

Contents - Learning Outcome 1 – Understand different factors which influence the risk of injury

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Extrinsic factors - SCEET

1. **Safety hazards**
2. **Coaching and supervision**
3. **Environmental**
4. **Equipment**
5. **Type of Activity**

Intrinsic factors - PIPPS

1. **Physical preparation**
2. **Individual variables**
3. **Psychological factors**
4. **Posture and causes of poor posture**
5. **Sport injuries related to poor posture**

Extrinsic Factors	Consideration 1	Consideration 1	Consideration 1
S afety Hazards	Risk Assessment	Safety Checks	Emergency Action Plan (EAP)
C oaching and Supervision	Incorrect Technique	Ineffective Communication	Not following the Rules
E nvironment	Playing Surface	Weather	Other Players
E quipment	Protective Equipment	Performance Equipment	Clothing and Footwear
T ype or Activity	Contact Sports	Non-Contact Sports	

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Extrinsic factors - **SCEET**

1. Safety Hazards

Risk assessment

A survey done to evaluate what risks there are and how to prevent them.

e.g. sportshall floor is there any risk of slips due to water on the surface. Or is there sufficient room around a netball courts so there are no collisions or are the football fields free of potholes and rubbish that could cause injury

Safety checks

These are carried on equipment used to ensure all equipment is safe to use and is not going to cause injury

e.g. trampoline springs are facing downwards and that the bed has no tears, or posts are securely in the ground so they don't fall over in netball.

Emergency action plan

This is put in place in case of an emergency so everyone knows what procedure to follow and what to do.

EAP

e.g. where the local hospital is

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Extrinsic factors - SCEET

2. Coaching and Supervision

Poor /incorrect coaching techniques	Can lead to injuring another player e.g. broken leg or injuring yourself when doing a somersault and not landing it correctly
Ineffective communication skills	Can lead to an injury if performers do not understand what they have to do so they do it wrong e.g. the shot put is thrown rather than pushed so a wrist sprain can occur
Poor understanding of the rules	Can lead to injury as they could high tackle a person in rugby which can lead to a neck injury or concussion

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Extrinsic factors - SC~~E~~ET

3. Environmental factors

Weather	Can cause injury for example the heat could cause sun stroke and cause participants to become de-hydrated or the rain could cause a pitch to be slippery
Playing surface / performance area and surrounding area	Can cause injury due to ice on a netball court or billboards or spectators around the playing area can cause collisions and therefore injuries
Other participants	Can cause injury as collisions can occur in netball or rounders when going for the ball

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Extrinsic factors SCEET

4. Equipment

Protective equipment	e.g. shin pads worn by footballers, helmet worn by a cyclist. Protecting bones, body parts, and vital organs from injury
Performance equipment	e.g. hockey stick, football, and rock climbing harness. Items used to perform a sport
Clothing / footwear suitable for playing surface/ weather conditions/ specific sport or activity	e.g. boots for grass football or astro turf boots for astro turf football or hockey. Cotton socks for trampolining or light weight t-shirt for marathon runners. Skiers would need warm clothes to prevent hypothermia.

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Extrinsic factors - SCEET

5.Type of activity

Contact sport	Such as rugby, boxing and football they have a different chance of injury such as broken bones and concussion due to the nature of the sport
Non-contact sports	Such as lawn green bowls, tennis, and skiing have a different chance of injury such as sprain or strains due to the nature of the sport

Intrinsic Factors		Considerations				
P hysical Preparation	Training	Warm Up	Cool Down	Fitness Levels	Overuse	Muscle Imbalance
I ndividual Variables	Gender	Age	Flexibility	Nutrition	Sleep	Previous injuries
P sychological Factors	Motivation		Aggression		Arousal / Anxiety levels	
P osture	Poor stance / gait	Sitting positions	Physical defects	Lack of exercise	Fatigue	Emotional factors Clothing / footwear
S ports Injury (related to Posture)	Pelvic tilt		Lordosis	Kyphosis	Round Shoulders	Scoliosis

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Intrinsic factors - PIPPS

1. Physical preparation

Training	Ensures the body is fit enough to take part in physical activity e.g. an inexperienced runner could not run a marathon as they would cause an overuse injury with no training
Warm-up	Ensures the body is ready to undertake physical activity so muscles are not strained or tendons over stretched
Cool down	Ensure the body goes back to its resting state to prevent sore muscles by getting rid of lactic acid
Fitness levels	Ensure the body is able to cope with the demands of the activity e.g. someone doing the splits would need good fitness flexibility or they are likely to tear a muscle
Overuse	Repetitive actions can damage to tendons and ligaments over time e.g. runners knee
Muscle imbalances	This is when one of the muscles in a pair is stronger than the other which can cause poor posture or a tear e.g. quadricep being stronger than the hamstring

