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Review Article

Importance of Nutrition in Geriatric Patients

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Abstract

The purpose of geriatric nutrition is to delay the effects of ageing and disease and to help with the management of the physical, psychological, and emotional changes that are frequently brought on by ageing. The health and comfort of oral tissues depend on proper nutrition, and healthy tissues increase the likelihood that elderly patients may benefit from prosthodontic treatment. According to a study, by 2050, 30 percent of the population in industrialized nations will be over 65.

Conclusion: One of the legislative and public policy committee of the academy's priority areas is ageing. From frail elderly patients in hospitals and institutions to independent older persons living in the community, nutrition is crucial in the prevention and treatment of disease. Evidence demonstrates that targeted MNT in the treatment of chronic diseases and conditions prevalent in older adults achieve positive outcomes and reduce health-related costs.

Keywords: Nutrition; Geriatric; Patients

Introduction

In order to improve the health and longevity of older persons, it has been shown that healthy lifestyle choices, early disease detection, vaccines, and injury prevention are helpful measures. Senescence is characterized by a number of physical changes, all of which have an opposing effect on the geriatric's wellbeing and way of life [1]. Nutrition becomes progressively more crucial as a person ages. It significantly affects living quality, as well as physical and mental health.

Geriatric nutrition can be summed up as eating practices that help manage the common physical, psychological, and psychosocial changes that come along with getting older [1,2]. The health and comfort of oral tissues depend on proper nutrition, and healthy tissues increase the likelihood of effective successful prosthodontic treatment in the elderly. Diet, health, and disease are all closely related. While this idea undoubtedly applies to people of all ages, the elderly are the most in need of it [3]. Aging gracefully takes practice. It necessitates a great deal of awareness, inspiration, and support on a social, mental, and physical level. According to a study, by 2050, 30 percent of the population in industrialized nations will be over 65. But the prevalence of chronic diseases is skyrocketing, which raises the elderly's risk of concomitant problems. Eating satisfaction is regarded as a crucial element of quality of life in a geriatric population. Public health and medicine describe quality of life as an individual's subjective physical and mental health throughout time, taking into account elements including health risks, diseases, functional status, social support, socioeconomic standing [4]. Half of all older persons have two or more chronic conditions, and over 80% of older adults have one. Only 6.4% of people 65 and older who are not in institutions are in need of assistance with daily personal care, and more than 39% of all such people have excellent or very good health. The best way to keep older people healthy, independent, and living in the community is to prevent chronic diseases and lessen their related consequences. Age-related multi-morbidity is a common condition that has been observed to occur more frequently in developing nations. According to the 2011 census, 8.6% of India's population is in the geriatric age group, which includes those 60 years of age and older [5].

Physiological changes during ageing

The rate of degenerative change surpasses the rate of cell renewal once the body achieves physiological maturity. But because everyone ages differently, the elderly are not a uniform group [6,7]. Sarcopenia is a condition in which muscle is gradually replaced by fat. Exercise, especially weight training, slows this process, according to a research. In addition, it has been observed that during adulthood, basal metabolic rate (BMR) decreases by roughly 5% per decade. With a reduction in calorie requirements and a reduction in protein stores, body water levels fall. Studies show that as people age, their levels of digestive hormones and enzymes drop. The main issue that elderly people have is constipation. In people's 30s and 40s, a steady loss of bone mass begins For women, this speeds up throughout menopause, leading to osteoporosis and fractures [8-10]. reduction in all senses, but especially in the taste receptors that influence appetite. A person wearing dentures chews less effectively than a person with natural teeth. In the 40s, insulin secretion often declines, which can cause glucose intolerance, and for certain people, renal function deteriorates. Recent studies have also shown that behavioral characteristics, early personality and education, and other remote experiences all affect how long people live. It is generally agreed upon that there are three categories of physiological changes that come with ageing [11].

Psychosocial changes that occur during ageing

As in earlier studies, there was a substantial correlation between physical ailments and poverty and geriatric depression. People with depression in low-income neighborhoods seldom ever accept biological explanatory models for depression and place more weight on psychosocial and interpersonal explanatory models. It's possible that families' low expectations of their older relatives also contributes to their high level of functional impairment and toleration of depressive symptoms. It is complicated how poverty, social isolation, physical and mental health are related [4,6,7]. About 15% of persons over 65 experience depression, the most prevalent cause of unexplained weight loss in older adults, and those who reside in long-term care facilities are significantly more likely to have it. Memory loss brought on by different forms of dementia, Alzheimer's disease, or other neurological conditions increases noticeably. Due to dwindling income, health issues, and the loss of a spouse or friends, social isolation among the elderly becomes a serious concern. All of these could have an impact on appetite, which would lead to inadequate nutrition [12].

