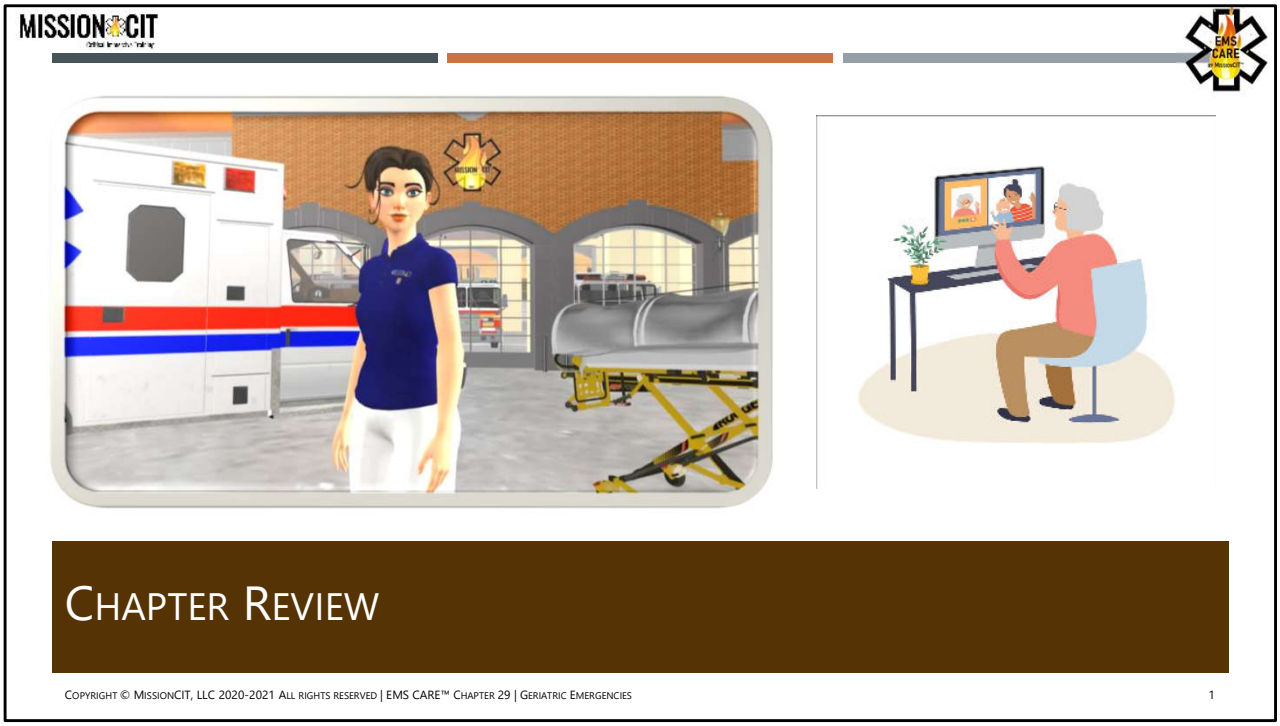
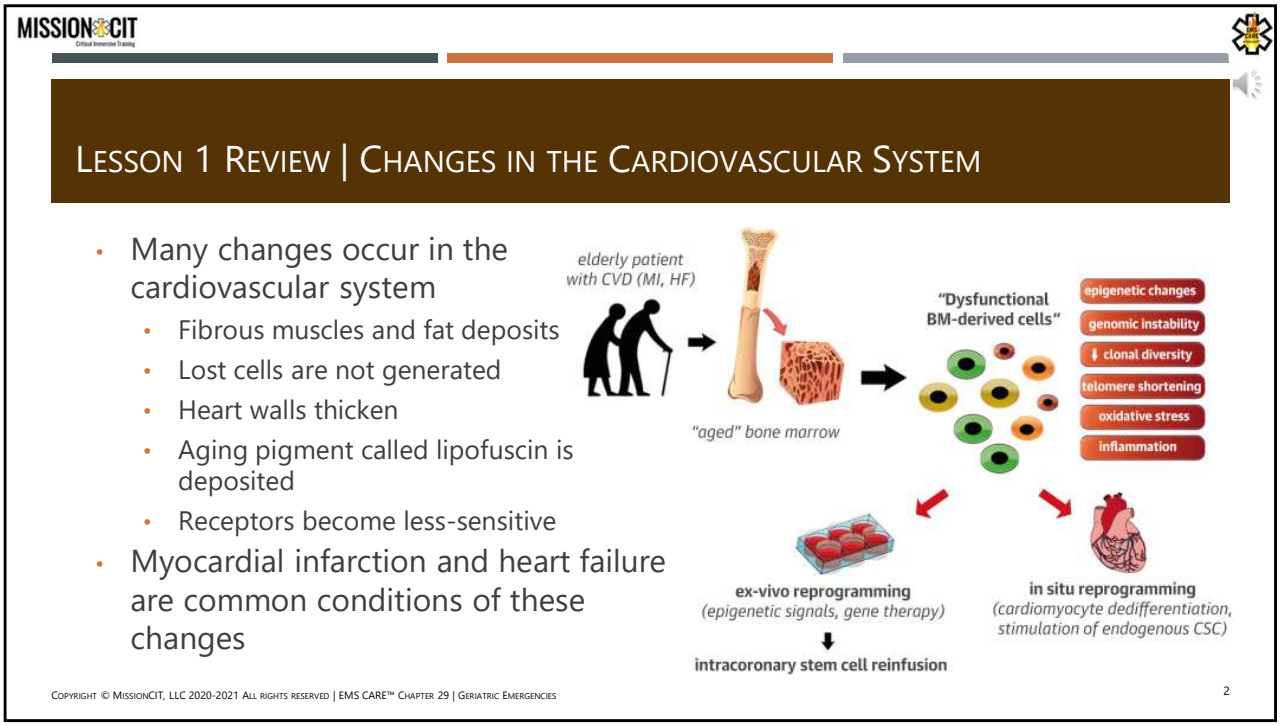