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Intrinsic factors - PIPPS

2. Individual variables

Gender	Men tend to be stronger than women and women tend to be more flexible so its important that women don't lift the same weights as men without training and the same for men attempting the splits
Age	As you get older your physical strength decreases and you become more prone to injuries and young adults are not as strong as adults e.g. rugby is played in age groups
Flexibility	A lack of flexibility puts unnecessary stress on the joints e.g. if you have not stretched or trained you would not be expected to perform the splits
Nutrition	It is important the right nutrients are eaten to recover and replace nutrients used. e.g. protein to build and repair muscle
Sleep	Lack of sleep risk injuries as you will not be focused and your judgement could be impaired so you make bad decisions e.g. when to tackle
Previous / reoccurring injuries	Can increase the risk of injuries occurring again either due to weaknesses or common cause. e.g. over use or a strain from using the wrong technique

Intrinsic factors - PIPPS

3. Psychological factors

Motivation	<p>Lack of motivation could cause injury as the performer will not commit to an activity e.g. a boxer could not dodge a punch and get punched</p> <p>Over motivation could cause performers to make poor decisions e.g. over commit to a rugby tackle causing an injury</p>
Aggression	<p>Could result in injury as a performer could go into a tackle too hard in football and because of their lack of control cause a broken leg</p>
Arousal/ anxiety levels	<p>If a performer becomes too aroused or stressed their anxiety will increase and they then may be worried or nervous which could cause mistakes and injury e.g. somersault in gymnastics</p>

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Intrinsic factors - PIPs

4. Posture and causes of poor posture

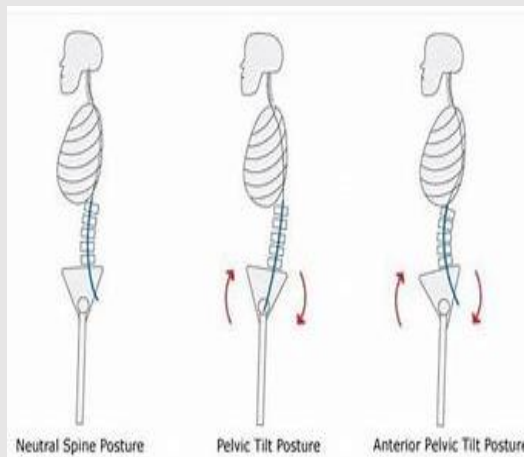
Poor stance / gait	Hunching your shoulders when standing or bending your knees when walking cause unnecessary pressure on your joints resulting in injury
Sitting position	Slumping or slouching on the sofa rather than sitting up right could cause pressure on the shoulders and result in an injury
Physical defects	Muscle weakness around the area with a defect could cause injury on other parts on the body that compensate for the weakness
Lack of exercise	Lack of core strength means less support, being overweight puts a strain on your posture resulting in injuries
Fatigue	Tired muscles will be unable to support the skeleton and puts pressure on joints resulting in injuries
Emotional factors	Having low self-esteem or lack of confidence means you are more likely to slouch resulting in injuries from pressure of poor posture
Clothing and footwear	Wearing shoes with high heels can affect posture and carrying heavy baggage puts pressure on the body resulting in injuries

Intrinsic factors – PIPPS

5. Sports injuries related to poor posture

Pelvic Tilt

- The pelvis can tilt forwards or backwards and puts pressure on the joints
- Can cause injuries such as a strain on hip flexor muscles or torn ligaments and tendons



Lordosis

- Forward or inward curve of the lower back or spine
- Looks like the stomach is sticking out.
- Muscles are pulled in different directions resulting in injuries



Kyphosis

- Backward or outward curvature of the upper part of the back or spine,
- Upper back is hunched putting pressure on muscles and joints resulting in injury



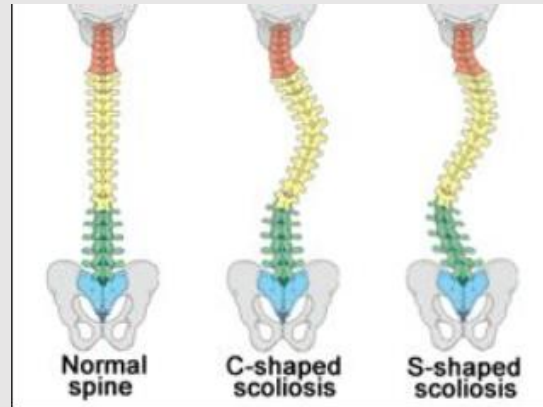
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Intrinsic factors

