

Introduction to Taping and Wrapping Skills Curriculum



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Introduction to Taping and Wrapping Skills Curriculum

This curriculum and accompanying taping supplies will help participants learn the basics of taping, wrapping, and bracing in sports medicine.

Curriculum Structure

The *Taping and Wrapping Skills Sim Kit* curriculum is composed of the following lessons. Approximate lesson times are included.

Lesson	Title	Approximate Time
One	Introduction to Taping, Wrapping, and Protective Equipment	60-75 minutes
Two	Taping vs. Bracing	60-75 minutes
Three	Lower Extremity Taping and Wrapping	60-75 minutes
Four	Upper Extremity Taping and Wrapping	60-75 minutes
Five	Taping and Bracing Scenarios	60-75 minutes
	Total	5-6.25 hours

Lesson Structure

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

Lesson Sections

The actual lesson follows the overview, which will contain 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, a game, a review of previous lesson information, or a demonstration. 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 – Introduction to Taping, and Wrapping, and Protective Equipment

Lesson Overview

In this lesson, participants will be introduced to the proper fitting of a football helmet. They will also learn about the different types of tapes, braces, and wraps that can be used in sports medicine.

Lesson Objectives

After completing this lesson, participants will be able to:

- Demonstrate the steps necessary to fit a football helmet properly
- Demonstrate a basic understanding and identify types of tapes, braces, and wraps
- Demonstrate a basic understanding of commercial vs. custom braces

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Heads up Football – Proper Helmet Fitting – USA Football</i> video found at: https://www.youtube.com/watch?v=Zi0smzNUk1M • <i>Proper Helmet Fitting</i> slide presentation • <i>How to Fit a Helmet</i> handout found at: https://www.nata.org/sites/default/files/football-helmet-handout.pdf • Supplies: – Tape Measure – Football Helmet (if available)	1. Prepare <i>Heads Up Football – Proper Helmet Fitting – USA Football</i> video for viewing. 2. Prepare <i>Proper Helmet Fitting</i> slide presentation. 3. Photocopy/print <i>How to Fit a Helmet</i> handout (one copy per participant).	15-20 minutes
LEARN	• <i>Introduction to Taping, Wrapping, and Protective Equipment</i> slide presentation • Supplies: – White adhesive tape – Orange cohesive tape – Tan elastic bandage – Black pre-wrap – Rapid splints – Air splint – Black cervical collar – Elbow braces	1. Prepare <i>Introduction to Taping, Bracing, and Wrapping</i> slide presentation for viewing.	20-30 minutes
REVIEW	• <i>Introduction to Helmet Fitting (Instructor Resource)</i> • Supplies: • Tape measure • Football helmet (if available) • <i>Introduction to Taping, Bracing, and Protective Equipment Quiz</i> • <i>Introduction to Taping Bracing and Protective Equipment Quiz – Answer Key</i>	1. Get supplies ready for demonstration. 2. Photocopy/print <i>Introduction to Taping, Bracing, and Protective Equipment Quiz</i> (one copy per participant).	20-25 minutes

Lesson One – Introduction to Taping, Wrapping, and Protective Equipment

FOCUS: Helmet Fitting

15-20 minutes

Purpose:

Participants will be introduced to the proper fitting of a football helmet.

Materials:

- *Heads up Football – Proper Helmet Fitting – USA Football* video found at: <https://www.youtube.com/watch?v=Zi0smzNUk1M>
- *Proper Helmet Fitting* slide presentation
- *How to Fit a Helmet* handout found at: <https://www.nata.org/sites/default/files/football-helmet-handout.pdf>
- Football helmet
- Tape measure

Facilitation Steps:

1. Provide each participant with a copy of the *How to Fit a Helmet* handout.
2. Prepare *Proper Helmet Fitting* slide presentation.
3. Share the following information with your participants as you review the handout and slide presentation.

Slide 2: Improper fit of a football helmet can lead to injuries, including concussions, facial lacerations, and facial fractures. Ideally, helmet fit should be checked weekly, especially for helmets with air bladders.

Slide 3: *May be beneficial to use a participant and helmet to demo the steps included in the following slides.

The first step in finding the correct fitting helmet is to measure around the athlete's head, approx. one inch above the eyebrows to find the correct helmet size (S, M, L, or XL). Before placing the helmet on the athlete's head, wet

their hair to mimic the sweat that would occur during a practice or game situation.

Adjust the chin strap so that it is snug against the chin to prevent the helmet from moving side to side or up and down.

Ensure that the helmet doesn't twist on the athlete's head.

Apply pressure to the top of the helmet. The athlete should only feel pressure on the top of the helmet. If they feel pressure on their brow, the helmet does not fit correctly.

Slide 4: With the helmet on, check that:

- The helmet sits two finger-widths above the eye
- The ear holes line up with the opening of the ear canal
- The helmet covers the base of the skull, including the occipital bone
- There are no gaps between the jaw pads and face
- The nose has at least two inches of clearance from the facemask

Slide 5: Air temperature, changes in altitude, hair length, and damage to the air bladder valve can all affect the fit of a helmet. For this reason, check the helmet fit weekly.

Slide 6: Watch *Heads up Football – Proper Helmet Fitting – USA Football*

The link for the video is on the slide.

Lesson One – Introduction to Taping, Wrapping, and Protective Equipment

LEARN: Presentation and Demonstration

20-30 minutes

Purpose:

Participants will view slide presentation and learn about basic types of tapes, braces, and wraps.

Materials:

- *Introduction to Taping, Bracing, and Wrapping* Slide Presentation
- Supplies:
 - Adhesive tape
 - Cohesive tape
 - Elastic bandage
 - Pre-wrap
 - Tape cutter/scissors
 - Medical splint roll
 - Cervical collar
 - Elbow braces

Facilitation Steps:

1. Share the following information with participants as you show the slide presentation.

Slide 2: These are the key concepts that participants should learn during the presentation.

The primary purpose of taping, bracing, and wrapping is to provide additional support, stability, and compression for an affected body part.

Never use taping, bracing, and wrapping unless the athlete has had an appropriate diagnosis, treatment, and rehabilitation of their injury.

Slide 3: Taping and bracing can be used to both prevent injury and to treat an injury. Use taping and bracing to provide support and protection in an attempt to avoid injury to a particular joint. This is known as prophylactic taping or bracing. Common examples of this type of taping and bracing can be seen in football, when an athlete wears a knee brace to avoid a knee injury or tapes their ankle to prevent an ankle sprain.

Taping, bracing, and wrapping are also used following an injury to allow for functional movement

to occur, control undesired movement, and protect an injured joint or muscle from further injury.

Slide 4: List of common uses for taping, bracing, and wrapping.

Slide 5: *Use provided supplies as examples for the following slides.

While there are many kinds of tape, the adhesive (or sticky) tape is the most common. Adhesive tape can be purchased in three different tensiles or strengths.

High tensile adhesive tape is a very heavyweight tape that is generally used to add extra support to a taping application. An example of high tensile adhesive tape is Elastikon. This type of tape usually cannot be torn by hand.