Thank you Justin!

Welcome to the review of this geriatric emergencies topic, where we will quickly recap all that we have learned, lesson by lesson.

Good Studying



In the first lesson, we looked at the cardiovascular changes that occur with aging, such as,

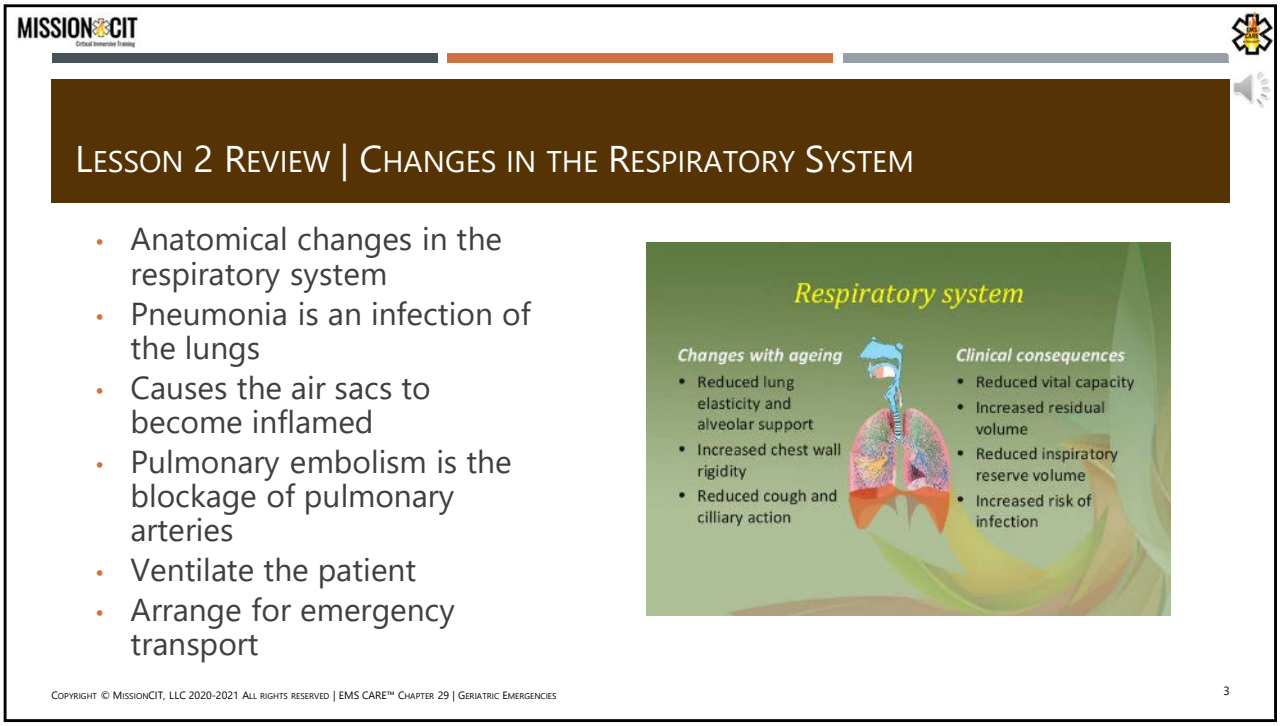
- Fibrous muscles and fat deposits that interfere with the pace of the heart
- Some lost cells are not regenerated
- Heart walls thicken and this affects the amount of blood that the heart can hold
- An aging pigment called lipofuscin gets deposited
- Receptors become less-sensitive, so blood pressure varies
- Capillary walls thicken

- Aorta becomes stiffer
- Blood pressure increases and volume decreases

All these changes lead to conditions such as heart murmurs, myocardial infarction, and heart failure. Myocardial infarction or a heart attack occurs when there is some impediment to the blood flowing to the heart. This blockage can be a buildup of fat, cholesterol, or any other substance that can form plaque in the arteries.

