

Name:



A summary of each topic you have covered whilst completing your GCSE in PE.

Mr Gordon's GCSE PE revision guide.

Use in conjunction with other revision methods.

This is a revision resource of key points only.

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1.1.1: Healthy, active lifestyles and how they could benefit you.

Health, active lifestyle: a lifestyle that contributes positively to physical, social and mental wellbeing, and includes regular exercise and physical activity.

The BENEFITS for taking part in physical activity fall into 3 categories:

PHYSICAL	SOCIAL	MENTAL
Contribute to good physical health	Mix with others	Relieve and/or prevent stress and tension
Physical challenge	Make new friends	Mental challenge
Increase fitness	Meet current friends	Increase self-esteem and confidence
Improve performance	Develop teamwork/cooperation	Help the individual feel good – exercise produces serotonin – a feel-good hormone.
Improve health related exercise factors: Cardiovascular fitness Muscular strength Muscular endurance Flexibility Body composition	Work with others	Contribute to enjoyment of life
		Aesthetic appreciation

There are 5 REASONS for taking part in physical activity:

- **Cooperation**
Teamwork – support and encourage your team work.
- **Competition**
Can be regarded as psychological in terms of the mental preparation and in terms of getting away from the stresses of life.
- **Physical challenge**
Perhaps someone is coming back to sport after a long time away or taking on a seemingly impossible task. For example The London Marathon.
- **Aesthetic appreciation**
Moments in sport are sometimes beautiful. For example a brilliantly executed goal, a cover drive in cricket, a delicate chip in golf or a smash in badminton. Sports such as ice dancing or gymnastics often thought of in these terms.
- **The development of friendships and social mixing**
Involvement with others, get to know more people, make new friends and develop lasting friendships. Many sports teams have a strong social side.

1.1.2: Influences on your healthy, active lifestyle.

There are 6 **INFLUENCES** on taking part in physical activity:

<u>People</u> 	<u>Image</u> 	<u>Cultural</u> 	<u>Resources</u> 	<u>Health & wellbeing</u> 	<u>Socio-economic</u> 
Family	Fashion	Age	Availability	Illness	Cost (Golf compared to running)
Peers	Media Coverage	Disability	Location	Health problems	Status
Role models		Gender	Access		
		Race	Time		

Opportunities for getting involved in sport:



Initiatives to keep people involved in sport:

Government Initiatives.

All pupils (up to age 16) have to receive an entitlement of 2 hours of high quality PE per week.



This encourages more participation and improve pupils' fitness.

Sport England.

Sport England believes sport has the power to change people's lives.

Sport England creates opportunities for people to *start, stay and succeed* in sport.

Start: Increase sport participation → improves health of the nation (focus on priority groups).

Stay: Retain people in sport through an effective network of clubs, facilities, volunteers and competition.

Succeed: Create opportunities for talented performers to achieve success.

