

## LIFESTYLE, NUTRITION AND DIET FOR COMPLETELY EDENTULOUS PATIENTS- A REVIEW

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### ABSTRACT

Decline in the oral health status are largely widespread non-communicable condition among the adults between the ages of 50-70yrs. The prime reason behind such scenario was found to be edentulous nature which affects either directly or indirectly on the oral as well as general health status of an individual. Diet and nutrition are the most significant factors in preservation of life and progress throughout the life. New researches are conducted across various countries shows that life style changes and diet level of physical activity improves the health of entire community. Mental fitness, positive thinking, healthy diet, exercise habits, maintaining good oral hygiene, life style practices are few ways of ensuring a healthy old age. A balanced diet is one that provides all the nutrients in required amounts with age, gender, physiological status and physical activity. Although the quality of food is important, a large quantity of a very healthy diet can still lead to high caloric intake. The present review focuses on various factors responsible for maintaining a good oral health and life style modifications, dietary supplements recommended among the elderly age group.

**KEYWORDS:** Oral health; balanced diet; food guide pyramid; xerostomia; vitamins; minerals; elderly age; edentulousness.

### INTRODUCTION

Lifestyle modification is directly related to health status of individual irrespective of the age group. The effect of edentulism on daily bases of the oral cavity and faces certain situations socially has significant plausibility and has various dimensions such as physiological, functional, psychosocial factors.<sup>[1,2]</sup> Dietary deficiency plays a key role as a risk factor for chronic diseases. Conventionally, accepted plant based diets have been swiftly replaced by high-fat; energy-dense diets with a substantial content of animal-based foods items.<sup>[3]</sup> Similarly the term nutrition is the consumed food considered in relation to the body's dietary needs. Correct nutrition is crucial for maintenance of health and luxury of body. Elderly patients wish are done, complete correction of oral health are made. Age related medical issues area unit inability to eat, render the recent aged patients to malnutrition deficiencies.<sup>[4]</sup> A recent survey by M.Rathee & A. Hooda concluded that more than one third of elderly patient above 65 years are found to the edentulous.<sup>[5]</sup> The term edentulousness indicates the state of complete loss of all natural teeth and are commonly attributed to difficulty in chewing of hard and soft food.<sup>[6]</sup> Hence the balance among dental status, masticatory and nutrition play a role

in maintaining the health of an individual in geriatric age group.<sup>[7]</sup> The effect of edentulous state on nutrition & health is essential but left unnoticed owing to the lack of awareness, negligence, socioeconomic status and various other contributing factors.<sup>[8]</sup> Several studies have shown that edentate elderly people intake fewer fruit and vegetables, less dietary fiber, carotene, calcium, and protein; and cholesterol and saturated fat than do their dentate counterparts.<sup>[9]</sup> Furthermore, these alterations in dietary intake have been suspected to increase the risk of significant weight loss.<sup>[10]</sup> and possibly of selected systemic diseases such as cancer and cardiovascular disease, osteoporosis, atherosclerosis, and bowel disease.<sup>[11]</sup> The WHO has emphasized the importance of oral health as a major component of quality of life & general health oral issues can predispose older people to different health conditions such as malnutrition and pneumonia.<sup>[12]</sup> Thus the question rises among the healthcare professions to know whether it's because of insufficient nutrition intake / edentulousness / combination of both could lead to poor health in geriatric age group.<sup>[13]</sup>

### Lifestyle of Elderly Patients

WHO represented impairment because the loss of an anatomic body part; incapacity as being prevented from partaking in everyday activities like Abduction and speaking; handicap as decreased contact with others in society ,likewise the loss of all natural teeth ends up in impairment, incapacity and handicap. Also loss of natural teeth and associated alveolar bone ends up in impairment.<sup>[14]</sup>

### Nutritional objectives

1. To create diet this is reliable with the physical, social, psychological and economic background of the patient.
2. To provide temporary dietary supportive treatment, directed towards specific goals such as carries control, post operative healing, or soft tissue conditioning.
3. To deduce factors peculiar to the denture age group of patients, this may communicate or complicate nutritional therapy.<sup>[15,16]</sup>

