



Session 4

C-PE 2 (3 units) **PATHFIT II Exercise-based Program**

Spring Semester 2024



Prevention, Assessment & Management of Physical Injuries



Session Objectives:

- ✓ Identify the two types of injury that are commonly acquired in engaging to physical activities.
- ✓ Recognize symptoms of musculoskeletal injuries and as well as specific skeletal or muscular injuries whether minor or major in nature.



Session Objectives:

- ✓ Classify and differentiate the type of injury that can possibly acquired through physical activities.
- ✓ Apply the first aid protocol in handling the injured person or an injured part of the body.



Session Objectives:

- ✓ Identify the need to apply taping, bandaging, splinting and bracing using different and appropriate materials.
- ✓ Acquire knowledge in injury assessment protocol and apply that according to what is required by a particular situation.



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Types of Common Injuries:

Chronic – overused injury

Acute – sudden occurrence
of injury



Signs and Symptoms of Musculoskeletal Injury:

- 1. Always compare injured to non-injured side.**
 - *Inspect : swelling, focal tenderness, redness, limited range of motion, decreased muscle function, muscle spasm.**



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Anatomic and Physiologic Processes

Sports Injury Model:

- a. Primary Injury-** hemorrhages, clotting
hematoma
- b. Secondary Injury** –hypoxia (lack of oxygen)

