TRAINING

SMOKING AND ALCOHOL

MENTAL TRAINING

Mental stress on top-level sportsmen and women is high

Some sports governing bodies employ sports psychologists to help performers set goals and targets for future competitions and help them come to terms with previous defeats

EFFECTS:

Raises self-esteem and helps the athlete focus on targets

ADVANTAGES:

Helps performers to cope with high stress levels and previous defeats

DISADVANTAGE:

The performer may find it hard to discuss issues with a psychologist

ANAEROBIC TRAINING

Short bursts of activity are required in many sports

Examples of this type of activity are a run-up for a vault in gymnastics or a sprint in rounders. Training is done by repetitions of short sprints (10-20 metres), or short bursts of activity under 10 seconds duration.

EFFECTS:

- The heart walls (particulary in the left ventricule) grow stronger and pump more blood
- There is a faster dispersal of lactic acid enabling longer muscle action

ADVANTAGES:

These are specific to each sport

DISADVANTAGE:

There is little variety in training method

AEROBIC CLASSES

This is usually continuous movement done to music, using the arms, the leg and the whole body

Some of the variations are:

STEP CLASSES	AQUAEROBICS
Aerobic routines carried out making use of a small platform, which increases the intensity of some exercises	Aerobic performed in a swimming pool. Water provides resistance and therefore, intensity. However, water also provides buoyancy and relieves stress on the joints

ADVANTAGES:

- **Heart becomes more efficient**
- **Stroke volume is increased and heart rate is lowered**
- **Recovery to normal heart rate is quicker**
- **Blood volume, red cells and haemoglobin levels increase**
- **Arteries grow larger**
- **Diaphragm grows stronger**
- **Lung expand more, increasing volume**
- **Alveoli (are sacs that make up the lung tissues) become more efficient**

AEROBIC TRAINING

INTERVAL TRAINING

Intermittent training at a high intensity interspersed with rest periods is called interval training

ADVANTAGES:

- Distances and times can be adapted for individual performers
- Suitable for a variety of sports and targets can be easily set
- Can be used for aerobic or anaerobic fitness or a mixture of both

DISADVANTAGE:

- Needs careful and accurate planning
- Can be repetitive and boring

AEROBIC TRAINING

CONTINUOUS TRAINING (long/slow distance)

Working without rest can be only be done with **moderate intensity**, usually at 75% maximum intensity, but fitter performers can work at a higher rate

ADVANTAGES:

- Requires little equipment, easy to organise
- Training levels can be easily controlled by the performer

DISADVANTAGE:

- Does not develop anaerobic fitness
- Difficult to accurately measure training amounts
- Can be monotonous

AEROBIC TRAINING

FARTLEK

Fartlek is a Swedish training method meaning speed play

A typical session could be:

- 5 minutes slow jog
- 3 minutes normal jog
- 3 minutes fast walk
- 5 minutes fast jog
- 2 minutes hopping on alternate legs
- 5 minutes 30 metre sprint
- 3 minutes fast jog
- 2 minutes fast walk
- 2 minutes cool down

AEROBIC TRAINING

FARTLEK

ADVANTAGES:

- Range of both aerobic and anaerobic training
- Can be adapted for different sports, variety of activity
- Needs little special equipment

DISADVANTAGE:

- Difficult to measure training amounts
- Needs self-discipline to maintain work rates
- Not sport specific

WEIGHT TRAINING

Weight training is an effective way of improving muscle strength

- **MUSCULAR ENDURANCE**: use a light weight with many repetitions
- **EXPLOSIVE STRENGTH**: use a medium weight and move very fast
- **STATIC STRENGTH**: use a heavy weight with few repetitions

ADVANTAGES (weight training machines):

- They are safer and more comfortable to use
- They work specific muscle groups
- The amount of weight used can be easily adjusted
- They can be used in a small space effectively
- They can help with motivation as the weight lifted can be seen easily

REPETITIONS: the number of time a weight is lifted

SETS: The number of times the activity is repeated in a training session

WEIGHT TRAINING

TRAINING AND MUSCLE ACTION

- **ISOMETRIC**: use very heavy weights with little or no movement
- **ISOKINETIC**: weights provide resistance through the full range of movement
- **ISOTONIC**: muscle shortens (concentric contraction) or lengthens (eccentric contraction) as the weight is being lifted

CIRCUIT TRAINING

Circuit training is an **adaptable** form of training. A **variety of exercises and skills** are done at different localitations in a gym or hall, known as **stations**

PLANNING A CIRCUIT

When planning a circuit, you need to consider the following things:

- Purpose of the circuit (e.g. skills, fitness) and type of activities to be used
- Number of stations in the circuit and number of circuit altogether
- Time on each activity and time of the entire training session
- Number of repetitions and rest or recovery time

CIRCUIT TRAINING

EXAMPLE of a nine station circuit to improve cardiovascular fitness

1- SIT UPS (abdominals)	**2- BENCH DIPS** (arms)	**3 - STEP UPS** (leg)	**4- SQUAT THRUST** (abdominal and legs)	**5- PRESS UPS** (arms)
6- STAR JUMPS (legs)	**7- PULL UPS** (arms)	**8- BURPEES** (abdominals)	**9- SHUTTLE RUN** (legs)	

FLEXIBILITY TRAINING

Maintaining and improving flexibility, with a good range of movement at the joints, is an essential component of fitness

There are four ways of improving flexibility:

STATIC STRETCHING:

A muscle is held in a stretched position for a short time. As flexibility increases the time can be extended, but it should be at least 10 seconds. The subject is in full control of this type of stretching

PASSIVE STRETCHING:

An external force is applied to a joint. This is usually done by a partner or coach. However, care must be taken as the subject does not control this stretching

FLEXIBILITY TRAINING

There are four ways of improving flexibility:

ACTIVE STRETCHING:

Sometimes known as ballistic stretching, this is done by moving the limbs vigorously. Although effective warm up must be extensive to reduce the risk of injury

PNF STRETCHING (Proprioceptive Neuromuscular Facilation)

Immediately after contracting, muscles can be more easily stretched. The muscle is contracted against a high resistance, and then immediately stretched to its full range

SMOKING

Nicotine is taken into the blood stream through smoking. It is an **addictive** drug, which raises the heart rate and blood pressure.

There are other ways smoking can damage health:

- Lung cancer – tars are deposited in the lungs, making them less efficient and can lead to cancer
- Increased risk of heart disease
- Carbon monoxide reduces the effectiveness of the oxygen-carrying capacity of haemoglobin
- Throat cancer
- Reduce levels of fitness
- Less resistance to illness, such as bronchitis
- Loss of smell, taste and appetite
- Passive smoking affects other people

ALCOHOL

Small quantities of alcohol are not harmful to general health, but it does affect performance in sport. Alcohol contains the chemical ethanol, which acts on the brain.

Further effects:

- Balance, co-ordination and reactions are affected
- Diuretic – alcohol can increase water levels in urine and cause dehydration
- Loss of body heat – increased blood flow to skin causes loss of heat
- Reduction of glycogen levels and slower lactic acid removal
- Judgement affected, leading to accidents
- Aggressive behaviour