CHANGES ASSOCIATED WITH AGING

A. Physiological Changes

Aging results in physiological decline but the process is not uniform. The different organs as well as the different systems lose their capacity at varying rates. The physiological changes occurring in various systems as part of normal aging process include:

1. Loss of Teeth

In old age, the individual is likely to have tooth and gum problems, may lose teeth or may have ill fitting dentures. As a result of these dental problems, the elderly may often tend to omit foods like raw fruits, raw vegetables and meats, etc. which are rich in dietary fibers. Deficiency of raw vegetables and fruits results in decreased gastrointestinal mobility and leads to constipation.

2. Decreased Neuromuscular Coordination

With aging, there is decline in neuromuscular coordination. As a result, the holding of utensils and proper eating of food becomes difficult. Therefore, to avoid embarrassment, the elderly may sometimes prefer not to eat such foods, particularly in the company of others. This may lead to frequent nutritional inadequacies.

3. Impaired Hearing and Failing Vision

The loss of visual and auditory acuity has many implications on food selection and preparation, and finally consumption.

4. Diminished Sense of Taste and Smell

- The pleasure of eating is diminished and interest in food is decreased due to decline in the taste buds. Very often, the old people complain of an unpleasant taste in the mouth which reduces their enjoyment of food.
- Reduction in olfactory sensitivity may further result in decreased ability to enjoy food as aroma is an important contributor to the sensation commonly known as "flavor".

5. Anorexia

Anorexia or the loss of appetite may either be due to physiological or psychological reasons. This also leads to nutritional inadequacy.

6. Physical Discomfort

Very often some aged people report discomfort such as heart burn, gastric distension, incomplete digestion and flatulence associated with the consumption of certain foods. They may, therefore, try to avoid these offending foods which may, at times, result in the exclusion of nutritious foods from their diets.

Q. Write the physiological changes of oldage

7. Changes in Body Composition

Changes keep occurring in the body composition of adults throughout life but these become more important as age advances. There is a gradual decline in the lean body mass which is replaced by body fat or adipose tissue. Due to this change, Basal Metabolic Rate is declined.

8. Changes in Gastrointestinal Tract

With increasing age, the secretion of most of the digestive enzymes and digestive juices declines. Decreased secretion of the digestive juices may either result in incomplete digestion of food or a longer time may be required for its complete digestion. Thinning of the gastrointestinal tract muscle layers occurs and gastric motility is reduced. It leads to constipation, colon infection and even colon cancer.

9. Changes in Cardiovascular System

Changes in the blood vessles such as narrowing of the lumen, thickening of the arterial walls and atherosclerosis occur with advancement of age. These problems may reduce their capacity to carry nutrients to the body cells. Cardiac output is also decreased due to lowered myocardial contractibility. The blood pressure may also increase, particularly the systolic.

10. Changes in Renal Function

The rate of blood flow through the kidneys decreases with age and it maintains 50 percent less than adulthood.

11. Changes in Skeletal Tissues

The bones become increasingly vulnerable to fractures and the vertebrae may collapse due to rapid demineralization in old age. This may result in a decline in height and a stooping or bowed posture.

12. Hormonal Changes

With aging, activity of various glands such as thyroid, adrenal cortex and islets of Langerhans is diminished which results in significant changes in cell metabolism. The incidence of osteoporosis is high among women after the age of 50 and in men after 60 years. Osteoporosis is the major cause of frequent fractures among them. Menopause among women is responsible for a reduction in their iron requirements. Reduced thyroid activity leads to decrease in the BMR, which reduces the energy needs among old people.

B. Psychosocial Changes

1. Food Habits

The dietary pattern and food preferences of the elderly are largely the results of long-standing food habits. With changing time they find it very difficult to adjust to the newly developed varieties of food and rather tend to stick to their previous pattern. The elderly often have long held firmly established beliefs about the merits and demerits of certain foods which may have a profound effect on their nutrient intake. So major changes in their eating pattern should be avoided. Any dietary modifications should be suggested with great care.

2. Loneliness

Traditionally, India has been known for respecting the elderly and taking care of them but today the joint family system is breaking away. The rural migration as well as rapid urbanization has altered the respectful attitude of the young towards the old. They leave their parents alone at their native homes and living alone among the elderly leads to decreased motivation to cook regular meals for themselves. Loneliness also depresses their appetite.

Table 9.3 Modification of diet during old age

Dietary modification	Reason
Foods must be soft, easily chewable.	Problems of dentition, fallen teeth or dentures.
Foods should be easily digestible.	Decreased production of digestive enzymes.
Restricted fat in the diet, inclusion of PUFA.	Susceptible to heart disease.
Foods rich in fibre should be given.	To prevent constipation and reduce cholesterol level. Also to prevent colon cancer.
Coffee, tea and cola beverages should be restricted.	May result in insomnia due to over stimulation.
Foods rich in calcium like milk should be given.	To compensate the bone loss and reduce the incidence of osteoporosis.
Green leafy vegetables can be given liberally.	Source of nutrients like carotene, calcium, iron, riboflavin, folic acid and vitamin C, besides supplying fibre. Rich in antioxidants.
Foods of the elderly should consist of familiar foods. New foods are difficult to accept.	Unfamiliar or changes in the food pattern may lead to psychological problems like depression.
Clear soup at the beginning of meal.	Aids digestion.
Small and frequent meals instead of three heavy ones.	Favour more complete digestion and free from distress.
A glass of hot milk just before going to bed.	May induce sleep.
Heavy meal at noon and light evening meal.	Sleep is less likely to be disturbed.
Too many sweets with lot of fats and sugar should be avoided.	Too much of sugar may cause fermentation, discomfort due to indigestion and cause tooth ache and may increase cholesterol level. May lead to obesity.
Plenty of fluid.	To prevent constipation and dehydration.

Dietary modification of diet during oldage

Dietary Guidelines

- Empty calorie foods should be taken minimum and calorie dense foods should be avoided.
- Foods rich in protein, vitamin and mineral should be included.
- Vegetables and fruits are good sources of antioxidants. A minimum of five servings should be taken.
- Fat promotes weight gain. Fat particularly saturated fat should be limited.
- Gas forming foods like sulphur containing vegetables and certain type of pulses have to be avoided.

Dietary guidelines of oldage

- Soft well cooked foods are preferred.
- Food should be less salty and spicy.
- Fried and concentrated foods be avoided.
- Caffeine containing beverages should be limited, otherwise may suffer from insomnia.
- High fibre diet including greens and whole grains are to be included in the diet.
- Easily digestable steamed foods like idlis, idiappam can be part of the diet.
- Plenty of fluids and semisolid foods should be taken.
- 2–3 servings of low fat milk should be included in the diet.
- Consumption of ω-3 fatty acids may help in reducing hair loss, impairment of vision, improper digestion and tissue inflamation.
- Tobacco chewing, smoking and betel leaves chewing are the habits which may affect consumption of food in the elderly.

Dietary guidelines of oldage