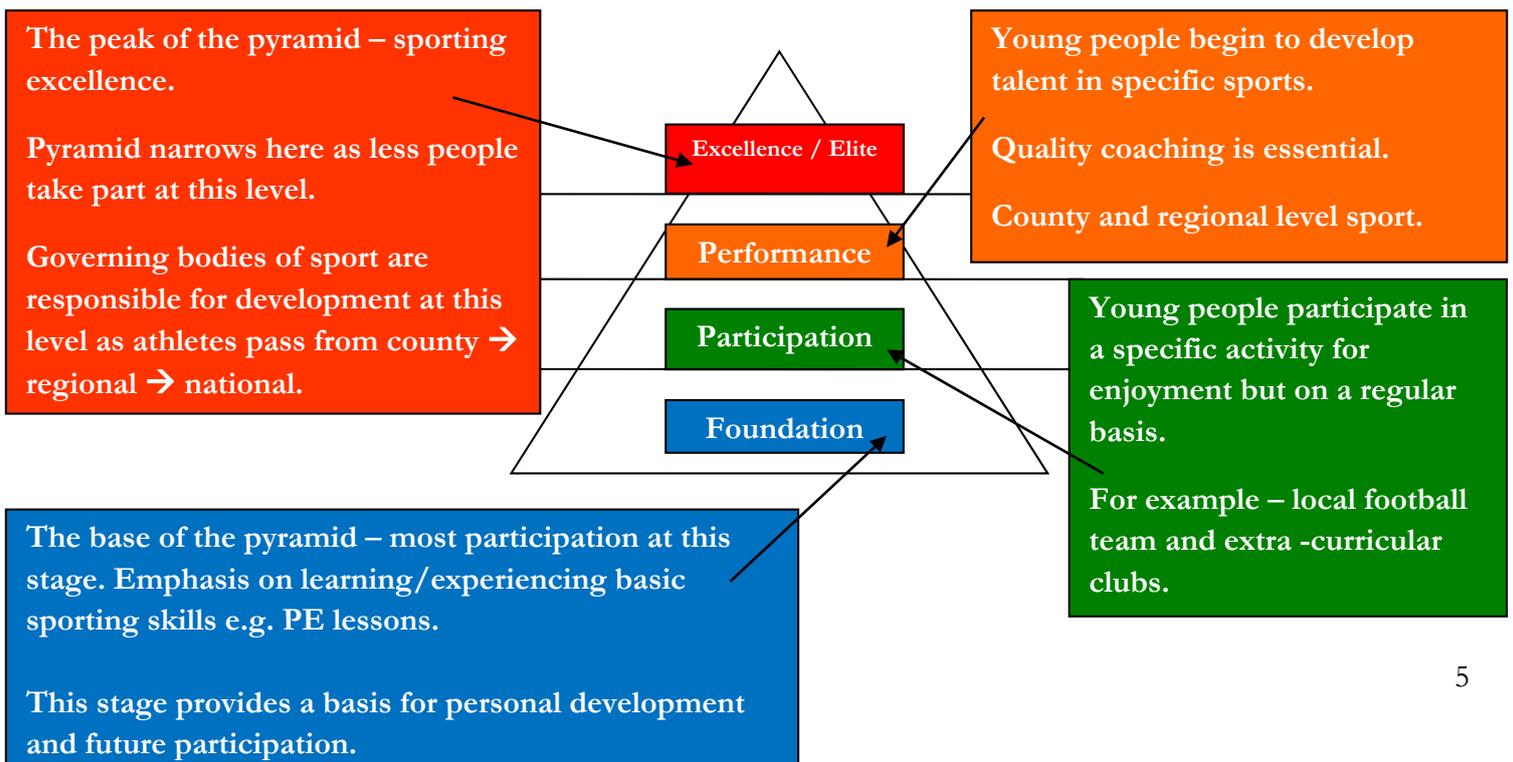


Active Kids programme.

Some supermarkets and enterprises run voucher schemes. Vouchers are collected when people buy items from shops/businesses in return for vouchers. Schools use these vouchers to buy sports equipment.



The Sports Participation Pyramid:



1.1.3: Exercise and fitness as part of your healthy, active lifestyle.

Exercise improves health and develops fitness, which enhances performance in physical activities.

Exercise:

A form of physical activity which maintains or improves health and/or physical fitness.

Health:

A state of complete mental, physical and social wellbeing and not merely the absence of disease and infirmity.

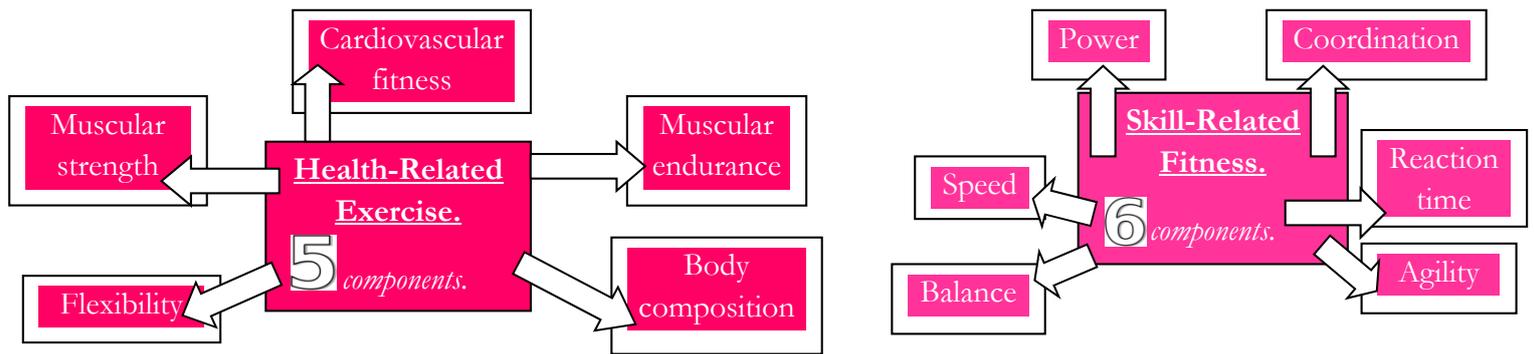
Fitness:

Ability to meet the demands of the environment.