Medium tensile adhesive tape is a rigid, non-elastic tape often referred to as white tape. This tape is easy to tear and is the most common athletic tape used for taping applications.

Low tensile adhesive tape is a lightweight, flexible tape that can be used to support a joint without restricting movement. It is also used to attach pads or keep braces from moving.

All of these types of adhesive tape can be purchased in a variety of colors and sizes.

Slide 6: Cohesive tape is a type of lightweight, elastic tape that sticks only to itself. It is waterproof and reusable, making it a very versatile tape. It is most often used to cover bandages or adhesive tape. Similar to lightweight elastic tape, it can also be used to support a joint or muscle and add compression.

Slide 7: Pre-wrap is a non-adhesive foam tape used to protect the skin from tape irritation.

Slide 8: The various supplies needed to tape correctly include adherent spray, scissors or tape cutters, and heel and lace pads.

Adherent spray, often called Tuf-skin or QDA, creates a bond between the patient's skin and the tape.

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Scissors or tape cutters are needed to cut the high tensile tape and remove taping applications from the patient.

Heel and lace pads should be used with a small amount of petroleum jelly or skin lube applied to the areas to prevent a blister from occurring at the heel and lace areas of the foot.

Slide 9: *Elbow braces have been provided and can be used for demonstration purposes.

Braces are a type of rigid device that can be used to protect a joint by adding structural stability. When choosing a brace, it is important that the type of injury and the purpose of the brace (preventative or treatment) be taken into consideration.

There are three main types of braces. Prophylactic braces are braces used to prevent or reduce the severity of an injury. An example of this is when a basketball player who has never had an ankle injury wears an ankle brace in the hopes of preventing an injury.

Functional braces are used to provide functional support during activities. They can be used both prophylactic and following an injury. They can be purchased off-the-shelf or custom.

Rehabilitative braces, or restrictive movement braces, are adjustable braces that are used following surgery and allow for controlled, progressive immobilization of a joint. These braces can be adjusted as the patient's strength and ROM (Range of Motion) improves or as the physician dictates.

Slide 10: Off-the-shelf braces are prefabricated braces that can be purchased at any large sporting goods store and some pharmacy and grocery stores. These types of braces are typically used as a prophylactic brace and are more cost-effective than custom braces.

Slide 11: Custom braces are measured to fit a specific individual. These braces are expensive and usually require a physician's order to purchase. The patient is typically measured for the brace by a sales rep from the company the brace is being ordered from.

Slide 12: Elastic bandages, also known as ace wraps, are an elastic woven cloth material used to provide support or compression to an injured joint or muscle. They are often applied to an injured joint to aid in decreasing swelling, such as after an ankle sprain or knee injury. They can also be used to support muscles that have been strained and somewhat restrict the undesired range of motion.

Slide 13: Scenarios that elastic wraps would be appropriate to be used for.

Slide 14: *Both types of splints have been provided and can be used for demonstration.

Commercial splints can be used to immobilize arm and leg fractures following a traumatic injury. These splints apply uniform pressure to the injured body part to provide stability and comfort.

Air splints are pumped up with air to protect the injured body part.

Rapid splints are pre-molded foam splints that can be used to immobilize a leg or arm quickly.

Slide 15: *Demonstrate the use of a Sam Splint, such as splinting a wrist.

SAM (Structural Aluminum Malleable) Splints, also known as medical splint rolls, are compact, lightweight devices that can be molded into various shapes to splint a limb or joint.

Slide 16: Cervical collars, also known as neck braces, are used to immobilize the neck after an injury. These braces can be used by emergency personnel following a traumatic injury, or worn after injury or surgery to support and immobilize the neck.

Slide 17: Orthotics are worn inside a shoe to correct biomechanical foot issues. They can also be used to treat foot and leg issues such as plantar fasciitis, shin splints, and some knee pain.

Orthotics can be either custom-made or purchased off-the-shelf at sporting goods stores, larger pharmacies, and some larger grocery stores.

Lesson One – Introduction to Taping, Wrapping, and Protective Equipment

REVIEW: Small Group Project and Quiz

20-25 minutes

Purpose:

Participants will work together in small groups to learn how to fit a helmet properly and complete a quiz to assess mastery of the material.

Materials:

- *How to Fit a Helmet* handout (provided during FOCUS lesson)
- 4-6 football helmets (dependent on the availability of helmets and size of the class)
- 4-6 tape measures (dependent on the size of the class)
- *Introduction to Taping, Wrapping, and Protective Equipment Quiz*
- *Introduction to Taping, Wrapping, and Protective Equipment Quiz – Answer Key*

Facilitation Steps:

1. Have participants get into small groups of 4-5 (dependent on the number of helmets available and the class size).
2. Have participants work together to fit a group member with a helmet, following the steps from the handout and FOCUS lesson.
3. Hand out the *Introduction to Taping, Wrapping, and Protective Equipment Quiz* to participants. Give them a couple of minutes to complete it.
4. Have participants self-check or peer check their answers as you share them from the *Introduction to Taping, Bracing, and Wrapping Quiz – Answer Key*.

Name: _____ Class: _____

Introduction to Taping, Wrapping, and Protective Equipment Quiz

Directions: Circle the correct answer or fill in the blanks for each question.

1. All of the following are principles of taping and wrapping EXCEPT:
 - a. Prevent or reduce the severity of an injury
 - b. Support an injured body part
 - c. Can be used in place of appropriate rehabilitation
 - d. Secure protective pads and dressings
2. Which is NOT a property of elastic tape?
 - a. Holds protective padding/dressings in place
 - b. Allows muscles to contract without impeding joint ROM
 - c. Provides no support
 - d. Give proprioceptive feedback
3. True or False: Wraps and braces can be used instead of tape to stabilize the affected area.
4. True or False: Custom braces are more cost-effective than off-the-shelf braces.
5. List the areas of the face that need to be checked when fitting a helmet:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
6. True or False: Prophylactic braces are designed to stop or lessen the severity of injuries, so their focus is prevention.
7. Which type of brace is manufactured for a specific individual and commonly used to protect an existing injury?
 - a. Off-the-shelf prophylactic
 - b. Off-the-shelf functional
 - c. Custom-made prophylactic
 - d. Custom-made functional
8. Tapes are typically classified as being any one of the following EXCEPT:
 - a. Non-elastic
 - b. Elastic
 - c. Cast
 - d. Non-adhesive
9. What type of brace would be applied post-operatively to control range of motion?
 - a. Off-the-shelf prophylactic
 - b. Functional
 - c. Custom-made prophylactic
 - d. Rehabilitative
10. When fit correctly, how many finger widths should a football helmet face guard be position from the nose?
 - a. 1-2
 - b. 2-3
 - c. 3-4
 - d. 4-5

