

Anaerobic Exercise: Student Handout

Key Concept

Anaerobic exercise happens when the body's demand for energy is greater than the supply of oxygen available for aerobic metabolism.

How It Works

- Aerobic metabolism (with oxygen) is slower but efficient — uses oxygen to break down glucose and fat.
- Anaerobic metabolism (without enough oxygen) is faster but less efficient — relies mainly on glucose and produces lactic acid.
- The body switches when energy is needed very quickly, e.g., sprinting, weightlifting, HIIT.

Characteristics of Anaerobic Exercise

- Short duration: seconds to a few minutes
- High intensity: effort greater than sustainable aerobic activity
- Relies on stored energy (glycogen, creatine phosphate)
- Leads to muscle fatigue due to lactate buildup

Why It's Important

- Builds strength and power
- Improves muscle endurance at high intensities
- Boosts metabolism (after-burn effect)
- Complements aerobic training

Student Takeaway

Aerobic = marathon pace (steady, oxygen-fueled, endurance)

Anaerobic = sprint pace (fast, oxygen-limited, power).

Both systems work together, but anaerobic exercise kicks in when oxygen delivery can't keep up with demand.