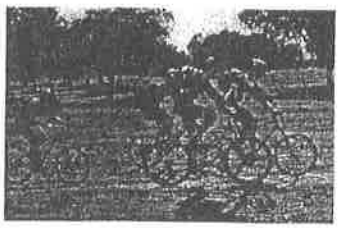
HEALTH- RELATED FITNESS

Health-related fitness includes: cardiovascular endurance, muscular strength and flexibility.

ENDURANCE



Endurance helps your muscles to work for a long period of time. Endurance is the physical ability that enables a person to carry out a task for a prolonged length of time, either tolerating or delaying the onset of fatigue.

With it, you can do exercises for a longer period of time, no matter the intensity. For example:

Cycling: In the Tour of France they ride more than 200km over a lot of days, but they also sprint!
Marathon runners run for more than 2 hours at a very fast pace.Swimmers in the 1500m race
Footballers need to run for 90 minutes without being tired so they can dribble and shoot.

There are **two types** of Stamina or Endurance: Aerobic and Anaerobic.

During Aerobic activity, your heart and lungs give your muscles plenty of oxygen and you can do exercise for long periods of time at a medium intensity. (Marathon, cycling...)

During Anaerobic activity, your muscles don't have enough oxygen. These exercises are shorter but have a very high intensity (100m sprint, a basketball attack). With anaerobic endurance, you can do these exercises faster and get tired later. In a sprint, for instance the heart rate can exceed 180 bpm.

AEROBIC ENDURANCE	ANAEROBIC ENDURANCE
LONG TERM MODERATE INTENSITY THERE IS NO LACK OF OXYGEN ENERGY RUNS OUT IN HOURS	SHORT TERM HIGH INTENSITY THERE IS A LACK OF OXYGEN ENERGY RUNS OUT IN SECONDS

Benefits of regular endurance training:
-Your heart grows larger and thicker
-Your breathing capacity increases.
-You have more capillary.
-It's easier to maintain your ideal weight

Aerobic Exercise is very good for your health. It develops your heart, your lungs and your circulatory system.

The heart rate
The heart rate or pulse rate measures how fast the heart beats. At rest a normal heart beats about 70 times per minute, and when you do exercise, it beats faster to send more oxygen and nutrients to the body's cells.

In order for physical exercise to be healthy, you should never exceed the maximum heart rate, which is calculated by subtracting the person's age from 220.

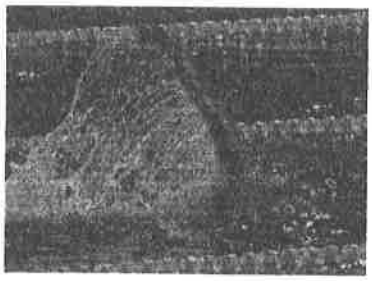
The pulse rate is taken by applying the index and middle fingers on your neck (carotid artery) on your wrist, beneath the base of the thumb and on your heart. Normally the pulse is

counted for 15 or 10 seconds and the number of beats multiplied by 4 or 6, which indicates the heart rate per minute.

When doing exercise, it is important to stop and check your heart rate every so often. Physical exercise is considered to be aerobic when the heart rate per minute is kept between 60% and 85% of the person's maximum heart rate.

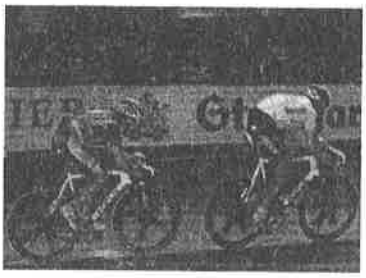
Training Methods

1. Continuous training:
It involves working for a prolonged period of time without stopping.



There are two types:
-At a **steady intensity** (you don´t vary the pace). It is good for aerobic fitness and very easy to do.
-At **different intensities** (you combine different speeds without stopping: slow-fast-medium...). This is often called "**fartlek**" or "**speed play**". The advantages of fartleck are that it can be easily adapted to the individual and games with a regular change of pace (football, basketball...