Introduction to Taping, Wrapping, and Protective Bracing Quiz – Answer Key

1. All of the following are principles of taping and wrapping EXCEPT:
 - a. Prevent or reduce the severity of an injury
 - b. Support an injured body part
 - c. **Can be used in place of appropriate rehabilitation**
 - d. Secure protective pads and dressings
2. Which is NOT a property of elastic tape?
 - a. Holds protective padding/dressings in place
 - b. Allows muscles to contract without impeding joint ROM
 - c. **Provides no support**
 - d. Give proprioceptive feedback
3. **True** or False: Wraps and braces can be used instead of tape to stabilize the affected area.
4. True or **False**: Custom braces are more cost-effective than off-the-shelf braces.
5. List the areas of the face that need to be checked when fitting a helmet (in any order):
 - a. **Eyebrow**
 - b. **Ears**
 - c. **Nose**
 - d. **Cheeks**
 - e. **Base of Skull**
6. **True** or False: Prophylactic braces are designed to stop or lessen the severity of injuries, so their focus is prevention.
7. Which type of brace is manufactured for a specific individual and commonly used to protect an existing injury?
 - a. Off-the-shelf prophylactic
 - b. Off-the-shelf functional
 - c. Custom-made prophylactic
 - d. **Custom-made functional**
8. Tapes are typically classified as being any one of the following EXCEPT:
 - a. Non-elastic
 - b. Elastic
 - c. **Cast**
 - d. Non-adhesive
9. What type of brace would be applied post-operatively to control range of motion?
 - a. Off-the-shelf prophylactic
 - b. Functional
 - c. Custom-made prophylactic
 - d. **Rehabilitative**
10. When fit correctly, how many finger widths should a football helmet face guard be position from the nose?
 - a. 1-2
 - b. **2-3**
 - c. 3-4
 - d. 4-5

Source

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Lesson Two – Taping vs. Bracing

Lesson Overview

In this lesson, participants will learn about the differences between taping and bracing, including the advantages and disadvantages of using each one.

Lesson Objectives

After completing this lesson, participants will be able to:

- Demonstrate understanding of the advantages and disadvantages of taping and bracing
- Demonstrate understanding of when using either taping or bracing would be most appropriate

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• Supplies: – Tape – Pre-wrap – Elbow brace – Ankle brace (optional) – Knee brace (optional)	1. Ask for 1-3 volunteers to use to compare tape and brace at different joints.	15-20 minutes
LEARN	• <i>Taping vs. Bracing</i> slide presentation	1. Prepare <i>Taping vs. Bracing</i> slide presentation (if not done for FOCUS lesson).	30-35 minutes
REVIEW	• Supplies: – Tape – Pre-wrap – Elbow brace – Ankle brace (optional) – Knee brace (optional)	1. Ask volunteers to put braces back on to compare tape and brace again if they were not left on during the lesson.	15-20 minutes

Lesson Two – Taping vs. Bracing

FOCUS: Experiencing Taping vs. Bracing

15-20 minutes

Purpose:

Participants will be actively engaged in discussion/debate over whether taping or bracing is better.

Materials:

- Tape
- Pre-wrap
- Elbow brace
- Ankle brace (if available)
- Knee brace (if available)

Facilitation Steps:

1. Ask for a participant to volunteer (or ask for three volunteers if using ankle and knee braces).
2. Have the participant(s) put the brace(s) on.
3. Complete a hyperextension elbow tape (and ankle tape and knee tape, if using ankle and knee braces) on the participant(s).
4. Ask the participant(s) to move freely with the brace and tape applied.
5. Have the participant(s) move the affected body part in different ROMs and describe to the class the difference between how the two feel with regards to support and restrictions:
 - Which one limits ROM more?
 - Which one feels more comfortable?
 - Which one provides the most compression?
 - Which one is easiest to apply?
 - If you had an injury to your elbow, knee, or ankle, which do you feel would provide the most support?
6. Ask the participant(s) to leave the tape and brace on during the remainder of the class. This will allow for further discussion in the REVIEW lesson.

Lesson Two – Taping vs. Bracing

LEARN: Taping vs. Bracing Presentation

30-35 minutes

Purpose:

Participants will watch a slide presentation to learn the advantages and disadvantages of using tape vs. braces.

Materials:

- *Taping vs. Bracing* Slide Presentation

Facilitation Steps:

1. Share the following information with participants as you show the slide presentation.

Slide 2: What is more effective: taping or bracing? It would be beneficial to show this slide during the FOCUS lesson.

Slide 3: Whether someone uses taping or bracing usually comes down to personal preference and/or availability.

For example, sports medicine programs with small budgets often expect athletes to purchase their braces to save the cost of taping an athlete throughout an entire season.

Preventative taping and bracing are mainly used at the knee and ankle joints.

Slide 4: Why are taping and bracing used for athletes?

Taping and bracing can both be used prophylactically (to prevent injury), or post-injury to support an injured joint. However, it is important to know when it is most beneficial to use either taping or bracing. It is also important to remember that taping and bracing should be used in conjunction with a rehabilitation program to strengthen the involved joint.

Slide 5: There are some advantages to using tape instead of bracing.

Tape is typically less expensive if it is only used for a short time.

It is less bulking than a brace, which can be beneficial for athletes that wear tight-fitting shoes or gloves while playing.

Tape has been shown to increase proprioceptive feedback (body awareness in space).

Specific taping techniques may work better for some athletes, and adjustments can make the tape more specific to the individual athlete's needs.

Slide 6: While there are some advantages to taping, there are also some disadvantages.

The biggest disadvantage to using tape is that the greatest amount of support only lasts for the first 20 minutes, and within one hour, the tape provides almost no support at all.

Tape can become costly if used long-term. Tape costs over 3x more than bracing when used over the length of a regular season.

There is a higher chance of skin irritation when using tape, especially when worn for long periods.

Tape requires a skilled individual, someone other than the wearer, to apply the tape, and it must be applied with good technique to avoid skin irritation.

Slide 7: Like taping, there are some advantages to the use of braces.

Braces are cheaper if they will be used long-term. Braces, such as off-the-shelf ankle or knee braces ranging from \$30-50 each, can be used for multiple seasons. This is significantly cheaper than tape which, as mentioned in the previous slide, can cost around \$300 for one season.

Braces are easier to apply and require no assistance from anyone to use. Braces typically irritate the skin less than taping will.

The biggest advantage to braces is that they can be loosened or tightened as needed, allowing the athlete to adjust the amount of support provided before and during use. This is especially beneficial for athletes with more than one game per day or events that will last multiple hours.

Slide 8: There are also some disadvantages to bracing. Braces are often bulkier than tape. For

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athletes who wear very tight shoes, wearing ankle braces may not be possible.

Braces have a higher up-front cost than tape. A roll of pre-wrap and tape can be purchased for less than \$10, where the average cost of an ankle brace is around \$30.

Slide 9: Critical thinking. Discuss the scenario with the class. Have participants volunteer their opinion and have them explain why they chose that particular answer. Review which decision may be the best choice for this given situation and why.