Heart failure, on the other hand, is a condition when the heart doesn't pump as much blood as it should. It is a condition caused by a failure of the left and right ventricles, and it is always accompanied by pulmonary edema.

Both these conditions are life-threatening, so call A L S and arrange emergency transportation.



In the second lesson, we looked at the anatomical changes in the respiratory system. Some of the possible changes are:

- Bones of chest and spine become thinner
- Ribcage can't expand and contract much, and this impacts the amount of oxygen inhalation
- Muscles lose their capacity to open
- Air sacs lose shape
- Less carbon monoxide is removed

These changes lead to severe conditions such as pneumonia and pulmonary embolism. Pneumonia is an

infection of the lungs caused by bacteria, viruses, or fungi. This infection causes the air sacs or alveoli to become inflamed and filled with pus or fluid.

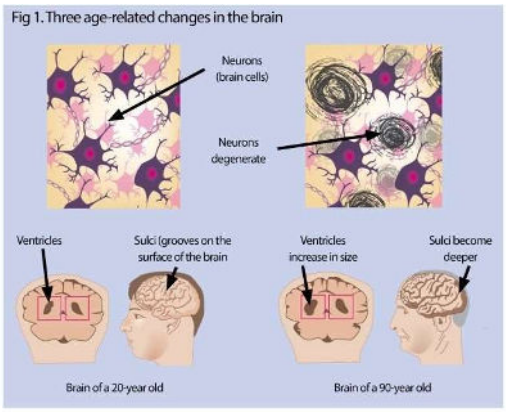
Pulmonary embolism, on the other hand, is the blockage of one of the pulmonary arteries in your lungs.

In both the cases, ventilate the patient, and arrange for emergency transport if required.

MISSION CIT

LESSON 3 REVIEW | CHANGES IN THE NEUROVASCULAR SYSTEM

- Neurovascular changes lead to dementia, an impairment of some brain functions like language, memory, judgment, and problem-solving
- Alzheimer's is the most common
- Mental confusion and emotional disruption
- Be gentle, empathetic, assess the patient



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The next lesson was about the changes in the neurovascular system that include,

- Aortic or arterial stiffness
- Autonomic dysregulation
- Neurovascular uncoupling
- Damages to the blood-brain barrier

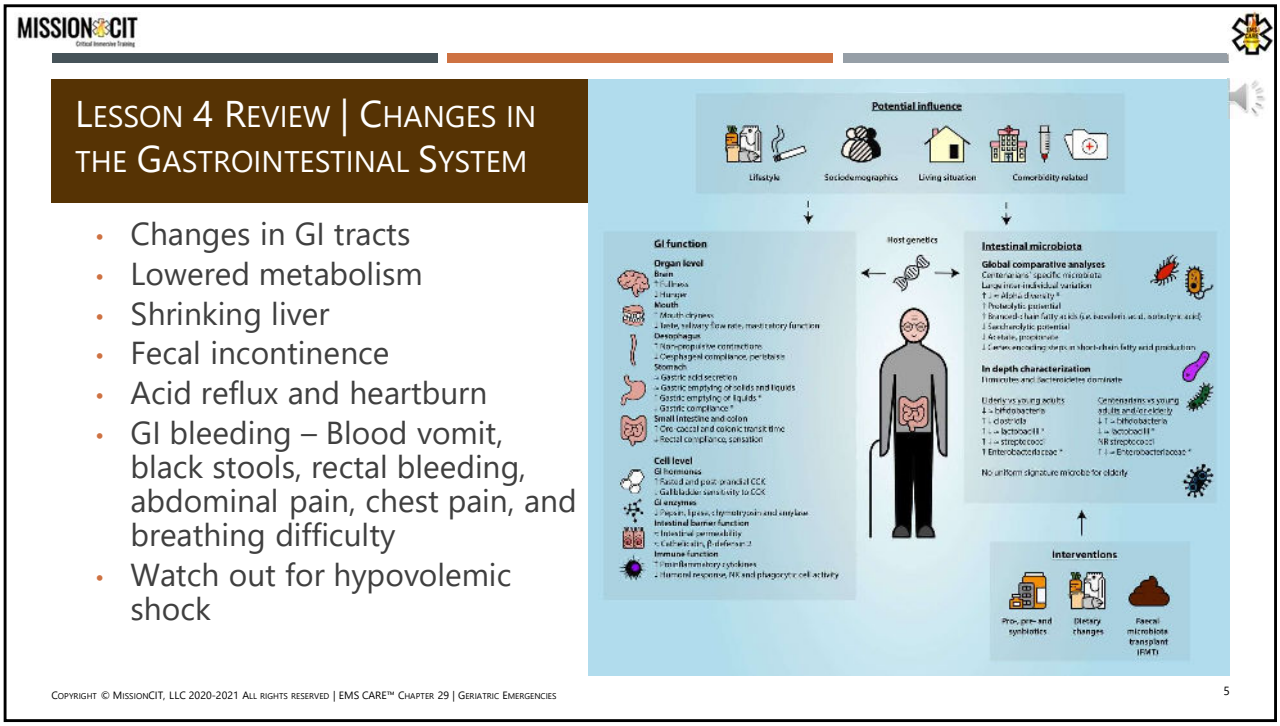
All these lead to dementia, an umbrella term used to describe a group of conditions that are characterized by the impairment of at least two brain functions, like loss of memory, language, judgment, and problem-solving. These symptoms interfere with the daily functioning of

