

Working with the Aging: Respiratory Illnesses and Mobility Curriculum



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The COPD and Mobility Challenges Simulation is a multi-component, wearable, one-size-fits-most simulator set that enables the wearers to experience both COPD and mobility challenges as well as possible secondary disabilities due to these conditions. The accompanying curriculum helps participants learn about the cause, symptoms, treatment, and accommodations as they relate to COPD and mobility challenges.

This simulation and accompanying curriculum will help participants gain a sense of empathy and sensitivity to the challenges this condition has on daily living. Soft skill instruction is also integrated throughout the lessons.

Author



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Ms. Hansen has worked in secondary science education, teaching biology, advanced biology, forensic science, microbiology, and molecular biology. As Chair of the Science Department, she led her department through a curricular review, using the NSTA Next Generation Science Standards as a guiding framework for the school's 3-12 science curriculum.

In addition to her work inside the classroom, Ms. Hansen developed a science research program to send gifted students into the field to participate in cutting-edge scientific research internships. Students not only participated in laboratory work but were often published as well.

Curriculum Structure

The *Working with the Aging: Respiratory Illnesses and Mobility Curriculum* is composed of the following lessons. Approximate lesson times are included.

Lesson	Title	Approximate Time
One	Respiratory Illnesses of the Elderly	100-130 minutes
Two	Mobility Challenges with Age	100-135 minutes
Three	Enhancing Soft Skills When Working with Older Adults	135-170 minutes
	Total	5.5-7 hours

Lesson Structure

Each lesson begins with a Lesson Overview, Lesson Objectives, and a Lesson at a Glance table, which lists lesson activities, materials required, suggested preparation steps, and approximate class time.

Lesson Sections

The actual lesson follows the overview, which contains some of the sections described below.

FOCUS

Every lesson begins with a FOCUS activity intended to capture participants' attention. This may be in the form of a small or large class discussion, game, demonstration, or review of previous lesson information. During this activity, participants are introduced to the topic of the lesson.

LEARN

The LEARN activity in each lesson varies in its presentation mode. It may be a slide presentation, group activity, or demonstration.

REVIEW

The majority of lessons end with a REVIEW activity intended to briefly review the lesson's key messages or main points.

Lesson One – Respiratory Illnesses of The Elderly

Lesson Overview

Respiratory diseases affect the lungs, bronchi, trachea, throat, mouth, and nose. As our bodies age, we become more susceptible to diseases that affect these structures. In this lesson, we will discuss some of the most common respiratory diseases that afflict the aging population.

Lesson Objectives

After completing this lesson, participants will be able to:

- Understand how aging impacts disease susceptibility
- Understand how some respiratory illnesses progress to chronic obstructive pulmonary disorder (COPD)
- Experience the symptoms of COPD
- Learn how to identify risk factors and prevent COPD

Lesson at a Glance

Activity	Materials	Preparation	Approximate Class Time
FOCUS	• <i>Respiratory Illnesses of The Elderly Pre-Test</i> • <i>Respiratory Illnesses and The Elderly Pre-Test – Answer Key</i>	1. Print/photocopy the <i>Respiratory Illnesses and The Elderly Pre-Test</i> (one per participant). 2. Access the answer key for reference.	10 minutes
LEARN	• <i>Respiratory Illnesses of The Elderly</i> slide presentation • <i>Respiratory Illnesses of The Elderly Notes Page</i> • <i>Respiratory Illnesses of The Elderly Notes Page – Answer Key</i>	1. Prepare the <i>Respiratory Illnesses and The Elderly</i> slide presentation for viewing. 2. Print/photocopy the <i>Respiratory Illnesses of The Elderly Notes Page</i> (one per participant). 3. Access the answer key for reference.	45- 60 minutes
REVIEW	• Abdominal binders • Straws • <i>Impact of Breathing Restriction: COPD Simulation Experience</i> • <i>Impact of Breathing Restriction Debrief Questions</i>	1. Print/photocopy the <i>Impact of Breathing: COPD Simulation Experience</i> and <i>Impact of Breathing Restriction Debrief Questions</i> (one of each per participant). 2. Set up stations for small groups of participants to rotate through. 3. Prepare one straw per participant (cut to two-inch lengths).	45-60 minutes

Lesson One – Respiratory Illnesses of The Elderly

FOCUS: What Do You Know About Respiratory Disease?

10 minutes

Purpose:

Participants answer the following questions about respiratory illnesses among older adults from prior knowledge.

Materials:

- *Respiratory Illnesses of The Elderly Pre-Test*
- *Respiratory Illnesses of The Elderly Pre-Test – Answer Key*

Facilitation Steps:

1. Provide each participant with the pre-test and allow five minutes for them to fill it out.

2. As a group, review the answers using the *Respiratory Illnesses of the Elderly Pre-Test – Answer Key*.
3. Explain to participants that they will have the opportunity to learn more about aging and respiratory illnesses in the upcoming presentation.

Additionally, they will have the opportunity to experience symptoms of respiratory restriction through a simulation.

Name: _____ Class: _____

Respiratory Illnesses of The Elderly

Pre-Test

Instructions: The following questions will ask you about your knowledge of respiratory diseases and conditions that commonly affect older adults. Please circle your answer or write your response in the space provided.

1. Chronic obstructive pulmonary disease (COPD) affects only smokers.
True False
2. Staying up to date with _____ can reduce a person's chance of developing COPD.
3. Which of the following is NOT one of the most common symptoms of COPD?
 - a. Wheezing
 - b. Nasal congestion
 - c. Chronic cough
 - d. Tightness in chest
4. Which of the following diseases contribute(s) to COPD?
 - a. Pneumonia
 - b. Bronchitis
 - c. Emphysema
 - d. All of them contribute to COPD.
5. Work-related pollution accounts for up to 20% of COPD cases.
True False
6. COPD in elderly patients causes significant physical limitations.
True False
7. COPD is completely reversible.
True False
8. In emphysema, the _____ are the part of the lung most damaged.

