

Sports Science 100% Sheet 1 -

LO1 Understand different factors which influence the risk of injury

5 Extrinsic Factors - outside influences

- 1 **type of activity** (e.g. contact sports present different injury risks from gymnastic activities)
- 2 **coaching/supervision**, i.e. – poor/incorrect coaching techniques – ineffective communication skills – importance of adhering to rules and regulations
- 3 **environmental factors**, i.e. – weather – playing surface/performance area and surrounding area – other participants
- 4 **equipment**, i.e. – protective equipment (e.g. shin pads in football, gum shield in boxing, helmet in cycling, goggles in skiing) – performance equipment (e.g. hockey stick, cricket ball, rock climbing harness) – clothing/footwear suitable for playing surface/weather conditions/specific sport or activity
- 5 **safety hazards**, i.e. – risk assessments – safety checks – emergency action plans

5 Intrinsic Factors - inside influences

- 1 **physical preparation**, i.e. – training – warm up – cool down – fitness levels – overuse – muscle imbalances
- 2 **individual variables**, i.e. – gender – age – flexibility – nutrition – sleep – previous/recurring injuries
- 3 **psychological factors**, i.e. – motivation – aggression – arousal/anxiety levels
- 4 **posture and causes of poor posture**, i.e. – poor stance/gait (e.g. bending your knees or hunching your shoulders when standing) – sitting positions (e.g. slumping/slouching on the sofa rather than sitting upright) – physical defects (e.g. muscles weaken around an injured area) – lack of exercise (e.g. lack of core muscle strength means less support, being overweight puts strain on posture) – fatigue (e.g. tired muscles will be unable to support the skeleton properly) – emotional factors (e.g. having low self-esteem/lack of confidence can influence posture) – clothing/footwear (e.g. wearing shoes with high heels can affect posture)
- 5 **sports injuries related to poor posture**, i.e. – pelvic tilt – lordosis – kyphosis – round shoulder – scoliosis.

Sports Science 100% Sheet 2 - LO2 -Understand how appropriate warm up and cool down routines can help to prevent injury - part 1

The physical benefits of a warm up, i.e.

- warming up muscles/preparing the body for physical activity
- increase in body temperature
- increase in heart rate
- increase in flexibility of muscles and joints
- increase in pliability of ligaments and tendons
- increase in blood flow and oxygen to muscles
- increase in the speed of muscle contraction

The psychological benefits of a warm up, i.e.

- heighten or control arousal levels (e.g. 'get in the zone' or settle nerves)
- improve concentration/focus
- increase motivation
- mental rehearsal

key components of a warm up, i.e.

- pulse raising, i.e. exercises that slowly increase heart rate and body temperature (e.g. jogging, cycling, skipping)
- mobility, i.e. exercises that take the joints through their full range of movement (e.g. arm swings, hip circles)
- dynamic movements (e.g. change of speed and direction)
- stretching (e.g. developmental stretches, dynamic stretches linked to sport – 'open and close the gate' groin walk)
- skill rehearsal phase, i.e. rehearsing common movement patterns and skills which will be used in the activity (e.g. dribbling drills for football, passing drills for netball)

Sports Science 100% Sheet 2 - LO2 -Understand how appropriate warm up and cool down routines can help to prevent injury - part 2

physical benefits of a cool down, i.e.

- helps the body's transition back to a resting state
 - gradually lowers heart rate
 - gradually lowers temperature
 - circulates blood and oxygen
 - reduces breathing rate
 - removes waste products such as lactic acid
 - reduces the risk of muscle soreness and stiffness
 - aids recovery by stretching muscles, i.e. lengthening and strengthening muscles for next work-out/use
- key components of a cool down, i.e.
- pulse lowering, i.e. exercises which gradually lower heart rate and reduce temperature (e.g. easy movements, light running, stretching)
 - stretching, i.e. maintenance stretches, static stretches (e.g. hamstring stretches)

specific needs which a warm up and cool down must consider, i.e.

- characteristics of the individual/group, i.e. – size of group – age of participants – experience of participants – individual fitness levels – any medical conditions participants may have
- suitability as preparation for a particular activity/sport
- environmental factors (e.g. weather/temperature if outdoors, available facilities).