Age-related determinants influencing nutritional requirement

Physiological factors: As lean body mass declines in the elderly, calorie requirements reduce and the risk of falling rises. In turn, vitamin D insufficiency is a significant contributor to metabolic bone disease in older people. Aging frequently results in a decrease in stomach acidity, which can impair the absorption of vitamin B12 linked to food [1,3,4]. Many nutritional deficiencies that are typical in the elderly, such as zinc and vitamin B6, appear to be associated with lowered or altered immunological responses. Dehydration, brought on by deteriorating renal function and changes in the body's overall water metabolism, is a major issue for the elderly. Neurological and/or behavioral impairment is linked to overt vitamin insufficiency, including B1 (thiamin), B2, niacin, B6 [pyridoxine], B12, foliate, pantothenic acid, vitamin C, and vitamin E. Psychosocial Determinants: Elderly people are especially at risk, and at-risk groups include those who are bereaved, lonely, depressed, physically incapacitated with inadequate care, living alone, depressed, follow a rigid diet, and come from lower socioeconomic backgrounds. Changes in the environment are also known to elevate stress levels, which can alter eating habits and enhance the risk of anorexia [13].

Pharmaceutical Influences: The majority of elderly people regularly take a number of prescription and OTC drugs. Anorexia, nausea, vomiting, gastrointestinal problems, xerostomia, taste loss, and problems with nutrient absorption and utilization are all primarily brought on by prescription medications. Nutrient deficits, weight loss, and ultimately malnutrition can result from these disorders [12,13].

Oral predictors

Xerostomia: It can be a side effect of many drugs that negatively affect the tissues supporting the dentures. Due to difficulty chewing and swallowing, it also contributes to anorexia by altering food preference and leading to a nutritionally deficient state. The tissues supporting dentures may suffer if medications with hypo salivary side effects are used. Drug intake is higher in people with poor masticatory function than in people with better function [2,7,9].

Taste and scent perception: Some people's food preferences and diet quality may be affected by age-related changes in taste and scent. Health conditions, drugs, dental hygiene, wearing dentures,

and smoking are all potential contributors to this observed diminished function. With ageing, the sense of smell declines significantly and considerably more quickly than the sense of taste. Aging is the cause of diminished taste. Foods may lose their attractiveness due to sensory alterations (such as sensitivity to the bitterness of cruciferous vegetables), which would limit their consumption and possible health benefits. Reduced sensory function affects geriatrics' food intake subjectively and quantitatively [14,15].

Effect of dentures on diet quality, dietary preferences, and general health: Individual differences in how dentures affect nutritional status are significant. Some people choose processed or prepared foods instead of fresh food and chew for extended periods of time before swallowing to make up for a reduction in their masticatory capacity.[16] Some people might cut out whole food groupings from their diets. Adults with dentures typically consume more fruits and vegetables than people with full dentures. Replacement of uncomfortable dentures with fresh ones does not always lead to appreciable dietary consumption increases. Similar to the above, switching from implant-supported dentures to optimum complete dentures has not significantly improved food intake or meal selection [1,3,4].

Calories required as we age

Calorie needs decline with age, yet individual needs differ widely based on activity level and nutritional quality. The recommended daily calorie intake is 1800, although this will again depend on your health. Healthy older persons have the same protein requirements as adults [16]. The minimum requirement for protein is 0.8-1.0 g/kg of body weight. Green leafy vegetables, other vegetables, and fresh fruits are a veritable gold mine of vitamins and minerals, and as a result, they guard against illness. Use of animal and plant-based fats in excess raises blood lipid levels, raising the risk of heart disease and other ailments [17]. Consume foods high in alpha-linoleic acid (ALA), such as fenugreek, mustard seeds, green leafy vegetables, and legumes. Higher salt intake causes more calcium to be excreted, which could lower bone density. High salt intake has been shown to have negative effects on the gastrointestinal tract, bones, blood vessels, and blood pressure. Our population generally consumes more salt than is necessary. No more than 6g should be consumed each day. Since salt is frequently used in food preparation, it is employed as a carrier for food fortification [18]. Due to their potential to enhance immunological processes, the antioxidant vitamins vitamin E, carotenoids, and vitamin C continue to draw interest. As we age, our needs for zinc, riboflavin, vitamins B6 and B12, and vitamin A change. A diet that includes meals from many food categories offers all the necessary nutrients in the right amounts. They aid in the prevention of some chronic diseases, including cancer, cataract, and micronutrient deficiencies. Fruit liquids lack the nutritious value of fresh fruits. Co-morbidities include type 2 diabetes, fatty liver disease, gallstones, high blood cholesterol and triglycerides, orthopedic conditions like osteoarthritis, hypertension and other cardiovascular diseases, some malignancies, and psycho-social issues are more common in overweight and obese people [1,11,13]. To ensure a balanced diet, consume a range of foods. Because they are high in fats, salt, sugar, and preservatives, processed foods can be harmful to your health if you eat them frequently. The most vital nutrient is water, which supports the maintenance of human health. Guidelines for adequate water intake are either 1.0 ml of water for every calorie consumed (thus 1.8 L for an intake of 1,800 calories), or Alternatively, for the majority of people, 25-30 ml/kg of weight. The foundation of excellent health is healthy and positive food concepts and culinary techniques. To be healthy and active, seniors require additional vitamins and minerals. Elderly people should strive to eat a range of meals that are high in nutrients [19]. They ought to keep a healthy balance between their dietary intake and physical activity.

