



R041 – Reducing the risk of sports injuries

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Learning Outcomes

- **LO1 - Understand different factors which influence the risk of injury**
- LO2 - Understand how appropriate warm up and cool down routines can help to prevent injury
- LO3 - Understand how to respond to injuries within a sporting context
- LO4 - Understand how to respond to common medical conditions

Risk of Injury and prevention



How can you prevent injuries in sport?

Risk of Injury

Taking part in sport places the body under a huge amount of stress. Knowing the potential risks and how to avoid them is important.



Think. Pair. Share – Other than a warm up, how can injury be prevented during sport?

Extrinsic Factors

These particular factors external to the individual and are often out of a performer's control.

1. Type of activity – Contact sports will present an increased injury risk.

Contact sports	Non-contact sports
Rugby	Swimming
Boxing	Volleyball
Martial arts <i>i.e. karate/judo</i>	Table Tennis
Fencing	Gymnastics



Think. Pair. Share – How are non-contact sports made safer?

Extrinsic Factors

2. Coaching or supervision – The skills and actions of a good coach will maintain performer safety.

- Poor or incorrect coaching of techniques may cause mild/severe injuries.

i.e. Teaching a forward roll incorrectly



- Ineffective communication skills may lead to unclear instructions or fail to highlight the risks involved.

i.e. poor instructions when coaching a rugby tackle



Extrinsic Factors

3. Correct application and adherence of the activity rules/regulations - Rules and laws in sport are not just there to ensure fair play, they are also designed to protect participants.



Think. Pair. Share – Select a sport and name as many rules as you can that relate to injury prevention.

Extrinsic Factors

Officials make sure that rules are kept and discipline players when necessary.



Think. Pair. Share – What are the consequences of rule breaking in sport?

Extrinsic Factors

4. Environmental factors – These factors are highly variable and may change throughout the course of a match or training session.

(i) Weather: Athletes working for a long time in very hot or very cold conditions can cause injury. Rain, wind and snow are also common.



Think. Pair. Share – Name a series of sports and discuss whether the event continues when faced with bad weather.

Extrinsic Factors

(ii) Playing surfaces and surrounding areas: All playing areas should be safe and free from hazards and all users should be inducted into how to use the equipment safely.



Playing fields - Pre training/match checks should include a check for sharp or dangerous implements on the playing surface.

Extrinsic Factors

Swimming pool: Potential hazards are controlled by rules that are enforced by staff. No running or diving into certain areas of the pool maintain the health and safety of individuals.



**No Running
Allowed in
Pool Area**



Extrinsic Factors

(iii) Other participants: Often injury can occur as a result of dangerous play by others taking part. The open nature of sport can make gameplay unpredictable.

Sport is often categorised into weight, grading, age and gender so competition is fair.



Extrinsic Factors

The world of **performance equipment** is continually changing and the use of technology and analytics is one of the fastest growing in modern day sport.



Think. Pair. Share – What technology changes have been seen in sport in the last 5 years?

Extrinsic Factors

Sports **equipment** is now lighter and more durable enabling a better performance from participants.

Examples of equipment advancements in the last 5 years are:

- **Running shoes**
- **Compression clothing**
- **Tennis rackets**
- **Golf clubs**



Extrinsic Factors

5. Equipment – Action and high contact sports require certain pieces of equipment to support and protect the performer.

Protective equipment:

Compulsory items are worn by individuals for player safety and to prevent injury.

i.e. shin pads for football.



Extrinsic Factors

Protective equipment:

Sport	Protective equipment necessary
Boxing	Gum shield, headgear, high ankle non grip boots
Skiing	Helmet, Goggles, Gloves, Ski boots & warm clothing
Cycling	Helmet,
Swimming	Goggles
Cricket	Helmet, pads, gloves, arm/leg guards
Hockey	Gum shield, shin pads, gloves, helmet/padding (GK)

Think. Pair. Share – Consider the protective equipment necessary for the sports above.

Extrinsic Factors

Performance equipment: These are the items needed to play the sport. Technological advances are continuing to improve performance using new materials and the latest designs.

i.e. Tennis racket, golf clubs, footballs, javelins and bicycles.



The aim is to improve control, speed and distance.

Extrinsic Factors

Clothing/footwear: Wearing the correct clothing and footwear is essential to all sports. This will **protect** and **assist performance**.

i.e. football boots and lightweight shirts.



