

# NUTRITION FOR THE ELDERLY

- Aging is an irreversible biological change that occurs throughout an individual's life and continues until death.
- It is a process that involves the whole body. Each organ independently loses its function, and the body becomes senescent. As an individual grows older, a number of changes occur in the body which affect nutrient needs, dietary intake, and nutrient utilization.
- The changes associated with aging are partly influenced by genetics, race, and gender also, the role of environmental, psychosocial and life style factors.
- The nutritional status of people at 70 to 80 reflect not only their current food practices, but all of their previous dietary history as well.

YOUNG ADULT = 65 to 74yrs  
AGED = 75 to 84yrs  
OLDEST ADULT = 85 and older



## CHANGES ASSOCIATED WITH AGING .

During period of growth anabolic change exceed catabolic changes. Once the body reaches physiological maturity, the rate of catabolic or the degenerative changes become greater than the rate of anabolic cell regeneration .

1. **SENSORY LOSSES** : The sense of taste (dysgeusia) , smell (hyposmia) ,sight , hearing, touch diminish and loss of teeth ,Xerostomia (feeling of dry mouth ) anorexia ( loss of appetite ) . Also decline in neuromuscular coordination are common problems which lead to less food intake as result of decrease appetite, food recognition and self feeding ability.

- 3. CHANGES IN GASTRO INTESTIONAL TRACT** : Secretion of digestive enzyme and digestive juices decreases which result in incomplete digestion of food as a result absorption and utilization of nutrient are affected adversely.
- 4. CHANGES IN CARDIOVASCULAR SYSTEM** : Narrowing of lumen, thickening of arterial walls and lowered myocardial contractibility.
- 5. RENAL FUNCTIONS** : Working ability of kidney decreases as a result the elimination of waste products and reabsorption or nutrient are affected.
- 6. REDUCED HORMONES LEVEL**
- 7. IMMUNOCOMPETENCE** : immune functions decline with age .
- 8 Psychological Factors** like depression, anxiety. Loneliness food habits loss of self esteem can affect appetite, digestion, energy level weight, and well being.



# Nutrient needs and recommended dietary allowance

**Energy:** Requirement generally decreases with age due to decline in BMR and a reduction in physical activity. Meeting the nutrient need is challenging because although there energy requirements decreases but requirement of proteins, vitamins and mineral do not diminish or actually increases . Average calorie intake for person 51yrs and older is 2300kcal/day and 1900kcal /day for women. Sarcopenia an age related loss in skeletal muscle is the result of a decline in muscle strength. The calorie intake should be adjusted to maintain the body weight constant e.g. obese.

**Proteins:** Intake of 1.0 g/kg is needed to maintain the positive energy balance in the elderly. Protein needs increases in the relation to the acuity and chronicity of diseases. Stressful and psychological stimuli can induce a negative balance. Deficiency of proteins results in oedema, anaemia, and lowered resistance to infection .

**CARBOHYDRATES:** an impaired glucose tolerance in the elderly can lead to hypoglycaemia, hyperglycemia and type 2 diabetes mellitus. 50% to 60% to total calorie intake should be come from CHO. Emphasis should be given on increasing the intake of complex CHO, including dietary fibre, and controlling the intake of simple sugar.

**LIPIDS:** Not more then 25-30% of the total daily calorie intake come from lipids. Emphasis should be placed on reducing the intake of saturated fat and choosing monounsaturated or poly saturated fat source. Diet should provide adequate amount of essential fatty acids (linoleic/linolenic acid).