Performance:

How well a task is completed.

It is possible to be fit but not healthy. For example Sir Steve Redgrave, 5 times an Olympic gold medallist for rowing has diabetes and a severe bowel condition.



<p>Cardiovascular fitness (Marathon and tennis)</p> 	<p>The ability to exercise the entire body for long periods of time</p>	<p>Power (100m sprint start and triple jump)</p>	<p>The ability to undertake strength performances quickly. Power = Strength x Speed</p>
<p>Muscular strength (Weightlifting and rugby scrum)</p> 	<p>The amount of force a muscle can exert against a resistance</p>	<p>Coordination (Hand-eye: Tennis, Foot-eye: Kicking a ball, Head-eye: football header)</p>	<p>The ability to use two or more body parts together</p>
<p>Muscular endurance (Tennis, running and swimming)</p> 	<p>The ability to use the voluntary muscles many times without getting tired</p>	<p>Reaction time (100m and badminton)</p>	<p>The time between the presentation of a stimulus and the onset of movement</p>
<p>Flexibility (Gymnastics, high jump, badminton)</p> 	<p>The range of movement at a joint</p>	<p>Agility (Rugby and badminton)</p>	<p>The ability to change the position of the body quickly and to control the movement of the whole body</p>
<p>Body composition (Ectomorph: high jump Mesomorph: weight lifting Endomorph: sumo wrestling)</p> 	<p>The percentage of body weight that is fat, muscle and bone</p>	<p>Balance (Static balance: archery Dynamic balance: basketball Static & Dynamic: gymnastics)</p>	<p>The ability to retain the centre of mass (gravity) of the body above the base of support with reference to static (stationary), dynamic (changing) conditions of movement, shape & orientation</p>
<p>These 5 elements help us to stay physically fit and healthy.</p>		<p>Speed (Leg speed: 100m Hand speed: boxing)</p>	<p>The differential rate at which an individual is able to perform a movement or cover a distance in a period of time</p>
<p>ABC PRS – write this down when you see “Skill Related” in the question</p>			
<p>These 6 elements help people become good at PA</p>			

1.1.4: Physical activity as part of your healthy, active lifestyle.

PAR-Q (Physical Activity Readiness Questionnaire).

A PAR-Q is done prior to starting an exercise programme starting. This makes sure you are safe to exercise.
Considers; Medical conditions e.g. heart condition or asthma, injuries and blood pressure.

Health related exercise fitness tests		Skill related fitness tests	
Test name	Testing	Test name	Testing
Cooper's 12-minute run test	Cardiovascular fitness and muscular endurance in legs.	Illinois agility run / speed bounce	Agility
Hand grip strength test	Muscular strength in the hand.	Standing stork test	Balance (static)
Sit and reach flexibility test	Flexibility of the hamstrings.	Sergeant jump test	Leg power
Harvard step test / 2min sit up test	Cardiovascular endurance and muscular endurance.	Standing broad jump	Power
It is important to follow the correct protocol for each of these tests. This will ensure results are valid and can be compared.		Ruler drop test	Reaction time
		30-metre sprint	Speed
		Tennis ball test	Coordination

For training to be effective, relevant and safe we must follow set guidelines or principles...

The principles of training.

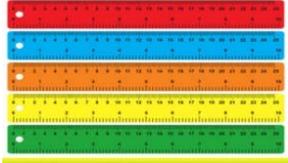
ISPORRRFITT

Individual needs	Matching training to the requirements of an individual.	Consider: First time marathon runner compared to an experienced marathon racer compared to a power lifter.
Specificity	Matching training to the requirements of an activity.	To be successful at a particular sport/position you need to develop certain areas of fitness. A goal keeper will train differently to a midfielder.
Progressive Overload	Gradually increasing the amount of overload so as to gain fitness without the risk of injury.	Working at an intensity that places demands on the body, but not too much that you cause injury. Working between 60% and 80% of your maximum HR will make sure you are overloading.
Frequency	FITT... The ways you can apply Progressive Overload.	How often you train.
Intensity		How hard you train.
Time		How long is each training session?
Type		Which methods of training are used?
Rest	The period of time allotted to recovery.	Adaptation takes place during rest. Rest must be included in a training programme to allow the body time to Recover (repair & adapt) ready for the next session. If not enough rest time is taken, over-training will occur, which could lead to a drop in performance, tiredness, fatigue and therefore: Reversibility.
Recovery	The time required to repair damage to the body caused by training/competition.	
Reversibility	Any adaptation that takes place as a consequence of training will be reversed when you stop training.	Fitness is lost about 3 times faster than it is gained! You will experience reversibility if you are; ill, injured, have a lack of motivation, stop or plateau your training. Reversibility will affect people at different rates, depending on how long they have trained for, how fit they are, and how bad the illness or injury is.