2. Interval training:
This involves alternating periods of high intensity work with rest periods. During the rest periods the person may be inactive (their body stops moving) or they may work at a low intensity.



Some examples of interval training are:
- Swimming 8 x 25m sprints with a 20 seconds rest between each
- Running 10 x 100 m sprints with a 300m jog between each.

In this type of training, you can increase the stress level if you:
- Increase the speed of the sprint
- Increase the number of sprints
- Increase the distance
- Decrease the rest periods

3. Circuit training:
This type of work includes a number of physical exercises performed one after the other in the form of a circle or circuit.
Circuits can be designed to build up strength, increase endurance or speed. You can do all types of exercises: with the only load of your body (push-ups), with loads (dumbbells, medicinal balls...), with benches, ropes, balls and other materials...
You must carefully select the exercises that best suit your objective.

The advantages of circuit training are that:
- The variety of exercises prevents boredom
- A lot of people can work in a small place at the same time
- Any kind of exercise can be included.

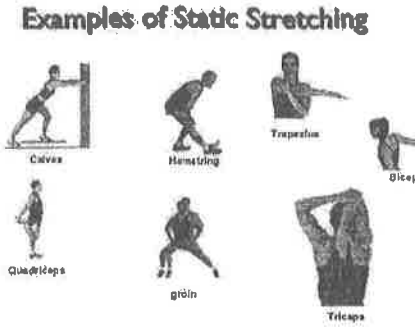
In this type of training, you can increase the stress level if you:

- Increase the number of exercises
- Increase the number of laps to the circuit
- Increase the speed
- Decrease the rest periods

FLEXIBILITY

Flexibility is the ability to have a wide range of movement with any part of your body. Flexibility is the amount of movement possible at a joint.
It is often forgotten about, but flexibility is useful for any physical activity.
Benefits:

- Fewer injuries: if you are flexible, you are less likely to pull or strain a muscle or stretch too far and injure yourself.
- Better performance: flexibility makes you more efficient in other sports like swimming or hurdling.
- Better posture: more flexibility means a better posture and fewer aches and pains.

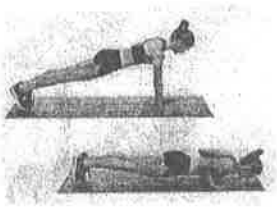


How to improve the flexibility
- Flexibility is trained with specific exercises, we usually use **static exercises** in which we adopt a position to stretch a certain muscles group and then maintaining that position for several seconds.

STRENGTH

Strength is the ability to use muscles against a resistance (a force or a weight). With it, you can move or lift weights, and you can move your body weight more easily.

How to improve strength:



- **Static** and **dynamic** exercises: in a static exercise we adopt a posture with our body and maintain the position for and specific length of time for instance the plank. In a dynamic exercise, we move our body, or part of it, for example squat.

- **Body weights** and **additional weights:**

  - **Body weights exercises** with the opposition of our own body, such as squat and push up.
  - **Additional weights exercises** with a supplementary weight, such as partner or material object.

SKILL-RELATED FITNESS

SPEED

Speed is the ability to do one or more movements in a short period of time.

AGILITY

Agility is the ability to control the movement of your entire body, and to be able to chage your body's position quickly (to change the direction quickly)
Agility is important in any activity where you've got tu run about, changing direction all the time, like football or hockey.

OBTEINIG ENERGY BY THE MUSCLE

Muscles need energy for muscle contraction and muscle relaxation. For this it uses ATP.

There are two pathways:

Anaerobic pathways: When the muscles make very intense efforts.

Firstly, the muscle takes energy from the muscle: ATP.

Secondly, the muscle gets energy from the glycogen (HC).

Aerobic pathways: Use high oxygen consumption.

Firstly, the muscle takes energy from the glycogen during the first seconds.

Secondly, the muscle gets energy from thefatty acids.