- **VITAMINS:** physiological changes associated with the aging may increase or decrease vitamin absorption influencing total dietary vitamin requirement. Therefore same level as for adults i.e. 600ug of retinol or 2,400ug of beta carotene can be considered adequate for elderly men and women.
- Elderly people are at risk of vit. D deficiency due to decrease exposure to sunlight, supplementation of calcium and vit. D improves bone density and prevent fractures. Vitamin E (cellular immunity), carotenoids and vitamin C (protect against cataract), vitamin B6 (immune functions) have been promoted as agents that enhance the health.
- **WATER:** With aging a progressive decline in the water content therefore 1ml of water for each kcal of food consumed for all people of ages is recommended.
- Water stimulates peristalsis' and thus aids in combating constipation. Dehydration can result in the mental confusion, headaches and instability. Elderly should be advised to consume some fluids at regular interval.
- **FIBER:** Increase consumption of dietary fiber are correlated with decrease rate of heart diseases. Fiber stimulates peristalsis.
- It is essential to consume fiber containing food but increase should be gradual otherwise bowel discomfort, distension and flatulence will result. Rough fiber, bran and mature vegetable are not advised. Fiber also helps in reducing cholesterol which may reduce the incidence of atherosclerosis.

- **MINERALS:** Aging produces physiologic changes that affect the need of several essential nutrients. Elderly should emphasize the value of high quality, nutrient dense food. Calcium and phosphorous needs increases to prevent from osteoporosis i.e. 400mg of calcium for both man and woman has been recommended. Ca:P ratio of 1:1 may be maintained.

IRON stores tend to increase with increasing age. Intake of ZINC in elderly declines in relation to decrease in energy intake and are much lower than the recommended level of 15 mg/day for men and 12mg/day for women, SODIUM is associated with hypertension therefore it is prudent to limit dietary sodium intake to approx 2-4g/day.



# Problems Of Old Age:

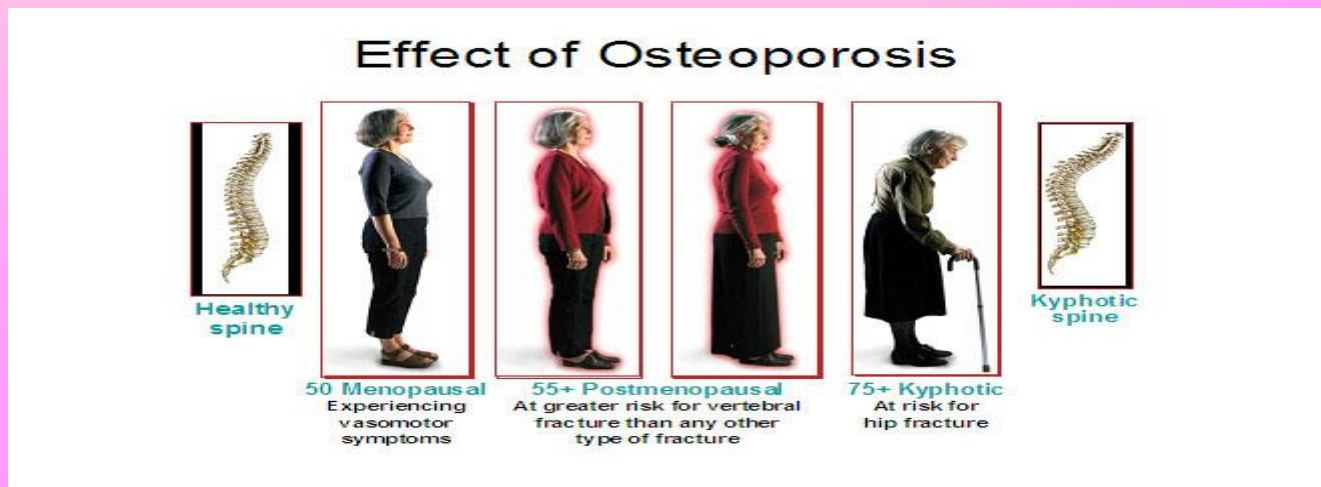
- The elderly are at a risk of poor nutrition due to economic pressure, poor dentition, reduced mobility, depression loneliness, ageing tissues, and inadequate food consumption.

**Commonly prevalent nutrition related problems are :**

**Obesity:** it is higher among elderly. Because of more consumption of calories and sedentary lifestyle. Obese are susceptible to diabetes, cardio vascular diseases, arthritis decrease mobility and various physiological problems.