Consume food in daily servings that are spread out. Spices and foods with extra oil should be avoided. Elderly people need to routinely move their bodies through exercises like walking, yoga, etc. By regulating body weight and composition, you can lower your chance of developing chronic conditions like Type 2 diabetes, high blood pressure, heart disease, osteoporosis, arthritis, and some malignancies. Additionally, it aids in developing healthy bones, muscles, and joints, increases flexibility, prevents melancholy, elevates mood, sense of wellbeing, and boosts self-esteem. Before beginning a vigorous physical activity programme, those over the age of 40 and people over the age of 50 should also speak with a doctor or health care practitioner [20].

Elderly Indian's nutritional status

There is a severe lack of in-depth knowledge on the nutritional state of the elderly in India. Therefore, it is necessary to create a database on the food and nutritional condition of the elderly from various regions of the nation so that the government and non-governmental organizations (NGOs) may draught policies and launch plans that would improve the wellness of the senior population. The most recent study report was published in 1996-1997 by

NNMB, which at the time was India's first significant database on diet and nutritional status of the elderly [21]. The study's findings showed that men's overall intake of different foods, with the exception of cereals and millets, was lower than the RDI. The average consumption of every nutrient-aside from calcium, thiamine, and vitamin C-was also lower than RDI. But in addition to dietary and nutritional status, thorough surveys must also collect data on chronic diseases linked to diet, as well as behavioral and psychosocial factors. Elderly people's nutrition and health are frequently overlooked. The majority of nutritional intervention programmes target newborns, young children, adolescents, as well as expectant and nursing mothers. However, nutritional interventions might help to improve the quality of life and prevent degenerative disorders in the elderly [22].

Risk reasons to choose nutrition

The geriatric population is typically more susceptible to illnesses, injuries, psychological issues, and degenerative issues. Morbidity, death, and disability are all at higher risk. Infection, fluid and electrolyte balance, malnutrition, diabetes, hypertension, fainting, blackouts, and falls, fractures and sore joints, immobility, incontinence and retention, confusional states, dementia and neurodegenerative illnesses, and heart failure are some of the prevalent signs. Other nutrient requirements are also impacted by the ageing process. For instance, while some nutrients may have lower requirements as we age, some findings indicate that requirements for other crucial nutrients may actually increase. Therefore, it is necessary to reassess the group's present recommended daily limits for nutrients. Additionally, the need for WHO recommendations that competent national authorities can employ to address the nutritional requirements of their ageing populations [5,7,9].

Diabetic guidance and nutrition counseling for the olderly

Dietary analysis and counselling can be easily incorporated into the treatment sequence because denture fabrication necessitates a series of sessions. When a severe deficiency disease of any kind is present, the patient should be strongly encouraged to visit his doctor for additional diagnostic testing and treatment. On the other hand, the dentist can provide appropriate guidance when there is clear overconsumption of cariogenic foods, proof of an unbalanced diet likely to cause problems, or minimally indicative clinical indications combined with similarly poor eating habits [23].

Modified food pyramid diagram

A new food pyramid has been designed for people aged 70 years and above, to reflect the unique needs of older people (Figure 1) [2,7,8].

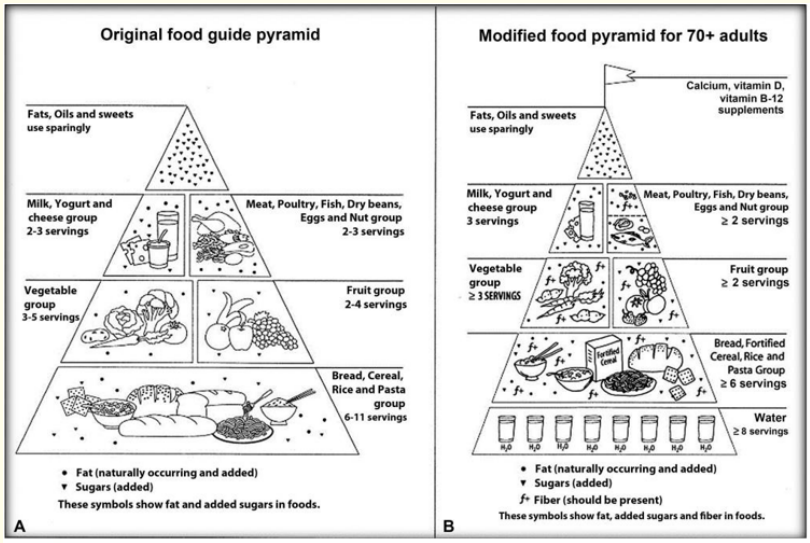

Figure 1: (A) Initial food guide pyramid; (B) Revised food guide Pyramid for people aged 70 and older.

