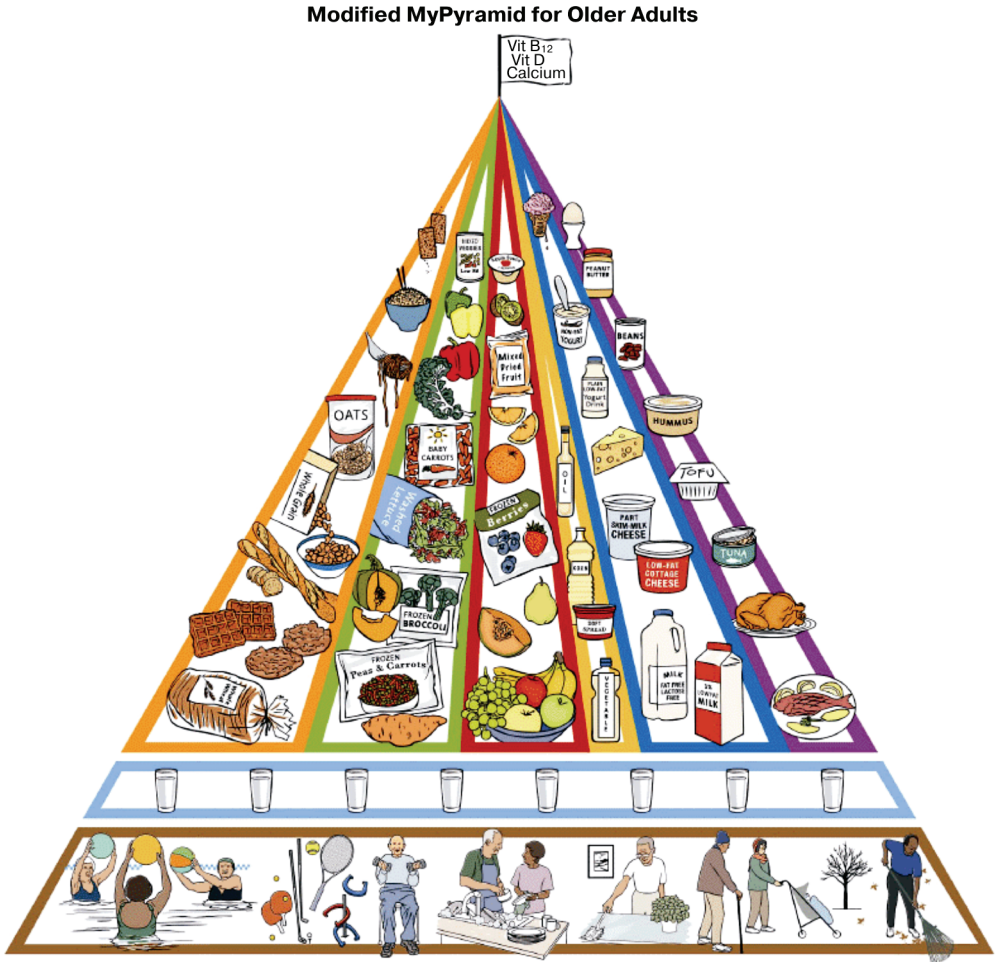

Fig. 1. MyPyramid

In brief, eat 400g/day of fruits, vegetables and nuts and another 400 g/day of whole grains in conjunction with 25—40 g/day of w-3 fatty acid rich oils for prevention of NCDs (4—15). Reduce daily sodium intake to less than 2,300 milligrams (mg) and further reduce intake to 1,500 mg among persons who are 51 and older and those of any age who are African American, Asians or have hypertension, diabetes, or chronic kidney disease. The 1,500 mg recommendation applies to about half of the World population, including children, and the majority of adults. Consume less than 7 percent of calories from saturated fatty acids by replacing them with monounsaturated and polyunsaturated fatty acids. Consume less than 300 mg per day of dietary cholesterol. Keep trans fatty acid and w-6 fatty acid consumption as low as possible, especially by limiting foods that contain synthetic sources of trans fats, such as partially hydrogenated oils, and by limiting other solid fats and w-6 rich oils. Reduce the intake of calories from solid fats and added sugars. Avoid the consumption of foods that contain refined grains, especially refined grain foods that contain solid fats, added sugars, and sodium.