Respiratory Illnesses of The Elderly Pre-Test – Answer Key

Instructions: The following questions will ask you about your knowledge of respiratory diseases and conditions that commonly affect older adults. Please circle your answer or write your response in the space provided.

1. Chronic obstructive pulmonary disease (COPD) affects only smokers.

True **False**

2. Staying up to date with **vaccinations** can reduce a person's chance of developing COPD.

3. Which of the following is NOT one of the most common symptoms of COPD?

- a. Wheezing
- b. Nasal congestion**
- c. Chronic cough
- d. Tightness in chest

4. Which of the following diseases contribute(s) to COPD?

- a. Pneumonia
- b. Bronchitis
- c. Emphysema
- d. All of them contribute to COPD.**

5. Work-related pollution accounts for up to 20% of COPD cases.

True False

6. COPD in elderly patients causes significant physical limitations.

True False

7. COPD is completely reversible.

True **False**

8. In emphysema, the **alveoli/air sacs** are the part of the lung most damaged.

Lesson One – Respiratory Illnesses of The Elderly

LEARN: Respiratory Illnesses of the Elderly

45-90 minutes

Purpose:

Participants will view the following slide presentation to learn about the most common respiratory illnesses that affect older adults and which conditions progress to COPD.

Materials:

- *Respiratory Illnesses of The Elderly* slide presentation
- *Respiratory Illnesses of The Elderly Notes Page*
- *Respiratory Illnesses of The Elderly Notes Page* – Answer Key

Facilitation Steps:

1. Provide the *Respiratory Illnesses of The Elderly Notes Page* to participants to take notes on the information presented.
2. Begin the slide presentation.

Slide 1: Introductory slide

Slide 2: The Effects of Aging on Respiration and Related Systems

Aging changes nearly every system in the human body. Cellular turnover slows considerably. For this lesson, focus on the effects of aging on the respiratory, immune, and musculoskeletal systems.

Slide 3: The Aging Process

Immune system changes include weakened innate and inflammatory responses, weakened cell-mediated and humoral responses, and a general decline in the number of immune cells produced in the bone marrow. There are fewer operational cells lining the mucosal membranes. Common respiratory changes include a loss of flexibility in respiratory tissues, stiffening of ciliated surfaces, and changes to the amount of air that can be inhaled and exhaled. Bones lose strength and bone

density from mineral loss. Muscles, like the diaphragm and those lining the thoracic cavity, lose strength, which impacts breathing volume and control.

Slide 4: Immunocompromised

Being immunocompromised means you have less internal immune defense than a healthy individual. Older adults need to be more careful with their surroundings. Declines in their immunity increases susceptibility to many major communicable diseases, many that lead to respiratory illness.

List and explain the most common respiratory illnesses experienced by the elderly.

Slide 5: Common Respiratory Conditions and Diseases in the Elderly

Acute diseases last a short time with a definitive beginning and end. Chronic diseases are longer-lasting conditions that either have repetitive outbreaks or long duration of symptoms. Chronic symptoms often lead to serious complications.

Slides 6-8: Common Respiratory Conditions/Symptoms

These are the most common symptoms, but certainly not an exhaustive list. Certain illnesses, like bronchitis and pneumonia, can be viral or bacterial.

The symptoms listed for COVID are the most common, though there are several more that have been reported.

Emphysema and chronic bronchitis are the two most common conditions that lead to COPD. They are not the only ones. It is also possible for a person to have both conditions. Emphysema, largely due to smoking, can cause the patient to become “barrel chested” over time as they are constantly straining their

muscles to take a deep breath. It is a progressive, chronic condition.

Slide 9: COPD: 2 Main Types

Chronic bronchitis type often leads to facial tissue cyanosis (bluish tint in the skin) due to lack of sufficient oxygen delivery to cells. Though many patients present with one type or the other, it is possible to have both conditions.

Slide 10: COPD Symptoms

Describes the classic symptoms of COPD, dyspnea being the most important. People with this symptom consistently feel like they cannot breathe/take a full breath.

Slide 11: 4 Stages of COPD

The GOLD criteria are an international set of criteria set for doctors to assess how far a patient's COPD has progressed. The criteria system was set by the Global Initiative for COPD. This is an international set of criteria that is intended to designate where a patient currently is in their progression with COPD. As the numbers suggest, stage one is mild and will respond best to medical intervention, while stage four is near terminal.

Slide 12: Risk Factors for COPD

When working with adolescent students, it is important to convey that vaping is just as dangerous as cigarette smoking in contributing to lung damage.

Smoking is the #1 indicator for COPD. While vaping has not been around to provide as much data, early reports indicate that vaping is just as dangerous and will lead to COPD.

Occupational hazards include working with dust, chemicals, particulate matter, asbestos, burn pits, and chemical fumes. The alpha-trypsin protein helps to protect the lung from being attacked by its own enzymes.

Slide 13: Not Just Smokers...

Though this group of people represents a much smaller percentage, COPD can happen to people outside the traditional risk factors.

Slide 14: Diagnosing COPD

Explain spirometry, a breathing test that measures how much air a person can exhale and how fast they can exhale. This is one of the most important indicators of a patient's lung health.

Spirometry is the most common assessment worldwide. A person's forced vital capacity (FVC) is the largest amount you can exhale after inhaling as much as possible. Forced expiratory volume (FEV) is the amount of air you can expel in one second. Both values are helpful in diagnosing COPD.