### Factors affecting nutritional status

The most common problem faced by the elderly population throughout the world is nutrition. The factors associated with aging process, disease or other medical conditions due to nutritional problems are,

1. Physiologic factors
2. Functional factors
3. Pharmacological factors
4. Psychosocial factors

**1. Psychosocial factors:** Elderly people have possibility of life-situational risks like those who living alone, the physically handicapped with insufficient care, isolated by the family members poor socioeconomic status & those with chronic disease and/or restrictive diets, which will increase nutritional risk

**2. Functional factors:** Nutritional status indirectly affects some systemic conditions like arthritis, stroke, and vision or hearing impairment.

**3. Pharmacological factors:** Most of the geriatric population intakes moderate to high dosage drugs daily. Drugs may influence the absorption and utilization of some foods and nutrients. Nutrient deficiencies, weight loss and ultimate malnutrition are caused by the drugs which can leads to anorexia, vomiting, xerostomia, taste loss and interference with nutrient absorption and Utilization.

**4. Physiological factors:** When the elderly people body mass is decreased so, they will be thin and they are under more chances of falling down.<sup>[17]</sup>

### Oral Factors That Affect Diet & Nutrition Status

**a) Xerostomia:** Xerostomia is the clinical manifestation of salivary dysfunction caused by fear /anxiety, neuroses, organic brain disorders, and drug

therapy. The use of drugs for hypo salivary leads side effects may have deleterious influence on denture bearing tissues. Deficient masticatory performance leads to utilization of more drugs, than those with superior performance.

**b) Changes in oral mucosa:** Increase in age, results in change of mucous membranes of the lips, buccal, palatal tissues and floor of the mouth. The patient's chief complaints is burning sensation, pain and dryness of the mouth or cracks in the lips, altered/loss of sensation of taste ,and also has the history of difficulty in chewing and swallowing. The epithelial membrane is thin and it gets easily injured, heals slowly due to impaired circulation.

**c) Oral infectious conditions:** As the age progress elderly people are more likely to be affected by various oral diseases or conditions such as periodontal diseases, root caries. Periodontal diseases results in tooth loss due to alveolar bone resorption & may be exacerbated by nutritional deficiency.

**d) Sense of taste and smell:** Age-related changes in taste and smell may alter food choice and decrease diet quality in some people. Factors contributing to this reported decreased function may include health disorders, medications, oral hygiene, denture use and smoking. The sense of smell decreases rapidly than sense of taste. Sensory changes can decrease the demand of some foods which causes limited their using up and fall of potential health benefits.<sup>[18]</sup>

### Balanced Diet

A balanced diet is one that provides all the nutrients in required amounts and proper proportions. The quantities of food required to meet the nutrient necessity vary with age, gender, physiological status and physical activity. A balanced diet can simply be achieved through a mix of four basic food groups that includes 50% to 60% of the total calories from simple or complex carbohydrates, from protein is 10% to 15% and 20 to 30% from both visible and invisible fat. In addition, a balanced diet should provide other non nutrients, such as dietary fibers, antioxidants, and phytochemicals, which give positive health benefits.<sup>[19]</sup>

### Nutrient Needs of the Elderly People

#### 1. Importance of Water & Energy

**Energy requirement:** With increase in age energy constraint decreases in older persons by about 100kcal/decade. RDA for energy: 30kcal/kg/day. RDA for protein: 0.8–1 gram/kg/day. Carbohydrates should symbolize 55-60% of the total calories inspired. More amounts of saturated fats, cholesterol cause several diverticular diseases and obesity so fat consume should be kept low.

**Water:** water is the main element of human blood, which accounts 70% of total body weight and other body fluids. A healthy person will need eight glasses (2l) of water daily. A cross-sectional.

Women in average energy consumption level at same age. Deficiency causes dull, parotid gland enlargement, pallor, pale atrophic tongue, spoon nails, pale conjunctiva.

**Calories:** A caloric requirement declines with advancing of age, which is due to reduced energy and a decreased basal metabolic rate. The recommended dietary allowance (RDA), the estimates amount of calories for women is 1600 and for men is 2400.