the patients.

Out of these conditions, Alzheimer’s is the commonest.

Another possibility is delirium, a sudden change in the brain that leads to mental confusion and emotional disruption. The patient is unable to think, understand, remember, sleep, or pay attention.

Handling both these conditions is not easy, so be gentle and empathetic. Assess the patient and arrange emergency transportation if required.



In the fourth lesson, we discussed changes in the gastrointestinal system that include,

- Changes in the GI tracts
- Lowered metabolism
- Changes in muscle tone and sphincter
- Shrinking liver
- Fecal incontinence
- Acid reflux and heartburn

All of these could lead to changes in food habits.

A common condition that occurs is G I bleeding which is

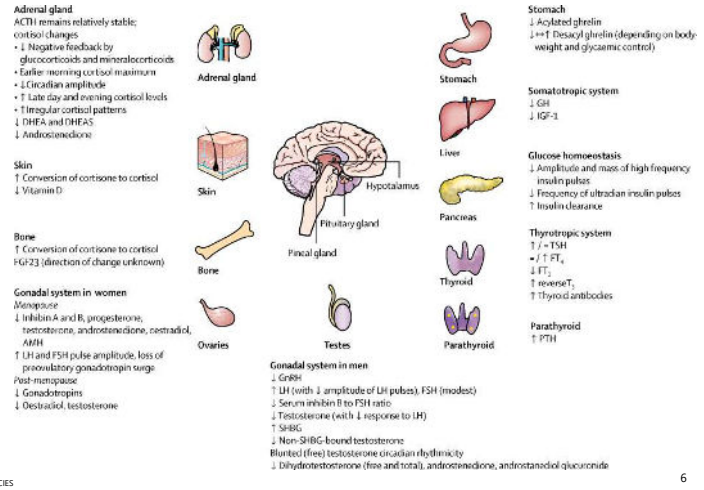
characterized by blood vomit, black and tarry stools, rectal bleeding, abdominal pain, chest pain, and breathing difficulty.

While assessing, watch out for hypovolemic shock, and identify whether the bleeding is in the upper or lower GI tract. Monitor the vitals, and arrange for transportation if needed.

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LESSON 5 REVIEW | CHANGES IN THE GENITOURINARY SYSTEM

- Many changes in the genitourinary system
- Urinary tracts, fatigue, and decreased mobility
- Prostatic carcinoma in males
- Changes in the endocrinal system
- Hyperosmolar hyperglycemic, a complication of type 2 diabetes



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6

The next lesson was all about changes in the genitourinary and endocrinal systems. The changes in the genitourinary system that occur due to aging include

- Reduction in the renal function
- A 50 percent reduction in the renal blood flow
- Tubule degeneration
- Decreased bladder capacity
- A decline in sphincter muscle control
- A decline in voiding senses
- Increase in nocturnal voiding
- Prostatic hypertrophy in males

As a result of these changes, urinary tract infections are common, and can lead to fatigue and decreased mobility. Dehydration and hypovolemic shock are also possible as seniors tend to drink a lot less water for fear of wetting.

