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health talk

Kicking It Up Into High Gear

Understanding Exercise Physiology

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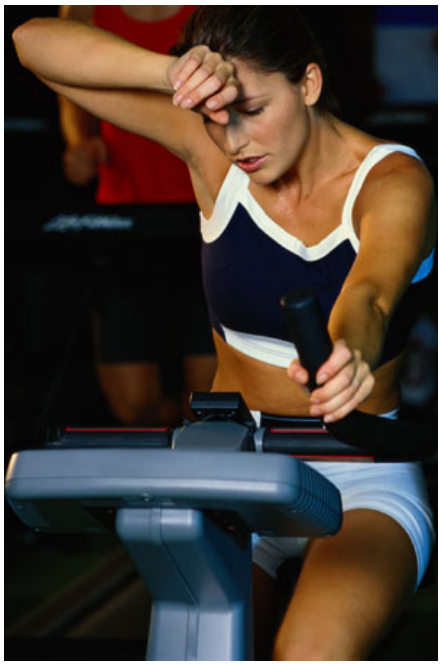
Exercise Physiology In Brief

Energy for exercise may come from 3 energy systems in the body. The aerobic energy system uses oxygen in a chemical reaction with different fuels to produce energy, heat, carbon dioxide and water. The other 2 systems do not require oxygen and are considered anaerobic. In reality, energy to perform exercise comes from a combination of anaerobic and aerobic sources.

Some of the fuels used by the body include fats, carbohydrates and proteins. At rest, the body requires a minimum amount of oxygen to continue the chemical reactions required to sustain life. This is known as metabolism. When you are more active and use more muscles, you need more energy. Compare running at 6 km per hour on a treadmill versus running 6 km per hour outdoors on uneven, hilly terrain. Which one is probably more demanding? Which one will make you breathe harder? If the oxygen supplied meets the amount needed, the by-products produced are carbon dioxide and water. Like complete combustion, it's a clean burn with no left overs.



Everyone has a ventilatory threshold when the energy demand exceeds the body's ability to extract oxygen. This is known as anaerobic energy metabolism. A couch potato reaches that limit much sooner than a professional athlete. Because of this "oxygen debt", the fuels are not broken down entirely and lactate is produced. This is similar to incomplete combustion when you are left with carbon at the end of the reaction. Lactate contributes to the muscle burning sensation you experience when you're working really hard. The body converts the lactate into a different fuel for later use after you finish exercising. That's why after exercise, you will continue to breathe hard when your workout is done. The best example is when you're running hard to catch a bus and afterward find yourself gasping for air. This is a phenomenon known as excess post-exercise oxygen consumption (EPOC).

Why Is That Important To Me?

Training at higher intensities is a great way to condition the body. Normally, when lactate levels rise, performance drops. If you regularly train at a higher intensity, your body can adapt to be able to tolerate and eliminate more quickly, the rise in lactate levels.

Furthermore, EPOC can last for several hours. This means your metabolism continues to be increased long after your workout is over. That's great for anyone looking to lose a few pounds!

One more thing...

If you have been sedentary or have a medical condition, make sure to see a health care professional before starting an exercise program. **Book a consultation at Form and Function with Lucinda today to find out more about the best kinds of exercise for you.**

References
Adams, K.J. (2010). Chapter 3 Exercise Physiology. American College of Sports Medicine Resource manual for guidelines for exercise testing and prescription, Sixth edition. (Page 45 -51). Baltimore: Lippincott Williams and Wilkins.

Add This To Your Next Workout By

- Add higher intensity intervals with active rest periods
- Start with intervals that are short in duration and gradually make them longer
- Increase your intensity slightly to start, progress to going 100%
- Increase the amount of resistance and lower the number of repetitions you complete
- Add some plyometric exercises like box jumps, hopping, etc.
- Do a fun activity, you won't keep it up if you hate doing it

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