

COMPONENTS OF FITNESS

Aerobic Endurance - the ability of the cardio respiratory system to work efficiently, supplying nutrients & O₂ to working muscles during sustained physical activity. Swimmers need this so they have enough energy to complete the race in a good time.

Muscular Endurance the ability of the muscular system to work efficiently, in which a muscle can repeatedly contract over a period of time against a light to moderate fixed resistance load. Swimmers need this to last the whole race without their muscles tiring.

Power the work done in a unit of time. It is calculated in the following way:

$$\text{Power} = \text{Force (kg)} \times \text{Distance (m)} / \text{Time (min or sec)}$$

This is needed for a swimmer to push off the starting block.

Reaction Time the time taken for a sports performer to respond to a stimulus.

The time taken for a swimmer to react to the starting pistol.

Body Composition the relative ratio of fat mass to fat free mass in the body. You need the right muscle to fat ratio so you can get the best time for the race eg mesomorph

COMPONENTS OF FITNESS

Progressive Overload In order to progress, training needs to be demanding enough to cause your body to adapt, improve performance. You can do this by increasing your frequency, intensity, or time or by reducing recovery times. Don't use all methods at once as this could lead to injury or illness. You also need essential time to rest and recover.

Reversibility

If you stop training, or the intensity of the training is not sufficient to cause adaptation, training effects are reversed. Reversibility is also known as de-training.

Rate of Perceived Exertion

The BORG (1970) rating of perceived exertion scale is a measure of exercise intensity that runs from 6-20. It is designed to show people how hard they think they are working while exercising so that the intensity can be changed if necessary.

Continuous 9-11 Interval 10-12

Specificity
Training needs to be specific to your sport/activity or developing physical/skill related goals

Individual Needs
Should be designed to meet your training goals, needs, ability, levels of fitness, skill level and exercise likes/dislikes

Variation
It is important to maintain interest, this helps an individual keep their training schedule. Vary your programme to avoid boredom and maintain enjoyment.

SWIMMING LONG DISTANCE

PRINCIPLES OF TRAINING

multistage fitness Test

Predicts maximum O₂ uptake levels.

Method - 2 cones 20m apart in a sportshall. Starts at level 1. Each is 1 minute long and the bleeps between levels increase. You must make it to the line for the bleep. If you miss it twice you must stop. You are aiming to get as high a level as possible.

Level 4 - 26.8 = Poor

Level 6 - 3.7 = Average

Level 12 - 5.4 = Excellent

Females 15-19 years

Both tests look at aerobic endurance but are not done in a pool so not sport specific.

FITNESS TESTS

Freshy Step Test

Also predicts maximum O₂ uptake levels.

Method - Using a bench (female height 33cm), face the bench.

Step up + down in time with the metronome for 5 minutes. Then take your pulse for 15 seconds.

Using your pulse result + your weight you use the table to work out your final result (ml/kg/min)

54+ = Superior
43-39 = Good
<29 = Poor

Females 15 years

METHODS OF TRAINING

Continuous

Long/slow or steady training for at least 30 minutes.

Advantages

- Good for building aerobic endurance.
- Training can be made sport specific

Disadvantages

- Can become boring and hard to motivate.
- Only develops aerobic endurance.

Example

- warm up - 4 laps each stroke
- 25 mins of continuous training of 46 seconds a lap.
- Cool Down - 4 laps each stroke

Interval

Alternates work periods with rest or recovery periods. Varying length of work and rest can develop both aerobic + anaerobic training.

Advantages

- Clear progressive overload.
- No equipment needed
- Can be sport specific

Disadvantages

- may lose interest due to repetition
- careful planning needed

Example

- warm up - 4 laps of each stroke
- 10 x 50m freestyle with 15sec rest
- 10 x 50m backstroke " " etc.
- Cool Down - 4 laps of each stroke

How often you train - **Frequency** - 5 times a week, 3 Interval, 2 continuous

How hard you train - **Intensity** - Con - slow to medium, Inter - medium

How long you train - **Time** - 30 min sessions ↑ PO

How you train - **TYPE** - Con + Int