Slide 10: Most athletes and coaches have pre-existing opinions about braces that fall into one of two sides:

- a. Every athlete should be required to wear an ankle or knee brace to prevent possible injury or re-injury during the season.
- b. Athletes should never wear tape or braces because it will cause them to become weaker.

Ask participants if they agree with either of these opinions.

Slide 11: Let's evaluate what the research shows us.

Slide 12: Except for very early research, almost all research exclusively examines the use of braces to prevent ankle injuries.

Research is inconclusive. Many research studies show that bracing can reduce injury, while some show no significant difference in ankle injuries compared to athletes that do not wear braces.

Research is also inconclusive on whether wearing ankle braces will affect the knee joint. Some research has shown positive effects on the knee joint by reducing shear forces and possible knee injury. In contrast, other researchers have shown an increase in knee injuries due to decreased mobility at the knee and ankle joint while wearing braces.

Slide 13: Review scenario with participants.

An athletic trainer works for a rural school where athletes often travel for at least 45 minutes for each game. An athlete wants ankle support for games. In this situation, would taping or bracing be a better option? Why? Discuss.

Slide 14: Research involving knee injury prevention always involves only bracing, as tape will not support the knee joint enough to prevent an injury. Tape can be used on the knee joint following an acute minor injury, but bracing is typically used for long-term treatment.

Bracing of the knee joint is commonly used for both prevention and treatment.

Slide 15: Research has shown that there is insufficient evidence to recommend for or against the use of knee braces for injury prevention.

While used at most large college programs, prophylactic knee braces have an inconsistent effect on knee injuries in football players and are not recommended. Some research has also shown an increase in knee injuries as a result of wearing knee braces prophylactically.

Slide 16: Bracing for patellofemoral pain has insufficient and conflicting evidence to recommend for or against the use of patellar stabilizing braces.

Slide 17: This slide contains the key points that participants should learn from this class.

Slide 18: It is important to remember that whichever you choose to use, tape or braces, each sport has specific rules and it is important to know if bracing or taping will be affected by them.

Lesson Two – Taping vs. Bracing

REVIEW: Recapping the Experience

15-20 minutes

Purpose:

Review the tape and brace application from the FOCUS lesson, comparing the tape and brace with regard to what participants learned during the slide presentation.

Materials:

- Previous taping applications from the FOCUS lesson
- Previous brace worn during the FOCUS lesson

Facilitation Steps:

1. Ask the participant(s) wearing the tape to put the brace back on.
2. Have the participant(s) compare the support provided by the two applications, now that time has passed since the application of the tape.
3. Have participants point out the advantages and disadvantages of the tape or brace based on what they learned during the slide presentation.
4. Ask participants the following questions:
 - a. Now that about 30 minutes have passed since the original taping application, how does the tape feel to you now?
 - b. Do you notice any differences between the support of the tape now and before?
 - c. Has your opinion/choice between the tape or brace changed since learning about them in the LESSON and wearing them over time?
5. Ask class participants if they have questions for the volunteers about how the tape feels compared to the brace.

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Lesson Three – Lower Extremity Taping

Lesson Overview

In this lesson, participants will learn techniques for wrapping or taping lower extremity injuries. They will get hands-on practice with a variety of taping and wrapping procedures.

Lesson Objectives

After completing this lesson, participants will be able to:

- Identify the specific procedure/technique used for wrapping or taping four lower extremity injuries
- Explain when a particular type of tape or wrap would be appropriate to use for these four different injuries
- Tape an ankle

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Taping Proficiency</i> slide presentation	1. Prepare <i>Taping Proficiency</i> slide presentation for viewing.	10-15 minutes
LEARN	• <i>Lower Extremity Taping</i> slide presentation	1. Prepare <i>Lower Extremity Taping</i> slide presentation for viewing.	30-35 minutes
REVIEW	• <i>Ankle Taping Checklist</i> • Supplies – Tape – Pre-wrap	1. Print/photocopy <i>Ankle Taping Checklist</i> (one per participant).	20-25 minutes

Lesson Three – Lower Extremity Taping and Wrapping

FOCUS: Discussion and Video

10-15 minutes

Purpose:

Participants will engage in class discussions and watch the slide presentation to understand the importance of taping proficiently.

Materials:

- *Taping Proficiency* slide presentation

Facilitation Steps:

1. Share the following information with the participants as you show the slide presentation:

Slide 2: Taping proficiency is important for many reasons.

With proficiency comes speed! An athletic trainer must often tape an athlete during an event with a time constraint, such as tennis or wrestling, or an athlete may need to get back to a game quickly. The more proficient you are at taping, the faster you will be able to do it correctly.

Taping is often one of the few things that the public sees an athletic trainer do. Whether it is coaches or parents in the stand, they will watch while you are taping. Since taping is seen more than anything else, your ability to tape can instill confidence or doubt in your overall abilities as an athletic trainer.

Slide3: Watch the video.

Take a few minutes to discuss how this situation would have been different if this athletic trainer had not been as proficient at taping.

Lesson Three – Lower Extremity Taping and Wrapping

LEARN: Lower Extremity Presentation and Techniques

30-35 minutes

Purpose:

Participants will watch a slide presentation to learn four taping and wrapping techniques for the lower extremity.

Materials:

- *Lower Extremity Taping and Wrapping* slide presentation

Facilitation Steps:

1. Share the following information with the participants as you show the slide show.

Note to instructor: There are many videos in the slide presentation that will demonstrate a variety of taping and wrapping techniques. In lieu of showing the videos, you could opt to do a live demo in class using a participant or a manikin if you prefer. Or you could create your own demo videos for participants if they are learning remotely.

Slide 2: Today, we will learn about two wrapping and two taping techniques for the lower extremity. We will introduce the hip spica for the hip flexor and groin injuries, arch taping, and ankle taping.

Slide 3: The first technique is the hip spica technique. This same technique is used to support the muscles of the groin or hip when the athlete has suffered a groin strain or hip flexor strain. It can also be used to hold a pad in place for a hip contusion injury. To perform this wrap, you will need an ace wrap and white tape.

Slide 4: Watch the hip flexor wrap video

It is important to note the direction that the wrap is going for the hip flexor wrap. Remember Hip ends in P = so UP and out!

Slide 5: Watch the groin wrap video.

Again, it is important to note the direction of the wrap. GroIN = down and in!

Slide 6: Next, we'll talk about two techniques for the lower extremity. The first is the low-dye or arch tape. The purpose of this technique is to support the subtalar joint and reduce excessive pronation. It is often used when an athlete has suffered an arch sprain or plantar fasciitis. It can also be beneficial for some athletes in reducing shin splint pain. The supplies needed to perform this tape job is tuf-skin and white tape.

Slide 7: Watch the low-dye taping video.

Slide 8: Ankle taping is the most common taping technique performed on the lower extremity. This technique provides stability and supports the ligaments of the ankle. It is used to prevent an ankle injury or for support of an injured ankle. To perform ankle taping correctly, you need tuf-skin, heel and lace pads, pre-wrap, and white tape.