Slide 15: COPD Treatment

The most important treatment is smoking cessation. Pharmaceutical intervention is highly individualized. Bronchodilators include salbutamol, salmeterol, formoterol (beta-2 antagonists), and albuterol. Steroid medications include oral prednisone.

Oxygen therapy should only be used in certain patients with extremely low blood-oxygen saturation.

Slide 16: Prevention

Name: _____ Class: _____

Respiratory Illnesses of The Elderly

Notes Page

1. The Effects of Aging on Respiration and Related Systems: As we age, there are significant changes to our bodies. Aging impacts:

2. The Aging Process and the impact on each system.

Immune System:

Respiratory System:

Musculoskeletal:

3. What does “immunocompromised” mean?
4. List at least six common respiratory conditions and diseases in the elderly:

5. The 2 main types of COPD are:

_____ : Damaged and enlarged alveoli cause loss of lung elasticity

_____ : Chronic mucus-based cough for more
than 3 months over 2 years

6. COPD symptoms include:

7. 4 Stages of COPD

- Gold 1 -
- Gold 2 -
- Gold 3 -
- Gold 4 -

8. Risk Factors for COPD:

9. A spirometry test is:

Respiratory Illnesses of The Elderly

Notes Page – Answer Key

1. The Effects of Aging on Respiration and Related Systems: As we age, there are significant changes to our bodies. Aging impacts:

The Respiratory System

The Immune System

The Musculoskeletal System

2. The Aging Process and the impact on each system.

Immune System:

The body loses ability to fight foreign invaders, makes fewer immune cells

Bacteria, viruses

Respiratory System:

The lining of respiratory surfaces becomes less flexible, cells are less able to sweep away debris

Musculoskeletal:

Thoracic cavity bones weaken, and muscles lose strength and begin to atrophy, becomes harder to cough, and inhalation/exhalation is impacted

3. What does “immunocompromised” mean? **They are less capable at fighting disease compared to a healthy individual**

4. List six common respiratory conditions and diseases in the elderly:

Rhinitis (common cold)

Asthma

Influenza

Acute or chronic bronchitis

Pneumonia

COVID, RSV, or other viruses

Lung Cancer

Emphysema

Pulmonary complications (edema, embolism)

Chronic obstructive pulmonary disease (COPD)

5. The 2 main types of COPD are:

Based in Emphysema: Damaged and enlarged alveoli cause loss of lung elasticity

Based in Chronic Bronchitis: Chronic mucus-based cough for more than 3 months over 2 years

6. COPD symptoms include:
 - a. Dyspnea: Shortness of breath
 - b. Swollen, inflamed airways make it difficult to clear mucus
 - c. Destroyed alveoli reduce the body's ability to exchange gases
7. 4 Stages of COPD
 - Gold 1 - Mild/Stage 1
 - Gold 2 - Moderate/Stage 2
 - Gold 3 - Severe/Stage 3
 - Gold 4 - Very Severe/Stage 4 (end-stage COPD)
8. Risk Factors for COPD
 - a. Smoking and vaping
 - b. Occupational hazards
 - c. Air pollution
 - d. AATD deficiency
9. A spirometry test is: A measurement of how much air you can inhale/exhale, and how fast you can for air out

Lesson One – Respiratory Illnesses of the Elderly

REVIEW: The Impact of Restriction on Breathing – COPD Simulation

45-60 minutes

Purpose:

Participants engage in a simulation to help them understand the impact of breathing restriction.

Materials

- *Impact of Breathing Restriction: COPD Simulation Experience*
- Abdominal binders
- Straws
- *Impact of Breathing Restriction Debrief Questions*

Facilitation Steps:

1. Set up two stations in the room for participants to rotate through. There should be one abdominal binder and set of straws at each station. The straws should be cut into two-inch pieces. These will be discarded after use.
2. Give each participant *Impact of Breathing Restriction: COPD Simulation Experience* worksheet.

3. Place participants in two groups. Participants in one group will take turns wearing the abdominal binders to simulate the restriction of breathing/inability to take a deep breath that occurs when someone has a serious respiratory illness.

Participants in the other group will be asked to inhale and exhale through the straw. This simulates inflamed and constricted airways.

4. Each participant should rotate through the COPD simulation, documenting their experience on *Impact of Breathing Restriction: COPD Simulation Experience* worksheet.
5. After all participants have had the chance to participate in the COPD simulation experience, distribute the *Impact of Breathing Restriction Debrief Questions* for students to complete.
6. Have a class discussion to review the debrief questions, asking students to volunteer their answers.

Name: _____ Class: _____

The Impact of Restriction on Breathing: COPD Simulation Experience

TASK	Breathing on a scale of 1-5 1 – Easy 5 - Difficult	Observations about how your body felt
Walking down the hall		
Going from seated to standing position		
Bending over to tie shoe or pick something up		
Walking up a flight of stairs		
Button/zip a coat/shirt/fleece/etc.		
Cough forcibly three times (into your elbow, please!)		
Sit on floor and stretch to your toes		
Do 10 jumping jacks		

Name: _____ Class: _____

The Impact of Restriction on Breathing Debrief Questions

1. Which activity was the most difficult to perform and why?
2. How might someone's daily activities be impacted if they were diagnosed with COPD?
3. Which symptoms of COPD does this activity attempt to closely simulate?
4. How is COPD diagnosed?
5. Why does airflow become restricted in cases of COPD?
6. What is the best way to prevent COPD?
7. How can we help and support people diagnosed with COPD?