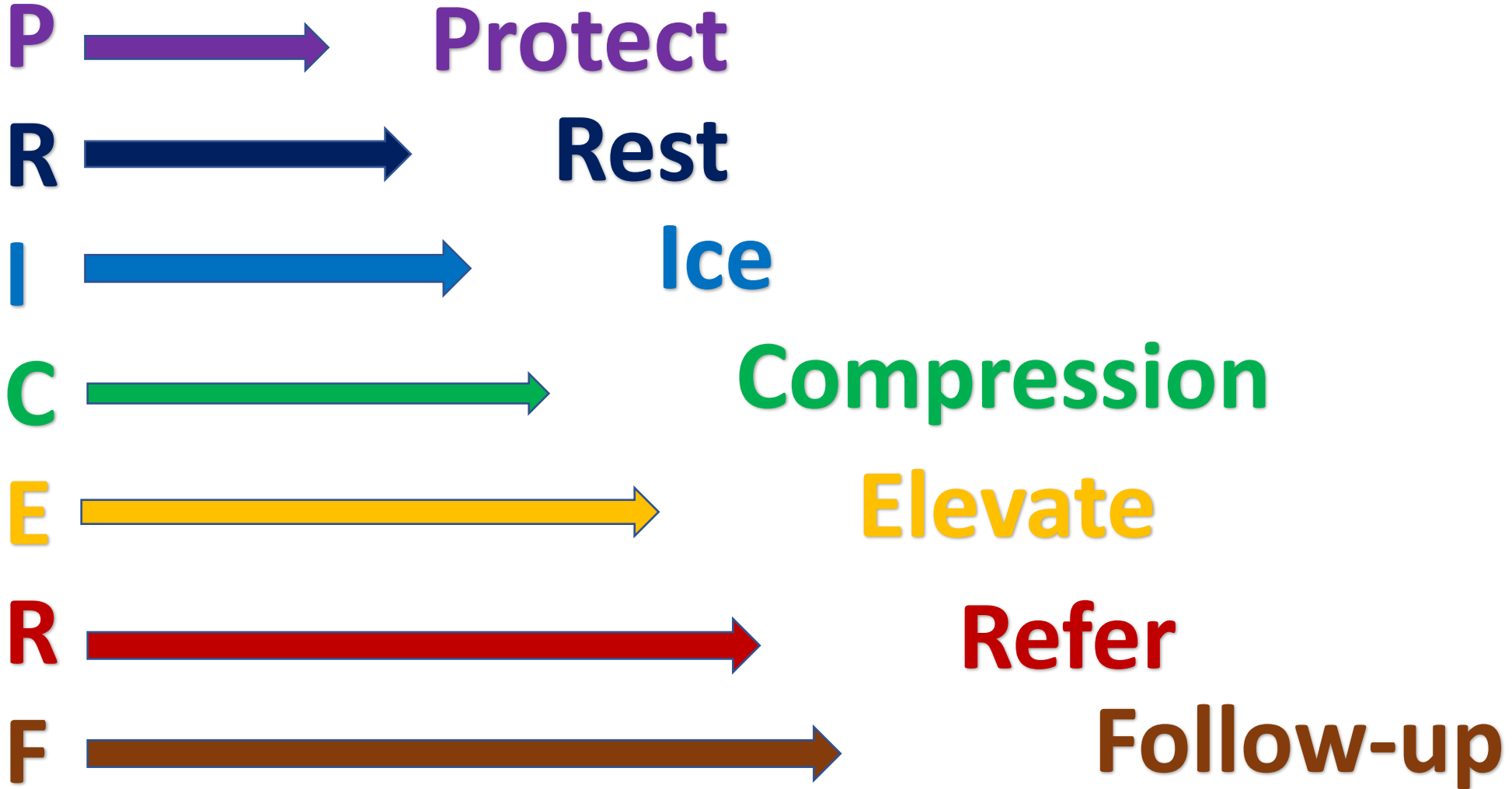


Treatment of Common Injury: (First Aid)

- 1. PRICERF Principle**
- 2. No HARM Principle**
- 3. Taping, Splinting and Bandaging**



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No HARM Principle

H *EAT*

A *LCOHOL*

R *UNNING*

M *ASSAGE*



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Treatment of Common Injury: (First Aid)

Taping, Splinting and Bandaging

Terminologies:

Strain – pulled muscle and tendon



Figure 1: Pulled Hamstring Muscle.
(Source: Wilson, C. 2024:Online)

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Sprain – over- stretched ligaments

Ulnar Collateral Ligament Sprain (Skier's Thumb)

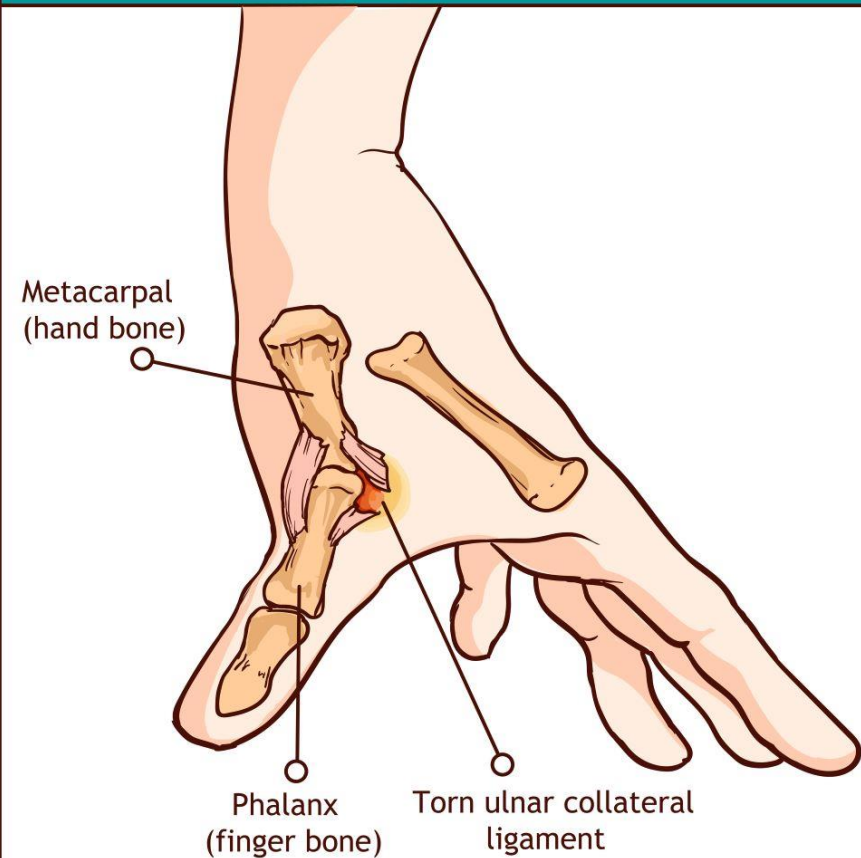


Figure 2: Thumb Ligament Injury Treatment.
(Source: Hajjipour, L.. 2024:Online)

**Contusion –
caused by blunt
hard objects**



Figure 3: Thigh Contusion (Quadricep Contusion).
(Source: Goonetilleke, C. 2023:Online)