**Osteoporosis:** Loss in bone density and bone mass. It's primarily found in middle age. Bone demineralization takes place at faster rate than bone mineralization. As a result bone becomes porous lighter and fragile leading to easy and frequent factors. This is very common among women in post menu-pausal phase of life. Decrease intestinal absorption of calcium and production of vitamin D reduced to physical activity and increased Para-thyroid hormones secretion may also cause osteoporosis.

**Treatment** :Exercise combined with adequate calcium and vitamin d intake may have a modest effect on slowing the decrease in bone mineral density in post menu pausal women.



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- **Diabetes:**

- Diabetes mellitus: (NIDDM) increases with age in both male and female. The elderly are at a risk of poor nutrition due to economic pressure, poor dentition, reduced mobility, depression loneliness, ageing tissues, and inadequate food consumption.

**Cardio vascular diseases:** Hyper tension, atherosclerosis, acute myocardial infection, angina pectoris, congestive cardiac failure is high among elderly.

**Constipation:** it is the infrequent passage of stools which are most often drier or harder than normal. The stools becomes hard and dry because moves too slowly through colon. The natural contraction or rhythm of the colon might be disturbed due to loss of tone , stress , medication , illness , resisting the urge to defecate , pain from hemorrhoids or tissues, lack of exercise , a low fiber diet or not drinking enough fluids.

**Anemia:** Inadequate intake of iron causes fatigue, anxiety, lack of energy and sleeplessness caused by low dietary intake, lack of iron, or vitamin C or blood loss.

**Malnutrition:** due to various physiological and socio-psychological changes, food intake of the elderly may decrease drastically resulting in under nutrition and malnutrition

# **POSSIBLE CAUSES OF UNDERNUTRITION IN THE ELDERLY:**

- **Depression or feeling of worthlessness.**
- **Polypharmacy that affects appetite, food intake or the absorption, utilization or excretion of nutrients.**
- **Loss of income, poverty.**
- **Social isolation, loss of loved ones, loneliness.**
- **Diseases that reduce appetite. Decrease in absorption or utilization of nutrients or increase requirements for nutrients.**
- **Lack of education about proper nutrition.**
- **Dental problems or gum diseases.**
- **Decreased functional ability.**



# Diet And Feeding Pattern

- Foods rich in proteins, vitamins and mineral should be included.
- Excess salt intake should be avoided.
- Intake of energy foods sweets, Fried and high fat ,starches concentrated foods are avoided.
- Plenty of solids and semisolids should be taken.
- Liberal amount of milk and milk products ,fresh fruits, vegetables (GLV) should be included to meet the requirement of vitamins and minerals.
- High fiber diet including greens and whole greens are to be included.
- Gas forming foods like sulphur containing vegetables and certain types of pulses should be avoided.
- Exposure to sunshine is essential to meet the body needs for vitamin D.
- Supplements of calcium and vitamins needs to be provided.
- Foods rich in fats ,especially saturated fats should be avoided, oil containing PUFA should be used e.g. sunflower oil , soyabean oil etc.
- Intake of simple sugar should be reduced.
- Quantity of food given at a time needs to be decreased because of poor digestion.
- Modification in consistency of food need to be done. Diet should be soft well cooked
- Food for the elderly should be colorful ,attractive and tasty to arouse their appetite and interest in food.
- Regular Walk and exercise with periodic health checkups should be done.
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- **Hypertension or high blood pressure** is a condition in which the blood pressure in the arteries is chronically elevated.
- **Angina pectoris**, commonly known as **angina**, is severe [chest pain\[1\]](#) due to [ischemia](#) (a lack of blood, thus a lack of [oxygen](#) supply) of the [heart muscle](#), generally due to obstruction or spasm of the [coronary arteries](#) (the heart's blood vessels

**Heart failure (HF)** often called **congestive heart failure (CHF)** is generally defined as the inability of the [heart](#) to supply sufficient [blood flow](#) to meet the needs of the body.[]