Lesson Two – Mobility Challenges with Age

Lesson Overview

As our bodies age, physiological changes occur that make it increasingly difficult to perform everyday tasks. Beginning around the age of 70, older adults start to experience changes to their mobility. It can begin slowly with changes to walking speed but can progress to unsteadiness and inability to perceive spatial awareness. In this lesson, participants will learn about the challenges of age-related mobility.

Lesson Objectives

After completing this lesson, participants will be able to:

- Understand the effects of age-related mobility
- Understand how loss of mobility affects everyday tasks
- Experience a simulation of mobility loss
- Critically evaluate a patient's situation where mobility is a concern

Lesson at a Glance

Activity	Materials	Preparation	Approximate Class Time
FOCUS	• Nursing Career: Geriatric Patients Scenario Cards • <i>Responsibility Scenario</i> (Geriatric Scenarios Student Workbook, page 8) • <i>Spheres of Responsibility at Work</i> (Geriatric Scenarios Student Workbook, page 9)	1. Print/photocopy the <i>Responsibility Scenario</i> and <i>Spheres of Responsibility at Work</i> (pages eight and nine) from the student workbook (one of each per participant). 2. Prepare to share the “Responsibility” scenario card.	10-15 minutes
LEARN	• <i>Mobility Challenges with Age</i> slide presentation • <i>Mobility Challenges with Age Notes Page</i> • <i>Mobility Challenges with Age Notes Page – Answer Key</i>	1. Prepare the slide presentation for viewing, 2. Print/photocopy the <i>Mobility Challenges with Age Notes Page</i> (one per participant). 3. Access the answer key for reference.	45- 60 minutes
REVIEW	• Canes • Overshoes • Tape measures or meter sticks • Timers • <i>Mobility Challenge Simulation Experience</i> • <i>Mobility Challenge Simulation Debrief Questions</i>	1. Print/photocopy the <i>Mobility Challenge Simulation Experience</i> and <i>Mobility Challenge Simulation Debrief Questions</i> worksheet and debrief questions (one of each per participant). 2. Gather activity supplies: overshoes, canes, timers (or allow smartphone use with the timer app), and tape measures/meter sticks.	45-60 minutes

Lesson Two – Mobility Challenges with Age

FOCUS: How Does Mobility Impact an Everyday Task?

10-15 minutes

Purpose:

The purpose of this exercise is to posit a real-life situation in which mobility compromises and interferes with an everyday function. Participants will evaluate the potential response of the healthcare worker to simulate the challenges that can arise from the situation.

Materials:

- Nursing Career: Geriatric Patients Scenario Cards
- *Responsibility Scenario* (Geriatric Scenarios Student Workbook, page 8)
- *Spheres of Responsibility at Work* (Geriatric Scenarios Student Workbook, page 9)

Facilitation Steps:

1. Place participants in small groups of two to three.
2. Share the “Responsibility” card from the Nursing Career: Geriatric Patient Scenario Cards. Read the card aloud or show it on a document projector.
3. Give participants five minutes to discuss the scenario.
4. Ask if groups would like to share their perspective with the larger class.
5. Distribute the *Responsibility Scenario* and *Spheres of Responsibility at Work* pages and provide 10 minutes for participants to complete them.

Lesson Two – Mobility Challenges with Age

LEARN: Mobility Challenges with Age

45-90 minutes

Purpose:

Participants will view a slide presentation to learn about how age-related physiological changes impact how older adults move and accomplish everyday tasks.

Materials:

- *Mobility Challenges with Age* slide presentation
- *Mobility Challenges with Age Notes Page*
- *Mobility Challenges with Age Notes Page – Answer Key*

Facilitation Steps:

1. Provide the *Mobility Challenges with Age Notes Page* to participants to take notes on the information presented.
2. Begin the slide presentation.

Slide 1: Introductory slide

Slide 2: Aging and Changes to Mobility

Mobility equals mortality, according to older adults. Loss of mobility is a profound indicator of quality of life. It signifies a reduction in independence and can lead to depression. It can be said that loss of mobility feels like it brings you closer to death.

The average lifespan in the U.S. is 77 years. Several studies indicate that mobility/loss of mobility is the main limiting factor to an otherwise healthy quality of life.

For many older adults, loss of mobility equates to quicker mortality.

Slides 3-5: Loss of Mobility

Physiological changes contribute to mobility loss/change. In the central nervous system, neurotransmitter uptake slows, which slows the reaction time. People can become more forgetful. Short-term memory loss is common and increases with age. More serious conditions, such as Alzheimer's disease and dementia, compound mobility exponentially. Central nervous system changes include slower uptake of neurotransmitters, resulting in slowed reaction times, and loss of spatial awareness. Forgetfulness can be a simple decline or an indication of more serious conditions.

Important minerals, like calcium, leak out of bones as we age. This leaves our bones brittle, fragile, and prone to fracture. Muscles lose tone, shape, mass, and definition. Most importantly, they lose endurance, as they are not capable of sustaining the level of activity they once did. Bones begin to lose mineral deposits, calcium, and density; they become brittle. For women, osteoporosis is a problem; bones break much easier. There is a loss of muscle definition, mass, and, most importantly, endurance. People cannot do as much as they used to or sustain themselves in an activity for the length of time they used to.

Joint deterioration can be any wear and tear to ligaments, tendons, or cartilage. Very common with age. Arthritis is the most common affliction and is characterized by general inflammation and swelling of joints. This causes pain which can be

intermittent or constant. Depending on the location, it can also affect mobility.

Arthritis is a common condition for an elderly person as it affects joints and bone junctions. Tendons, ligaments, and cartilage can stiffen, lose elasticity, move out of place, or thin. Any of these physiological changes may cause swelling, inflammation, or bone to bone contact which can be quite painful. It is not reversible.

