

EXERCISE AND TRAINING

Energy and Energy Systems / Thresholds of Training

OBJECTIVES



- Recap and revise where energy comes from and how it is used to make movement
- Know how to use heart rate to train specific energy systems

Starter – Write your training programme

Day	Training
Monday	Swimming 400m warm up (100 f/c, 100 kicking, 100 pull, 100 f/c) 8 x 100 (20 secs rest) 4 x 200 (30 secs rest) 2x 400 (35 secs rest) 200m cooldown
Tuesday	Running 1 hr steady run
Wednesday	Cycling 2 hr steady / spinning
Thursday	Run session 5 min warm up Interval sprints 10 min cool down
Friday	Swimming
Saturday	Rest
Sunday	Competition

Energy and Energy Systems



- Make bullet point notes on Aerobic and Anaerobic respiration
- Answer questions 1-4 p29

Oxygen Debt



- Muscles need extra O₂ to get rid of lactic acid
- This extra O₂ is called the oxygen debt
- **Oxygen Debt** = the amount of O₂ needed to get the body back to its resting heart state

Ways in which you create and payback O₂ debt

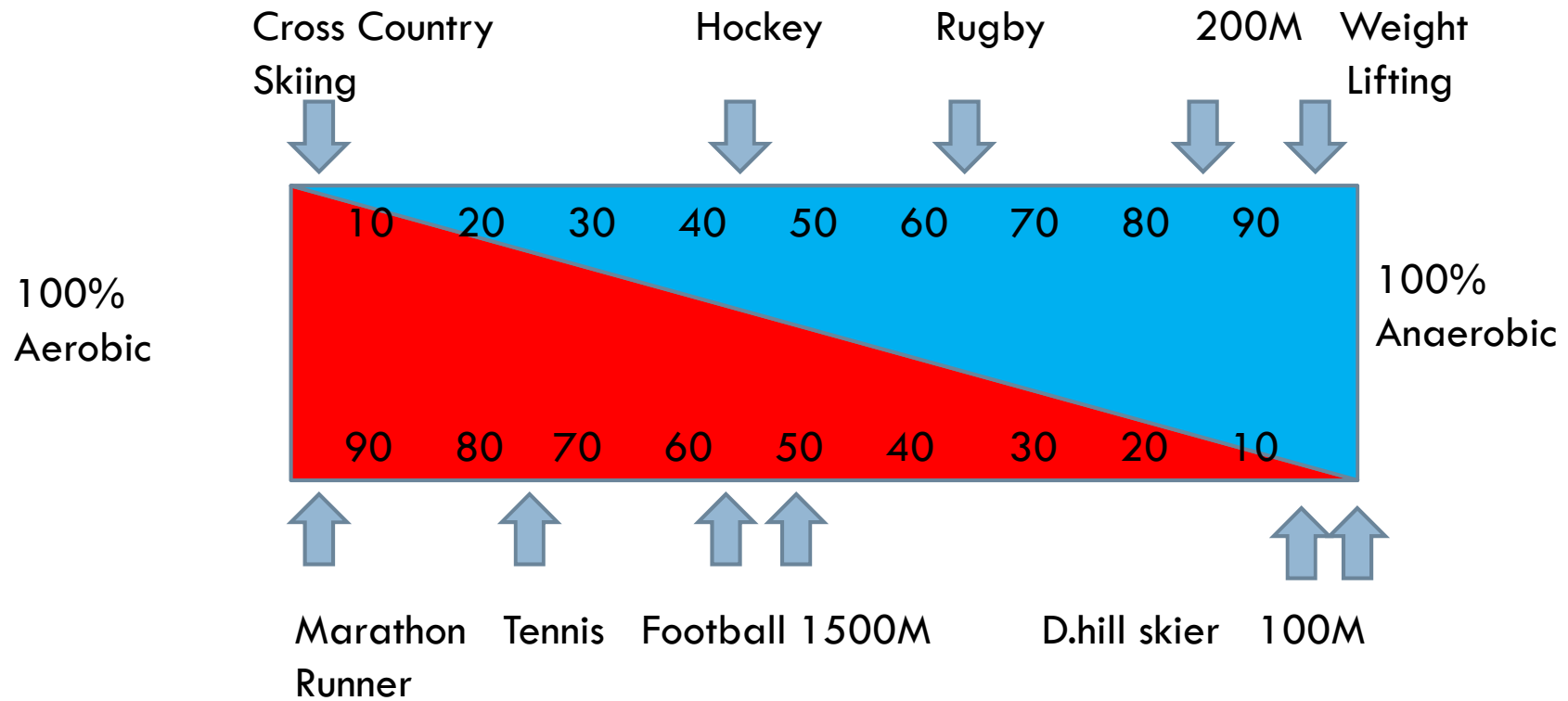
- Max effort activities – breathing hard to take in extra O₂
- Long events- at the beginning waiting for heart rate and breathing to increase to get the extra O₂ to the muscle (2-3 mins), if event is steady pay back then if not at the end
- Sudden burst of speed , payback depends on what you do in between these bursts