Slide 9: To prepare the athlete for taping, have them place their foot in a dorsiflexed position. Spray the area with tuf-skin and apply the heel and lace pads to the appropriate locations. Next, apply pre-wrap and ensure that there are no wrinkles to avoid blistering.

Slide 10: The first step of taping an ankle is applying the anchor strips. Watch the video.

Slide 11: The next step is stirrups and horseshoes (or spurs). Stirrups are the vertical strips applied, while the horseshoe (or spurs) are the perpendicular strips applied around the malleoli.

Slide 12: Watch video on applying stirrups and horseshoes.

Slide 13: The next step of taping an ankle is applying the heel locks. The lateral heel lock is

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applied to support the back of the ankle, while the medial heel lock supports the front of the ankle.

Slide 14: Watch the heel lock video.

Slide 15: Figure-8 taping is the next step. When performing the figure-8, the tape starts at the top of the foot, wraps under the foot, back up and around the back of the ankle, ending where it started. It should look like an 8 on the ankle with the top loop around the leg and the bottom loop around the foot.

Slide 16: Watch the figure-8 taping video.

Slide 17: The final step of taping an ankle is the closing strips. This step adds additional stability to the tape job and holds all the different pieces together. When finishing the tape job, you are also trying to make it look complete and pretty by covering any stray ends.

Slide 18: Watch the video.

Lesson Three – Lower Extremity Taping and Wrapping

REVIEW: Hands-on Ankle Taping Experience

30-35 minutes

Purpose:

Participants will work in groups of 2-4 to practice taping an ankle.

Materials:

- *Ankle Taping Checklist*
- Tape
- Pre-wrap

Facilitation Steps:

1. Place participants in groups of 2-4.
2. Provide each participant with a copy of the *Ankle Taping Checklist*.
3. Hand out taping supplies to each group.
4. Walk around the class as participants attempt to tape, offering help where needed.

Ankle Taping Checklist

Skills Check-Off 	Skill
	Place the ankle in dorsiflexion, apply tuf-skin, heel and lace pads, and pre-wrap
	Apply anchor strips, 2 at the base of the calf and 1 at the base of the 5th metatarsal
	Apply alternating stirrups and horseshoes
	Apply 1 anchor to hold stirrups in place
	Apply 4 heel locks, 2 medial and 2 lateral
	Apply 2 figure 8s
	Apply closing strips to finish tape job

Sources

1. Beam, J. (2021). Orthopedic taping, wrapping, bracing, and padding. F.A. Davis Company.
2. Pygeorge, S. (2017, May 24). Low dye tape job with colored tape [Video]. YouTube. https://www.youtube.com/watch?v=fZAksNGrE_4&t=16s
3. Pygeorge, S. (2017, April 13). Groin ace wrap [Video]. YouTube. <https://www.youtube.com/watch?v=kqgF-bD5UJE&t=52s>
4. Pygeorge, S. (2017, April 13). Hip flexor ace wrap [Video]. YouTube. <https://www.youtube.com/watch?v=dGsnf2PWKZM&t=50s>
5. Pygeorge, S. (2017, August 30). Tape selection, foot position, tuf-skin, heel-n-lace pads, pre-wrap for ankle tape job/closed basket [Video]. YouTube. https://www.youtube.com/watch?v=mLgKM81wq_Y&t=39s
6. Pygeorge, S. (2017, August 30). Anchors for closed basket weave ankle tape job [Video]. YouTube. https://www.youtube.com/watch?v=AFkud_jYqu0&t=10s
7. Pygeorge, S. (2017, August 30). Stirrups and spurs for closed basket weave ankle tape job [Video]. YouTube. https://www.youtube.com/watch?v=EY3GcDOy_lw&t=19s
8. Pygeorge, S. (2017, August 30). Heel locks for closed basket weave ankle tape job [Video]. YouTube. https://www.youtube.com/watch?v=T7PcjCAvF_8&t=1s
9. Pygeorge, S. (2017, August 30). Figure eight for closed basket weave ankle tape job [Video]. YouTube. <https://www.youtube.com/watch?v=R429-X3YTho&t=29s>
10. Pygeorge, S. (2017, August 30). Closing strips for closed basket weave ankle tape job [Video]. YouTube. <https://www.youtube.com/watch?v=Hclb2LFipNk&t=3s>

Lesson Four – Upper Extremity Taping

Lesson Overview

In this lesson, participants will learn techniques for wrapping or taping upper extremity injuries. They will get hands-on practice with a variety of taping and wrapping procedures.

Lesson Objectives

After completing this lesson, participants will be able to:

- Identify the specific procedure/technique used for wrapping or taping four upper extremity injuries
- Explain when these techniques would be appropriate to use
- Tape a wrist

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Upper Extremity Injuries</i> slide presentation	1. Prepare <i>Upper Extremity Injuries</i> slide presentation for viewing.	10-15 minutes
LEARN	• <i>Upper Extremity Taping</i> slide presentation	1. Prepare <i>Upper Extremity Taping</i> slide presentation for viewing.	30-35 minutes
REVIEW	• <i>Wrist Taping Checklist</i> • Supplies • Tape • Pre-wrap	1. Print/photocopy <i>Wrist Taping Checklist</i> (one per participant).	20-25 minutes

Lesson Four – Upper Extremity Taping and Wrapping

FOCUS: Examples and Discussion

10-15 minutes

Purpose:

Participants will discuss upper extremity injuries and the types of taping and wrapping that they have seen.

Materials:

- *Upper Extremity Injuries* slide presentation

Facilitation Steps:

Show the slide presentation to the participants, allowing for discussion of personal injury experiences while showing slides.

Slide 2: Picture of a potential wrist injury.

Ask the participants what they think may have happened to the skater's wrist during this fall.

Ask if any of the participants have ever injured their wrist and how the injury was treated.

Slide 3: Wrist injury picture.

Again, ask the participants what they think happened. Does it appear to be fractured? Is it dislocated?

Slide 4: Picture of thumb dislocation.

Continue discussion of participant's experiences with thumb injuries.

Slide 5: Picture of finger dislocation.

Again, continue the discussion and lead into taping of these types of injuries.

Lesson 4 – Upper Extremity Taping and Wrapping

LEARN: Upper Extremity Presentation and Techniques

30-35 minutes

Purpose:

Participants will watch a slide presentation to learn four taping and wrapping techniques for the upper extremity.

Materials:

- *Upper Extremity Taping* slide presentation

Facilitation Steps:

1. Share the following information with the participants as you show the slide show.
Note to instructor: There are many videos in the slide presentation that will demonstrate a variety of taping and wrapping techniques. In lieu of showing the videos, you could opt to do a live demo in class using a participant or a manikin, or you could create your own demo videos for participants if they are learning remotely.

Slide 2: Today, we are going to learn taping and wrapping skills for the upper body. We will learn the shoulder spica wrap, finger taping, thumb taping, and wrist taping.