1.1.4: Physical activity as part of your healthy, active lifestyle. Goal setting.

Goal setting.

By having a goal or aim to achieve, you have a specific focus to work towards.
You can also plan, record and monitor progress easily and accurately, then evaluate and make adaptations to meet your changing needs.

SMART Goals.		
<p><u>Specific</u></p> 	<p>Knowing exactly what the goal is. It is specific and relevant to you.</p>	<p>I want to fitter, is not specific. I want to be able to run 2min 30sec for 800m, is specific.</p>
<p><u>Measurable</u></p> 	<p>Easy to know when a goal has been achieved.</p>	<p>Using; reps, sets, times, distances, Kg's, HR's, etc.</p>
<p><u>Achievable</u></p> 	<p>If you believe something can be achieved you stay motivated, as you see results.</p>	<p>Aiming to complete a marathon with no previous long distance running experience in 2 weeks is not achievable! Aiming to run a 2min 30sec 800m in 6 weeks might be achievable.</p>
<p><u>Realistic</u></p> 	<p>A goal needs to be achievable in practice as well as theory.</p>	<p>A 2min 30sec 800m will depend on; current performance and amount of time that can be dedicated to the training.</p>
<p><u>Time-bound</u></p> 	<p>Does the goal have an end point?</p>	<p>If not, then reaching it can be delayed or put off. Knowing you have 6 weeks until a race, you are likely to be motivated to make the improvements necessary.</p>

Past exam question (June 2012) **(long answer question)**

12. Eshan is inspired by performers in the run up to the London 2012 Olympic and Paralympic Games, and is determined to improve his performance. He decides to set SMART targets as a first step to achieving his long-term goal.

Discuss the use of target setting to improve performance.
You must make reference to examples in your answer. (6 marks)

1.1.4: Physical activity as part of your healthy, active lifestyle.

Methods of training.



Methods of training.

There are 6 different training methods:

<u>Circuit</u>	<u>Continuous</u>	<u>Interval</u>	<u>Fartlek</u>	<u>Weight</u>	<u>Cross</u>
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Methods of training: Circuit Training.

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
Easy to set up and is flexible	Can require lots of equipment depending on the type of circuit.
Can select activities specific for your sport	Have to keep checking a stopwatch if you have no training partner.
Adaptable to team games and individual fitness levels	Can be difficult to maintain work rate.
Can develop both fitness and skills	
Allows a rest period in between stations for recovery. (Intervals)	
Develops both aerobic and anaerobic systems	
Can be set up to develop all areas of HRE & SRF.	
Easy to apply Progressive Overload and measure improvement.	

Methods of training: Continuous Training

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
You can work on your own or in a group.	Can become boring and requires motivation to continue.
Improves Aerobic fitness.	Time consuming.
Can take place in a variety of venues.	
It can be adapted to suit your individual needs	
Very cheap! Minimal equipment.	
Easy to monitor and apply Progressive Overload.	
	Does not develop other components of fitness – e.g. strength, agility.

Methods of training: Interval Training

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
Takes place over short periods of time.	Can become repetitive and requires motivation to continue.
Includes rest which allows recovery.	Difficult to identify how hard an individual is working.
Includes repetitions which raises the HR to near maximal	Can be difficult to maintain work rate.
Develops aerobic and anaerobic systems.	
Can develop other areas of fitness and skill – agility, speed etc.	
Allows for monitoring and evaluating of HR.	

Methods of training: Fartlek Training.

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
Takes place over short periods of time.	Can become repetitive and requires motivation to continue.
Includes active rest which allows recovery.	Difficult to identify how hard an individual is working.
Includes repetitions which raises the HR to near Maximal.	Can be difficult to maintain work rate
Develops aerobic and anaerobic systems.	<u>FARTLEK AND INTERVAL TRAINING ARE VERY SIMILAR...FARTLEK TRAINING HOWEVER CAN TAKE PLACE OVER DIFFERENT TERRAINS AND CAN INCLUDE HILLS.</u>
Can develop other areas of fitness and skill – agility, speed etc.	
Adaptable to team games and individual fitness levels	
Can be done almost anywhere on any terrain.	

