

EXERCISE AND TRAINING

Energy and Energy Systems / Thresholds of Training

Objectives



- Understand the different types of training
- Appreciate the advantages and disadvantages for each method of training.
- Determine which training methods are suitable for different sporting activities

STARTER



- Put the sports into order most aerobic to anaerobic
- Put the training methods into order most aerobic to anaerobic

Continuous Training



Continuous Training

- Run, swim, cycle or walk at the same pace without rest for 30 mins+
- Work in the aerobic training Zone (60-75%)
- As fitness improves the distance involved can be above competition distance
- Overload – increase weekly frequency
- Intensity – same distance faster
- Time – Same speed for longer
- Improves aerobic fitness
- Increases metabolic rate
- Decreases body fat

Continuous Training

ADVANTAGES

- Cheap – running and walking can be done anywhere
- Can be done from own home needs no transport

DISADVANTAGES

- No skill work
- Boring
- Only improves aerobic fitness (footballer will also need to do speed sessions)

Continuous Training



- Write a continuous training session that you might follow
- State the aim of the session. (For example, to improve aerobic base fitness)

Fartlek Training (Speed play)

- Changes in pace, terrain and style
- Works aerobic and anaerobic systems
- Can be adapted to running, cycling, skiing, swimming etc...
- Cones, lamp posts or houses as markers
- Overload – increase the weekly frequency
- Intensity – time or speed, ground (uphill/sand)
- Improves aerobic and anaerobic fitness
- Increases metabolic rate
- Decreases Body Fat

Fartlek Training



ADVANTAGES

- Very good for games players, as games have many changes of speed
- You can change the mix of fast and slow to suit the energy system required for your sport
- Although coach can control the speed it is hard to tell if the athlete is working hard enough
- A lot of motivation is required to work at maximum speed, easy to drop effort

Examples of Fartlek Training

EXAMPLE 1

Jog for warm up 8 min
90% Sprint every 8 posts
Jog recovery 5 mins
Sprint exceleration 10 reps
(10 paces)
Jog Recovery 30 sec
 $\frac{3}{4}$ pace 30 sec
Jog recovery 1 min
Jog to finish 10 min

EXAMPLE 2

10 min jog
100m walk
50m sprint
2 min rest
5 min jog
REPEAT

Fartlek Training



- Write a Fartlek session that would be relevant to your sport
- State the aim of your session

Interval Training



- Intervals of activity followed by intervals of rest (light exercise)
- Can work aerobic and /or anaerobic
- Can be adapted to running, cycling, skiing, swimming etc...
- Overload – increase the weekly frequency/ number of repetitions
- Intensity – time or speed,

Interval Training



ADVANTAGES

- Aerobic system improves quickly
- Increases speed for aerobic and anaerobic based activities
- Does not take a prolonged time

DISADVANTAGES

- It does hurt, needs motivation and is easy to give up

Interval Training

- Beginners can use Borg's Scale of perceived exertion to help
- During recovery Level 11
- Hard work start at 12

Level 6 – no exertion at all

Level 7 – Very light

Level 9 – Easy walking, comfortable pace

Level 11 – Light Work

Level 13 – Somewhat hard (tired but you can continue)

Level 15 – Hard (Heavy)

Level 17 – Very hard/Very tired

Level 19 – Extremely hard/you cannot continue at this pace

Level 20 – Maximal Effort

Interval Session - Beginner



- Aim – To improve health

20 minute jog (3 mins comfortable pace, 1 min slightly breathless, 3 mins recovery jogging, REPEAT)

Interval training – Netball player



- Aim – Improve netball specific fitness, improve power, the anaerobic system and footwork around the court
- 30 seconds rest between each exercise

Interval Training – Netball Player

1. Sprint to circle edge and touch it with your hand sprint back, jump and touch the net. Repeat 6 times
2. Sprint a third, sidestep across the court, cross-overs to the back line, $\frac{3}{4}$ pace to the start. Repeat 2 times
3. Sprint forward 5 metres jump and catch an imaginary ball, land in the same spot you took off from. Repeat 10 times
4. From back line sprint to the 1st third line and back, then to the 2nd line and back, then to the end of the court and back
5. Starting at the centre third line, sprint out level with the centre circle, side step back half way to the end third and then sprint into the circle, jump out and touch the net. Repeat 5 times



This is 1 set, repeat 3-5 times

Interval Training Session



- Design your own interval training session, state the aim and make it applicable to your sport.