Slide 3: The first technique we are going to learn about is the shoulder spica. The shoulder spica is used to provide support and stability to an unstable shoulder. It can also be used to prevent excessive abduction and external rotation of the shoulder. A shoulder spica can also be used to hold protective padding in place on the shoulder.

The shoulder spica is used for an AC sprain, compression wrap to control swelling, or limit ROM of the shoulder following subluxation or dislocation. The supplies needed to perform the shoulder spica wrap are a 4- or 6-inch double-

length ace wrap (depending on the size of the person being wrapped) and stretch tape.

Slide 4: Watch shoulder spica wrap video.

Slide 5: The next tape job we are going to learn is finger tape, or buddy taping. This tape job provides support to the finger joints.

It is used to treat collateral ligament injuries, finger sprains, finger dislocations and subluxations, and finger fractures.

The supplies needed to complete a finger tape job are tuf-skin, white tape, and optional stretch tape.

Slide 6: Watch video on how to perform finger taping.

Slide 7: Thumb taping is next. The purpose of performing a thumb tape job is to support and limit the ROM of the MCP joint of the thumb. It is used for thumb sprains, thumb dislocations, and thumb subluxations.

This tape job requires tuf-skin, pre-wrap (optional), white tape, and stretch tape (optional).

Slide 8: Watch the video of how to tape a thumb.

Slide 9: The final tape job for the upper extremity is the wrist tape. The purpose of the wrist tape is to prevent excessive hyperextension or hyperflexion of the wrist. It is used for wrist sprain and TFCC injuries.

The supplies needed for the wrist tape job are tuf-skin, pre-wrap, and white tape.

Slide 10: Watch the video of how to perform wrist taping.

Lesson 4 – Upper Extremity Taping and Wrapping

REVIEW: Hands-on Wrist Taping Experience

30-35 minutes

Purpose:

Participants will work together in small groups to learn how to tape a wrist.

Materials:

- *Wrist Taping Checklist*
- White tape
- Pre-wrap

Facilitation Steps:

1. Place participants in groups of 2-4.
2. Provide each participant with a copy of the *Wrist Taping Checklist*.
3. Handout taping supplies to each group.
4. Walk around the class as participants attempt to tape, offering help where needed.

Wrist Taping Checklist

Skills Check-Off 	Skill
	Apply a thin layer of pre-wrap to the hand and wrist area
	Apply anchor strips, 2 at the base of the forearm muscles and 1 around the hand
	Measure 3 strips for the fan, ensuring that the strips of tape are slightly longer than the anchor strips
	Secure the fan into the palm of the hand with 1-2 strips of tape
	Secure the other end of the fan with 2 additional strips of tape
	Apply 1 figure 8 around the wrist
	Apply closing strips to finish tape job

Sources

1. Beam, J. (2021). Orthopedic taping, wrapping, bracing, and padding. F.A. Davis Company.
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<https://www.youtube.com/watch?v=mnmJZ1WxLhw&t=18s>
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<https://www.youtube.com/watch?v=rej6p2qtjBw&t=281s>
5. Pygeorge, S. (2017, March 10). Triple figure eight thumb tape job [Video]. YouTube.
<https://www.youtube.com/watch?v=gY-udouA>

Lesson Five – Joint and Long Bone

Lesson Overview

In this lesson, participants will learn how to immobilize the following: closed radius/ulna fracture, closed tibia/fibula fracture, compound femur fracture, and jaw trauma. They will familiarize themselves with the different types of splints and braces.

Lesson Objectives

After completing this lesson, participants will be able to:

- Define open and closed fractures
- Demonstrate joint injury and splinting techniques
- Demonstrate how to immobilize a jaw injury
- Demonstrate immobilization and splinting of specific long bone fractures

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS:	• <i>Joint and Long Bone (Focus on Empathy)</i> worksheet • <i>Joint and Long Bone (Focus on Empathy)</i> Instructor Resource • <i>Joint and Long Bone Pre-test</i> • <i>Joint and Long Bone Pre-test – Answer Key</i>	1. Print/photocopy <i>Joint and Long Bone (Focus on Empathy)</i> worksheet and <i>Joint and Long Bone Pre-test</i> (one per participant).	20 minutes
LEARN	• <i>Joint and Long Bone</i> slide presentation	1. Prepare <i>Joint and Long Bone</i> slide presentation for viewing.	30 minutes
REVIEW	• Splints and braces for participant practice and demonstration of skills • <i>Joint and Long Bone Post-test</i> • <i>Joint and Long Bone Post-test – Answer Key</i>	1. Print the <i>Joint and Long Bone Post-test</i> (one per participant).	60 minutes

Lesson Five – Joint and Long Bone

FOCUS: Developing Awareness of Patient-Focused Care

20 minutes

Purpose:

To help participants develop an awareness of patient-focused care. Take the *Joint and Long Bone* pre-test.

Materials:

- *Joint and Long Bone (Focus on Empathy)* worksheet
- *Joint and Long Bone (Focus on Empathy)* Instructor Resource
- *Joint and Long Bone Pre-test*
- *Joint and Long Bone Pre-test – Answer Key*

Facilitation Steps:

1. Distribute the *Joint and Long Bone (Focus on Empathy)* worksheet prior to or at the beginning of class.
2. Have the *Joint and Long Bone (Focus on Empathy)* Instructor Resource available.
3. Pair up participants and have them complete the *Joint and Long Bone (Focus on Empathy)* worksheet.
4. Distribute the *Joint and Long Bone Pre-test* and have the participants complete it.
5. Either collect the pre-test or have participants self-correct, using the *Joint and Long Bone Pre-test – Answer Key* as a resource.

Joint and Long Bone (Focus on Empathy)

Skill: Immobilization and Splinting of a closed radius/ulna fracture

READ the following:

It's a slow Saturday afternoon when your EMS unit receives a call from dispatch, asking you to respond to a possible fractured arm call at a local baseball field. When you arrive on the scene, you are directed by a group of people to the dugout, where you find an 8-year-old boy crying and holding his right forearm to his chest. You notice obvious deformity and swelling to his ulna, and it is reported that a fastball hit his arm as he tried to catch it. There are no other injuries. The coach informs you that the boy's parents are not present, but he called them at work and they are on their way. You assist your partner with immobilizing the boy's arm and start the evaluation of your patient. While splinting the boy's arm and providing comfort, his mother arrives and tells you that she does not want you to provide further care and to stop touching her son. You explain what happened and that you are providing care and trying to make her son as comfortable as you can. His mother tells you that their religion does not allow medical treatment and that you can leave now.

REFLECT on the situation:

How do you think the EMS personnel would feel in a situation where medical treatment is refused based on religious beliefs?

How do you think the crowd would feel after seeing a young boy get injured and his mother refusing treatment?

What is the best way to handle the situation with the boy and his mother?

SHARE your thoughts with a peer when it's discussion time.

