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*Your body —  
Changes  
through the  
years*



*Self-study course*

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# *Course objectives*

By the end of this course you will be able to:

- 1) Identify one change related to each of the following body functions: skin, musculoskeletal, circulatory, respiratory, gastrointestinal, urinary, neurosensory, sexuality and nutrition.
- 2) Identify one helpful hint to deal with the changes associated with each of the following body functions: skin, musculoskeletal, circulatory, respiratory, gastrointestinal, urinary, neurosensory, sexuality and nutrition.

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# Introduction

As we age, the body goes through changes. These changes affect our feelings of physical and emotional well-being as well as our overall health.

In this course we will learn about some changes our body may experience and how to deal with them for ourselves and those we care for.

## Skin

The skin is the body's largest organ and is necessary for life. It forms a barrier between the internal organs and the external environment.

The skin performs several vital functions for the body. It protects the body against invasion by bacteria and foreign matter; monitors the conditions of the immediate environment (sensing temperature, pain, light or heavy pressure); prevents water and electrolyte loss; and regulates the body's temperature through sweating or shivering.



As we age the skin changes.

- The fat under the skin decreases, making people more sensitive to heat/cold.
- Folds appear and the skin becomes looser as it becomes less elastic.
- The skin has a reduced ability to maintain a constant temperature.
- Changes in nerve endings make it difficult to sense if something is too hot or too cold.
- Skin becomes drier, making it sensitive to irritations from soap, tight clothing or weather changes.
- "Liver spots" may appear on hands, wrist and face.



The following can help care for aging skin.

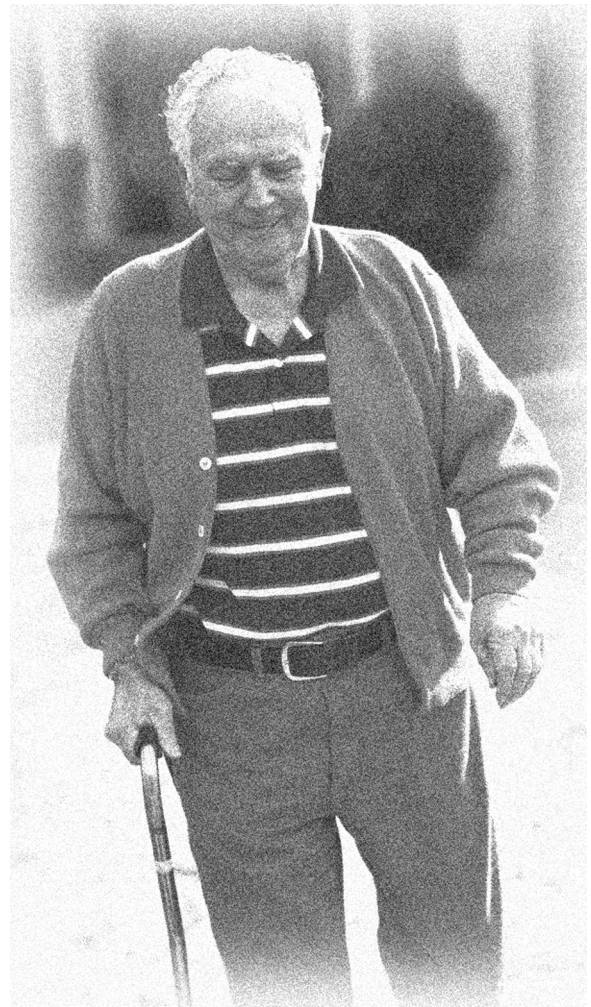
- Maintain an even room temperature.
- Handle the skin with care. Keep areas under and between the skin folds clean and dry.
- Avoid exposure to temperature extremes.
- Check the temperature of all liquids (bath water, coffee etc.) before bathing, touching or drinking.
- Apply moisturizing lotion directly after each shower or bath, avoid tight clothing and use mild detergents.
- Even though liver spots are not harmful, report any change in these or any other spots to a health care professional.

## *Musculoskeletal*

The musculoskeletal system provides the framework for the body and allows the body to move. This system also protects and gives the body its shape. Besides bones and muscles, the system has ligaments, tendons and cartilage. Problems with the musculoskeletal system are generally not life threatening, but they have a significant impact on one's life.

Listed below are some changes in the musculoskeletal system that occur with age.

- Muscles shrink and become less elastic and flexible.
- Bones may become more porous and less dense resulting in osteoporosis.
- Bones are more easily broken and take longer to heal.



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- Balance and movement are affected, creating a risk for falls.
  - Back pain may result from the wearing away of the padding between spinal vertebrae (discs).
  - Arthritis may become a problem in the joints.

The following hints can help decrease risk to the musculoskeletal system during aging.