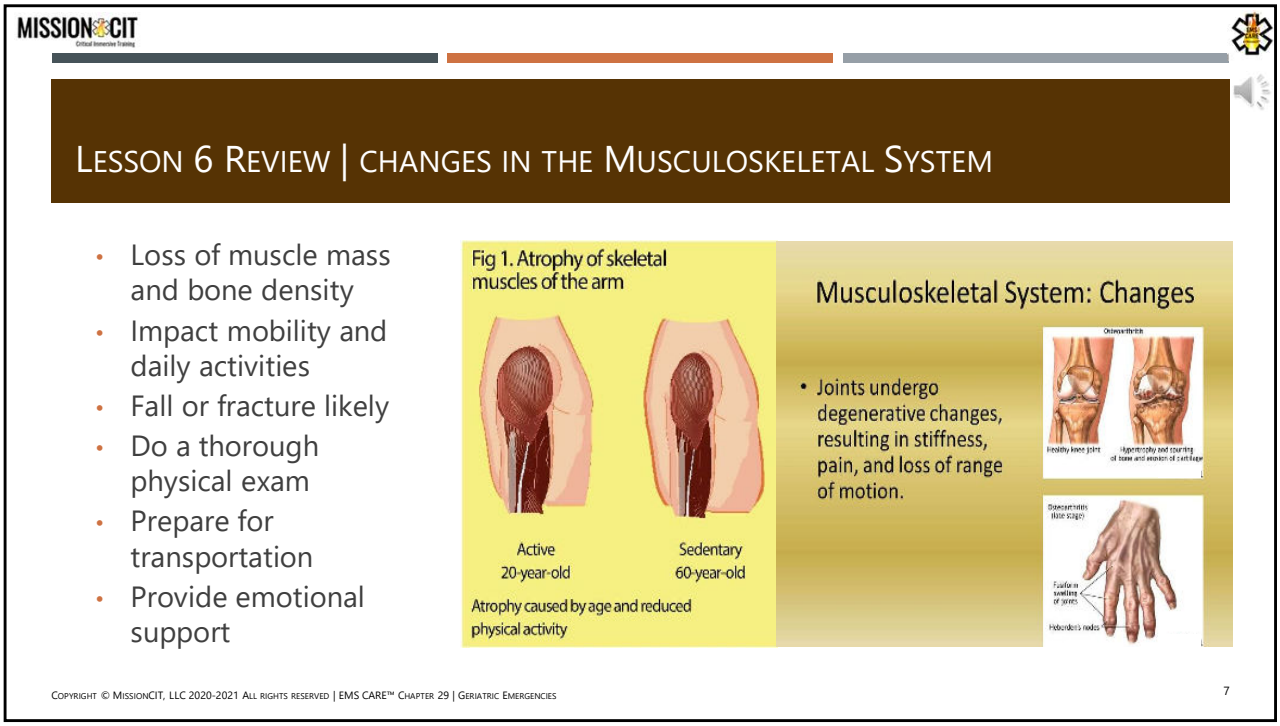
A condition called prostatic carcinoma is likely in males, and this is characterized by sudden moderate to high fever, chills, changes in bowel or bladder function, and melena.

Changes in the endocrinal system include

- There is a marked decrease in the metabolism of thyroxine
- The pancreatic beta-cell secretion also reduces, causing hyperglycemia.
- The level of hormones secreted by the hypothalamus and pituitary gland reduces as well
- There is an increase in the secretion of antidiuretic hormone and atrial natriuretic hormones that causes a fluid imbalance in the body.
- Finally, the epinephrine levels go up.

A possible emergency condition that these changes can lead to is hyperosmolar hyperglycemic, a complication of type 2 diabetes. A key characteristic of this condition is

that the high blood glucose levels don’t cause ketosis but lead to osmotic diuresis and a shift of fluids to the intravascular space, which can lead to intense dehydration.



The sixth lesson was all about anatomical changes in the musculoskeletal system, and this includes,

- Atrophy of muscles where the muscles waste away due to a lack of physical activity
- Loss of bone mass and degenerative changes
- Loss of strength
- Degenerative changes in joints
- Loss of elasticity in ligaments and tendons
- Thinning of cartilage