Triphasic nutritional analysis for evaluating nutritional status

Phase 1

All patients should go through the first phase of screening, which includes gathering information from a medical social history, checking for clinical indicators of deficiency, taking a few anthropometric measurements, and determining whether or not nutritional intake is adequate.

Qualificative dietary evaluation

The goal of the dietary evaluation is to find out what a person is now eating, what he or she has eaten in the past, and whether their diet has recently changed. A questionnaire has been created to help determine which older people have nutritional issues. Health care practitioners may give this questionnaire in both inpatient and outpatient settings. If any of these indicators point to probable nutritional issues, the nutritional examination should move on to Section II. However, if sufficient data is obtained at the end of Phase I to guarantee a logical basis for therapy, the nutritional assessment should be stopped and appropriate dietary counselling should be implemented [24].

Stage two

More data should be gathered when the indicators mentioned below suggest the possibility of a nutritional issue. Regular blood chemistry testing and a semi-quantitative dietary analysis should be done.

Semi-quantitative analysis of diet

Dietary intake is evaluated at this level using more scientific methods. A 3- to 5-day period's worth of food and drink consumption's nutritional content is calculated using food composition tables or computer-assisted nutrient analysis programmes.

It is possible to quantify average calorie and nutrient intakes and compare them to standards. consulting services provided by a licensed dietitian are priceless at this stage of evaluation. biochemical evaluation.

Common automated blood tests are also helpful in giving the patient's nutritional status more precise information.

Although many of the indicators are impacted by pharmacological and chronic disease impacts, aging-related declines in renal function, body water, and other factors, most indices remain within normal ranges for young individuals [24].

Phase three

The third stage of the analysis is used to address more complicated nutritional issues and should be carried out with a doctor's guidance. This phase of the investigation involves evaluations of metabolic and endocrine function in addition to thorough nutritional biochemical assessments of blood, urine, and tissues [24].

Suggestions for food for the geriatric population

You can get all the nutrients you need for optimum health by consuming a variety of meals from the following five food groups in enough amounts

- Four servings of each of the following three types of fruits and vegetables: two servings of vitamin C-rich foods, such as raw cabbage, salad greens, and citrus fruits. b. One serving of a diet high in vitamin A, such as fruits and vegetables that are yellow and dark green in colour. c. A single fruit-, vegetable-, and potato-based entrée.
- Four portions of bread, cereal, and other things produced with enriched flour.
- Two servings of milk and milk-derived products, such cheese.
- For instance, two pieces of a high-protein diet, It could be advised to eat non-vegetarian foods including meat, fish, poultry, and eggs. Dry beans, peas, and almonds are some of the best sources.
- Other undeclared foods, such as alcohol, fats, sweets, and oils; the only serving size recommended is 2 to 4 tablespoons of polyunsaturated fats, which are a source of crucial fatty acid [25-27

Conclusion

One of the legislative and public policy committee of the academy's priority areas is ageing. From frail elderly patients in hospitals and institutions to independent older persons living in the community, nutrition is crucial in the prevention and treatment of disease. Evidence suggests that tailored MNT can improve outcomes and lower healthcare costs in the treatment of chronic illnesses and ailments that are common in older persons. A lot of prior research has indicated how crucial diet and nutrition are to the health of the elderly. Elderly individuals with apparent nutritional issues, including both undernutrition and over nutrition, are

more likely to experience more disability and have a higher risk of dying prematurely. In senior patients, doctors must be suspicious of dietary abnormalities. Whether a person is at a moderate or high risk of nutritional deficiencies can be determined by a thorough clinical history, which may be preceded by a self- administered questionnaire. Clinically significant protein-calorie deficiency will be confirmed by a complete physical examination that includes weight and height measurements. A few screening tests, such as assessments of serum albumin and hemoglobin levels, may be necessary for common nutrient deficits. It could be required in certain circumstances to request additional laboratory testing and to refer the patient to a nutritionist for a more thorough evaluation. The likelihood that elderly people would retain high nutritional status could be considerably increased by the promotion and execution of low-cost, prevention-based activities like health, nutrition, and physical education.

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