

How to optimise training and prevent injury



UNTAMED
EDUCATION

3.1.3 Physical training

Post-season

Injury

Aerobic zone

Maximum Heart Rate

Anaerobic zone

How to optimise training and prevent injury

Training Thresholds

Circuit Training

High Altitude

Weight Training

Pre-season

Peak-Season

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1. Training thresholds

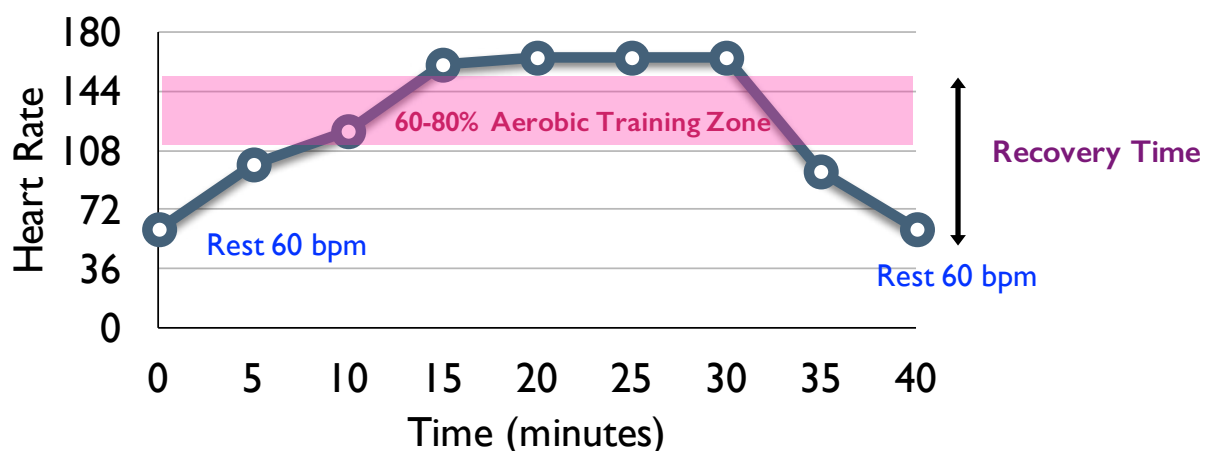
- ▶ Training thresholds allow athletes to **measure the** _____ of their training.
- ▶ The **heart rate** is used to ensure that athletes are working at the correct intensity for the fitness component and energy system they are trying to develop.
- ▶ Training in the _____ **zone** allows athletes to develop their aerobic performance.
- ▶ Training in the _____ **zone** allows athletes to develop their anaerobic performance.

2. Aerobic training zone

To improve your cardiovascular endurance you must raise your heart rate into the training zone and stay there for at least 15 minutes.

- ▶ Maximum Heart Rate = $220 - \text{age}$
- ▶ Aerobic training thresholds are calculated between _____ **and** _____ % of the maximum heart rate.

Pulse Changes During Rest, Exercise and Recovery for a 16 Year Old



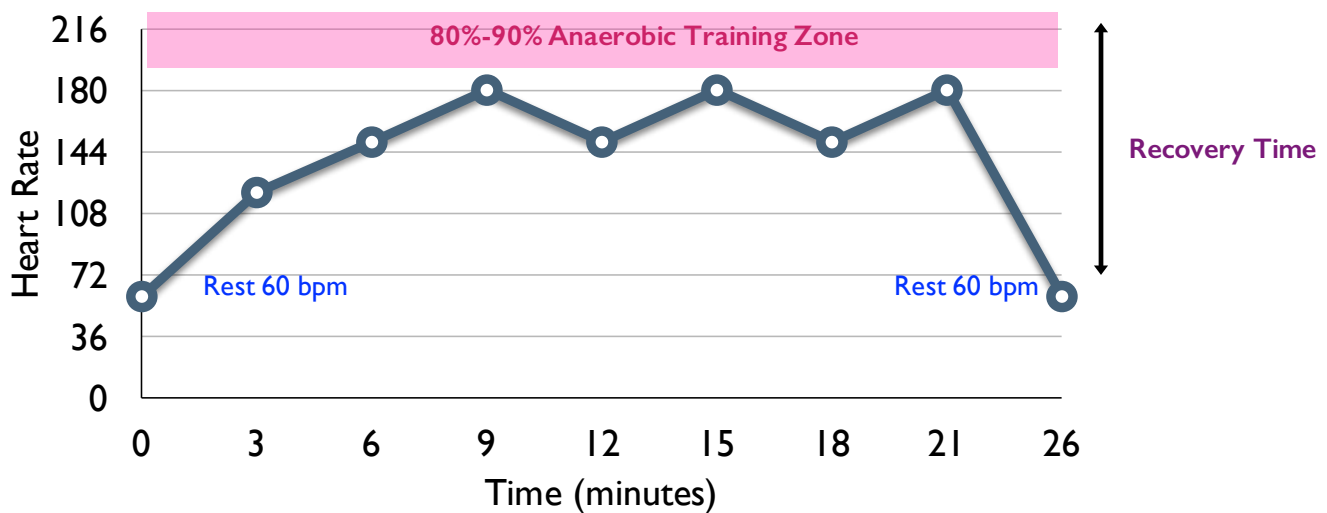
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3. Anaerobic training zone

▶ **Maximum Heart Rate** = _____ - _____

▶ Anaerobic training thresholds are calculated between 80 and 90% of the maximum heart rate.

Pulse Changes During Rest, Exercise and Recovery for a 16 Year Old



4. Training to optimise performance

Circuit training to optimise performance.

▶ _____ **performance** - short high intensity work followed by longer periods of rest

▶ _____ **performance** - longer medium intensity work with short periods of rest.

Weight training to optimise performance.

▶ _____ **training** - high weight (above 70% of 1RM) and low reps (4-6 reps)

▶ _____ **training** - low weight (below 70% of 1RM) and high reps (12-15 reps)

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5. High altitude training



- ▶ Altitude training increases the performance of the aerobic system.
- ▶ Athletes train at high altitude where there is less atmospheric oxygen.
- ▶ The reduced oxygen supply forces the body to adapt and produce more red blood cells to carry more of the available oxygen.
- ▶ When they return to sea level they use this advantage to increase performance.

Advantages

- It increases the oxygen-carrying capacity of the blood due to the increased concentration of red blood cells.
- Increased aerobic performance.
- Enhances endurance.

Disadvantages

- Expensive to travel to high altitudes.
- Fitness can be lost or reduced quickly when returning to sea level.
- May suffer from altitude sickness.
- Does not increase anaerobic performance.

Athletes who benefit

Any athlete that performs aerobically.
Long-distance runners and games players.

6. Preventing injury

- ▶ A thorough _____ **up** completed before exercise.
- ▶ Do not _____ i.e. use correct weight and intensity.
- ▶ Appropriate _____ and **clothing** worn.
- ▶ Use of _____ and _____.
- ▶ _____ maintained.
- ▶ Stretches not _____ or bounced.
- ▶ Correct performance **technique** used.
- ▶ Appropriate _____ and _____ time between sessions.



7. Training season

Pre-season/_____

- ▶ There is very little competition at this time.
- ▶ Training is focused on fitness and techniques.

Peak-season/_____/playing season

- ▶ This is the competitive part of the season where performers compete and focus on skills and tactics in training.
- ▶ Maintenance of fitness levels.

Post-season/_____

- ▶ This is after the competitive part of the season and the athlete will rest.
- ▶ Introduce light aerobic training to maintain general fitness.