5.Sports injuries related to poor posture

Scoliosis

- Spine or back is visibly curved to the side giving an C or S shape,
- one shoulder can appear higher than the other
- causing strain on muscles and joints resulting in injuries



Round Shoulders

- Excessive curve forward of the neck
- Makes the shoulders hunch
- Putting pressure on muscles and joints causing injuries



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Warm up components (5 Stages)

1. Pulse raiser	Raising the heart rate	e.g. running, jogging, skipping, swimming
2. Mobility	Moving your joint through a full range of movement (ROM)	e.g. circling arms, ankles or wrist. Hips rotation, leg swings
3. Dynamic movements	Change of speed and direction	e.g. zig zag running around cones, running to half way line varying speed, running back wards then forward and left to right
4. Stretches	Developmental – holding a stretch	e.g. holding a lunge, tricep stretch
	Dynamic – moving whilst stretching	e.g. open and close gate, moving lunges, heel kicks , high knees
5. Skills practice	Practise a skill to be used in the activity	e.g. passing a ball, somersault in trampolining, kicking a conversion in rugby, hitting ball in hockey, dribbling the ball

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Benefits of a warm up

Physical

1. Warming up muscles and preparing the body for physical activity
2. Increase body temperature
3. Increase heart rate
4. Increase pliability of ligaments and tendons
5. Increase blood flow and oxygen
6. Increase muscle contraction speed
7. Increase flexibility of muscles and joints



Psychological

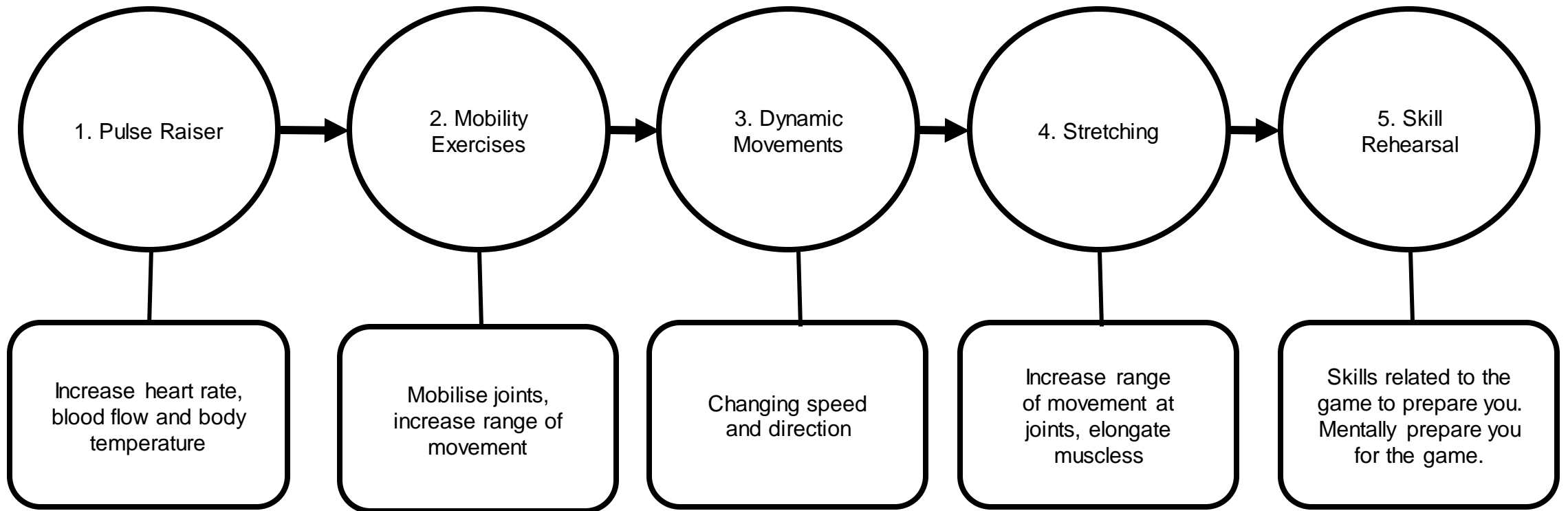
1. Heighten or control arousal levels e.g. getting into the zone, settle nerves
2. Improve concentration
3. Increase motivation
4. Mental rehearsal



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Linking the benefits of each stage of the warm up

