

Geriatric Nutrition: Food for Elderly by Dr. J.S. Pai

Life expectancy in India has gone up substantially and is over 60. Better medical care and reduced birth rate has made the elderly the fastest growing section of Indian population. At the present rate, elderly population in India will double in just 25 years. In 2001, it was estimated to be over 77 million. In the year 2025, it is expected to be well over 150 million. Elderly population is growing in percentage all over the world and of late it is becoming a very sizeable proportion, so with their specific needs, markets have been taking serious looks at the possibility of Geriatric Foods.

As people grow older, there are physiological, physical, psychological and social changes that accompany and these necessitate certain changes in the diets, in order to maintain health and if possible delay the effects of ageing and diseases such as cardiovascular diseases, cancer etc.

In the US, National Centre for Health Statistics showed in 2002 that of all the deaths in elderly population aged 65 and above, 31.8% died of heart diseases, 21.6% of cancer, 7.9% of stroke, 6% of chronic lower respiratory diseases, 3.2% of influenza & pneumonia, 3.2% of Alzheimer's disease, 3% of diabetes and 23.3% of all other diseases. Similar situation is slowly developing everywhere including India. The only difference will be as opposed to developed countries, 80% of Indian elders live in villages, and almost ¾ of them are illiterate and economically dependent. With such situation nutrition becomes very important to prevent diet-related complications of diseases in the old.

Changes Associated with Ageing

Many physiological/physical changes might affect nutritional status. Body composition changes as fat replaces muscle in a process called sarcopenia. Exercise may slow down this process. Because of decrease in lean body mass, BMR (basal metabolic rate) declines, which lowers energy needs. To avoid gaining weight, calorie intake is decreased as increasing the activity to expend extra calories is difficult.

There is also a drop in Bone Mass, making bones vulnerable to fracture and osteoporosis. Women after menopause tend to lose bone mass at an accelerated rate. When food intake is reduced to maintain the weight, the nutrients intake also gets reduced, although their needs remain the same or even more.

Gastrointestinal (GI) changes cause poor digestion and absorption due to decreased digestive hormones and enzymes, leading to conditions such as pernicious anaemia (due to poor absorption of vitamin B₁₂) and constipation.

There are also sensory or oral changes. There is a decrease in sensitivity in taste buds for salty and sweet affecting appetite. Denture wearers chew less effectively without natural teeth. Insulin secretion decreases, affecting carbohydrate tolerance. Cardiovascular changes take place increasing hypertension and serum cholesterol. Lower immune function lessens ability to fight diseases. Loss of visual acuity and hearing impairment may lead to less activity.

There are also some psychological and social changes that affect the elderly because of the change in their status in society. These also may affect their appetite and nutritional status. Some of these changes may include depression, memory impairment, social isolation and in some cases alcohol abuse.

Changes Required in the Diet

As food intake declines due to decrease in caloric requirements, it is important to ensure that elders eat nutritious foods. There is less room for empty calories from sweets, fatty foods and alcoholic beverages, as they are less nutrient dense. There is also another possibility. A sensible programme of exercise like walking may be advisable. When people are physically active, they spend more calories and can take in more food, with which more nutrients are consumed.

Supplements are not necessary when varied foods are consumed. However, it becomes difficult, when food consumption reduces with physical activity and also limited types are consumed. When diets fall below 1800 kcal per day, they may be low in protein, calcium, iron and vitamins. This is when protein, vitamin and mineral supplements may be recommended. There are also many nutritious food products available with higher density of vitamins and minerals.

Protein needs of healthy seniors are the same as other adults, with 0.8 to 1g of protein per kg body weight recommended. Poor appetite may reduce protein intake or some severe disease may increase protein requirements.

Exercise along with a diet high in calcium helps protect against osteoporosis. As said earlier, walking is the best exercise, but people may also enjoy swim, aerobics and other forms of exercise as per the capability and liking.

Problems with Digestive System

Digestive system has many problems for elders, giving them a source of discomfort. They may avoid healthy foods because of these problems. Flatulence or gas problem may cause old people to avoid vegetables like cabbage or beans, which are good sources of vitamins, minerals and fibre. Similarly, constipation is a common complaint resulting from not drinking enough fluids and by eating diets with low fibre or roughage. Certain medications like antacids or habitual use of laxatives may also make this problem worse.

Constipation may be prevented by including liberal amounts of whole grain products as well as plenty of vegetables and fruits. Fresh fruits may not be eaten if there are chewing and swallowing problem. Cutting them to smaller pieces or even slight cooking to soften them might help. Fruit juices are quite healthy as they supply vitamins and minerals of fruits, however, their fibre content is lower than fruits themselves. Drinking plenty of

fluids is very essential. Foods like meats, sweets and high fat dairy products are calorie dense and low in fibre and too much of these may displace healthy foods with fibre and essential vitamins and minerals. Regular exercise is effective in preventing constipation.

Osteoporosis

Osteoporosis is another possibility that needs to be avoided. The most effective way of avoiding osteoporosis is calcium rich diet in childhood and adolescence. Hence in old age, one can only delay or slow it down by reducing loss of calcium by providing sufficient dietary calcium. Since consumption of food is reduced in senior, there is concomitant reduction in calcium intake. Sometimes milk products are avoided either trying to restrict calories or because of difficulty in digesting milk. This further lowers calcium intake.