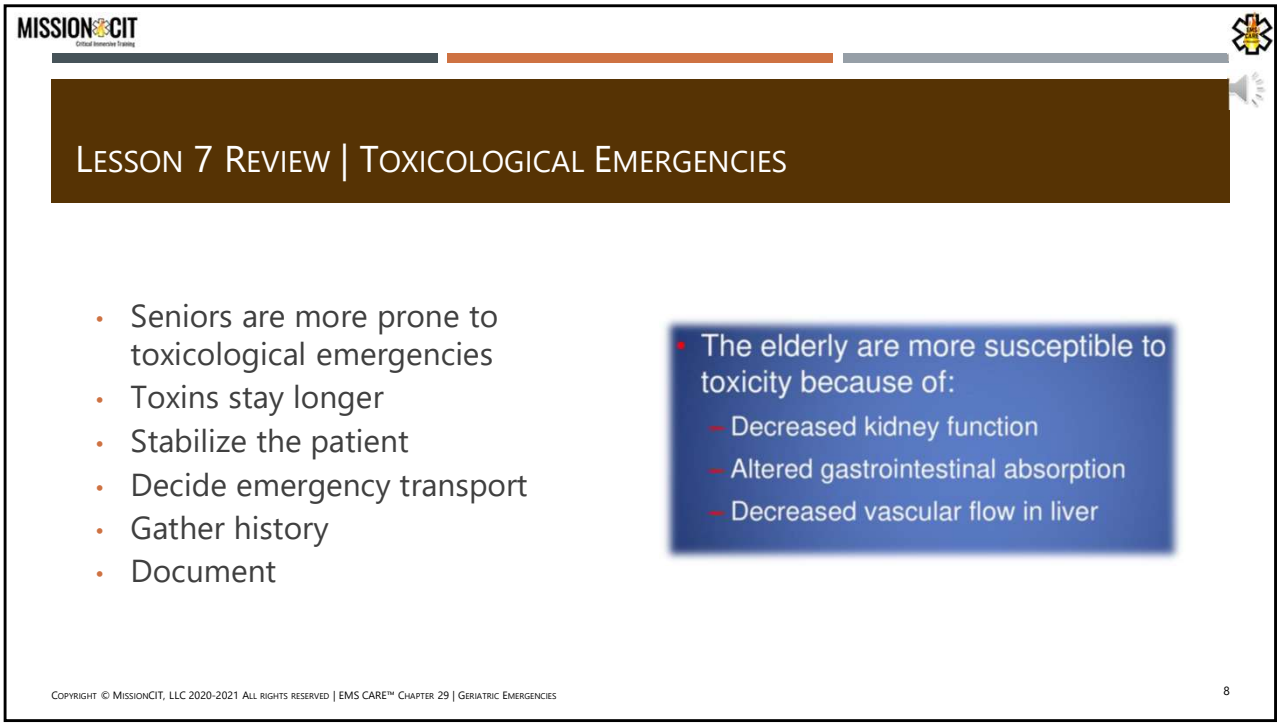
- Thickening of synovial fluid

These are significant changes that can impact the mobility of people as they become older. It can also affect their daily activities.

Next, we discussed Osteoporosis, a condition where the bones become weak and brittle because the body loses too much bone density and makes little to make up for it

You'll most likely be called because of a fall or fracture. As soon as you enter, check where the patient fell and which bone is likely to be fractured. Do a thorough physical exam to rule out any other complications.

Gently prepare the patient for transportation and communicate softly to not alarm the patient. The patient can be in a lot of pain, so provide emotional support when needed.



In this lesson, we examined the toxicological emergencies in geriatric patients.

Some of the pathophysiological changes that make seniors more prone to toxicological emergencies are:

- Decreased kidney function that makes it difficult for the body to remove toxins from the body
- Altered gastrointestinal absorption that changes the way toxins are absorbed by the body when compared to young adults
- Decreased vascular flow

- Changes in metabolism and excretion

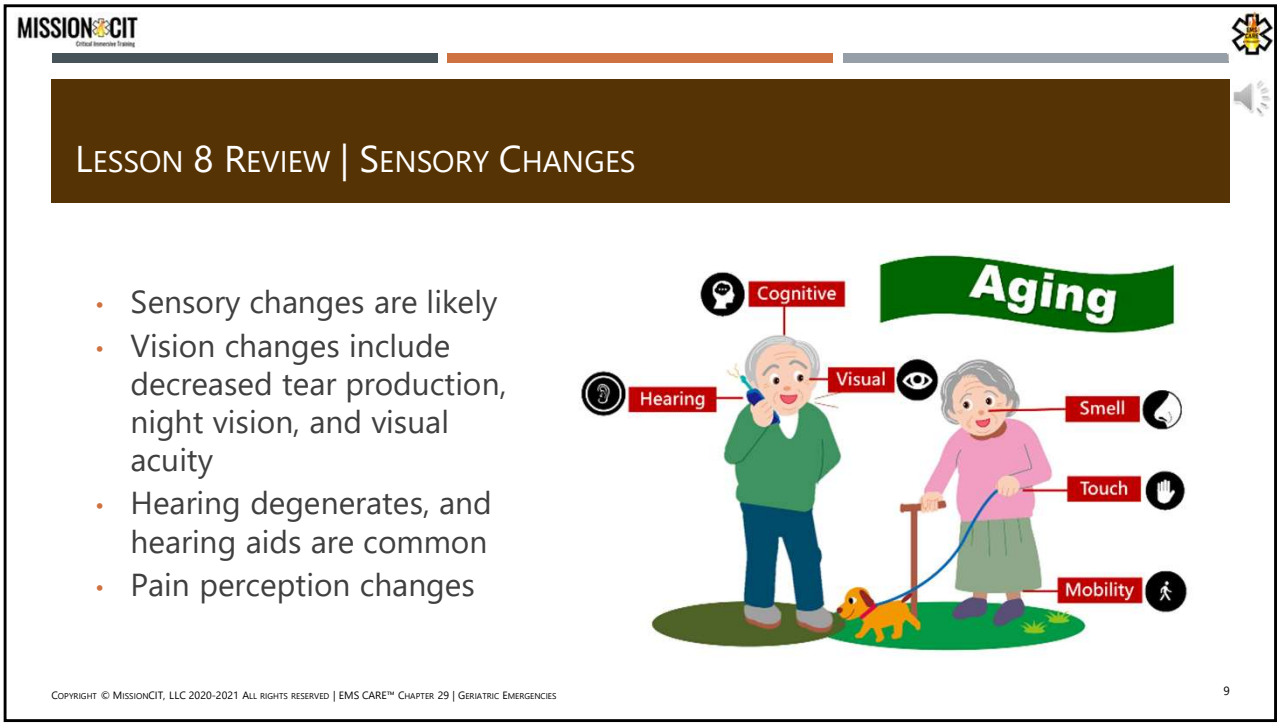
Due to these factors, toxins tend to stay longer in the body, thereby causing more damage. Also, for the same reasons, recovery from a toxicological emergency is delayed.