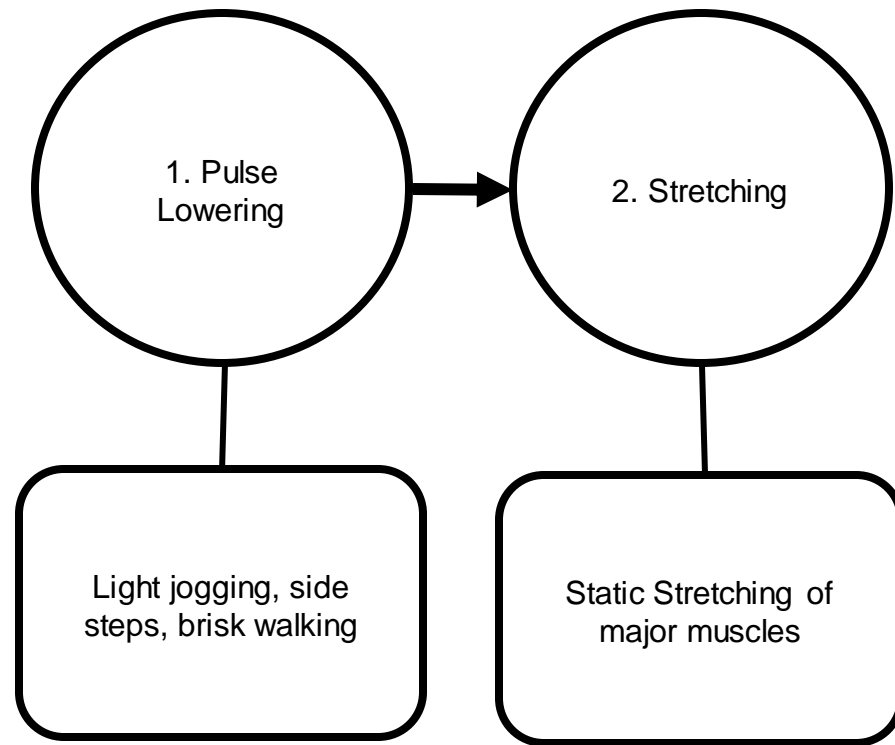
The 5 stages of the warm up showing examples of what you might do at each stage.



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Stages of the cool down with examples

The 2 stages of the cool down showing examples of what you might do at each stage.

