

## In this Unit you will:

1. Learn about common sporting/exercise injuries and prevention techniques.
2. Learn about first aid treatment for minor sporting/exercise injuries.

## Sports/Exercise Injuries

Suffering an injury as a result of playing sports/exercising is not uncommon. There are two types of injury: Acute injuries, and Chronic Injuries.

### Acute Injuries

Acute injuries happen as a result of a sudden trauma to the body, for example a tackle in football, or colliding with another player in basketball. They can cause lots of damage to bones, muscles, tendons and ligaments and result in immediate pain, and usually swelling with a loss of function. They can be a result of:

- **Colliding:** with another player (as in a tackle) or with an object (such as a goal post)
- **Being hit:** usually by a ball (as in baseball, softball, basketball), a stick or racket (as in hockey or tennis) or sometimes an opponent (boxing)
- **Falling:** usually either at speed (like when cycling) or from a height (rock-climbing)

### Chronic Injuries

Chronic injuries are also known as overuse injuries and are a result of continuous stress on an area. Examples of overuse injuries are tendonitis, shin splints or tennis elbow. These injuries tend to come on gradually over a period of time and the athlete often can't recall when it first started hurting.

To try to avoid chronic overuse injuries you should make sure you get enough rest, work on your core strength, don't train too hard, make sure you wear the right footwear, have the right equipment for you and develop good techniques.

### Soft Tissue Injuries

Soft tissue is basically anything that isn't bone! So muscles, ligaments, tendons, skin, cartilage etc. Soft tissue injuries can be either chronic or acute. They can also be open or closed:

#### Open

Open injuries are when the skin is broken through cuts, grazes etc

#### Closed

Closed injuries happen when the skin stays intact, and the injury is underneath the skin. Here are some examples:

- **Sprains** - ligament damage. Ligaments attach bones to bones and keep a **joint** together. Sprains can occur as a result of a violent twisting or side-ways movement to the joint (such as when you roll the ankle over and sprain it)
- **Strains** - **muscle** damage. These are also known as pulled muscles and can vary in severity with some only causing minor damage and other tearing the whole muscle (a rupture)! These are usually caused by overstretching. The hamstrings are the most common example
- **Bruising** - bleeding underneath the skin. This usually happens as a result of an impact such as being hit with a cricket ball
- **Dislocations** - a **bone** is pulled away from the normal joint position. The most common example is the shoulder, where the humerus (arm bone) is pulled out of the socket. This can cause damage to the surrounding soft tissues and must be scanned with an MRI before being repositioned
- **Cartilage tears** - Cartilage, the white connective tissue between two bones, is torn. Cartilage within the knee is most commonly injured. This happens through violent twisting or impacts which force the knee out of line

### Fractures

Fractures are breaks or cracks in the bone. A broken bone is the same as a fracture! They can also be either open or closed.

- Closed fractures are more common and mean that the skin isn't broken
- Open fractures involve the broken end of the bone coming through the skin
- All fractures usually cause bruising and swelling because of associated damage to surrounding blood vessels
- They are also very painful because nerves within the bone are damaged
- A stress fracture is a thin crack in a bone, which can be caused by overuse and continuous stress to the bone. These are common in the legs of runners and soldiers. Stress fractures are the only form of chronic bone injury, all other fractures are acute

### Injury Prevention

It is possible to prevent a large number of injuries. Just follow these tips to help you stay injury free!

[http://www.teachpe.com/gcse\\_training/injuries.php](http://www.teachpe.com/gcse_training/injuries.php)

## Preparation

- Remove any jewelry, watches or loose clothing that could get caught
- Make sure you have the right equipment and that it is all in good condition
- Inspect the playing area to make sure it is in good condition - fill in any divots and remove any debris or litter
- **Warm-up** thoroughly before you start

## While playing

- Make sure you know the rules of the game and stick to them
- Use good technique to avoid overuse injuries
- Only play with people who are of the same ability, size and strength as you
- Wear the right footwear for the sport and the conditions
- Wear any protective equipment where possible
- Participate using good sportsmanship, and abide by the rules

## At the end

- **Cool down** after playing to help your body return to normal
- Get plenty of rest before you play again

## Common Injuries

Here are some of the most common sporting/exercise injuries:

**Sprained ankle** - Ligament damage to the ankle, usually from rolling or 'going over' on it

**Plantar fasciitis** - Pain in the heel and arch of the foot, common in runners

**Tennis elbow** - Common in tennis players but also any sport using the wrist

**Shoulder dislocation** - Where the humerus (upper arm bone) pops out of the socket

**Shin splints** - Pain at the front, inside of the lower leg, common in runners

## Treatment of Common Exercise Injuries

### PRICE

PRICE is the protocol used for the treatment of **soft tissue injuries**. It stands for:

**Protect** –Protect the injured area the best you can until you can be evaluated. This may include an Ace wrap, taping, or bracing.

**Rest** - Stop playing immediately and take any weight off the injured area

**Ice** - Apply ice to the injured area. This helps to slow the bleeding and swelling by making the blood vessels constrict

**Compression** - Using a compression bandage on the area will also help to control swelling. Make sure it is not so tight that it cuts off the circulation altogether!

**Elevation** - Keeping the injured part raised above the heart helps swelling drain away and reduce blood flow to the area

### Treatment for other conditions

#### Hyperthermia

This is where the body temperature rises too high and usually occurs following exercising in a hot climate. Signs of this are a weak pulse and pale, clammy skin. To treat this, lay the athlete down in a cool place and give them a drink before seeking medical advice.

#### Hypothermia

This is the opposite, where body temperature goes too low (below 35 degrees C). Symptoms include an irregular heart rate, stiff muscles and possible unconsciousness. You must slowly raise the body temperature by removing wet clothing and wrapping in a warm, dry blanket, and giving warm drinks and maybe a warm bath.

#### Cramp

Cramp is an involuntary contraction of a muscle which can be very painful. It is caused by a lack of blood flow to the muscle, or a lack of salt minerals within the blood. You can treat it by gently stretching and massaging the muscle.

#### Concussion

This is caused by a knock to the head which can cause dizziness, memory loss, disorientation and sometime unconsciousness. If conscious they should be kept under observation for 24 hours. If unconscious they should be put in the recovery position and an ambulance called.

#### Stitch (stitch in the side)

Stitch is caused by a cramp of the diaphragm and is a pain in the side of the abdomen. It usually comes on during hard exercise, especially if you have eaten recently. If this happens, stop and taken some deep breaths until the stitch goes away. You can usually resume exercise after a short break

**1-9 DEFINE THE FOLLOWING TERMS:**

1. Acute Injuries

2. Chronic Injuries

3. Soft Tissue Injuries

4. Fractures

5. Sprains

6. Strains

7. Bruising

8. Dislocations

9. Cartilage tears

10. What does P.R.I.C.E. represent?

11. What is the difference between an open injury vs a closed injury?

**12-14. BRIEFLY DESCRIBE WHAT YOU CAN DO TO PREVENT INJURIES BEFORE, DURING, AND AFTER EXERCISE.**

12. BEFORE

13. DURING

14. AFTER

**15-19. BRIEFLY DESCRIBE THE RECOMMENDED TREATMENT FOR THE FOLLOWING:**

15. Hypothermia

16. Cramp

17. Concussion

18. Stitch in the side

19. Soft tissue injuries?