As with all toxicological emergencies, your priority must be to stabilize the patient by checking the circulation, airways, and breathing.

In general, patients with mild respiratory depression may not need intubation, but if the depression is severe, intubation is necessary. Depending on what you see, decide on emergency transportation.

In the meantime, gather information about what the patient ingested. You can either get it from the patient or other caregivers.

Document everything.



As people age, many changes happen in the sensory system, and we dealt with all these changes in this chapter.

Some of the possible changes that happen in vision are:

- Decreased visual acuity, as a result of which, seniors find it hard to shapes and details of the things they see.
- Inability to differentiate colors
- Decreased night vision

- Decreased tear production
- Development of cataracts
- Possibility of diseases like glaucoma, macular degeneration, and retinal detachment.

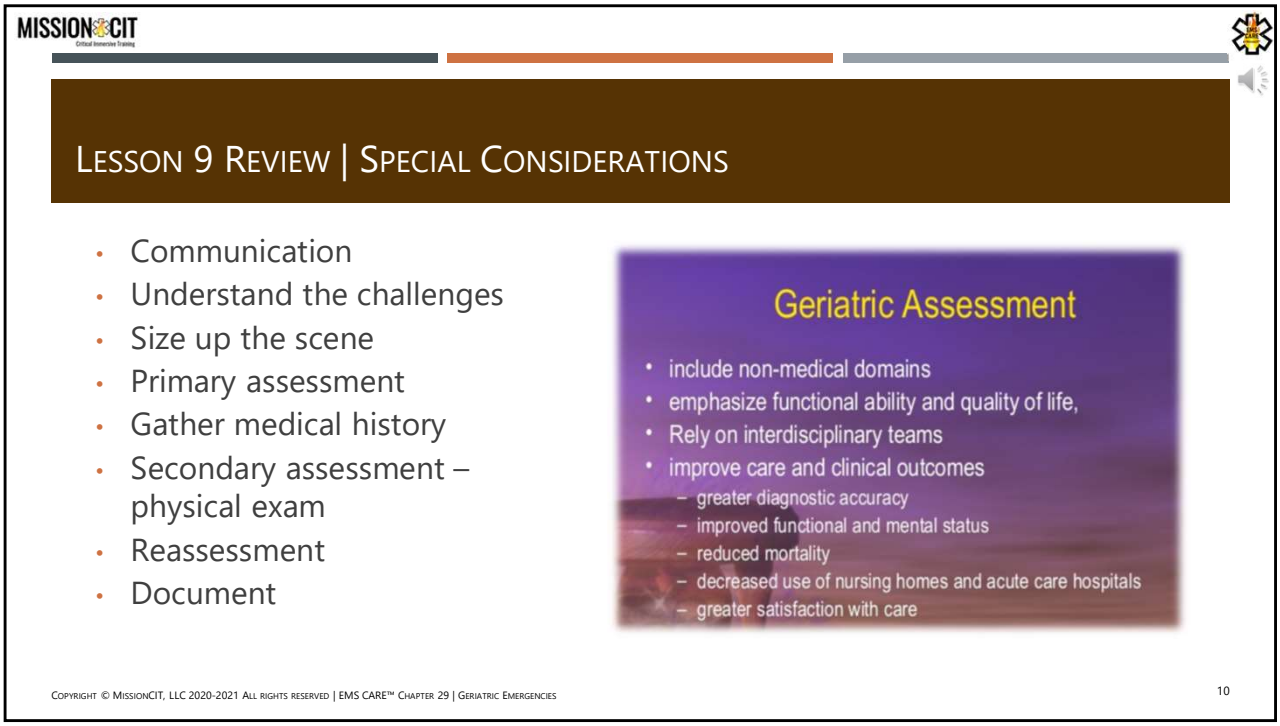
One of the most prominent hearing-related conditions is presbycusis, an age-related hearing loss that happens in both the ears. It is a common problem linked with hearing and it is estimated that one in every three adults faces this problem. But these changes are gradual, so the patient may not be aware of it first.

Along with this, seniors may not be able to hear high-frequency sounds. Inner ear problems and loss of balance are other issues that come with aging.

Due to these conditions, hearing aids are fairly common.

