

COMPONENTS OF FITNESS:

Vo2 Max is probably the best determinate of overall fitness. A high VO2 max typically means one excels in each of the individual components. It takes into account all aspects of the cardiovascular and muscular system. It is the maximal oxygen uptake, or the maximum amount of oxygen that can be consumed per minute during maximal exercise.



Testing VO2 Max in a laboratory.

Endurance: Time to fatigue. The ability to perform activities for extended periods of time.



Ultra marathons and other ultra distance events are a test of endurance.

Anaerobic Threshold: The point where the exercise intensity increases to a level that the body's energy requirements can no longer be met completely by the aerobic energy pathway. Lactic acid is produced at a faster rate than it can be cleared from the body.

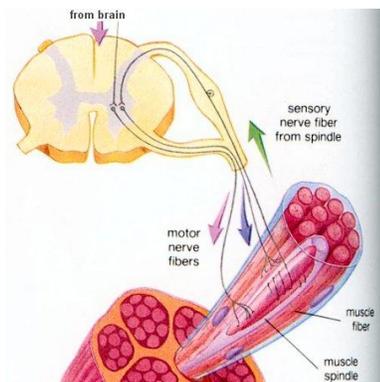


Sprints are an example of anaerobic threshold.

Strength: the ability of a muscle to exert force against a resistance. Muscular strength is the maximum force that can be applied by a muscle during a single maximal contraction. Muscular endurance is the ability to perform repetitive muscular contraction against some resistance. Also related to agility, or the ability of the body to make a rapid, coordinated change in direction.



Proprioception/Balance: sense of bodily movement and position in space. The major receptor responsible for this sense is the muscle spindle stretch receptors. They occur in skeletal muscles and respond both to the absolute magnitude of muscle stretch and the rate at which the stretch occurs. Also related is sense of effort or awareness of the amount of muscle contraction being exerted. For this awareness we rely on information in pathways that descend to the motor neurons from the parts of the brain controlling motor behavior.



Flexibility: the ability to move joints and use muscles through their full range of motion. Flexibility can be gained through stretching, massage, and relaxation. All these aid in preventing injuries, increasing range of motion, restoring the length of the muscles to allow maximal contraction, and improving biomechanical efficiency.



Recovery: the ability to heal and recover after a stress to the body. Exercise is a positive and typically moderate stress that allows the body to recover stronger than its previous state, improving fitness. The fitter an individual the faster they heal and recover after any stress, positive or negative. Rest (good sleep), relaxation, and good nutrition are all key to recovery.