Slides 6-7: How Mobility Change is Measured

There are various identifiers to mobility reduction. People will start to walk slower with less distance in-between steps. They may be less balanced and start using compensatory behaviors, like stooping shoulders or favoring one limb over the other. Gait is a person's manner of walking. The walking assessments generally ask a person to walk a defined course of prescribed length as quickly/safely as possible; it is timed. The test is often repeated over time to mark changes in speed, distance, and stability.

Compensatory behaviors include asymmetrical weight shift, pelvic tilt, rounded shoulders, and favoring one hand over the other.

Slides 8-9: Obesity, high BMI, and sedentary lifestyle all increase the progression of mobility declines. Also, males tend to decline faster than females. Risk factors for accelerated mobility changes: It is important to stress that lifestyle behaviors in the mid-life are strong predictors of mobility in one's 70's and 80's. Obesity, a high BMI, and a lifestyle without exercise will contribute to mobility issues later in life. Scientists and physicians recommend a healthy diet, regular cardio exercise, and the use of weights to maintain a healthy lifestyle. Recent studies have shown that activity levels in one's 40's and

50's greatly contribute to mobility in their 70's. It is important to maintain a healthy lifestyle throughout one's life including a balanced diet, cardiac exercise, and weight-bearing exercise.

Slides 10-11: Loss of mobility and falls: Loss of mobility often leads to problems with balance, leading to an increase in falls. Fall risks increase the potential for serious injury like a bone break or hip fracture. Falls lead to serious bone breaks such as hip fractures, arm and wrist fractures, and dislocated joints.

When an injury does occur, it can be a very painful and scary event. The trauma can be a setback for an individual that leads to a period of inactivity and reluctance to move as often. People recovering from falls and injuries need support and assistance to get moving again since movement is vital for a healthy recovery.

Slides 12-13: Health care assessment for mobility loss: Healthcare workers may use a variety of assessments to evaluate where a patient is concerning their mobility. The 2-question assessment is an easy way to ask patients how they feel. Timed walking tests can ascertain walking speed, distance between steps, and how long it takes a person to rise from a seated position. The 2-question test was developed by researchers at the University of Alabama at Birmingham. Published in the JAMA, this test is now commonly used by an array of healthcare workers to help assess the mobility level of a patient. These tests are often administered repeatedly, over time to show the degree of decline.

Slide 14: Depression and anxiety can exacerbate mobility by way of isolation and loneliness. It is important to encourage engagement with activities they enjoy.

Slide 15: In addition to remaining physically active, keeping social connections is very important for mental and emotional stimulation. Family members and caregivers of elderly family members who help do a fall-audit of living spaces. This is a thorough check of any potential hazards that could harm someone if they fall (sharp corners, slippery surfaces, etc.).

Name: _____ Class: _____

Mobility Challenges With Age

Notes Page

1. For some _____ = _____
2. Loss of mobility can occur from:
3. Central Nervous System changes can include:
4. Skeletal System changes can include:
5. Muscular Structure changes can include:
6. The accumulation of these changes can cause _____.
7. How is mobility change measured? List at least 4 ways.

8. _____, _____, _____ all increase the progression of mobility declines.
9. Often poor mobility leads to _____.
10. What is the 2-question quick assessment:
11. Two other assessments for mobility are:

Mobility Challenges With Age

Notes Page Answer Key

1. For some **mobility=mortality**
2. Loss of mobility can occur from **various disorders or an accumulation of impairments**
3. Central Nervous System changes can include:
 - **Reaction times slow**
 - **Become more forgetful**
4. Skeletal System changes can include:
 - **Bones lose mineral deposits, shrink in size**
 - **Density loss leads to frailty**
5. Muscular Structure changes can include:
 - **Loss of definition, muscle mass**
 - **Loss of endurance**
6. The accumulation of these changes can cause **pain.**
7. How is mobility change measured? List at least 4 ways.
 - **Gait speed**
 - **Gait stability**
 - **Gait distance**
 - **Neuromuscular effort**
 - **Rate of decline**
 - **Compensatory behaviors**
 - **Deterioration of tissues**
 - **Overall, there is more energy expended for less distance, progress, movement**
8. **Obesity, high BMI, and sedentary lifestyle** all increase the progression of mobility declines.
9. Often poor mobility leads to **falls.**
10. What is the 2-question quick assessment:

- **Do you have difficulty walking/climbing 10 steps?**
- **Have you modified the way you walk/climb 10 steps?**

11. Two other assessments for mobility are **1) Timed walking test and 2) Timed seat to stand**

Lesson Two– Mobility Challenges With Age

REVIEW: Mobility Challenge Simulation

45-60 minutes

Materials

- Canes
- Overshoes
- Tape measures or meter sticks
- Timers (Alternative: allow use of smartphones with timer app)
- *Mobility Challenge Simulation Experience* worksheet – 1 per participant
- *Mobility Challenge Simulation Debrief Questions* handout 1 per participant

Facilitation Steps:

1. Set up two stations in the room for participants to rotate through. At each station there should be one cane and set of overshoes. In addition, a tape measure/meter stick and timer will also be needed.
2. Give each participant the *Mobility Challenge Simulation Experience* worksheet.
3. Place participants in two groups. Mobility Challenge Simulation: Participants will take turns wearing the overshoes to simulate a shuffled gait. The cane will also be used to show mobility loss during ambulation. Explain the construction of canes to the students: canes are a tool that help provide stability to people who experience loss of mobility. There are primarily two types: a straight cane with one rounded bottom, and a quad cane that has a four-pronged bottom. The integral feature of both is the rubber cover with concentric circles that makes contact with surfaces. Overshoes are a simulation device intended to mimic mobility loss also. Encourage participants to take care and caution when using. Participants should not rush as it may be easy to experience unsteadiness.
4. Each participant should rotate through the *Mobility Challenge Simulation Experience*, documenting their experience on the *Mobility Challenge Simulation Experience* worksheet.
5. After all participants have had the chance to participate in the mobility challenge simulation experience, hand out the *Mobility Challenge Simulation Debrief Questions*. Participants should complete the debrief questions.
6. Have a class discussion reviewing the debrief questions asking for students to volunteer their answers.