Thresholds of Training



- **Aerobic Fitness** – low intensity training and is needed for endurance and recovery. It is a good foundation for reaching higher levels of fitness
- **Anaerobic Fitness** – higher intensity training, needed for short, explosive bursts of activity, requires a good foundation of aerobic fitness

Fitness demands of different activities



Aerobic and Anaerobic Training

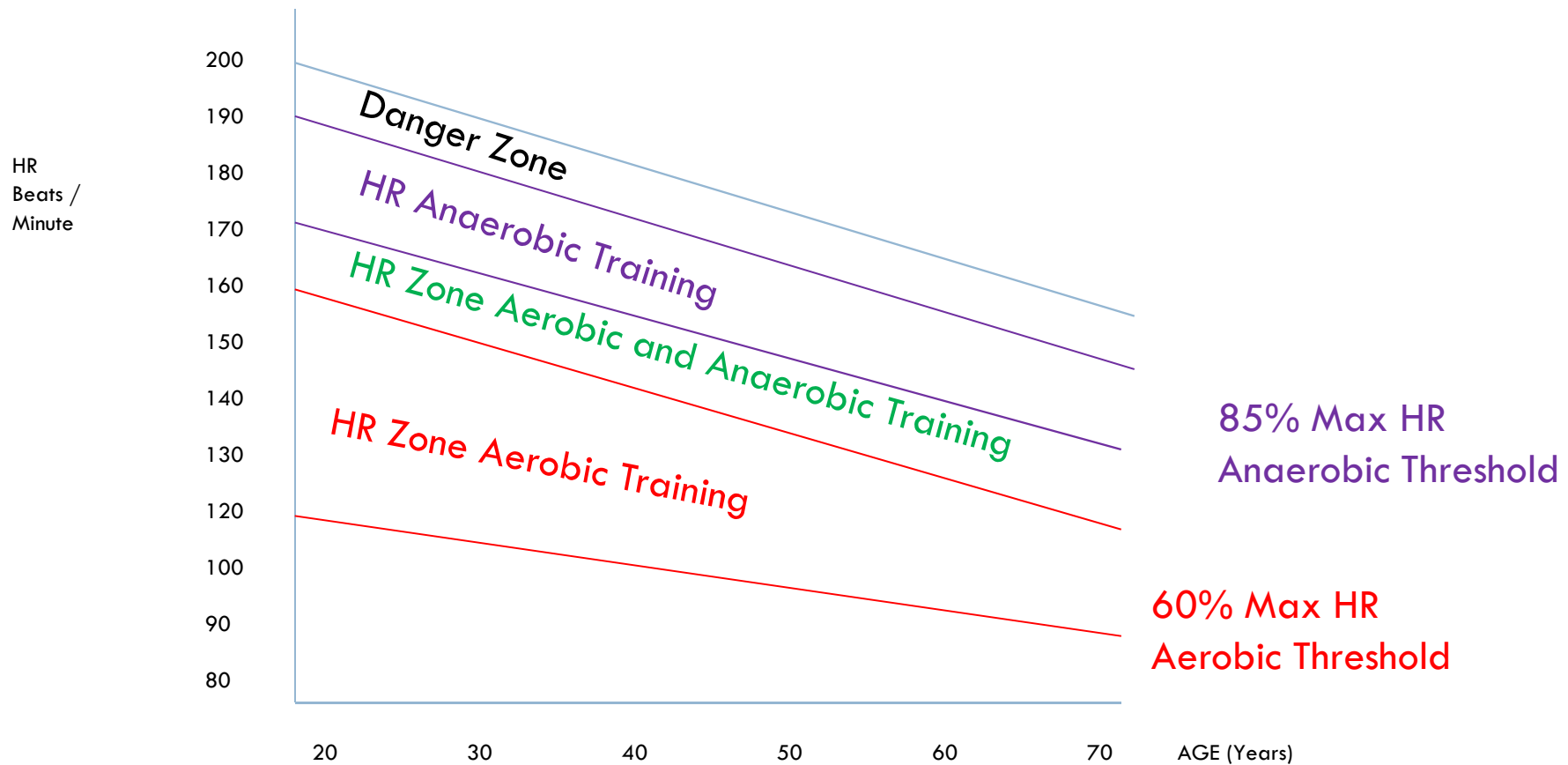
□ AEROBIC

- Strenuous, rhythmical and prolonged
- 60 – 80% Max HR
- Large muscle groups

□ ANAEROBIC

- Very strenuous in short bursts
- 85% Max HR
- Rest and Recovery
- With Caution

Heart rate (HR) Zone



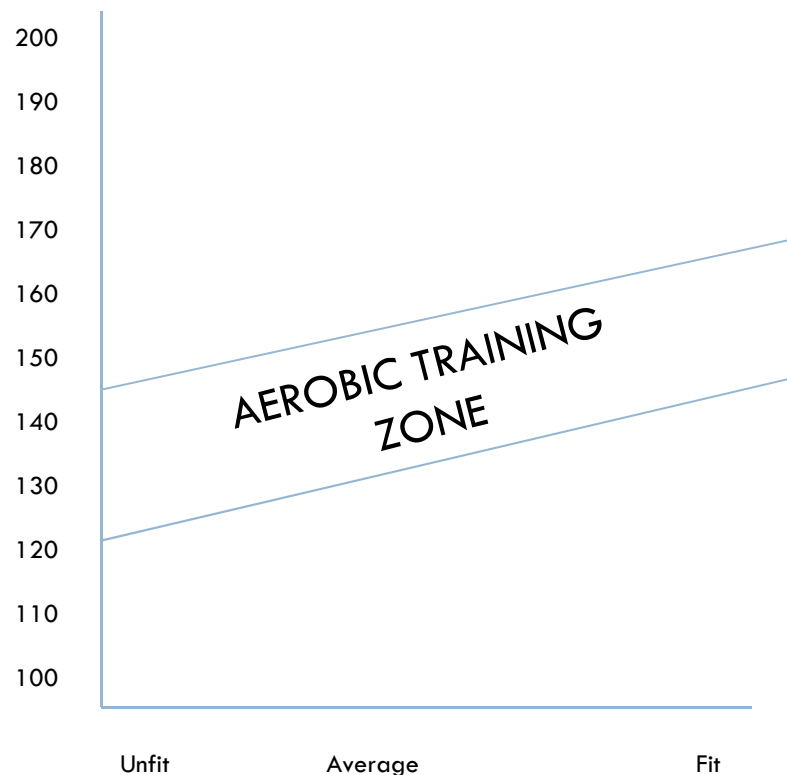
Remember Max Heart Rate is $220 - \text{AGE}$

