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

MITOCHEONDRIAL 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