Chapter 18: Nutrition for Older Adults

Older Adults

- Many chronological ages have been used as cut-points to mark the beginning of “old age.”
- While no biological benchmark signals a person’s becoming old, there are societal and governmental definitions for *old.*
- The World Health Organization uses age 60 when referring to aging populations

Indicators of Health

- Functional status, a description of how well one can accomplish the desired tasks of daily living, is more indicative of health than chronological age.

- Rather than ask, “How old are you?” we should ask, “Can you do the things you want and need to do?” and “Can you shop for food?”

Longevity

- In trying to assess the contribution good nutrition can make to longer life, the Centers for Disease Control and Prevention (CDC) suggest that longevity depends:

  - 19% on genetics,
  - 10% on access to high-quality health care,
  - 20% on environmental factors such as pollution
  - and 51% on lifestyle factors

Terms related to aging

- **Life Expectancy** Average number of years of life remaining for persons in a population cohort or group; most commonly reported as life expectancy from birth.

- **Life Span** Maximum number of years someone might live; human life span is projected to range from 110 to 120 year

Physiological Changes

Table 18.3

Age-associated physiological system changes that affect nutritional health*

- Aging is not all loss or decline. Rather, healthy aging is associated with continuing psychosocial, personal, moral, cognitive, and spiritual development.

Cardiovascular System

- Reduced blood vessel elasticity, blood volume, stroke volume output
- Increased arterial stiffening, blood pressure

Endocrine System

- Reduced levels of estrogen, testosterone
- Decreased secretion of growth hormone
- Increase in cortisol (stress hormone)
- Reduced glucose tolerance
- Reduced levels of thyroid gland secretions
- Decreased ability to convert provitamin D to previtamin D in skin

Gastrointestinal System

- Reduced secretion of saliva and of mucus
- Missing or poorly fitting teeth
- Dysphagia, or difficulty in swallowing
- Damaged, less-efficient mitochondria produce less ATP, less energy
- Reduced secretion of hydrochloric acid and digestive enzymes
- Slower peristalsis
- Reduced vitamin B_{12} absorption

Musculoskeletal System

- Reduced lean body mass (bone mass, muscle, water)
- Increased fat mass
- Decreased resting metabolic rate
- Reduced work capacity (strength)

Nervous System

- Blunted appetite regulation
- Blunted thirst regulation
- Declining number of olfactory receptors, blood flow to nasal smell organ, and increased thickness of nasal mucus
- Reduced nerve conduction velocity, affecting sense of smell, taste, touch, cognition
- Changed sleep as the wake cycle becomes shorter

Renal System

- Reduced number of nephrons
- Slowed glomerular filtration rate

Respiratory System

- Reduced breathing capacity
- Reduced work capacity (endurance)

Body-Composition Changes

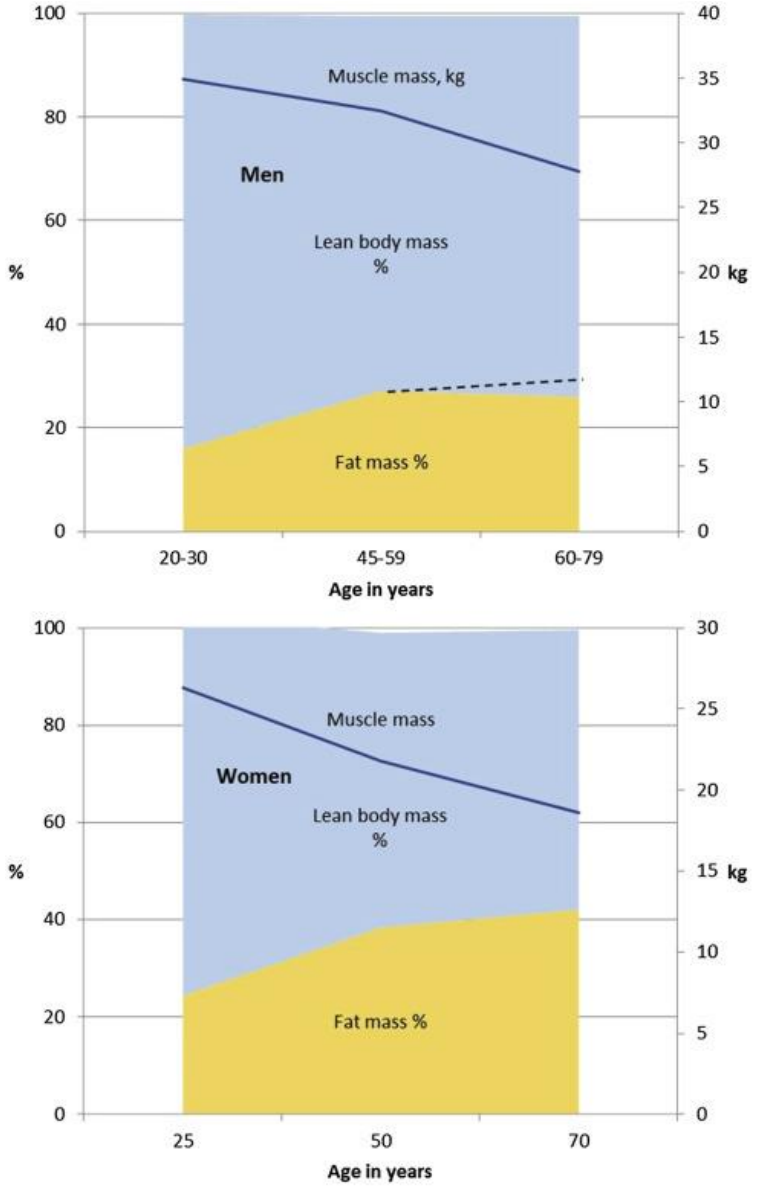
- **Lean Body Mass (LBM) and Fat**
- Of all physiologic changes that occur during aging, the biggest effect on nutritional status is due to the shifts in the musculoskeletal system, which loses up to 15% of ***fat-free mass***

