

Cambridge Nationals Sport Science Unit R180

Topic Area 1 Different Factors which Influence the Risk and Severity of Injury

Name: _____



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Introduction

This revision work-booklet includes topic overview sheets and exam questions.

The topic overview sheets include a range of key information, images and diagrams in order to help you revise each topic. There are lots of gaps within these sheets which you will need to fill in. Lets look at an example.

As you can see, there are gaps in the description of head injuries shown below.

Head Injuries

_____ is normally caused by a blow to the head
Symptoms include headaches, loss of _____ and
slurred _____

You simply need to fill in the gaps in order to complete the definition.

Head Injuries

Concussion is normally caused by a blow to the head
Symptoms include headaches, loss of **balance** and
slurred **speech**

The example below shows that you need to complete the bullet points covering the reasons for aggression:

Reasons for Aggression



After filling in the answers, the bullet points will look like this:

Reasons for Aggression

- Level of performance
- Retaliation
- Pressures to win
- Decisions of officials
- Performance enhancing drugs



You will also be required to answer a number of exam questions throughout the booklet. Read each question carefully and pay close attention to the amount of marks available.



Advice on Correct



Expertise



Contact Sports

The nature of some sports can make them more dangerous than others

High quality coaching can reduce the chance of an injury occurring. Coaches can provide....

Support

Instruction

Direction

Knowledge

Guidance

contact Sports



Coaching/Instruction

Type of Activity

R180 TA1 - Part 1 Extrinsic Factors Influencing Injury



Environmental Factors

Weather

Environmental factors can increase the chances of injury taking place in certain sports

Temperature

Playing

Interaction with officials, spectators and other participants



Equipment



Shin Pads

Goggles

Gum

Specialist Shoes

Knee Pads

Sports tend to have specific sportswear necessary to carry out activities

Helmet

Types of Sport Activity

Organise the sports into contact and non-contact

Contact Sports	Non-contact Sports



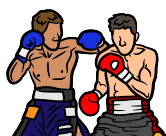
Rugby



Taekwondo



Basketball



Boxing



Netball



Tennis



Football

Contact sports have a _____ risk of injury from physical contact in defence, attacks or _____. This risk can be reduced by wearing _____ equipment & clothing and officials awarding _____ when unruly contact is made.

However, injuries also occur on non-contact team sports like netball including muscle strains and _____ such when running or jumping.

In net games like Tennis, the most common injuries are _____ injuries from repeated actions and injuries from twisting too quickly.

In individual sports such as gymnastics and dance, the most common injuries occur as a result of _____ incorrectly or falling. These include sprains and _____ in the knee and ankle.

Also, injuries can occur in both contact and non-contact sport through contact with sporting _____.

Fill in the gaps with the following words:

Higher	Overuse	Equipment	Fractures	Sprains
Tackles	Safety	Penalties	Landing	



Coaching/Instructing/Leading

Factor	Explained Examples
Technique	<p>Coaching good tackles in football and rugby -</p> <ul style="list-style-type: none"> • Avoid injuries by having better timing and _____ in tackles • Players techniques will be _____ for both themselves and their opponents <p>In sports involving jumping, coaches should ensure feet are planted correctly and knees are _____ on landing to avoid excess _____ on the ankle joint.</p>
Rules and Regulations	<p>It is the responsibility of a coach to check:</p> <ul style="list-style-type: none"> • Players know _____ and _____ • They wear protective _____ and clothing • They are playing in the correct _____ group • Players do not play with pre existing _____
Experience	<p>A more experienced, fully qualified coach can:</p> <ul style="list-style-type: none"> • Readily identify risky _____ • _____ injuries for technique and form • Provide advice on correct technique and use of _____ to reduce the risk of acute and chronic injuries
Communication	<p>Instructions needs to:</p> <ul style="list-style-type: none"> • Be _____ and easy to understand • Cover all _____ and technique points • Heard by all performers, especially when coaching _____ groups.
Supervision	<p>Amount of supervision needed depends on the _____ of participants and the _____ level of activity.</p> <p>Poor supervision includes tidying up whilst participants are still training and no checking form.</p>
Ethical Standards/ Behaviour	<p>Needs to ensure their players:</p> <ul style="list-style-type: none"> • Comply with rules and _____ • Reduce the 'win-at-all-costs' _____ • Manage their _____ and self control. <p>They need to also ensure they follow these themselves so participants do not copy aggressive or reckless behaviour.</p>