straight cane with one rounded bottom, and a quad cane that has a four-pronged bottom. The integral feature of both is the rubber cover with concentric circles that makes contact with surfaces. Overshoes are a simulation device intended to mimic mobility loss also. Encourage participants to take care and caution when using. Participants should not rush as it may be easy to experience unsteadiness.

Note: The ideal room set-up would have spaces where participants can lie on tables to simulate supine to standing, chairs to simulate seat to standing, and stairs to measure the step climbing task.

Name: _____ Class: _____

Mobility Challenge Simulation Experience

Instructions: Put on the overshoes. Carefully take a few steps to get the feel of them. Using the overshoes and a cane, perform the following tasks. Rate each task on a scale of 1-5 with 1 being easy and 5 being difficult.

Table I.

Task	Difficulty Level (1-5)
Lie down on a table, then go from a lying position to a standing position using the cane for support.	
Sit in a chair. Using the cane for support, stand up.	
From a standing position, button/zip a coat/jacket/sweater with one hand while holding the cane with the other hand.	
Bend over to retrieve a fallen object from the floor with one hand on the cane.	
Step over an object on the floor.	
Assuming a fallen position, lie on the floor and get yourself up using the cane for support.	
Walk up 5 stairs (assuming a 'strong leg' and a 'weak leg': the sequence should be strong leg, cane, weak leg)	
Walk down 5 stairs (assuming a 'strong leg and a 'weak leg': the sequence should be weak leg cane, strong leg)	

Instructions: Using a tape measure or meter stick and a timer, perform the following tasks. Be mindful of performing them as safely as possible. This part should be performed with a partner.

Table II.

Task	Measurement (Time or Distance)
Timed Task: Lie on a table and have your partner record the time it takes to rise to a standing position using only a cane for support.	
Timed Task: Sit in a chair and have your partner record the time it takes to rise to a standing position using only a cane for support.	
Timed Task: Measure a distance of 6 meters. Have your partner record the time it takes to safely walk the distance assuming one weak limb and using the cane as support.	
Timed Task: Have your partner record the time it takes to walk up 5 steps.	
Timed Task: Have your partner record the time it takes to walk down 5 steps.	

Name: _____ Class: _____

Mobility Challenge Simulation Debrief Questions

1. What were your impressions of using the overshoes and cane?

1. Which activity did you find most difficult and why?

2. In thinking about the most difficult activity you performed, how might this interfere with an elderly person's daily life?

3. What kind of environmental hazards may need to be avoided to secure a safer living space for someone with mobility issues?

Lesson Three – Soft Skills for Working with the Elderly

Lesson Overview

A large part of being a healthcare worker is exercising your capacity for empathy. When one empathizes with another, you put yourselves in their life and experience what they experience. In this lesson, participants will encounter several healthcare related scenarios that call for empathic behavior.

Lesson Objectives

After completing this lesson, participants will be able to:

- Understand why empathy is important when dealing with elderly patients.
- Experience several situations where personal responses could have been better handled through empathic behavior.

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Nursing Career: Geriatric Patients Scenario Cards (Listening card)</i> • <i>Geriatric Scenario Student Workbook (Listening pages 3-4) – one per participant</i> • <i>Empathy Checklist worksheet (optional)</i>	1. Print/photocopy <i>Empathy Checklist</i> (one per participant)	15-20 minutes
LEARN	• <i>Nursing Career: Geriatric Patients Scenario Cards</i> • <i>Geriatric Scenario Student Workbook</i> pages	1. Prepare four stations. Place 4 Geriatric Scenario Cards at each station. 2. Ensure each participant has a copy of the student workbook pages from <i>Geriatric Scenarios Student Workbook</i> .	90-120 minutes
REVIEW	• <i>Respiratory Illnesses and Mobility Challenges Assessment</i>	1. Print/photocopy <i>Respiratory Illnesses and Mobility Challenges Assessment</i> (one per participant)	30 minutes

Lesson Three – Soft Skills for Working with the Elderly

FOCUS: Listening, a Key Soft Skill

15-20 minutes

Purpose:

The purpose of this exercise is to pay special attention to an extremely important soft skill: listening. Listening is a defining feature of one's ability to empathize. In this activity, participants will see how critical it is to listen when working in a healthcare setting.

Materials:

- *Nursing Career: Geriatric Patients Scenario Cards* (Listening card)
- *Geriatric Scenario Student Workbook* (Listening pages 3-4) – one per participant
- *Empathy Checklist* worksheet (optional)

Facilitation Steps:

1. Print/photocopy *Empathy Checklist* worksheet. Provide 5 minutes for completion and self-reflection. Ask participants if they have ever reflected on these attributes before. (optional)
2. Place participants in small groups of 2-3.
3. Share the Listening card from the *Nursing Career Geriatric Patient Scenario Cards* deck. Read aloud or show on a document projector the *Geriatric Scenario Card- Listening*. Give participants 5 minutes to discuss the scenario.
4. Ask if groups would like to share their perspective with the larger class.
5. Provide 10 minutes for participants to complete pages 3-4 in the *Geriatric Scenarios Student Workbook*. Provide one per participant.