- Encourage daily activity including exercise — especially weight-bearing exercise.
- Encourage good nutrition and other interventions and allow proper healing time.
- Encourage walking. Be sure all walkways are clear.
- Use a calcium supplement as necessary.
- Discuss all new exercise programs with the medical doctor or nurse practitioner.
- Notify your health care team if these measures are not working.

## *Circulatory system*

The circulatory system is made up of the blood, the heart and blood vessels. The heart pumps the blood through the blood vessels. The circulatory system carries food, oxygen and other substances to the cells. The circulatory system also produces and circulates cells that defend the body from disease-causing germs.

These are common changes in the circulatory system as we age:

- The blood vessels narrow sometimes resulting in high blood pressure and heart disease.
- The narrowed blood vessels carry less oxygen to the heart, which can result in angina or heart attack.
- The blood also carries less oxygen to the brain, which can result in a variety of symptoms ranging from forgetfulness to a stroke.

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Following these measures will help maintain the circulatory system during aging.

- Maintain blood pressure at a level recommended by your physician.
- Know and monitor cholesterol levels.
- If chronic chest pain is present or there is a history of it, keep the level of exertion below a level that causes pain.

## *Respiratory system*

The process of inhalation (breathing in) and exhalation (breathing out) is called respiration. The respiratory system supplies all of the body's cells with oxygen and removes carbon dioxide, a waste product. The respiratory system consists of the pharynx, the larynx, the trachea, bronchi and the lungs.

These are some changes in the body that may affect respiratory function.

- Skeletal changes and decreases in strength cause the rib cage cartilage to become hardened. This results in limited rib cage expansion.
- Weakened and wasted muscles hinder inhalation and exhalation in some people.
- The lungs becomes less elastic and don't expand as well. This leaves less air available for oxygen-carbon dioxide exchange.
- The incidence of emphysema increases with age but is not expected in all persons.

What can you do to maintain respiratory good function?

- Pneumonia and flu vaccinations are recommended for all people age 65 or older.
- Do not use heavy bed linens to cover the chest of less active individuals.



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- Frequent turning, repositioning and deep breathing prevent complications for those who are bedridden.
  - Encourage regular activity as much as possible.
  - Encourage regular deep breathing.

## *Gastrointestinal*

The gastrointestinal system, also known as the digestive system, breaks down food physically and chemically so it can be absorbed for use by the body's cells. This system also eliminates solid wastes from the body. The major parts are the mouth, pharynx, esophagus, stomach, small and large intestines. Accessory organs include the teeth, tongue, salivary glands, liver, gallbladder and pancreas.

Listed here are some of the gastrointestinal changes that occur with aging.

- Less saliva is produced, which may cause difficulty in swallowing.
- Taste and smell senses become dulled.
- Increased indigestion may occur due to a decrease in the secretion of digestive juices.
- Fewer calories may be needed.
- Movement of the bowels slows down resulting in gas and constipation.

What can you do to help prevent gastrointestinal problems?

- Avoid foods that are dry, fried or fatty.
- Practice good denture and oral hygiene.
- Drink adequate fluids (6-8 glasses of water/day) to aid chewing, swallowing, digestion and hydration.
- Maintain a well balanced diet to encourage general health and to discourage constipation, weight gain or loss.
- Maintain a daily physical exercise program.



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# Urinary system

The urinary system has two functions. First, it removes waste products from the blood and, second, it maintains water balance within the body. Major parts of this system include the kidneys, ureters, bladder and urethra.

What changes occur in the urinary system with aging?

- Nephrons, which help to rid the body of toxic substances and waste products, are lost.
- Bladder muscles weaken and urinary frequency, urgency or leakage may occur.
- In men, the prostate gland enlarges causing pressure on the urethra. Difficulty urinating and frequent urination are common complaints.

How can you prevent urinary system problems?

- Encourage adequate fluid intake — 6 to 8 glasses of water each day.
- Fluids should include water, fruit juices and milk. Personal choice is important but be aware some fluids, such as those that contain caffeine, are an irritant to the bladder.
- Try to limit fluid intake after 5 p.m. to reduce the need for nighttime urination.
- Bladder training programs may be necessary for those with incontinence.

# Neurosensory

The nervous system controls, directs, and coordinates body functions. The two main parts of the nervous system are the central nervous system (CNS) and the peripheral nervous system (PNS). The central nervous system consists of the brain and spinal cord. The peripheral nervous system is made up of the nerves throughout the body. Nerves are connected to the spinal cord and carry messages or impulses to and from the brain.



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What changes in the neurosensory system as the body ages?