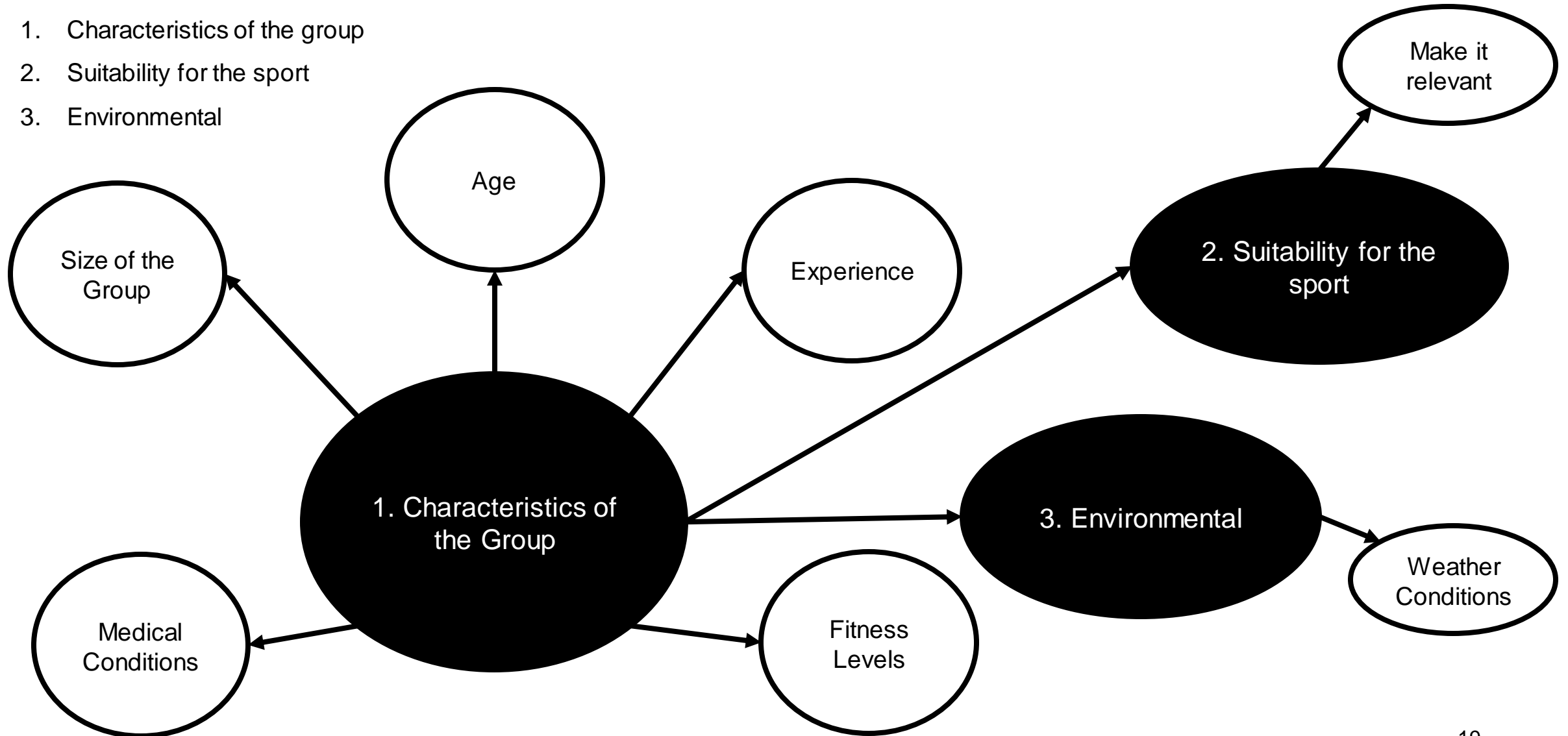


Benefits of a cool down

1. Body transitions back to resting state
2. Lower body temperature
3. Lower heart rate
4. Reduce breathing rate
5. Remove waste products such as lactic acid
6. Circulates blood and oxygen
7. Reduces the risk of muscle soreness and stiffness
8. Aids recovery by stretching muscles through lengthening and shortening muscles for next work out or use

What to consider when planning for specific needs to be considered for planning a warm up and cool down

1. Characteristics of the group
2. Suitability for the sport
3. Environmental



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Specific needs to be considered for planning a warm up and cool down

1. Characteristics of the group

Size of the group	e.g. larger groups will need a bigger space and they will need to be able to see the instructor
Age of the participants	<p>e.g. younger participants may not have a good attention span, older participants would need to stretch more thoroughly and hold the stretches for longer</p> <p>Young children need lower intensity and shorter time to stretch</p>
Experience of participants	e.g. less experience performers would need very clear instructions and simple stretches whilst more experienced performers could lead their own warm up and use a larger variety of stretches and more advanced skill warm up
Individual fitness levels	e.g. various factors would need to be consider such as recovery from a recent injury, illness, previous experience of routines, levels of flexibility, strength and power
Any medical conditions	<p>e.g. health, medical condition such as asthma, epilepsy and diabetes and previous injuries, may require routines to be adapted</p>

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Specific needs to be considered for planning a warm up and cool down