**Protein:** In geriatric patients, the amount of protein required increases which is must for denture wearers. Decreased in skeletal muscle mass is due to decreased intake of protein. The recommended allowance for proteins, for persons at the age of 51 and above, is 0.8-g protein/kg body weight per day.

**Carbohydrates:** Carbohydrates are the major mechanism of the diet other than fats and protein. It is the most important and quick source of energy. It provisions 70 - 80 % of energy requirement to the body. The elderly person intake a large proportions of their calories as carbohydrates, probably at the expense of protein, due to their low cost, ability to be stored without refrigeration and easiness of preparation. The recommended range of ingestion is 50 to 60 per cent of total calories. The average 1800 calories diet should contain between 210 to 290 grams of carbohydrates each day, which is equal to 45 to 65 percent of your daily calories.<sup>[20]</sup>

#### Types of Carbohydrates

1. Complex: Vegetables, grains and legumes.
2. Nutrient poor simple: Sugars
3. Nutrient rich simple: Fruit, milk
4. Fiber: Whole grains, vegetables, fruit and legumes.

**Table: 1 Daily Requirement of Vitamins.**

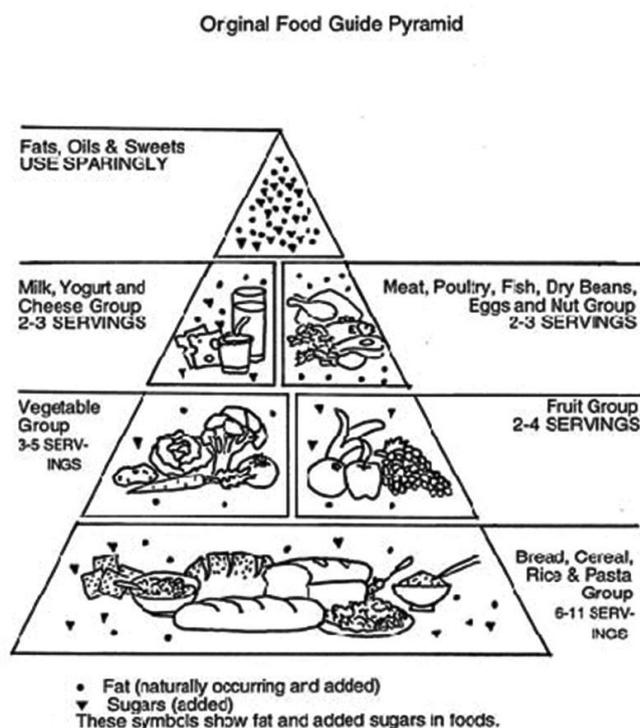
Vitamins	Recommended daily allowance	Sources of vitamins
Thiamine	1mg/day	Wholegrain, cereals, nuts, legumes, green Leafy vegetables, organ meats, pork, liver and eggs.
Niacin	6.5-7.2mg/day	Foods of animal origin.
Riboflavin	1.2mg/day	Flesh foods, poultry, dairy products, legumes, nuts and green leafy vegetables.
Pyridoxine	2mg/day	Meat, Fish, Poultry, Pulses, Nuts and wheat.
Folic acid	200ug/day	Leafy vegetables, fruits and yeasts, cereals, and pulses.
Vitamin B12	2.4ug/day	Liver, meat, egg, and milk are good sources.
Vitamin C	40mg/day	Fresh amla, citrus fruits, guava, banana and certain vegetables like tomatoes.
Vitamin A	600mg/day	Fruits and vegetables green or deep yellow/orange in color, like green leafy vegetables, carrot, tomatoes, sweet potatoes, papaya, mango etc.
Vitamin D	5ug/day	Sun exposure, fortified dairy products.