- On average, there is a **decline in lean body mass** of **2% to 3% per decade** from age 30 to 70, including loss of muscle (**sarcopenia**) beginning around age 40, even when weight is stable

Lean Body Mass (LBM) and Fat

- During this time, body fat increases, especially in the visceral region
- Males in their seventies have roughly 24 pounds less muscle

- After age 70, weight, **including fat** at all sites, begins to decline



Body-Composition Changes

- MUSCLES →USE IT OR LOSE IT !!
- Training exercises led to :
  - increases in fat-free mass;
  - decreases in total, subcutaneous, and visceral fat mass
  - weight loss.
- Weight-bearing and resistance exercise increase lean muscle mass and bone density
- contributes to maintenance of ***functional status***

Weight Gain

- mean body weight increases gradually during adulthood
- Weight and BMI peak between 50 and 59 years, then stabilize and start slowly dropping around age 70
- Reasons for age-associated gains are uncertain, but longitudinal studies are showing that lack of exercise could be a factor

Weight Gain

- Physical activity effects differed by gender.

- In women, higher levels of physical activity were associated with higher levels of lean body mass. However, lack of estrogen seems to promote fat accumulation, and total weight increased regardless of the group's activity level !!!!

- Men in the highest physical activity groups in the Fels Longitudinal Study slowed their total body-weight and body-fat gains.

Changing Sensual Awareness: Taste and Smell

Taste and Smell

- there is general agreement that taste and smell senses are generally robust until age 60, when they start declining
- The number and structure of taste buds are not significantly altered during aging.

- In addition, taste perception for sucrose does not decline with age.

Oral Health: Chewing and Swallowing

- saliva seems to become thicker and more viscous with age.
  - Lack of saliva slows nutrient absorption
  - makes the oral cavity more sensitive to temperature extremes and coarse textures, resulting in pain while eating.
- Pain and discomfort with chewing foods can result in eating fewer fruits, vegetables, and whole grains.

Appetite and Thirst

- Hunger and satiety cues are weaker in older than in younger adults

- Elderly people don’t seem to notice thirst as clearly as younger people do

Nutritional Risk Factors

- Hunger
- Poverty
- Inadequate food and nutrient intake
- Functional disability
- Social isolation
- Living alone
- Urban and rural demographic areas
- Depression
- Dementia
- Dependency
- Poor dentition and oral health; chewing and swallowing problems
- Presence of diet-related acute or chronic diseases or conditions
- Polypharmacy (use of multiple medications)
- Minority status
- Advanced age

Table 18.5 DETERMINE

Table 18.5 DETERMINE: Warning signs of poor nutritional health

Disease. Any disease, illness, or chronic condition (i.e., confusion, feeling sad or depressed, acute infections) that causes changes in the way you eat, or makes it hard for you to eat, puts your nutritional health at risk.

Eating poorly. Eating too little, too much, or the same foods day after day, or not eating fruits, vegetables, and milk products daily, will cause poor nutritional health.

Tooth loss/mouth pain. It is hard to eat well with missing, loose, or rotten teeth, or dentures that do not fit well or cause mouth sores.

Economic hardship. Having less or choosing to spend less than $41.90 (female) to $46.80 (male) weekly for groceries makes it hard to get the foods needed to stay healthy. [These costs are calculated for individuals living in 4-person households; add 20% to adjust for living alone.]

Reduced social contact. Being with people has a positive effect on morale, well-being, and eating.

Multiple medicines. The more medicines you take, the greater the chance for side effects such as change in taste, increased or decreased appetite and thirst, constipation, weakness, drowsiness, diarrhea, nausea, and others. Vitamins or minerals taken in large doses can act like drugs and can cause harm.

Involuntary weight loss or gain. Losing or gaining a lot of weight when you are not trying to do so is a warning sign to discuss with your health care provider.

Needs assistance in self-care. Older people who have trouble walking, shopping, and buying and cooking food are at risk for malnutrition.

Elder years above 80. As age increases, risk of frailty and health problems also rises.