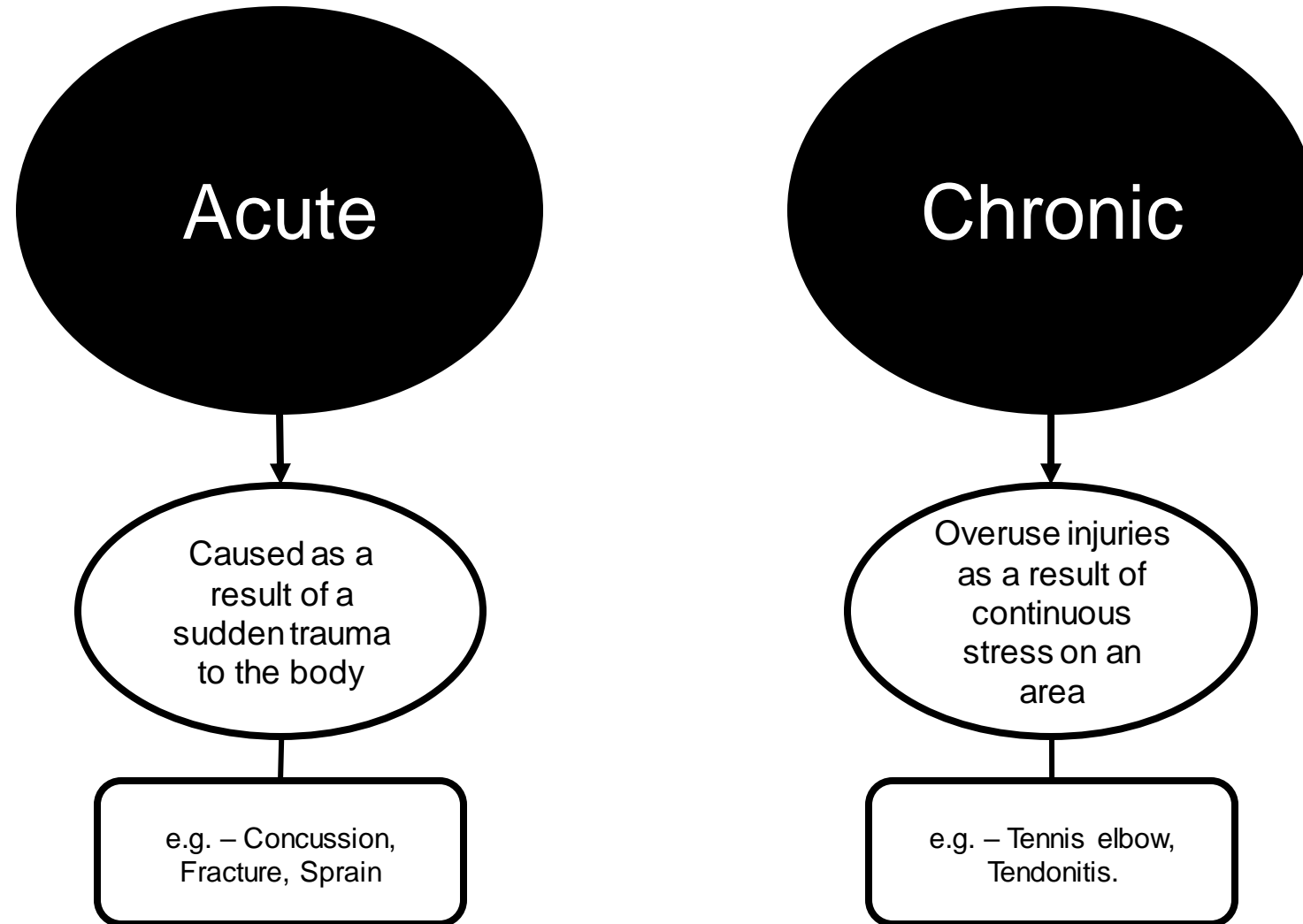
2. Suitability as preparation for a particular activity / sport

e.g. if you are warming up for a marathon you would focus on your leg muscles, whilst a gymnast would look to focus on the flexibility and warming up their core muscles.

3. Environmental factors

e.g. the sun can mean that too much exposure would cause heat stroke or dehydration. Whilst the cold would mean a longer warm up may be needed to warm your muscles up and layers may need to be worn

Injuries – Acute or Chronic?



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Acute Injuries (**A**t the time)

Caused as a result of a sudden trauma to the body e.g. hard rugby tackle, being hit by a ball

Results in sudden pain and usually swelling with loss of function

Soft Tissue Injuries

Injury	Explanation	Causes	Treatment
Sprain	Tear to ligaments	Uncontrolled movement like slipping twisting, or over stretching	RICE
Strain	Tear to muscles fibres	Uncontrolled movement like slipping twisting, or over stretching	RICE

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Acute Injuries (At the time)

Other acute injuries

Injury	Explanation	Causes	Treatment
Fracture	Open – broken bone comes through the skin Closed – broken bone stays under the skin	Sudden trauma like a sudden fall, bad landing, or impact with another player in a collision or tackle	Hospital treatment
Abrasion	Grazes and cuts	Falling or tripping onto a hard or rough ground, or rubbing against equipment, clothing or the ground	Plaster or bandage
Contusion	Bruise	Colliding with another player or piece of equipment, or falling, tackling, or tripping	RICE
Blister	Small bag of fluid under the skin	When skin rub against poorly fitting shoes, or badly fitting socks, or gripping a piece of equipment to tightly – more likely in hot weather due to sweating	Plaster or dressing
Cramp	Involuntary painful contraction of muscles	Lack of water and or salt to the muscles caused by excessive exercise or overuse or overstretching muscles. Poor hydration	Stretching or massaging

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Chronic Injuries (Overuse)

Also known as overuse injuries and are as a result of continuous stress on an area e.g. Achilles tendon, shin splints or tennis elbow

These injuries tend to develop gradually over a period of time

Soft Tissue Injuries / Overuse Injuries

Injury	Explanation	Causes	Treatment
Tendonitis	Injury to the tendons	Overuse that involves pain, restricted movement and maybe some inflammation and swelling	RICE
Tennis elbow	Injury to the tendons at the elbow	Overuse that involves pain, restricted movement and maybe some inflammation and swelling	RICE
Golfers elbow	Injury to the tendons at the elbow	Overuse that involves pain, restricted movement and maybe some inflammation and swelling	RICE
Shin splits	Pain in the shin or front of lower leg	Overuse and usually brought on by exercise involves pain, restricted movement and maybe some inflammation and swelling	RICE

