



UNDERSTANDING AEROBIC EXERCISE AT THE CELLULAR LEVEL

WHAT MITOCHONDRIA DO IN MUSCLE TISSUE

1

Chemical reactions that convert glucose into ATP, energy currency

2

Produce 32 molecules of ATP per cycle of reactions

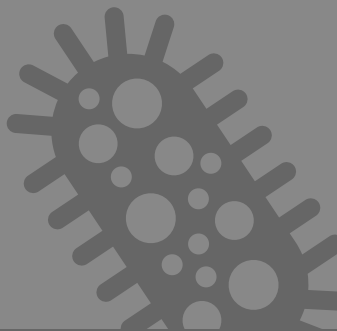
3

Reactions catalyzed by mitochondrial enzymes

4

Reactions catalyzed by mitochondrial enzymes

HOW AEROBIC EXERCISE CHANGES MITOCHONDRIA

- Increases **OXYGEN FLOW** to muscle cells and mitochondria
 - Increases amounts of mitochondrial enzymes
 - Creates **BLOOD VESSELS** to transport more oxygen to muscle tissue
 - Increases myoglobin, the protein that stores and transports oxygen in muscle cells
 - Increases **OVERALL DENSITY** of mitochondria in muscle tissue
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MITOCHONDRIAL ADAPTATIONS IMPROVE FITNESS

- Greater **BLOOD FLOW** to muscles
- More **OXYGEN** to muscles
- Improved aerobic capacity
- Greater **ENDURANCE**
- Increased time to fatigue
- Better **MUSCLE RECOVERY** after all types of workouts