Joint and Long Bone (Focus on Empathy)

Instructor Resource

Skill: Immobilization and Splinting of a closed radius/ulna fracture

READ the following:

It's a slow Saturday afternoon when your EMS unit receives a call from dispatch, asking you to respond to a possible fractured arm call at a local baseball field. When you arrive on the scene, you are directed by a group of people to the dugout, where you find an 8-year-old boy crying and holding his right forearm to his chest. You notice obvious deformity and swelling to his ulna, and it is reported that a fastball hit his arm as he tried to catch it. There are no other injuries. The coach informs you that the boy's parents are not present, but he called them at work and they are on their way. You assist your partner with immobilizing the boy's arm and start the evaluation of your patient. While splinting the boy's arm and providing comfort, his mother arrives and tells you that she does not want you to provide further care and to stop touching her son. You explain what happened and that you are providing care and trying to make her son as comfortable as you can. His mother tells you that their religion does not allow medical treatment and that you can leave now.

REFLECT on the situation:

How do you think the EMS personnel would feel in a situation where medical treatment is refused based on religious beliefs?

Confused and frustrated while trying to understand and respect the family's religious beliefs.

How do you think the crowd would feel after seeing a young boy get injured and his mother refusing treatment?

I think they would feel angry and confused as to why the mother would not want help for her injured son.

What is the best way to handle the situation with the boy and his mother?

I would explain that her son is in a lot of pain with a possible broken arm and that he needs to see a doctor. If she still refuses, I would call the base hospital and have her speak with medical control.

SHARE your thoughts with a peer when it's discussion time.

Name: _____ Class: _____

Joint and Long Bone Pre-test

Select the best answer to the following multiple-choice questions:

1. What is another name for an **open** fracture?
 - a. Spiral fracture
 - b. Simple fracture
 - c. Compound fracture
 - d. Greenstick fracture
2. How do you immobilize a fracture or joint injury?
 - a. Support directly under the injury
 - b. Support the joints only above the injury
 - c. Support the joints above and below the injury
 - d. Support the joints only below the injury
3. Which is a contraindication when using a traction splint for a femur fracture?
 - a. Hip fracture
 - b. Knee fracture
 - c. Ankle or foot fracture
 - d. All of the above
4. When is it appropriate to push a bone back into place with a compound fracture?
 - a. When there is a large amount of blood loss
 - b. When your partner tells you to
 - c. Never
 - d. When it will provide pain relief
5. When do you assess for distal pulses, sensation, and circulatory function?
 - a. Before applying a splint
 - b. After applying a splint
 - c. Never
 - d. Both a and b

Joint and Long Bone Pre-test – Answer Key

1. What is another name for an **open** fracture? *Refer to slide 4*
 - a. Spiral fracture
 - b. Simple fracture
 - c. **Compound fracture**
 - d. Greenstick fracture
2. How do you immobilize a fracture or joint injury? *Refer to slide 5*
 - a. Support directly under the injury
 - b. Support the joints only above the injury
 - c. **Support the joints above and below the injury**
 - d. Support the joints only below the injury
3. Which is a contraindication when using a traction splint for a femur fracture? *Refer to slide 13*
 - a. Hip fracture
 - b. Knee fracture
 - c. Ankle or foot fracture
 - d. **All of the above**
4. When is it appropriate to push a bone back into place with a compound fracture? *Refer to slide 4*
 - a. When there is a large amount of blood loss
 - b. When your partner tells you to
 - c. **Never**
 - d. When it will provide pain relief
5. When do you assess for distal pulses, sensation, and circulatory function? *Refer to slide 9*
 - a. Before applying a splint
 - b. After applying a splint
 - c. Never
 - d. **Both a and b**

Lesson Five – Joint and Long Bone

LEARN: Joint and Long Bone Slide Presentation

30 minutes

Purpose:

Participants will receive a thorough introduction to open and closed fractures, joint immobilization and splinting techniques, immobilizing a jaw injury, and specific long bone injuries with proper immobilization skills.

Materials:

- *Joint and Long Bone* slide presentation
- Closed Fracture Training Manikin (if available)
- Splints and Braces Supply Pack

Facilitation Steps:

Share the following information as you show the slide presentation.

Slide 1: Introduction slide.

Slide 2: Prerequisite knowledge for this lesson:

- The signs and symptoms of a fracture and a joint injury
- Basic anatomy
- Personal protective equipment
- Proper patient care and documentation

Slide 3: When dealing with a compound fracture, it is important never to touch the exposed bone or try to push it back into place. If there is bleeding, apply pressure to stop it and cover the exposed bone with a bandage before splinting.

Slide 4: When arriving on the scene, manually stabilize the injury from the joint above and below the injury to help alleviate pain and discomfort.

Slide 5: The exception to taking time and correctly splinting is if the patient needs rapid transport. The ABCs are always more important than splinting or immobilizing an injury in a critical situation. Newer studies have shown that it may be necessary to NOT splint in the position found and try to manipulate the injury into the

correct anatomical position for a better recovery outcome. However, other scientific studies show that this may cause more harm in an emergency setting and to only manipulate when necessary to regain pulses and circulation.

Slide 6: Padding the splint is important, but do not over-pad, as doing so may cause more discomfort for the patient. Ice packs can be re-applied every 10-15 minutes, but never directly to bare skin.

Slide 7 and 8: Every EMS provider carries a variety of splints and immobilization devices. The most common are padded boards, rigid splints, gauze, and triangular bandages. The EMT should familiarize him- or herself with the splints and immobilization supplies that their employer provides. *Show what types of splints you have in your training kit and how to use them.*

Slide 9: Oftentimes, a patient will have loose or missing teeth associated with a jaw injury. If they are conscious, have the patient try to spit any blood out of their mouth before bandaging. If the bandage is slipping off the patient's head, another bandage can be applied across the forehead and tied behind the head to hold the first bandage in place.

Slide 10: These are the requirements that the National Registry of Emergency Medical Technicians lists for their skills assessment. While the definition of joint immobilization recommends immobilizing above and below the **joint**, the NREMT uses the word **bone** in their skills test.

Slide 11: Because of the strong force required to break the radius or ulna in the middle of the bone, it is more common for adults to break both bones during a forearm injury. When only one bone in the forearm is broken, it is typically the ulna,

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usually as a result of a direct blow to the outside of the arm when it is raised in self-defense.

If you hold your arms at your side with your palms facing up, the ulna is the bone closest to your body, and the radius is closest to your thumb. The ulna is larger at the elbow; it forms the point of the elbow, and the radius is larger at the wrist. After immobilizing the fracture, place a roll of gauze in the patient's hand to minimize the movement of their fingers.

Slide 12: Tibia fractures vary greatly depending on the force that causes the break. The pieces of bone may line up correctly (stable fracture) or be out of alignment (displaced fracture).

Slide 13: Femur fractures are one of the most painful fractures a patient can have. This injury can cause a patient to go into shock because of the large amount of blood loss (typically 1500-2000 ml). Motor vehicle accidents are the number one cause of femur fractures.