Year 10

Chronic Injuries (Overuse)

Injuries related to children

Injury	Explanation	Causes	Treatment
Severs diseases	Inflammation of the growth plate of the heel	Repetitive stress during physical activity	RICE Stretching
Osgood-Schlatter's disease	Bones in the knee grow too quickly for surrounding tendons	Growth but can also be caused by repeated stress or overuse	RICE

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Concussion

Is caused by an acute injury but can also be a chronic condition depending on the length or the injury

Causes:

Impact to the head from either a collision or contact with the ground, a person, or a piece of equipment

Symptoms:

Loss of consciousness

Dizziness

Nausea or vomiting

Loss of memory

Loss of balance

Headaches

Treatment:

Medical assistance

Temporary pain relief

May miss physical activity depending on severity e.g. rugby players are not allowed to return to the field after a concussion and may have to miss several games depending on their recovery

Year 10

Responding to injuries and medical conditions

SALTAPS – on field assessment routine

S – See

A – Ask

L – Look

T – Touch

A – Active

P – Passive

S – Strength

See

Ask if anyone saw what happened, stop the activity check the injured person

Ask

Ask the injured player what happened and how they feel, ask them where it hurts and ask them about the injury e.g. what type of pain is it?

Look

Look for signs of the injury such as bleeding, bruising, swelling or deformity, if possible compare the injured limb to the opposite one to look for any differences

Touch

Examine the injured area for pain and tenderness, feel for abnormalities

Active

Can the performer move the limb themselves. Does it hurt to move? Can they manage non-weight-bearing movement?

Passive

Can you move the limb/joint through the full range of movement noting the injured person's reaction

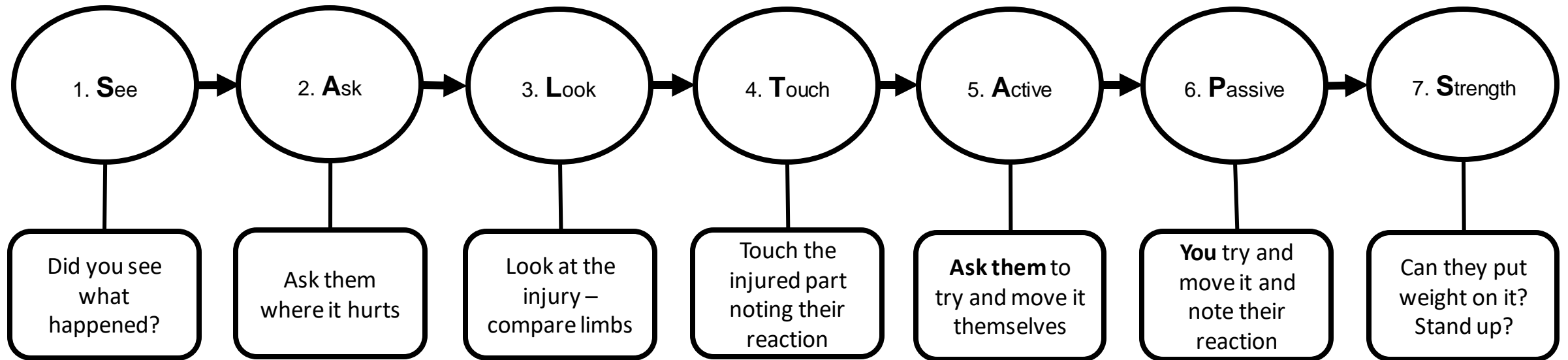
Strength

Can the performer support their own weight? Are they able to get up following the injury? Can they play on?

Year 10

Responding to injuries and medical conditions

SALTAPS – on field assessment routine in action



Year 10

Responding to injuries and medical conditions

RICE

For acute injuries, soft tissue injuries and treatment straight away

R – Rest

Stop the activity and stop using the injured part and try and keep their weight off it

I – Ice

Ice should be applied to reduce swelling and pain

C – Compression

Bandage the injured part to reduce swelling and help support the injured area

E – Elevation

Keep the injured limb above the level of the heart to reduce blood flow to the injured area
to help reduce swelling

Stretching and Massage – For manipulating soft tissue

- Increases the flow of blood to the affected body part and increase flexibility
- Helps to relax muscles and relieve tension
- Helps to manage pain and delayed onset muscle soreness (DOMS)

Year 10

Responding to injuries and medical conditions

Taping, Bandaging, splints and Slings

Taping

- Used to support weak or injured muscles and joints
- Reduce pain

Bandaging

- Helps prevent swelling
- Decrease blood flow to the area which can reduce pain and gives support.
- Immobilise the injured part
- Stop bleeding and help prevent infections

Sling

- Supports joints and helps hold injured part in place and in the correct position.
- It reduces stress around the injury and prevents further injury through impact.
- Elevate the injured part to reduce pain and swelling.