Extrinsic Factors

6. Safety Hazards - All dangers should be fully assessed and measures put in place to limit the risk of injury.

(i) Risk Assessments: This is a process where hazards are identified, risks evaluated and suggestions put forward to eliminate or control the hazard.



What can happen if risk assessments are not carried out?

Extrinsic Factors

Risk assessment template:

Risk assessment		
Date of event:	Name of officer:	
Venue:	Description of event:	
	Hazard/concern	Action taken
Equipment to be used:		
Facilities/environment:		
Activity undertaken:		

Task: Complete the risk assessment form for an event within school or in the local community.

Extrinsic Factors

(ii) Safety checks – Duties of a coach/sports leader also include safety checks around the venue and that the equipment is in good working order.



(iii) Emergency action plans – Many events will have emergency services onsite but plans for evacuation and fire assembly points must be made clear to participants.

Extrinsic Factors

There are different people that carry out various roles within sport and each have different responsibilities in order to minimise the risk of injury.

Role	Responsibility with regards to safety and reducing the risk of injury
Performer	Playing by the rules, abiding by the official's decision, wearing correct kit.
Coach	Coaching correct technique, ensuring performers play by the rules.
Spectator	Behave appropriately, no hooliganism or use of threatening or abusive language.
Referee	Pitch and equipment in good condition. Making sure players abide by the rules and sanction those who break rules.
Club/s participating	Ensure the correct staff are in place to support performers – physios/ medical team. Deal with inappropriate behaviour from players.
Governing body	Upholding the laws and morals of the game, issuing guidance to clubs. Adopting new ideas i.e. Video Assistant Referee (VAR)

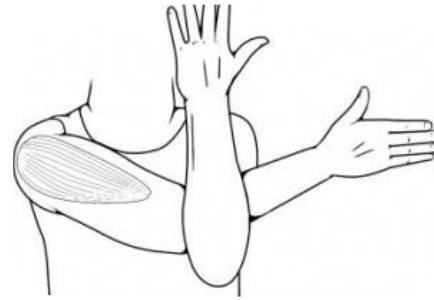
Think. Pair. Share – Consider the roles above and list their responsibilities to health and safety.

Intrinsic Factors

1. Physical Preparation – This refers to whether the body is physically prepared for particular sports competitions and at what level. The following factors can affect the risk of injury:



Pre-screening



Warm up, stretching
and cool down



Training/Fitness
levels



Overuse



Muscle imbalances

Intrinsic Factors

2. Individual Variables – Understanding the following factors will mean training is set at the right level and account for an individual's strengths and weaknesses. This can help prevent injuries from occurring.

- Gender
- Age
- Flexibility
- Nutrition
- Sleep
- Previous injuries



Intrinsic Factors

3. Psychological Factors – These are the mental factors that help or prevent sportspeople from being in the right 'frame of mind' to perform well.

- Motivation
- Aggression
- Arousal
- Anxiety



Think. Pair. Share – Think of a sport, how would the factors above effect a performer and help prevent the risk of injury?

Intrinsic Factors

4. Posture/Poor muscle tone – Muscle tone refers to when muscles are in a **state of slight tension** and are ready for action. Regular training tones muscles and helps to create good posture.

Other posture related factors that may cause injury are:

- **Poor stance/gait** – Hunched shoulders and walking issues.
- **Sitting position** – slumping and slouching at a desk.



Intrinsic Factors

- **Lack of exercise** – Muscle tone is developed by regular exercise, making daily tasks such as shopping and gardening much easier. It also helps to prevent injury as good posture reduces the strain on muscles, tendons and ligaments.



- **Physical defects** – weakened muscles around an injured area can cause re-occurring injuries.



Intrinsic Factors

- **Fatigue** – Working muscles gradually offer less support to the skeleton. This has implications for length/intensity of training and recovery time.

- **Emotional factors** – Low self esteem and confidence can affect an individual's posture.



Intrinsic Factors

- **Clothing or footwear –**
Trainers must be supportive to encourage the right posture when exercising. Shoes with heels effect the body's alignment and should be avoided.