**Table 2: Minerals.**

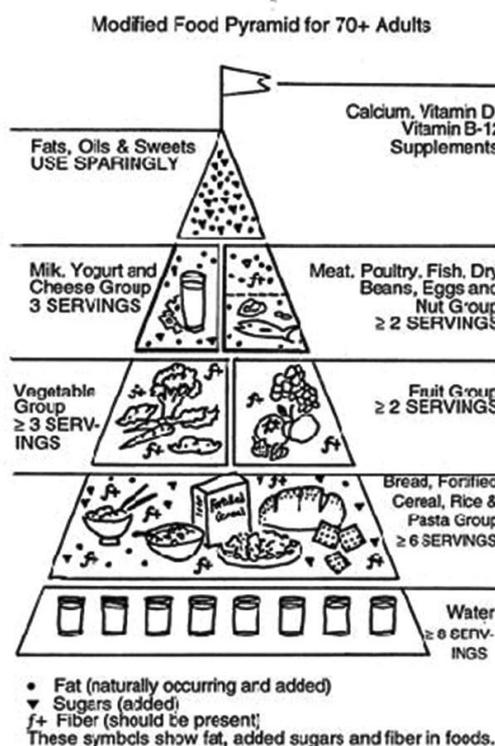
Minerals	Recommended daily allowance	SOURCES OF MINERALS
Calcium	1000mg/day	Almond ,rice ,coconut ,hemp milks, canned seafood with bones Dairy products, fortified cereals & juices, Green vegetables (spinach ,kale, broccoli)Tofu
Chromium	120mcg/day	Broccoli, fruits (e.g.: apple & banana), Grape and orange juice Meats, Spices, Turkey, Whole grains.
Copper	2mg/day	Chocolate, cocoa, Lentils, Nuts and seeds, Organ meats (e.g. liver), Whole grains.
Iodine	150mcg/day	Breads and cereals, potatoes Dairy products, Iodized salt, seafood, seaweed, turkey.
Iron	18 mg/day	Beans, Dark green vegetables, Meats, Poultry, Raisins, Sea foods, Whole grain, Enriched Cereals and breads.
Magnesium	400mg/day	Avocado, Bananas, Beans, peas, Dairy products, Green leafy vegetables, Nut and pumpkin seeds, Potatoes, Raisins, Wheat, Whole grains.
Manganese	2 mg /day	Beans, nuts, pineapple, sweet potato, pollen grains.
Molybdenum	75 mcg/day	Beans, peas,, nuts, pollen grains
Phosphorous	1000 mg/day	Beans, peas ,dairy products, meats, nuts and seeds, sea food ,enriched cereals and breads
Potassium	3500mg/day	Bananas, beet greens ,juices ,tomato ,milk, potatoes, prunes ,spinach ,white beans ,yogurt

Selenium	70mcg/day	Eggs, Pasta and rice, Meats, Nuts, Poultry ,Sea foods
Sodium	2400mg/day	Breads and rolls, Cheese, Cold cuts and cured meats, mixed meat dishes, pizza ,poultry, sandwiches, savory snacks, soups table salt
Zinc	15mg/day	Beans and peas, beef, dairy products fortified cereals, nuts, sea food pollen grains.

**Food Pyramid**



**Figure: 3**



**Figure: 4**

A new food pyramid has been considered for people aged 70 years and above, to reflect the sole needs of older people.<sup>[21]</sup> The U.S. Department of Agriculture has proposed the Food Guide Pyramid at the year of 1992. This replaces the former basic four models of milk, fruits and vegetables, and grains. The pyramid now contains six categories:

- Category 1 - Bread, cereal, rice, pasta, Chapatti,
- Category 2 - Vegetables.
- Category 3 - Fruits.
- Category 4 - Milk, yogurt, Cheese,
- Category 5 - Meat, poultry, dry beans, eggs, and nuts, fish
- Category 6 - Fats and sweets.

**CONCLUSION**

The geriatric population, being a very important asset for society, their experience and guidance in real life is indispensable. One of the most important factors of a satisfactory prosthetic service is the nutrition of the patient. Dietary supplements and nutritional diets are suggested to be followed to maintain the health of patients throughout the track of their treatment for prosthetic restorations. Nutritional content and dietary steering ought to allotted at the time of identification and

it may be incorporated whereas treatment coming up with. Several plate failures square measure the results of nutritional deficiencies. A healthy balance diet ought to be incorporated for all senior patients.

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