Splint

- This is used to keep the joint or limb still
- Protect against further injury which allows the joint, limb to rest and healing to occur.
- Commonly used for fractures or sprains

Year 10

Responding to injuries and medical conditions

Hot and Cold Treatment

Ice therapy

- Application of an ice pack to the affected area for 15-20 minutes every two to three hours
- Ice pack should be wrapped in a towel, so it does not touch the skin and burn the skin
- Commonly used for contusions, and soft tissue injuries such as a sprained ankle, strains, or headaches
- Cold sprays may also be used
- Used immediately after injury and 24-72 hours after
- Reduces blood flow
- Controls pain
- Reduces swelling and inflammation

Heat Treatment

- Used for Musculo-skeletal injuries such as sprains, tight muscles or can be used for chronic pain
- Heat treatment could be hot water been run over injured part, heat lamps, heat packs and reusable gel packs heated in microwaves
- Heat treatment is not used immediately after the injury but 72 hours after when swelling has gone down to encourage the following
 - Reduce pain
 - Reduce stiffness
 - Decrease muscle spasm
 - Increase blood flow to the area to promote healing

Year 10

Responding to injuries and medical conditions

Action Plan

- Organisations have to have an action plan of how to respond to injuries or medical conditions
- This is so everyone participant is safe
- The action plan is there so that people in charge know what to do in an emergency
- Having an action plan reduces the risk of minor injuries becoming more serious

Emergency Action Plan (EAP)

1) Emergency Personnel

First aider, first responder, coach

2) Emergency Communication

Emergency telephone contact information, emergency numbers e.g.999, location of nearest hospital

3) Emergency Equipment

First aid kits, evacuation chair, or inhaler

Year 10

Common medical condition- Asthma

Symptoms

- Coughing
- Wheezing
- Shortness of breath
- Tightness of chest
- Whistling or squeaky sound in your chest when you breathe

Treatment

- Reassurance
- Inhaler
- Keeping them calm
- Emergency services if needed and the asthma attacks continues, or the patient gets worse

Year 10

Common medical conditions - Diabetes

Type 1 diabetes

Insulin dependant as you are unable to make insulin to lower blood sugar levels so insulin is injected

Type 2 diabetes

Non-insulin dependant as you either cannot produce enough insulin or your insulin does not work effectively. Controlled through diet and medication

Symptoms

- Increased thirst
- Going to the toilet lots
- Extreme tiredness
- Weight loss
- Prone to infections
- Cuts and wounds take longer to heal

Treatment

- Insulin (or glucose) for hypoglycaemia (low blood sugar level)
- Give the individual sugar e.g. fruit juice, sugary sweets
- Emergency services if patient becomes unconscious
- Medication if they have some

Hypoglycaemia symptoms

- Shakiness
- Dizziness
- Sweating
- Hunger
- Irritability
- Can lead to drowsiness, slurred speech, confusion and unconsciousness

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Common medical conditions- Epilepsy

Condition of the nervous system in which brain activity becomes abnormal

Symptoms

- Seizures
- Periods of unusual behaviour and sensations
- Loss of awareness

Seizure symptoms can include:

- Staring blankly
- Repeatedly shaking their arms and legs
- Unconsciousness
- Lose of control of your bowel or bladder
- Falling down and muscle stiffness

Treatment

- Emergency care plan

If they have an elliptic seizure

- Keep away from danger
- Keep them calm

If they lose consciousness

- Remove harmful objects away such as tables and chairs
- Cushion their head if possible
- Time the convulsion
- Place in recovery position if possible

Call emergency services if the seizure lasts for more than 5 mins

If they have one seizure after another with gaining consciousness

If its their first seizure.

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When to Contact emergency services

- Performer loses consciousness or has an obvious concussion
- Performer has a potential or suspected fracture
- The performer has a recurring injury
- The injury is severe, or the performer is in considerable pain
- The performer is struggling to breathe
- The coach or person in charge is unqualified to deal with the injury
- Continue to show severe signs of asthma
- A type 1 diabetic does not have access to their insulin or they lapses into a diabetic coma
- The performer suffers a fit for the first time or the fits last longer than 5 minutes or is repeated