Match sport to likely injury from poor technique

Rugby

Weightlifting

Wrestling

Diving

Concussion

Soft-tissue damage from impact

Muscle Strains

Dislocations and Fractures

Give an example of tactics that can lead to injury in the following sports

Rugby	<hr/> <hr/>
Football	<hr/> <hr/>
Netball	<hr/> <hr/>
Cricket	<hr/> <hr/>



Environment

Temperature Conditions

Hypothermia

Heat exhaustion

Dehydration

Heat stroke

The body temperature drops very low due to exposure to very cold conditions.

When the body is unable to regulate body temperature, leading to fever.

The body loses more water than it takes in and causes headaches, dizziness and loss of concentration

Fatigue and collapse from prolonged exposure of heat

Human Interactions

<u>Officials</u>	<u>Other performers</u>	<u>Spectators</u>

Carry out safety checks on surface and surrounding area, and the equipment and clothing of participants.

Needs to effectively communicate in order to avoid friction.

Some may behave aggressively or irresponsibly, increasing risk of injury

Standing too close to play area can increase the risk of injury through collisions.

Aggressive supporters can encourage deviance in performers including retaliation.

All need to wear appropriate safety equipment and clothing, including removing jewellery.

Interact with coaches, players and spectators to explain decisions.

Team sports involve lots of performers in a space which comes with risks of collisions or fouls.

Good spectators encourage good performance.



The player surface and surrounding areas need to be checked before play can start.

What are the main hazards in the following images? What should be done in response?



- _____
- _____
- _____
- _____



- _____
- _____
- _____
- _____



- _____
- _____
- _____
- _____



- _____
- _____
- _____
- _____

4G Synthetic Pitches

The 4G synthetic pitch will be a _____ surface, especially during the _____ months. This can cause a number of problems such as _____ injuries when trying to twist at speed or fractures when falling onto the ground. The pace of the game will be _____ on the 4G surface which can lead to more _____ collisions. This will also lead to injuries. The surface will also lead to _____ such as cuts and grazes.

Winter

Quicker

Abrasions

Powerful

Harder

Knee



Equipment

Organise the equipment into protective, performance, clothing and footwear



Shin pads



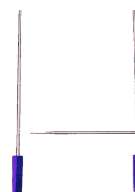
Harness



Sticks
e.g. lacrosse



Gumshield

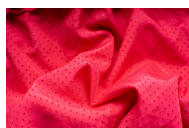


Goal post
padding



Trisuit

Protective	Clothing
<p>To protect lower body during a tackle - _____</p> <p>Protect teeth - _____</p> <p>Protect from head injuries - _____</p> <p>Protect the eyes - _____</p> <p>Reduce impact if players collide with equipment - _____</p>	<p>Minimises air resistance - _____</p> <p>Important in gymnastics because they are skin tight so cannot catch on equipment- _____</p> <p>Important in hot weather to prevent overheating - _____</p> <p>Quick-drying fabric and small pad for protection during cycling - _____</p>
Performance	Footwear
<p>Checked for hardness, shape and damage - _____</p> <p>Important when climbing for practicing air-bound moves in gymnastics and diving - _____</p> <p>Checked for damages before uses - _____ & _____</p>	<p>Needed for playing on astroturf and indoor sports - _____</p> <p>Needed for playing on hard, dry ground - _____</p> <p>Needed for wet and boggy pitches - _____</p>



Loose, breathable
fabric



Trainers



Moulded studs



Soft ground studs



Helmet



Ball



Athletics vest



Leotard



Bike



Ski Goggles

1 Markers

1. Which of the following is an extrinsic variable. (1 mark)

- A) Environment
- B) Motivation
- C) Arousal
- D) Mental rehearsal

2. Identify which one of the following is a contact sport.
(1 mark)

- A) Swimming
- B) Running
- C) Netball
- D) Tennis



3. Suggest one reason that a 4G synthetic pitch may increase the risk of injury. (1 mark)

2 Markers

4. Explain the difference between performance and protective equipment. (2 marks)



5. Identify a piece of performance and protective equipment in the sport of cricket. (2 marks)



6. Describe two ways an official should check the player surface and surrounding area to decrease the risk of injury. (2 marks)