Empathy Checklist

Instructions: The following checklist is a list of soft skills that are associated with empathy, a critical skill in the ability to understand other people and put yourself in their shoes. Read the following statements and check the box **rarely**, **sometimes**, **always** if you truly feel the statement reflects your behavior with regards to interactions with other people.

Behaviors	Rarely	Sometimes	Always
I listen intently to others without interrupting.			
I offer to help before it is needed.			
I always make eye contact during 1:1 conversation.			
During conversations, I spend more time listening than talking.			
I do not become defensive when receiving criticism.			
I always try to see other people's perspective.			
I admit it when I make mistakes.			
I show compassion.			
I welcome opposing viewpoints when they are made.			
I ask questions when I do not understand something.			

Lesson Three – Soft Skills for Working with the Elderly.

LEARN: Learning Stations for Soft Skills Development

90-120 minutes

Participants will rotate through four stations to learn about various necessary soft skills that make successful healthcare workers. Each station has four scenario cards with different workplace situations. Participants will discuss the scenarios and complete the corresponding workbook pages.

Materials:

- *Nursing Career: Geriatric Patients Scenario Cards*
- *Geriatric Scenario Student Workbook* pages (one for each participant at each station)

Facilitation Steps:

1. Create four stations in the learning space.
2. Distribute the Geriatric Patients Scenario Cards accordingly:
 - a. Station 1: Respect, Work-Ethic, Stress Management, Interpersonal Skills
 - b. Station 2: Communication, Patience, Teamwork, Using Technology
 - c. Station 3: Problem-Solving, Presentation Skills, Motivation, Time-Management
 - d. Station 4: Negotiation, Self-Confidence, Flexibility, Networking
3. Divide participants into four groups and assign each group to a station for the starting rotation. There will be four rotations in total so that all groups have a chance to visit all four learning stations.
4. Allow participants 20-30 minutes of work time at each station. Participants will read each scenario, discuss, and complete the corresponding workbook pages for each card.
 - a. Station 1: Respect (p. 5-6), Work-Ethic (p. 35-36), Stress Management (p. 26-27), Interpersonal Skills (p. 39-40)
 - b. Station 2: Communication (p. 31-32), Patience (p. 10-11), Teamwork (p. 28-29), Using Technology (p. 15-16)
 - c. Station 3: Problem-solving (p. 17-18), Presentation Skills (p. 12-13), Motivation (p. 33-34), Time-management (p. 41-42)
 - d. Station 4: Negotiation (p. 19-20), Self-confidence (p. 24-25), Flexibility (p. 37-38), Networking (p. 22-23)

Lesson Three – Soft Skills for Working with the Elderly.

REVIEW: Respiratory Illnesses and Mobility Challenges Assessment

30 minutes

Purpose:

Participants will take an assessment to see what they have learned during the three lessons.

Materials:

- *Respiratory Illnesses and Mobility Challenges Assessment* - one per participant
- *Respiratory Illnesses and Mobility Challenges Assessment Answer Key*

Facilitation Steps:

1. Give each participant the Assessment. Allow 20 minutes for completion.
2. Participants may self-grade, peer grade or turn in their assessments for grading by the instructor. There is an Answer Key provided for ease of grading.

Name: _____ Class: _____

Respiratory Illnesses and Mobility Challenges Assessment

Instructions: Circle the correct answer for each question.

1. Which person is less likely to develop Chronic Obstructive Pulmonary Disease (COPD)?
 - a. Someone who smoked for forty years.
 - b. Someone who had chronic bronchitis.
 - c. Someone who worked in asbestos abatement.
 - d. Someone who visited a smoking grandparent as a child.

2. Which of the following skills is necessary when working directly with elderly patients in a healthcare setting?
 - a. Being respectful.
 - b. Giving the elderly person a lot of space.
 - c. Being tech-savvy.
 - d. Knowing when they like to go outside.

3. What happens to bones as we age?
 - a. They increase in circumference.
 - b. They lose density.
 - c. They become more rigid.
 - d. They gain more mineral deposits.

4. Which of the following is not a symptom of COPD?
 - a. Dyspnea.
 - b. Ear infection.
 - c. Wheezing.
 - d. Chronic cough.

5. What percentage of COPD cases are current/former smokers?
 - a. 70%
 - b. 75%
 - c. 100%
 - d. 50%

6. Which of the following is not a risk factor in geriatric mobility loss?
 - a. BMI.
 - b. Obesity.
 - c. Poor muscle use in early years.
 - d. High metabolic rate.

7. What are the two main types of COPD?
 - a. Emphysema and Chronic Bronchitis.
 - b. Chronic Bronchitis and Pneumonia.
 - c. Pneumonia and Emphysema.
 - d. Chronic Bronchitis and RSV.

8. Emphysema is characterized by:
 - a. Enlarged and damaged alveoli/air sacs in lungs.
 - b. Damaged diaphragm.
 - c. Collapsed lung.
 - d. Stuffy nose.

9. Of the following choices, which is not something that is measured during a mobility assessment?
 - a. Running on a treadmill.
 - b. Timed stair climb test.
 - c. Timed seated to standing movement.
 - d. Timed walking course.

10. After a fall, what is the best course of action for a recovering geriatric patient?
 - a. Rest and be still so the swelling goes down.
 - b. Ice and heat the area while resting in bed.
 - c. Try to get up and move around, movement leads to better healing.
 - d. Sit and rest in front of the TV.

11. Which of the following does not happen to cardiothoracic muscles as we age?
 - a. Muscles gain mass from surrounding fat cells.
 - b. Muscles lose shape and endurance.
 - c. Muscle fibers become more rigid.
 - d. Muscles toughen.