Methods of training: Weight Training.

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
Can improve Muscular Strength, Muscular Endurance and Power (Strength x Speed).	Requires specialist equipment, which can be expensive.
Increase Muscle size or bulk.	Requires knowledge of correct techniques to gain benefits and avoid injury.
Improve muscle tone.	
Assist recovery after injury, rehabilitation.	
Can focus on specific areas/muscles in the body.	
Large variety of exercises.	
Easy to monitor and apply Progressive Overload.	

Methods of training: Cross Training.

Remember cross training is a combination of training methods, not activities. It does not mean going swimming one day, playing football the next, and badminton the next.

<u>ADVANTAGES</u>
Allows for a variety of training and therefore can make training interesting.
You can train with different people in different activities, or you can train alone.
Certain muscle groups can be rested from day-to-day.
Training can be adapted to suit the weather conditions.

Sporting examples:

- Sprinters require speed, so they may use interval training; power and strength, so they use weight training; and possibly other methods such as circuit training.
- Racket players need speed, so they could use interval training and circuit training for muscular endurance.

1.1.4: Physical activity as part of your healthy, active lifestyle continued. The exercise session.

The warm up gradually raises the body temperature, heart rate and improves the exchange of oxygen from haemoglobin.

The warm up.

Start with a Pulse raiser	Followed by... Dynamic Stretching	Finish with Specific skills practice .
<ul style="list-style-type: none"> Cardiovascular warm-up to raise heart rate to working heart rate. Cycling, jogging, skipping etc. Usually takes between 5-15 mins Also allows for mental preparation. Could use music for motivation. 	<ul style="list-style-type: none"> Static: hold for 10-15 seconds. Dynamic (ballistic): bouncing/active stretching. Generally start at top of body. Pay attention to areas used in sport – e.g. neck and shoulders in rugby. 	<ul style="list-style-type: none"> Needs to be specific to the activity. Tennis players may practice specific shots. Cricketers may practice catching, batting and bowling. Sprinters may practice their starts.

The main activity or event.

- Raises performer's heart rate above normal level for approx 20 minutes.
- Could be continuous training for a long distance runner or a skill circuit for a hockey player.
- Could include a game or be a competition.
- Focus of the session may be to focus on rehabilitation following an injury.
- Consider timing – pre-season or just before a major competition?
- What component of fitness is aimed at being improved? Cardiovascular fitness, muscular strength or flexibility perhaps?
- Skill focus – this could be done through a circuit

The cool-down.

- Returns body to normal resting heart rate.
- Important to include after every training session/competitive situation – most important after an anaerobic work-out.
- Disperses lactic acid therefore helps to prevent stiffness and soreness in muscles.
- Jogging can be used.
- Takes approximately 5-10 minutes for heart rate to return to resting.
- Stretching incorporated – static stretches held for about 30-35 seconds.
- Relaxation exercises should finish the session – especially if session has been high intensity.

1.1.4: Physical activity as part of your healthy, active lifestyle continued.

Comparing two types of training session: Aerobic and anaerobic fitness.

Aerobic = with air	Anaerobic = without air
<ul style="list-style-type: none"> Lower intensity than anaerobic, and performers would breath throughout it. Means can exercise for longer periods of time than anaerobic than anaerobic. Marathon=aerobic event. 	<ul style="list-style-type: none"> Out of breath after the exercise as body has been working at a high intensity. Also out of breath as the body, which requires extra oxygen when working, has not had enough oxygen during the exercise. 100m = anaerobic event.
Aerobic: 'with oxygen'. If exercise is not too fast and is steady, the heart can supply all the oxygen muscles need.	Anaerobic: 'without oxygen'. If exercise is done in short, fast bursts, the heart cannot supply blood and oxygen to muscles as fast as the cells use them.

For this section of the specification, you will need to:

- Understand and explain how a method of training can be used to create different effects and improve physical performance.
- Understand how different methods of training can match individual needs and differences.

1.1.4: Physical activity as part of your healthy, active lifestyle continued. Analysing training sessions.

Analysing training sessions is essential to monitoring ability and improvements. Without analysis it would be impossible to know whether training sessions were effective.

Heart Rate

The number of times the heart beats per minute (bpm).



Resting Heart Rate

Your HR at rest. Normally between 60-80bpm. The fitter you are the lower your RHR will be – your heart is more efficient at pumping the same amount of blood around the body with fewer beats. Best taken just as you wake up.