Tendonitis – inflammation of tendon

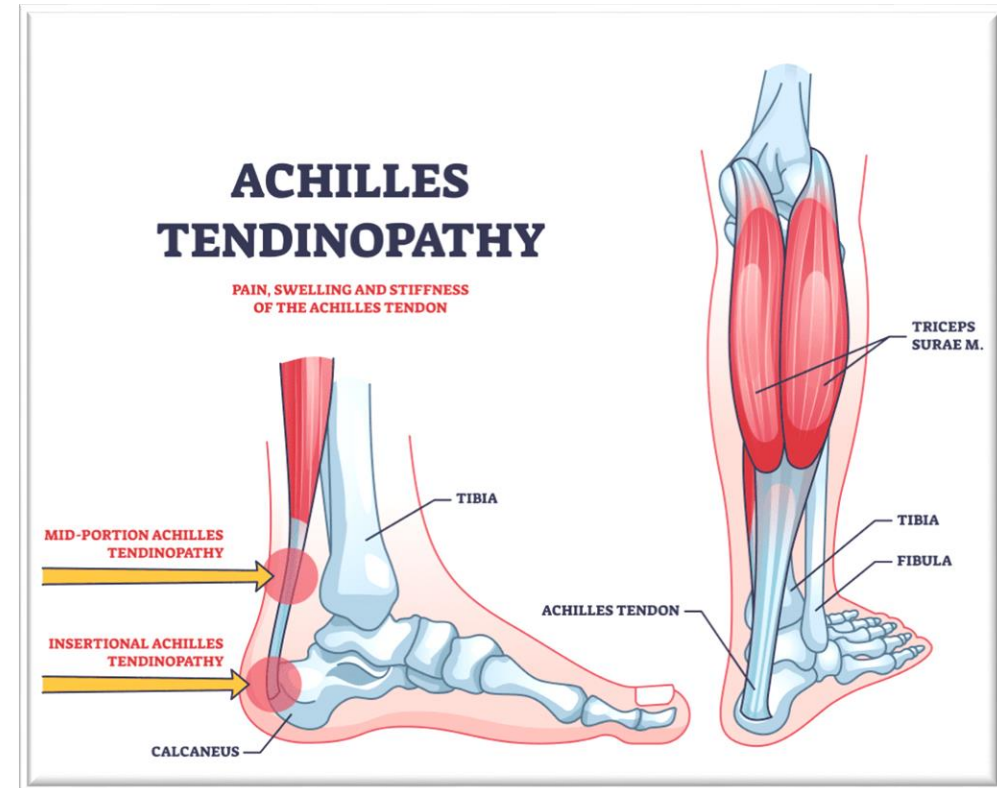


Figure 4: What is Achilles Tendonitis and Why Does It Hurt?
(Source: Stautberg, E. 2024:Online)

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Dislocation – joint displacement

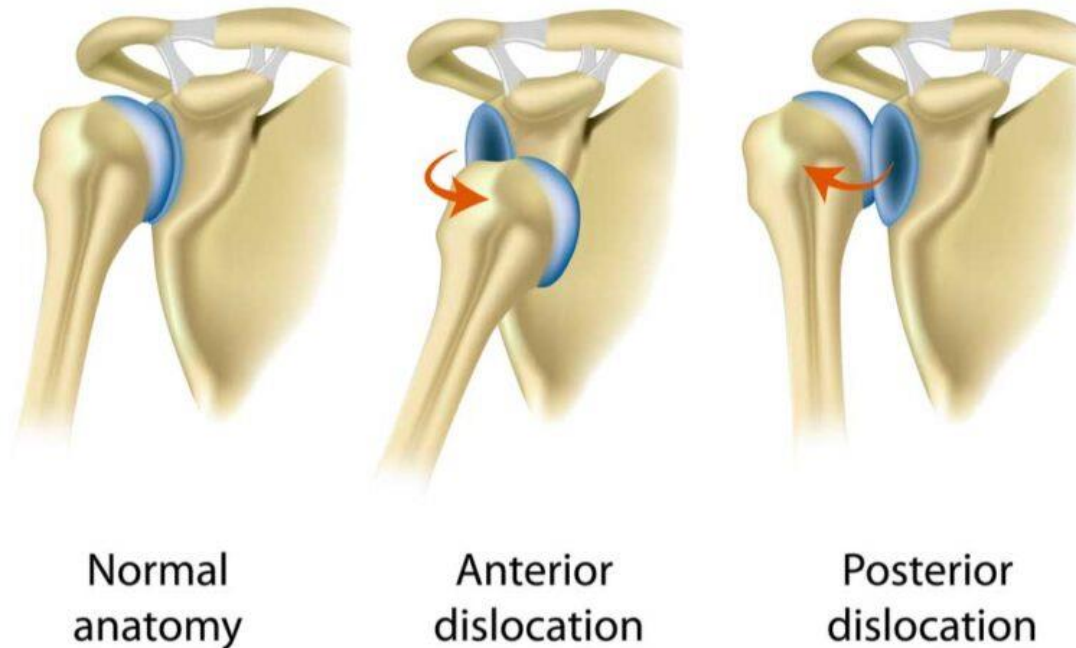
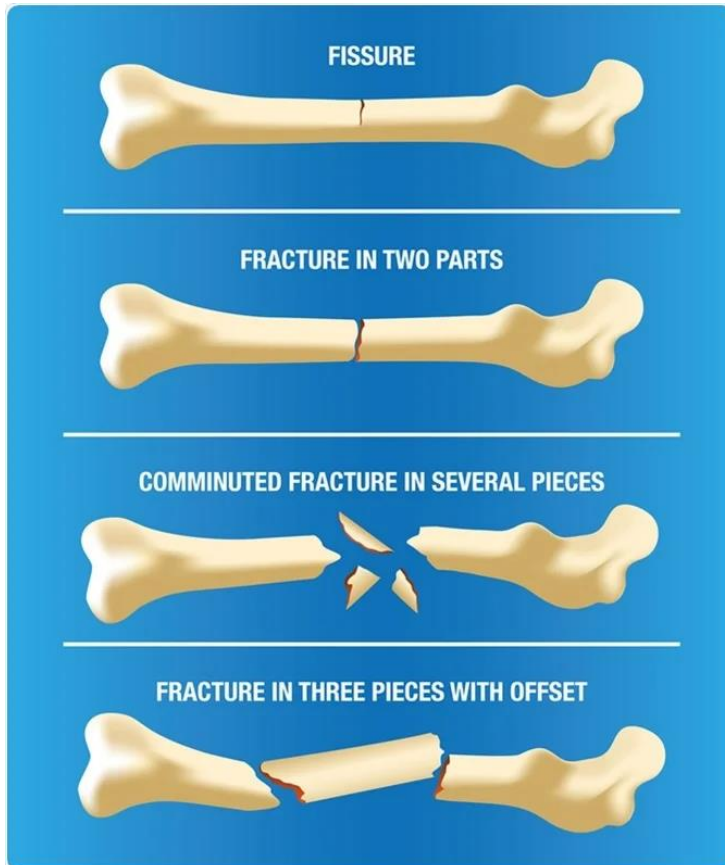


