A Spescific Adaptation to Exercise (Increase Glycogen Storage in Muscle)

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General Pattern of Exercise response (A Single Bouts of Exercise)

- Exercise : Homeostasis disturbance
- Receptor : Nerves, Hormones, Organs
- Target Organ : Heart, Lungs, Musclae
- Response of Fungsional Change: Increase Hart Rate, Respiration, Blood Flow, etc.
- Opposes Homeostasis Disturbance

A specific Adaptation to Exercise

The Human Body

Exercise session causes decline in Chemical Energy in The muscle

Receptor: Enzym of Glycogen Break Down

Response Pathway: Activation of Enzym of Glycogen Break Down

Adaptation Pathway: DNA/RNA for Producing More Active Enzym to Synthezise Muscle Glycogen

Target Organ: Working Muscle

Adapted Response: More Glycogen for More Energy

Opposive Fall in Energy

Respiratory System

- Homeostasis Disturbance: Exceed CO_2 in Blood
- Sensoric: Nerve Cells in The Brain
- Integrator: Group of Nerve Cells
- Regulator: Nerve Cells Controlling Breathing
- Opposite Effect: Faster Breathing, Lowers blood CO_2

Aerobic Adaptation to Aerobic Exercise

- Increase mitochondria's capacity to generate ATP aerobically by oxydative of phosphorilation
- Increase capacity for mitochondrial oxygen uptake: the size and number of mitochondria twofold increase in the level of aerobic system enzymes
- Scheletal muscle myoglobine content of animals increase by 80%: oxygen within the cells raises, facilitates oxygen diffusion to the mitochondria
- There is an increase in the trained muscles's capacity to mobilize and oxydize fat; increase blood flow within muscle and activity of fat-mobilizing enzymes in trained person. Uses more free fatty acids for energy than untrained counterparts at subsmaximal of work rate
- Trained muscle also exhibits greater capability to oxydize carbohydrate; larger quantities of pyruvic acids moves through the aerobic pathway. Increased oxydative capacity of the mitochondria and glycogen storage within the trained muscle.
- Aerobic training produces metabolic adaptations in the different types of muscle's fibers. Generally, the basic fiber's type does not change, but all fibers develop their already existing aerobic potential.
- There may also be selective hypertrophy of muscle fibers to specific overload training. Highly trained endurance athletes show larger slow-twitch fibers than fast –twitch fibers in the same muscle, vise versa.