Working Heart Rate

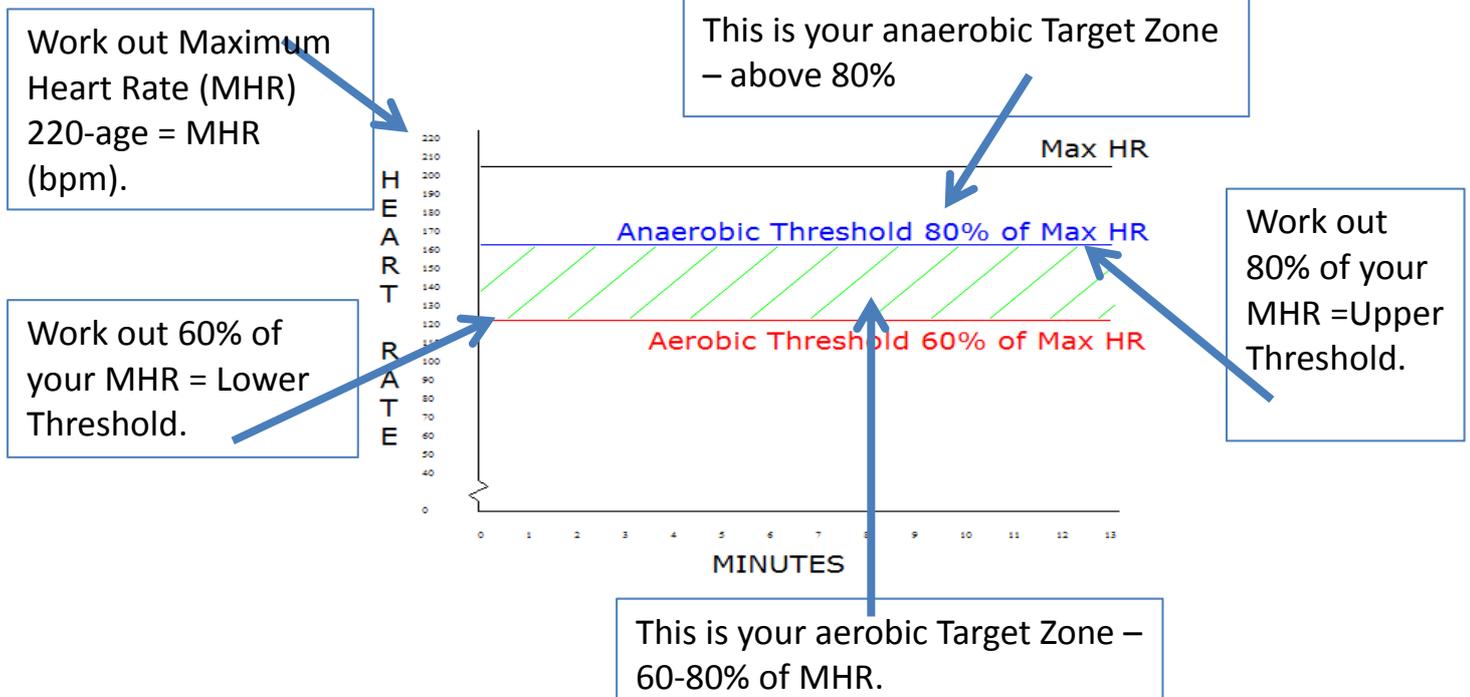
HR during/ immediately after exercise. This is an accurate guide to the Intensity (FITT) of the exercise.

Recovery Rate

How long it takes for a person's HR to return to its RHR after training. The quicker this happens, the fitter the person is.

Maximum Heart rate

Calculated according to a person's age.
 $220 - \text{age} = \text{maximum heart rate (BPM)}$.



Aerobic threshold = 60-80% of MHR
Anaerobic threshold = 80%+ of MHR

So ...

If you are 15 years old:
 $\text{MHR} = 220 - 15 = 205 \text{ bpm}$

60% of 205 = 123 bpm

80% of 205 = 164 bpm

Therefore, your aerobic threshold = 123 (lower threshold) - 164 (upper threshold) bpm and

Your anaerobic threshold = 164-205 bpm

If you works above 60% of your MHR:

- Fat will be burned – body composition.
- Increased levels of fitness.

If you work just below your anaerobic threshold – your upper aerobic threshold:

- The athlete will build up their lactic acid tolerance. Therefore, the athlete will be able to work for longer without fatiguing.