12. A person is born with the genetic disorder- AATD deficiency. How will this affect them later in life?
 - a. They will develop genetic Rhinitis and have nasopharyngeal symptoms consistently throughout life.
 - b. They will develop genetic Bronchitis and have inflammation in their air tubes consistently throughout life.

- c. They will develop genetic Emphysema and be unable to produce a protein to protect the lung's lining.
 - d. They will develop lung cancer and begin forming tumors which will obstruct breathing.
13. Why is damage to the alveoli/air sacs so detrimental?
- a. This is the site of gas exchange, where oxygen is brought into the bloodstream and carbon dioxide is sent out of the bloodstream.
 - b. This is where cells trap bacteria.
 - c. This is where immune cells trap allergens.
 - d. This is where chemical toxins are trapped.
14. What percentage of COPD cases come from occupational hazards?
- a. 25%
 - b. 20%
 - c. 30%
 - d. 50%
15. When performing a mobility walking assessment, which of the following are measured?
- a. Gait speed.
 - b. Gait distance.
 - c. Metabolic cost.
 - d. All of the above.
16. Which of the following is not an example of a compensatory behavior?
- a. Holding on to furniture for stability.
 - b. Shifting weight to the "good leg".
 - c. Walking slowly in a straight line.
 - d. Getting a hand when getting up from a chair.
17. Which of the following is not a piece of empathic advice to give to a geriatric senior who is struggling with mobility?
- a. Look for a physical activity that you might enjoy, like walking or swimming.
 - b. Join a club so you can meet new people!
 - c. Make sure you stay still to rest your old bones.
 - d. Incorporate some weights into your exercise routine.
18. Which of the following suggests the person is performing active listening?
- a. The person keeps checking their phone while you are speaking to them.
 - b. The person maintains eye contact with you for the duration of the conversation.
 - c. The person keeps looking over your shoulder.
 - d. The person keeps interjecting comments.

19. What does the O in SWOT stand for?
- a. Organization.
 - b. Opportunities.
 - c. Oppression.
 - d. Obstacles.
20. What is a growth mindset?
- a. The mindset that all things in life grow.
 - b. The mindset that personal growth is limited.
 - c. The mindset that a person can learn and change at any point in life.
 - d. The mindset that learning is too challenging.

True or False.

21. Keeping up with vaccinations is a good way to reduce a person's chances of developing serious respiratory disease.

True False

22. As we age, our Central Nervous System begins to slow down and as a result our reaction time quickens.

True False

23. In general, mobility begins to decline after age 55.

True False

24. Dyspnea is the medical term for a chronic cough.

True False

25. Being flexible and adaptable are signs of a good work ethic.

True False

Short Answer. Answer the following questions in a few short sentences.

26. What is the 2-question mobility assessment and why is it such a useful screening tool?
27. COPD was simulated using abdominal binders and straws. Which specific conditions were experienced by performing these tasks? What are the most common symptoms of COPD?
28. What are FEV and FVC and why would they be measured often?

29. Imagine you work in a care facility. What is the best way to handle an elderly patient who has specific dietary needs, has a lot of questions, and does not want to exercise? Which soft skills are going to be most important?

30. You are giving a seminar to a group of 40–50-year-old adults. Discuss three things adults can do to prevent serious respiratory disease and three things they can do to prevent serious mobility problems.

Respiratory Illnesses and Mobility Challenges Assessment – Answer Key

1. Which person is less likely to develop Chronic Obstructive Pulmonary Disease (COPD)?
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True False
22. As we age, our Central Nervous System begins to slow down and as a result our reaction time quickens.
True **False**
23. In general, mobility begins to decline after age 55.
True **False**
24. Dyspnea is the medical term for a chronic cough.
True **False**
25. Being flexible and adaptable are signs of a good work ethic.
True False

Short Answer. Answer the following questions in a few short sentences.

26. What is the 2-question mobility assessment and why is it such a useful screening tool?

The 2-question assessment was developed by the University of Alabama.

- **Do you have difficulty walking/climbing 10 steps?**
- **Have you modified the way you walk/climb 10 steps?**

The simplicity of this assessment can be universally used as a quick test of a person's change in mobility behaviors.

27. COPD was simulated using abdominal binders and straws. Which specific conditions were experienced by performing these tasks? What are the most common symptoms of COPD?

- **Binders: restriction in the thoracic region/ inability to take a deep breath**
- **Straws: narrowing of airway/inflammation**

Combined, the straws and binders simulate COPD, mimicking chest tightness, inability to take a deep breath, and inflammation of the airways. The most common symptoms of COPD are chronic cough, shortness of breath (dyspnea), coughing up sputum, wheezing, and fatigue.

28. What are FVC and FEV and why would they be measured often?

FEV stands for Forced Expiratory Volume and FVC stands for Forced Vital Capacity.

FEV measures the amount of air a person can expel in 1 second. FVC measures the total amount of air one can expel after taking the deepest possible breath. Taking these measurements often or over time can reflect changes to a person's lung health/decline in health/progression of COPD.

29. Imagine you work in a care facility. What is the best way to handle an elderly patient who has specific dietary needs, has a lot of questions, and does not want to exercise? Which soft skills are going to be most important?

Answers will vary, many soft skills can be used as answers here:

Respect
Patience
Encouragement
Compassion

Listening
Negotiation
Flexibility

30. You are giving a seminar to a group of 40–50-year-old adults. Discuss three things adults can do to prevent serious respiratory disease and three things they can do to prevent serious mobility problems.

Answers will vary, good choices will be:
Quit smoking

Keep regular doctor visits
Stay up to date on vaccinations
Exercise

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