3 Markers

7. State three ways in which the environment can increase the risk of injury (3 marks)



8. Outline three ways an experienced coach can reduce the risk of injury (3 marks)



4 Markers



9. Explain two ways in which poor supervision during a sports session can increase the risk of injury (4 marks)

10. Using two practical examples, explain how clothing and footwear can lead to injury in sport. (4 marks)

How clothing/footwear can increase the risk of injury	Sporting Examples



Gender

Nutrition

Arousal

Motivation

It is important to know your own strengths and weaknesses so that injuries can be avoided

Events during a match can have an impact on the psychological state of a performer

Age

Previous

Sleep

Anxiety

Aggression

Individual Variables

Psychological Factors

R180 TA1 - Part 2 Intrinsic Factors Influencing Injury

Selective Attention

An elite performer will be able to block out the '_____ information' from the environment

Reasons for High Arousal Levels

1. Increased number of _____
2. Significance of supporters e.g. family/friends
3. Must win in order to prevent _____
4. Under pressure to _____ position within a team
5. Media presence

Different _____ strategies can be used to control aggression

Mental Rehearsal

Performers practice movements of skill in _____ so they can ready to perform it

Imagery

Performers create a successful _____ of an action so they can _____ the feel of movements

Direct aggression involves _____ contact with others

Reasons for Aggression

- Level of performance
- Retaliation
- Pressures to win
- Decisions of officials
- Performance enhancing drugs

Channelled aggression is where feelings of aggression are diverted into more _____ actions. These feelings are controlled and can be turned off.



Individual Factors

Match Up the Intrinsic Factor to the correct explanation

Age

Gender

Experience

Weight

Low Fitness Levels

Poor Technique

Previous Injury

Women tend to be more flexible than males, whilst males tend to be stronger.

Contact sports will be separated into male and female sports.

Provides participants with knowledge of rest days, how to use equipment, dietary habits, rest and recovery and injury prevention strategies.

The older the participant, the more prone to injury.

Children will need specialist equipment such as lighter bats and lighter balls to prevent injury

**Cardiovascular - fatigue more easily
Strength - damages posture
Flexibility - easier to overstretch**

**Being overweight is linked with health implications and stress fractures in lower legs.
Being underweight is associated with fatigue and poor concentration which increase risk to injury through poor technique and accidents.**

Previous injuries can recur. This means an area injured and recovered in the past is more susceptible to the injury occurring again because:

- **Of a loss of fitness**
- **Damaged tendons and ligaments**
- **Strength in soft tissues around previous injuries may have not redeveloped properly in rehabilitation.**

Good technique reduces the risk of injury whereas poor technique can put strain on joints and tendons, causing acute and chronic injuries.



Fill in the Gaps

Factor	Explanation
Not enough calories (nutrition)	Not enough calories (or carbohydrates) - insufficient _____ to safely complete training or sporting event. This can cause a lack of _____ and focus, increasing the likelihood of technique being poor and making mistakes which leads to _____.
Too many calories (nutrition)	Consistent overconsumption of calories can lead to excess _____ development. This will add additional pressure onto _____, which can make injuries such as stress _____ more likely.
Mineral of vitamin deficiencies in diet (nutrition)	Leads to _____ bones and muscles. This makes them more susceptible to injuries such as stress _____ and muscle _____.
Lack of water (hydration)	Lack of water - Leads to _____. Symptoms include fatigue, _____ and lack of concentration which contribute to an increased injury risk through accidents.
Medical Conditions	<p>Medical conditions increase the risk of injury in various ways. This includes _____ conditions such as asthma and conditions which develop during exercise such as _____.</p> <p>Information about different medical conditions can be found in Topic Area 5.</p>
Sleep	<p>Sleep is important for:</p> <ul style="list-style-type: none"> • _____ following intense exercise • Avoiding _____ during the day <p>Poor sleep can lead to:</p> <ul style="list-style-type: none"> • Fatigue, reduced _____ and irritability, which affects judgement and _____ which can result in dangerous play. • Lack of muscle recovery, making the more _____ to injury.



Psychological Factors

Being in the wrong frame of mind increases the risk of injury.

Match up the psychological factor to the correct explanation of how it can increase the risk of injury.

High motivation

Not committing to a move or action properly can increase the chance of collisions or injuries from improper technique.