Consumption of milk, yoghurt, or cheese gives good amounts of calcium. Calcium intake may be ensured either by consuming low fat milk products. If digestion of milk is a problem, then buttermilk and yoghurt etc. fermented milk products are fairly well tolerated. Milk can be treated with lactase to reduce lactose content making it more easily digestible. Dietary phytate, which is present in good quantity in spinach, almonds etc., also reduces calcium absorption. In addition, it might be advisable to use calcium supplements especially for elderly women. Women after menopause may require calcium supplements, as diet alone may not give enough calcium. Vitamin D may be needed for calcium absorption by body.

Heart Diseases

Commonly, seniors have cardiovascular problems, including hypertension, high cholesterol (especially LDL cholesterol) and high triglycerides in blood among others. Dietary management will be to lower sodium from salt, lowering saturated and trans fats especially from bakery products, and lowering and maintaining healthy body mass index below 25. Here also exercise has a big role to play. Since elders can't do vigorous and strenuous exercises for a variety of reasons, walking briskly is an ideal exercise.

Weight management is very important. As was mentioned earlier, since there is a reduced caloric requirement, unless energy intake is reduced and/or energy expenditure by exercise or other physical activity is increased, there is a likelihood of accumulated weight. This in turn also increases burden on heart and increases blood pressure. Since elderly have slightly reduced senses of taste and flavour, highly tasty and flavourful substances including salty, sweet and fatty foods will be an attraction but will cause problems. They give calories and add to hypertension, unless they are nutrient dense, there will be deprivation of essential nutrients that are more essential for elderly. So careful diet and weight management is quite essential.

Saturated and trans fats increase the cholesterol levels but the latter also lower the good cholesterol, HDL, so these should be restricted. Mono- and poly-unsaturated fats lower cholesterol and mono helps increase the HDL. There are benefits reported of garlic, onion, soy foods, nuts etc. in lowering cholesterol and reducing the chances of heart attacks. There are also reports of plant sterols being useful in reducing absorption of cholesterol from diet.

Diabetes

Diabetes is fast becoming omnipresent in India and by various estimates, we will be having the highest number of diabetics soon. Although a sizeable number of patients will be type 1 diabetics, there will be much higher number of type 2 diabetics, since lifestyle is changing fast resulting in less activity and obesity.

Fibre is useful in controlling glucose level in blood. Although sugars may be restricted in a diet, but there are many starches, potato being one example, that get digested very easily and give the glucose response quite rapidly. It is essential to have fibre, which ensures slower absorption of glucose maintaining healthy level in blood. One must realise that when fibre is high in diet, it also slows down absorption of nutrients.

There is also a caution about carbohydrates in the diet. People tend to only consider glycaemic index (GI). However, one must also consider the glycaemic load (GL). If one has too much of food containing good amount of carbohydrates at a time, the blood glucose might rise too much, even when food may not have high GI carbohydrates. Therefore, GI and GL are both essential.

It has been shown that type 2 diabetes is more effectively managed by exercise and diet, rather than medication. It is therefore, very essential that elders take regular exercise and physical activity along with the careful diet that contains lower amounts of saturated fat and sugar, moderate amounts of carbohydrates with low GI, and good amount of fibre. Fruits and vegetables are quite suitable in giving fibre and essential nutrients. Sweet fruits like grapes should be restricted as they have much more sugar. Fruit products with added sugar should be avoided.

Cancer

As the statistics show, a large proportion of elders also get this disease. It is one of the major causes of death in developed countries and it is fast catching up in developing countries. The causes of cancer are many. Although heredity is not clearly linked, some genetic factors or defects may be responsible for certain types. Lifestyle is a very big cause especially smoking and consumption of tobacco products. Pollution, both industrial and urban is another important factor. There are also some chemicals having carcinogenic effect and can cause cancer if consumed.

Since elders might have been exposed to several of these factors over their lifetime, they become ripe targets for cancer. Diets have many factors, some may be carcinogenic and some anti-carcinogenic. Some of the fried and roasted foods may have carcinogenic substances formed in them. There are many phytochemicals having anti-carcinogenic effect e.g. betacarotenes, isoflavones, anthocyanins, many types of antioxidants, vitamins A, C & E etc. Fibre is also beneficial in providing protection. Thiols from cruciferous vegetables and lignans from cereals like flax seeds also have protective role. Many fruits and vegetables have these protective substances and have been recommended in diets for elders. (Please refer article on Naturally Occurring Carcinogens & Anti-carcinogens in Human Diets, PFNDAI Bulletin November 06).

In conclusion, there are certain simple rules that may be followed while advising elders about their diets. They should eat a variety of foods to stay healthy. For elders, it is important to have more calcium, fibre, iron, protein and vitamins A, and C in their meals. They should reduce calories and should select nutrient-dense foods and restrict intake of foods high in fat, sugar and sodium. In order to achieve these, they may reduce the consumption of sweets, coffee, fatty foods, salt and alcohol. They may eat plenty of fruits, vegetables and products with whole grains. They should drink plenty of water and take regular exercise to keep fit. If their usual diet does not give them these, there are dietary supplements and food products specially formulated with substances beneficial in old-age, which may be consumed to ensure that they get enough of these that might give them longer and healthy life.

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