Slide 14: Traction splints are contraindicated if there is a pelvic fracture, knee fracture, a distal femur fracture, ankle or foot fracture, or partial amputation. It is required to have intact bones to support the strap sites. When applying a traction splint, be aware of the patient's genitalia when resting the saddle against the ischial tuberosity. Do not place the strap directly over the injury, especially with a compound fracture. Do not place the strap directly over the knee. Instead, always place it above and below the knee. When applying traction, 10% of the patient's body weight is recommended, but it may take up to 15% for proper relief. Use the patient's pain reduction as a guide.

Lesson Five – Joint and Long Bone

REVIEW: Practice and Assessment of Immobilization and Splinting Techniques

60 minutes

Purpose:

Participants will get hands-on practice with splinting and immobilization procedures.

Materials:

- *Joint and Long Bone* slide presentation
- *Joint and Long Bone Post-test*
- *Joint and Long Bone Post-test – Answer Key*
- Closed Fracture Training Manikin
- Splints and Braces Supply Pack

Facilitation Steps:

1. Use the slide presentation to have participants practice the different techniques.

Slide 5 and 6:

Have participants:

- a. Practice immobilizing an injury above and below the joint
- b. Demonstrate how to identify the proper splint that is needed and measure for accurate length
- c. Add padding to a splint and apply the splint, adding more padding to fill voids
- d. Demonstrate how to apply wrapped ice packs, avoiding contact with bare skin

Slide 9: Have participants properly demonstrate how to immobilize a jaw injury.

Slide 10: Have participants demonstrate the steps needed to immobilize a long bone injury.

- a. Don proper personal protective equipment
- b. Manually stabilize the injury
- c. Assess distal motor, sensory, and circulatory functions in the injured extremity
- d. Select the proper splint and any bandaging supplies needed
- e. Immobilize the site of the injury
- f. Immobilize the bone above the injured extremity
- g. Immobilize the bone below the injured extremity
- h. Secure the entire injured extremity

- i. Reassess distal motor, sensory, and circulatory functions in the injured extremity

Slide 11: Have participants demonstrate how to immobilize a radius or ulna fracture.

- a. Place a splint under the forearm
- b. Support the forearm with a sling, or tape it to the arm just below the wrist and above the elbow
- c. Avoid placing ties directly over the injured area
- d. Fasten the splint tightly enough to hold the body part still, but not so tight that the ties will cut off the person's circulation

Slide 12: Have participants demonstrate immobilization of a tibia or fibula fracture.

- a. Place a splint under the leg
- b. Tie or tape the splint to the leg, just below the knee and above the ankle
- c. Avoid placing ties directly over the injured area
- d. Fasten the splint tightly enough to hold the body part still, but not so tight that the ties will cut off the person's circulation

Slide 13: Have participants demonstrate how they would control bleeding in a compound femur fracture.

Slide 14: Have participants demonstrate how to immobilize a compound femur fracture using a traction splint.

- a. Position the splint between the patient's legs, resting the saddle against the ischial tuberosity (the sit-bones)
- b. Attach the strap to the thigh
- c. Secure the ankle strap snugly
- d. Gently extend the inner shaft until the desired amount of traction is achieved (approximately 10% of the patient's body weight)
- e. Adjust the thigh/leg/foot strap
- f. Reassess neurovascular function

Introduction to Taping and Wrapping Skills Curriculum

2. Have participants complete the *Joint and Long Bone Post-test*
3. Use the *Joint and Long Bone Post-test – Answer Key* as needed for instructor reference.
4. Collect the tests to grade or have participants pair up and compare answers.

Name: _____ Class: _____

Joint and Long Bone Post-test

Select the best answer to the following multiple-choice questions:

1. What is another name for an **open** fracture?
 - a. Spiral fracture
 - b. Simple fracture
 - c. Compound fracture
 - d. Greenstick fracture
2. How do you immobilize a fracture or joint injury?
 - a. Support directly under the injury
 - b. Support the joints only above the injury
 - c. Support the joints above and below the injury
 - d. Support the joints only below the injury
3. Which is a contraindication when using a traction splint for a femur fracture?
 - a. Hip fracture
 - b. Knee fracture
 - c. Ankle or foot fracture
 - d. All of the above
4. When is it appropriate to push a bone back into place with a compound fracture?
 - a. When there is a large amount of blood loss
 - b. When your partner tells you to
 - c. Never
 - d. When it will provide pain relief
5. When do you assess for distal pulses, sensation, and circulatory function?
 - a. Before applying a splint
 - b. After applying a splint
 - c. Never
 - d. Both a and b

Joint and Long Bone Post-test – Answer Key

1. What is another name for an **open** fracture? *Refer to slide 4*
 - a. Spiral fracture
 - b. Simple fracture
 - c. **Compound fracture**
 - d. Greenstick fracture
2. How do you immobilize a fracture or joint injury? *Refer to slide 5*
 - a. Support directly under the injury
 - b. Support the joints only above the injury
 - c. **Support the joints above and below the injury**
 - d. Support the joints only below the injury
3. Which is a contraindication when using a traction splint for a femur fracture? *Refer to slide 13*
 - a. Hip fracture
 - b. Knee fracture
 - c. Ankle or foot fracture
 - d. **All of the above**
4. When is it appropriate to push a bone back into place with a compound fracture? *Refer to slide 4*
 - a. When there is a large amount of blood loss
 - b. When your partner tells you to
 - c. **Never**
 - d. When it will provide pain relief
5. When do you assess for distal pulses, sensation, and circulatory function? *Refer to slide 9*
 - a. Before applying a splint
 - b. After applying a splint
 - c. Never
 - d. **Both a and b**

Sources

1. Larson, Jeffrey P., Davidson, Tish (2019). *Immobilization*. Retrieved from <http://www.healthofchildren.com/I-K/Immobilization.html#ixzz61IaSUEjn>
1. Giorgi, Anna Zernone (2016). *Fracture*. Retrieved from <https://www.healthline.com/health/fracture>
2. Orthoinfo Website (2019). *Adult Forearm Fractures*. Retrieved from <https://orthoinfo.aaos.org/en/diseases--conditions/adult-forearm-fractures/>
3. Orthoinfo Website (2019). *Tibia (Shinbone) Shaft Fractures*. Retrieved from <https://orthoinfo.aaos.org/en/diseases--conditions/tibia-shinbone-shaft-fractures/>
4. WebMD Website. (2019). *Broken Jaw Treatment*. Retrieved from <https://www.webmd.com/first-aid/broken-jaw-treatment>
6. Takayesu MD, James Kimo (2019). *Splinting*. Retrieved from https://www.emedicinehealth.com/wilderness_splinting/article_em.htm#what_facts_should_i_know_about_splinting_broken_bones
7. NREMT Website. (2019). *NREMT Joint Immobilization Skills Sheet*. Retrieved from https://content.nremt.org/static/documents/skills/E216_NREMT.pdf
8. Gossman, William; Ginglen, Jacob G.; Kwon, Yong Hwan; Kahwaji, Chadi I (2019). *EMS, Traction Splint*. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK507842/>