- Often people experience a reduced ability to shift from near to far vision.
- Side or peripheral vision is reduced.
- The eyeball lens becomes less pliable making focusing on near objects more difficult.
- Cataracts may develop.
- Changes in vision may develop because of too much fluid pressure in the eye, a condition known as glaucoma.
- A gradual decrease in hearing. Men, in particular, tend to show a loss in the hearing of high-frequency sounds. This can also be caused by excessive wax buildup.
- Hearing impairment in older adults can lead to a sense of isolation and failure to receive mental stimulation. Often other people lose interest in trying to communicate with them.
- Changes in the sense of taste, smell and touch occur, with all becoming slightly less sensitive.
- Changes in smell seem to be minimal.

How can you help with the adjustment to neurosensory changes?

- Reading material should contain large clear type.
- Provide more light in the environment. Older people require more light because the pupil becomes smaller.
- Cataract removal by surgery is now quite common and almost always successful. If cataract surgery is done, only one eye should be operated on at a time to prevent disorientation.
- When speaking to someone with a hearing loss, make eye contact, speak slowly and speak in a lower tone of voice. Reduce background noise as much as possible when communicating.
- Determine if certain medications have affected the person's sense of taste. Adjust food seasonings accordingly.

# Sexuality

Except for the reduction of fertility in women, little change in sexual functioning is caused by aging. A sexual relationship provides more than a means of releasing sexual tensions. Companionship (someone with whom to share emotionally and physically), intimacy, touch and sexual interaction are all important aspects of sexuality.



For many older couples, intercourse itself is not the focus of their sexual interaction. They get a great deal of pleasure and comfort from hugging, kissing and just plain affectionate touching.

What changes in sexuality may be experienced with aging?

- Some couples find that a longer time is needed to respond to sexual stimulation.
- Reduced elasticity and expansion of the vagina occurs with aging.
- Increased incidence of medical conditions can interfere with sexual interest and performance.

What can help?

- Artificial lubrications can be very helpful. Be sure to provide proper instruction on its use.
- Allow enough time and privacy for the sexual relationship.
- Reassure that “normal activity” is dependent on personal preference, availability of partners and interference by medical illness, rather than by any written standards.

# Nutrition

The nutritional needs of the elderly are essentially the same as the average adult. A high-fiber diet emphasizing vegetables, fruits and whole grains is generally recommended.

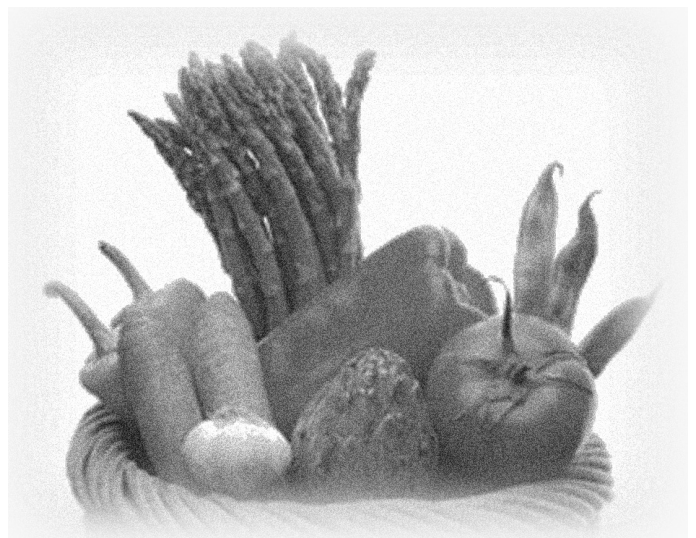
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## How is nutrition affected by aging?

- When activity levels are lower, calorie requirements may decrease.
- Loneliness, depression, decreased energy and fatigue may decrease interest in food.
- Older people frequently suffer from dehydration which can result in a disruption of the circulatory and urinary systems.
- People sometimes buy cheaper, less nutritious foods due to financial concerns.
- A decrease in the amount of saliva in the mouth makes swallowing some food difficult.
- Co-existing medical conditions can influence the type of diet as well as compliance with a diet.
- Poor teeth, no teeth or poorly fitting dentures can cause people not to eat.

## What can be done to help ensure balanced nutrition in older adults?

- Encourage sufficient intake of fluids, especially water. Six to eight glasses of water are needed daily to maintain body temperature and good hydration.
- Offer a variety of foods that reflect the person's personal and cultural likes and dislikes.
- Softer foods may be preferred for people with chewing difficulties. Use gravies or natural juices to keep food moist. Chop fresh fruits and vegetables.
- Ensure good dental hygiene by arranging visits with the dentist and ensuring properly fitting dentures.
- Smaller, more frequent meals may be necessary to ensure adequate intake.
- Consultation with a dietitian may be necessary to learn how to comply with medically modified diets while maintaining variety and flavor.





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Oregon Department of  
Human Services  
Seniors and People with  
Disabilities  
500 Summer St. NE, E02  
Salem, Oregon 97301-1073

Phone: 1-800-232-3020 V/TTY  
V/TTY: 503-945-5811  
Fax: 503-378-8966