Pain perception also changes in seniors. People who are more than 65 years of age tend to experience chronic pain. More importantly, conditions such as dementia make it difficult for them to express their pain in words.

Sometimes, their life experiences make them react differently to pain, but that doesn’t mean they don’t experience it.

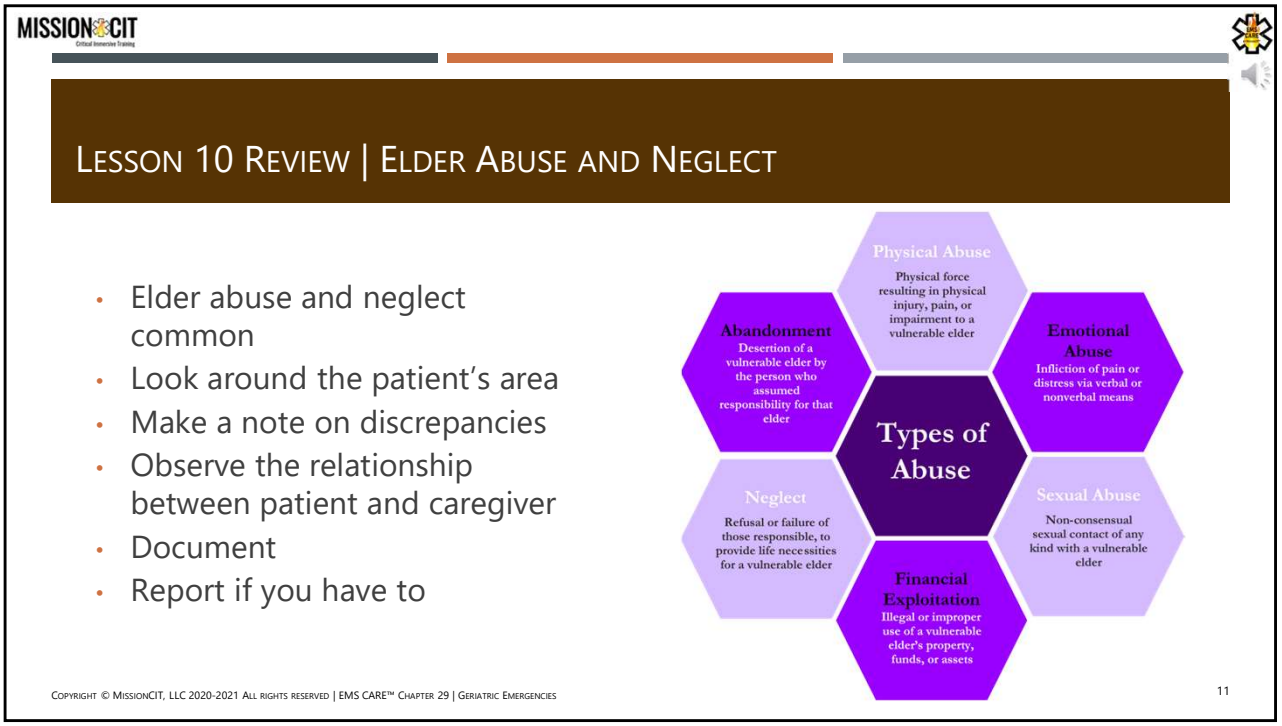


There are some special considerations to keep in mind while assessing and handling seniors. They are:

- Speak slowly and clearly, so they can understand. Use hand gestures if required to communicate.
- Understand the challenges that come with assessment and prepare for it accordingly.
- Size and evaluate the scene.
- During the primary assessment, form a general impression of the problem and identify if emergency transport is needed.
- Talk to the patient and caregivers to understand the

patient's medical history.

- Your secondary assessment must include a physical exam, where you examine the patient from head to toe, to better understand the problem.
- Do a reassessment while transporting the patient, and
- Document everything extensively.



In the last lesson, we touched on elder abuse and neglect. Some of the signs to watch out for are:

- Unexplained signs of injury
- Broken bones or dislocations
- Failure to take medication regularly
- Broken eyeglasses
- Signs of restraint such as rope marks
- Signs of dementia such as talking to oneself and mumbling or sucking the thumb

- Bloody underclothing is a sign of sexual abuse
- Bruises around breasts and genital areas.
- Bleeding or wounds in the anal and genital areas
- Unusual weight loss
- Bedsores
- Unsanitary living conditions
- Being dirty
- Unsafe living conditions
- Desertion and isolation

You can learn a lot just by looking around the patient's living area. While talking to the caregiver, observe keenly for the tone and words used to describe, and if you find any obvious discrepancy like an unexplained bruise or wound, it can point to neglect. Similarly, if the caregiver doesn't allow you to talk to the senior alone, it could be abuse as the caregiver may fear the consequences.

Document what you see. Some states require you to report any abuse or neglect, so understand the local laws, and follow them.

With this, we have come to the end of the chapter review. Now, proceed to take the quiz.