Circuit Training

- Muscle or skill training
- 8-15 stations
- Different exercise at each station
- Set amount of time on each activity (30 sec)
- Improves muscular strength. Endurance, muscle tone and posture
- Increases metabolic rate and bone density
- Decreases body fat
- Overload – more reps in the same amount of time
- Overload – more times round
- Overload- longer on each exercise / less rest

Circuit Training



ADVANTAGES

- Can be adapted to use free weights or body weight
- Shorter or longer bursts of work, anaerobic/aerobic
- Can be adapted to concentrate on certain muscle groups
- Can be adapted to work on skills

DISADVANTAGES

- Can be difficult to stay motivated when working alone

Circuit Training

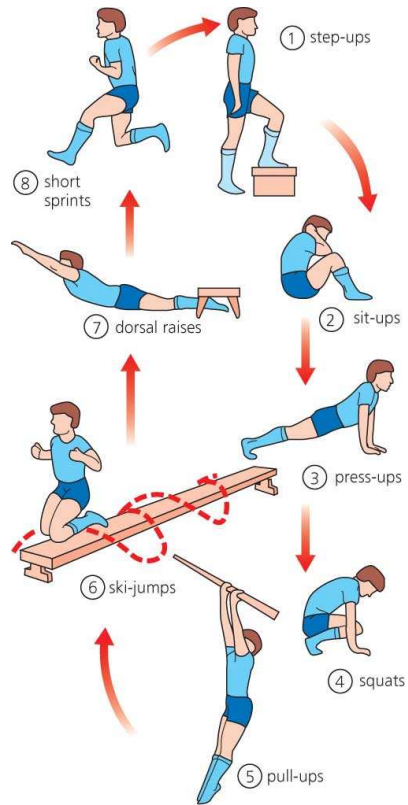


Fig 7.6a

Recording

| Week / Exercise | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------------|---|---|---|---|---|---|
| Step Ups | | | | | | |
| Sit ups | | | | | | |
| Press ups | | | | | | |
| Squats | | | | | | |
| Pull Ups | | | | | | |
| Ski Jumps | | | | | | |
| Dorsal Raises | | | | | | |
| Short Sprints | | | | | | |

Examples of training sessions



- www.topendsports.com

Starter



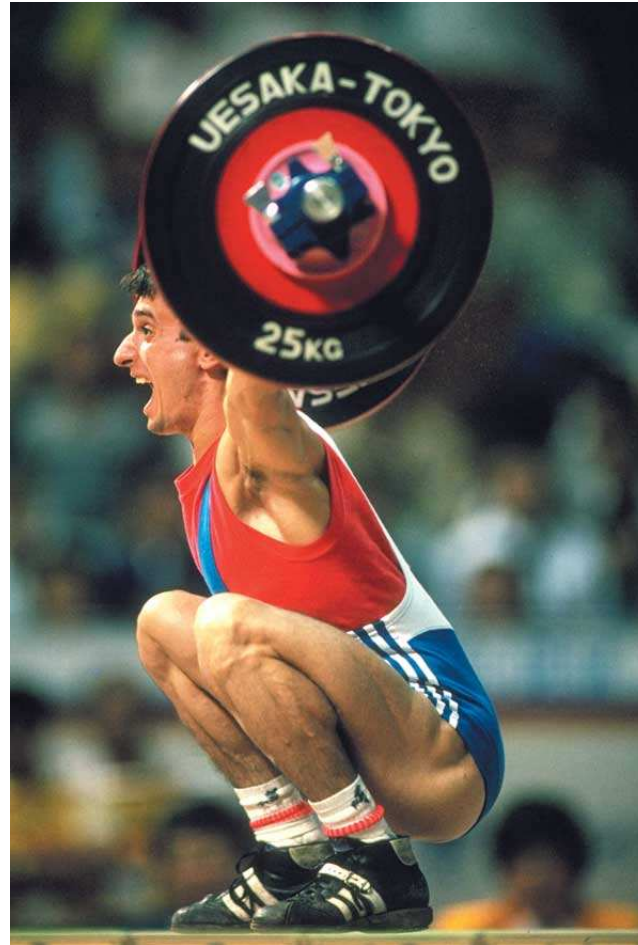
1. Define Aerobic Training
2. Define Anaerobic Training
3. Define Interval Training

Objective



- Learn how to specifically train muscles

Methods of muscle training

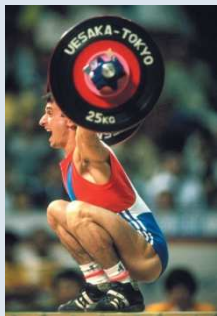




Muscular Strength— The amount of force muscles are able to exert against a resistance

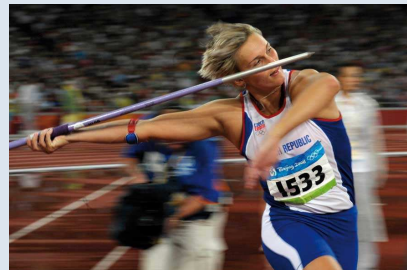
STRENGTH

- Force against resistance e.g weightlifting
- Does not matter how fast or slow you exert the force
- Few reps (3 to 5) near to max load
- Strength training makes muscles thicker
- Static or Dynamic



POWER

- Ability to do strength performances quickly
- Explosive strengths = $\text{Power} \times \text{Speed}$
- Important for most sports
- Training makes muscles bigger due to fibres becoming thicker
- Variation of strength and power work



MUSCULAR ENDURANCE

- Ability to repeat and maintain contractions without getting tired
- Running, cycling, swimming
- Low weight, high rep