If alcohol is consumed, it should be consumed in moderation—up to one drink per day for women and two drinks per day for men—and only by adults of legal drinking

age. One drink is defined as 12 fluid ounces of regular beer (5% alcohol), 5 fluid ounces of wine (12% alcohol), or 1.5 fluid ounces of 80 proof (40% alcohol) distilled spirits. One drink contains 0.6 fluid ounces of alcohol. Strong evidence from observational studies has shown that moderate alcohol consumption is associated with a lower risk of cardiovascular disease. Moderate alcohol consumption also is associated with reduced risk of all-cause mortality among middle-aged and older adults and may help to keep cognitive function intact with age. However, it is not recommended that anyone begin drinking or drink more frequently on the basis of potential health benefits because moderate alcohol intake also is associated with increased risk of breast cancer, violence, suicides, drowning, and injuries from falls and motor vehicle crashes.

Older adults should follow the adult guidelines. When older adults cannot meet the adult guide-lines, they should be as physically active as their abilities and conditions will allow. Older adults should do exercises that maintain or improve balance if they are at risk of falling. Older adults should determine their level of effort for physical activity relative to their level of fitness. Older adults with chronic conditions should understand whether and how their conditions affect their ability to do regular physical activity safely. Moderate-intensity physical activity: Aerobic activity that increases a person's heart rate and breathing to some extent. On a scale relative to a person's capacity, moderate-intensity activity is usually a 5 or 6 on a 0 to 10 scale. Brisk walking, dancing, swimming, or bicycling on a level terrain is examples. Vigorous-intensity physical activity: Aerobic activity that greatly increases a person's heart rate and breathing. On a scale relative to a person's capacity, vigorous-intensity activity is usually a 7 or 8 on a 0 to 10 scale. Jogging, singles tennis, swimming continuous laps, or bicycling uphill are examples. Muscle-strengthening activity: Physical activity, including exercise that increases skeletal muscle strength, power, endurance, and mass. It includes strength training, resistance training, and muscular strength and endurance exercises. Bone-strengthening activity: Physical activity that produces an impact or tension force on bones, which promotes bone growth and strength. Running, jumping rope, and lifting weights are examples. Regular physical activity, yogasan, meditation and pranayam (16) each for 30 minutes, may be protective against NCDs and may provide better spiritual, mental, social and physical wellbeing of the elderly population.

Conclusion. Older adults should follow the adult guidelines: there is evidence that Western diet may be important in the pathogenesis of non-communicable diseases and all cause mortality; aerobic activity that greatly increases a person's heart rate and breathing. Regular physical activity, yogasan, meditation and pranayama. Chronobiology establishes a strong relation of mind with brain.

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РЕКОМЕНДАЦИИ ПО ДИЕТЕ И ОБРАЗУ ЖИЗНИ ДЛЯ ПРЕДУПРЕЖДЕНИЯ СЕРДЕЧНО-СОСУДИСТЫХ ЗАБОЛЕВАНИЙ И ДИАБЕТА У ЛЮДЕЙ ПОЖИЛОГО ВОЗРАСТА

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У пожилых людей есть специальные пищевые потребности, существенно отличающиеся от рекомендованных диетическими справочниками и пособиями, которые учитывают пол, этническую принадлежность и текущее функциональное состояние.

Рацион питания имеет тенденцию к сокращению с увеличением возраста в связи со снижением уровня физической активности и скорости метаболизма. Однако витамины A, E, C, B и бета-каротин и такие микроэлементы как магний, кальций, селен, хром, цинк и медь, так же как Омега-3 жирные кислоты должны или оставаться на прежнем уровне или увеличиваться. Потребление Омега-3 жирных кислот, кальций, витамин D, магния и антиоксидантов должно иметь обратно пропорциональную зависимость со старением и такими заболеваниями как сердечно-сосудистые болезни, диабет, слабоумие, а также онкологические заболевания. Для того чтобы реализовывать эти рекомендации, необходимо, чтобы суточный рацион включал 400 г фруктов, овощей и орехов различного вида, а также 400 г цельных зерен в сочетании с 25—40 г масла канолы в зависимости от суточных энерготрат с целью предотвращения сердечно-сосудистых заболеваний и диабета второго типа.

Ключевые слова: старение, старшее население, продукты, пища, хронические.