OCR Cambridge National – Sport Science – R041 Reducing the risk of sports injuries – LO4

How to respond to common medical conditions

Asthma:

A common condition where airways can become restricted. Individual's can become wheezy and short of breath which will affect performance.

Symptoms of asthma/asthma attack:

- Coughing
- Wheezing
- Shortness of breath
- Tightness across the chest
- Difficulty talking
- Feelings of anxiety or panic
- Pale and sweaty face

How to respond to an asthma attack:

1. Reassure them and ask them to breathe slowly
2. Help them use their reliever inhaler straight away. This should relieve the attack.
3. Sit them down in a comfortable position. Get them to take one or two puffs of their inhaler every two minutes, until they've had 10 puffs.
4. If the attack is severe and they are getting worse or becoming exhausted, or if this is their first attack, then call 999/112 for an ambulance.

Diabetes:

A serious condition that causes a person's blood sugar level to become too high.

- **Type 1 diabetes (insulin dependant)** – where the body's immune system does not allow insulin to be produced at all.
- **Type 2 diabetes (non-insulin dependant)** – where the body doesn't produce enough insulin, or the body's cells don't react to insulin.

Symptoms of diabetes:

- Increased thirst/Dry mouth
- Increased hunger (especially after eating)
- Frequent urination or urine infections
- Unexplained weight loss
- Fatigue (weak/tired feeling)
- Blurred vision/Headaches

How to respond to a diabetic emergency:

Hyperglycaemia - Too little insulin can cause high blood sugar. If it's not treated and gets worse, the person can gradually become unresponsive (going into a diabetic coma)

- Help them take their insulin
- Call 999 or 112 straight away for medical help.
- Keep checking for breathing, pulse and level of response. Loss of responsiveness - prepare CPR.

Hypoglycaemia - Too much insulin can cause low blood sugar. This often happens when someone with diabetes misses a meal or does too much exercise.

- Help them sit down.
- If they have their own glucose gel, help them take it. If not, you need to give them something sugary (fruit juice, a fizzy drink or sugary sweets)

Epilepsy:

A condition of the nervous system in which the brain activity becomes abnormal. This leads the muscles in the body to contract uncontrollably and usually causes the person to lose responsiveness. It's also known as a **convulsion or fit.**

Symptoms of someone having a seizure:

- Sudden loss of responsiveness
- Rigid body with an arching back
- Noisy difficult breathing
- Convulsions (jerky uncontrolled movements)
- Loss of bladder and bowel control
- Afterwards they may be confused, tired and fall into a deep sleep

How to respond to an epileptic emergency:

- Don't restrain or move them.
- Protect them from hurting themselves. Clear away any potentially dangerous objects, like hot drinks or sharp objects.
- Make a note of the time when the seizure started and how long it lasts.
- Protect their head by placing something soft underneath it, like a towel, and loosen any clothing around their neck.
- Once the seizure has stopped, they may fall into a deep sleep – if they do, open their airway and check their breathing.
- If they're breathing, put them in the recovery position.

R042 – Applying Principles of Training

LO1

Overload- Working harder than normal

Progression Overload- Gradually making training harder as it becomes too easy.

FITTA- Principles of overload, frequency, intensity, time, type, adherence.

Specificity- Making training suited to the movements, skills and muscles that are used in an activity.

Reversibility/ regression- 'Use it or lose it'- if you stop training, you will lose fitness.

Moderation- Taking individual characteristics and circumstances into consideration when designing a training programme.

Variance- Altering and changing elements of training in order to prevent boredom.

LO2

Aerobic- With Oxygen.

Aerobic exercise- Using oxygen to produce energy during low-intensity long- duration exercise.

Lungs- Large spongy organs in the chest used for gas exchange.

Anaerobic- Without oxygen.

Anaerobic exercise- Not using oxygen to produce energy during high-intensity, short duration exercise.

Strength- The extent to which a muscle or muscle group can contract against resistance.

Power- Exerting muscular strength rapidly.

Agility- The ability to maintain a stable position; this often involves maintaining the centre of mass over the base of support.

Muscular endurance- The ability of muscles to keep contracting repeatedly.

Cardiovascular endurance- The ability of the heart, lungs and blood vessels to get oxygen to the muscles and the ability of the body to use that oxygen.

Continuous training- Any activity or exercise that can be continuously repeated without suffering undue fatigue.

Interval training- Any training that involves periods of work and rest.

Fartlek training- 'Speed play' which generally involves running, combining continuous and interval training.

Resistance training- Training that involves working against some kind of force that 'resists' your movement.

Circuit- Form of training in which the performer carries out different exercises at various stations.

Hypertrophy- An increase in muscle size as a result of training.

Plyometric training- Repeated exercises such as bounding, hopping or jumping over hurdles designed to create fast, powerful movements.

Quadriceps- Muscles at the front of the upper leg that straighten the leg.

Eccentric contraction- Where the muscle lengthens while contracting.

Concentric contraction- Where the muscle shortens while contracting.

Static stretching- Holding stretches, either actively or passively, to increase the range of movement at a joint.

Abdominals- Stomach muscles that protect internal organs.

LO3

Validity – a fitness test is valid if it tests the component of fitness that it aims to test.

Maximal tests – fitness test that require maximal effort in order to produce a valid, comparable result.

Sub-maximal tests – fitness tests that do not require maximal effort to gain a valid result.

Reliability – a fitness test is reliable if it can be repeated and gives similar results each time.

Burpee – a squat thrust and jump.

Strength endurance - ability to apply strength in activities that have an element of endurance (a long distance).

Normative data – data from a reference population that establishes a baseline score or measurement, against which your score or measurement can be compared.

LO4

Questionnaire - a series of questions to be answered truthfully.

PAR-Q – Physical activity readiness questionnaire – an introductory 'yes/no' questionnaire that aims to identify the small number of people for whom physical activity might be unsuitable on the grounds of medical advice.

Client progress review – an interview used to set goals and re-evaluate if any changes need to be made.

Overtraining – training too hard/often; not giving the body time to recover fully.

Work-to-rest ratio – the amount of exercise (work) compared to the amount of rest.

Adaptability – flexibility to adapt a programme if, for any reason, the session being performed cannot be followed precisely.