Figure 5: Dislocated Shoulder and Shoulder Instability
(Source: Nwchukwu, B. 2024:Online)

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Fracture – broken bone



Types of Fracture:

Open-simple fracture

Closed- compound fracture

Incomplete fracture

Complete fracture

Figure 6: Broken Bone First Aid
(Source: Laguipo, A.. 2022:Online)



Preventing Overuse of Sports Injuries:

1. Previous injury
2. Poor conditioning
3. Muscle imbalances
4. Anatomical abnormalities



...Preventing Overuse of Sports Injuries:

5. Nutritional factors
6. Errors in training or exercise
7. Inappropriate footwear
8. Improper workout structure



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Taping – the application of **adhesive elastic tape (stretchable)** or **non-elastic (rigid)** in order to provide support and protection to soft tissues and joints, and to minimize swelling and pain after getting injured



Role of Taping

- First Aid
- For injuries
- Exercise



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Principles of Tape Application

- Tear the tape
- Follow the contours of the limb
- Maintain the area to be taped in a pain-free but functional position
- Overlap by $\frac{1}{2}$ of the width of the tape

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Kinesiotape



Figure 7: KT TAPE: How it works.
(Source: Dhaliwal, P. 2022:Online)

- Educate weak muscles
- Limits over contraction of muscle
- Decrease cramp
- Decrease inflammation
- Improve range of motion
- Improve joint function
- Reduce Pain



When not to Apply Tape?

- Taping an undiagnosed injury
- Apply over broken or irritated skin



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Taping terms:

- 1. Anchors-** the first strip of tape to be applied above and below the injury site in which subsequent strips are attached.
- 2. Lock strips** – to secure the cut-end of the tape which tends to roll back on itself. Applied over anchors.
- 3. Heel locks-** to give additional support to subtalar and ankle joints.

What is Splinting?



Figure 8: A guide to an improvised femoral traction splint in a resource-limited setting
(Source: Swanepoel, S. et.al. 2021:Online)



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Splinting (*Movable, Rigid, Soft*)

1. Avoid movement of fractured site.
2. It avoids a closed fracture from becoming an open one.
3. It should be applied in such a manner to immobilize the joint above and below the injury site
4. Rigid splints must be generously padded.
5. If fracture is open, sterile dressings should be applied.
6. Extremity should be elevated and cold packs should be applied.
7. Improvisation is necessary.



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