Aerobic Training Zone



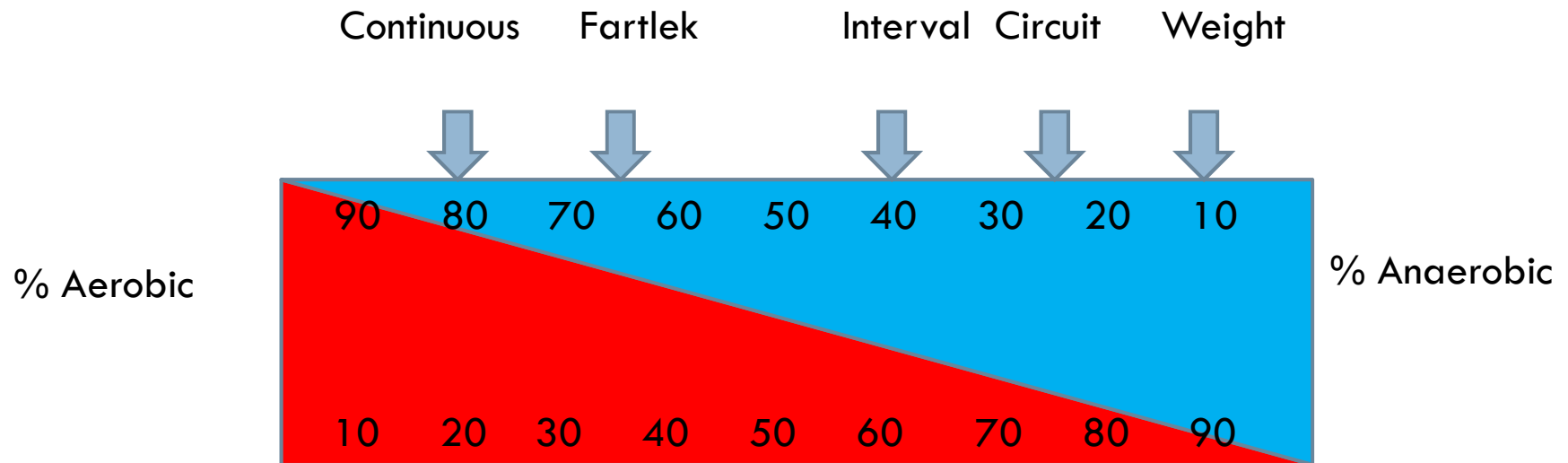
- Working within a range of heart rates (depending on fitness)
- When you reach it you need to stay in it (adjusting the intensity of your exercise)
- Heart rates at the limit of the zone are called **training thresholds**
- At the point you can no longer supply enough energy aerobically is your **aerobic threshold**

Aerobic Target Zone for a 15 Year Old



- Unfit person 60-70% max HR
- Average Person 65-75% max HR
- Fit Person 75-85% max HR

Specific Training Methods



Each Method consists of exercises that can be organised into

Repetitions

The number of times an exercise is repeated

Sets

The number of groups of repetitions of one exercise

Homework

- Questions 1-4 p31