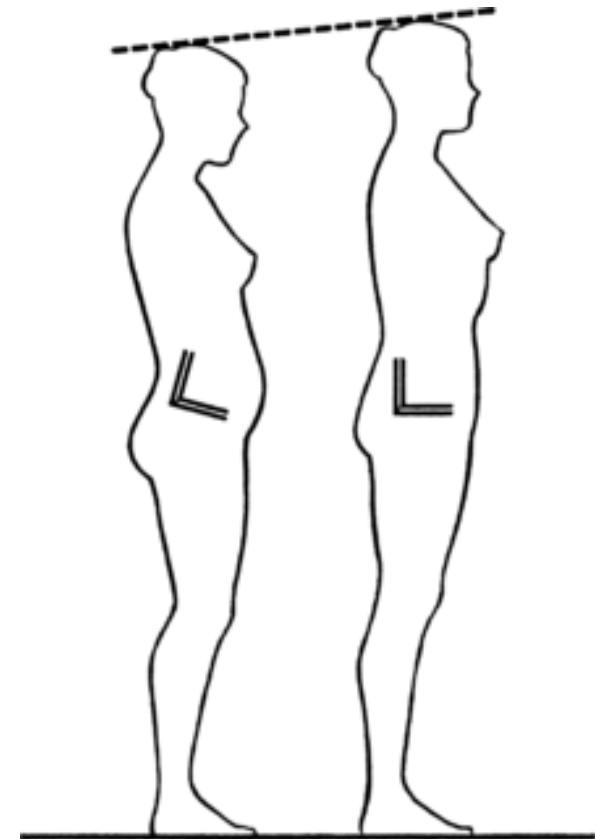


Intrinsic Factors

5. Sports related injuries related to posture – Injuries related to poor posture tend to be overuse injuries which are build up over a period of time, rather than the more sudden, acute forms of injury. Here are some of the most common:

Pelvic tilt:

Excessive sitting causes the muscles that control the position of the pelvis to get tight, overactive and weak. As a result, there is an imbalance of the forces around the pelvis.



Intrinsic Factors

Rounded shoulders – Rounded shoulders are typically caused by poor posture habits, muscle imbalances and focusing too much on certain exercises, such as too much focus on chest strength while neglecting the upper back.



Intrinsic Factors



Think. Pair. Share – What is the difference between the three posture defects above and predict the possible injuries they might lead too?

Intrinsic Factors

Lordosis – This is an excessive inward curve of the spine. It differs from the spine's normal curves at the cervical, thoracic, and lumbar regions. It is located in the lower back region.



Kyphosis – This is an abnormally excessive curvature of the spine. It is located in the upper back region.



Intrinsic Factors

Scoliosis – This is a medical condition in which an individual's spine has a sideways curve. Mild scoliosis does not typically cause problems, while severe cases can interfere with breathing.



Retrieval Practice

What is the difference between an intrinsic and extrinsic factor which can influence the risk of injury?

Describe two extrinsic factors that can prevent injury in sport.

Factors which influence the Risk of Injury

Explain the psychological factors which can help prevent the risk of injury.

Using examples, how can poor posture lead to injury?

Exam Question Application

1. Identify two aspects that would be checked during a risk assessment. (2)

(a)

(b)

2. Explain how emotional factors can affect someone's posture.

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.....

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..... (2)

Exam Question Application

3. Using examples, explain why the following can help to reduce or prevent sport injuries.

(a) Following the rules (2)

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.....

.....

(b) Equipment checks (2)

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.....

.....

Exam Question Application

4. Identify each of the back conditions shown in the following pictures.

(3)



(a)



(b)



(c)

Exam Question Application

Marks Scheme:

1. Equipment / facilities 2. Jewellery 3. Weather or temperature 4. Participants' age / health / medical conditions / previous injuries 5. Participants' clothing / footwear or protective equipment 6. Environment / (playing) surface / floor or surrounding area or litter.

2. Low self-esteem / lack of confidence / shy or has low confidence or is anxious/nervous / upset / depressed / sad
Can cause someone to look down / hunch forward or leading to round shoulder / poor posture (in the upper body) or Slouching.

Exam Question Application

Marks Scheme:

3. (a) Following the rules:

Explanation: fair play/playing by the rules to stop/reduce injury; rules are there for a reason (to ensure safety of performer).

Possible examples: high tackles in rugby (facial and neck injuries); two footed tackle in football (lower limb injuries); below the belt punch in boxing; un-sportsmanship behaviour in sport; stamping in rugby.

(b) Equipment checks:

Explanation: making sure the equipment is safe so that equipment does not break and cause injury.

Possible examples: goal posts (FA regulations) collapsing on players; basketball blackboards breaking; rugby posts without padding.

Exam Question Application

Marks Scheme:

4.

(a) **Kyphosis**

(b) **Lordosis**

(c) **Scoliosis**