Low motivation

Increased drive can result in reckless decisions such as a dangerous challenge for a ball.

Channelled Aggression

Results in deliberate deviant physical contact with players or equipment

Direct Aggression

This is a response to a threat. This can increase anxiety or aggression, both of which can increase the risk of injury.

Stress

Results in positive actions, but the heightened aggression increases the chance of the an injury occur through forceful actions.

Anxiety

Being nervous or worried can reduce effort, concentration and focus.

Confidence

Too much can lead to carelessness which makes an injury more likely.

Too little can lead to not committing to actions which can make contact or technique more dangerous.



Reasons for Aggression

Factor	Explanation
Level of Performance	<p>Description -</p> <p>Example -</p>
Retaliation	<p>Description -</p> <p>Example -</p>
Pressure to win from performers/coach/spectator	<p>Description -</p> <p>Example -</p>
Decisions from officials	<p>Description -</p> <p>Example -</p>
Performance enhancing drugs	<p>Description -</p> <p>Example -</p>

Frustration at the result or performance quality of yourself or your teammates.

Side effects of steroids include increase aggression.

Revenge for a an injustice such as a foul or aggression from another player.

If players believe decisions are unfair, this can lead to frustration and thus aggression.

Expectations to do well can increase nerves which may lead to over arousal and aggression.



1 Marker

1. Which one of the following is generally true? (1 mark)

- A) The older an individual, the more prone to injury
- B) An experienced player has an increased risk of injury compared to an experienced player
- C) A lack of carbohydrates can lead to weak bones
- D) If a player has recovered from an injury, they are less likely to sustain the same injury again

2. Which of the following can be defined as 'a response to a threat'. (1 mark)

- A) Anxiety
- B) Stress
- C) Direct Aggression
- D) Channelled Aggression

2 Markers

3. State two ways the age of a performer can decrease the risk of injury (2 marks)



4. State two ways in which the weight of a performer can increase the risk of injury (2 marks)



5. Explain the difference between direct and channeled aggression (2 marks)

6. A referee awards a penalty to a rugby team who were offside. Suggest how this decision could lead to injury (2 marks)

3 Markers

7. State three mental strategies that can reduce the risk of injury (3 marks)

8. Explain the importance of fitness levels of a performer in reducing the risk of injury (3 marks)



4 Marker

9. Explain how arousal can increase the risk of injury (4 marks)

[illegible]

8 Marker

10. Analyse how intrinsic factors influence the risk of different types of injury in rugby players.

In your response, you should include practical examples.

This image shows a full page of white paper with horizontal black lines, resembling notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Lined writing area with 30 horizontal lines.



UNIT CHECKLIST

Different Factors which Influence the Risk of Injury

EXTRINSIC FACTORS

Types of Sports Activity:

- How different sporting activities can influence types of injury

☐

Coaching/Instructing/Leading:

- Knowledge of techniques/rules/regulations
- Experience
- Communication
- Supervision
- Ethical Standards/Behaviour

☐

Environment:

- Weather/Temperature Conditions
- Playing surface (natural and artificial) and surrounding area
- Human Interaction
 - Other performers/participants
 - Officials
 - Spectators

☐

Equipment:

- Protective equipment
- Performance equipment
- Clothing
- Footwear

☐

Compare and contrast how different extrinsic factors can influence the risk and severity of injury.

☐

Understand how some extrinsic factors can influence other extrinsic factors or part of the same extrinsic factor.

☐

UNIT CHECKLIST

Different Factors which Influence the Risk of Injury

INTRINSIC FACTORS

Individual Factors:

- Gender
- Age
- Experience
- Weight
- Fitness Levels
- Technique/Ability
- Nutrition/Hydration
- Medical Conditions
- Sleep
- Previous/Recurring Injuries

☐

Psychological factors:

- Motivation
- Arousal
- Anxiety/Stress
- Confidence
- Aggression: Direct and Channelled

☐

Reasons for Aggression:

- Level of Performance
- Retaliation
- Pressure to win
- Decisions of officials
- Performance Enhancing Drugs

☐

Mental Strategies:

- Mental rehearsal
- Imagery
- Selective Attention

☐

Compare and contrast how different intrinsic factors can influence the risk and severity of injury.

☐

Understand how some intrinsic factors can influence other extrinsic factors or part of the same intrinsic factor.

☐



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