**Boosting and Fueling Your Metabolism**

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**By Michelle May, M.D.**

The word metabolism is thrown around a lot these days. Some people complain, "I have a slow metabolism" and buy products that claim to "boost your metabolism". But how do you increase your metabolism, and *what is it* exactly? How do diets affect your metabolism?

In a nutshell, metabolism simply refers to the amount of fuel or energy that your body burns each day. While images of treadmills and aerobics classes may come to mind, you're using energy right now just reading this article.

The largest part of your metabolism, called basal metabolism, is the amount of fuel your body burns to support your basic bodily functions. These vital functions include your heartbeat, breathing, brain function and numerous other important, but invisible, activities going on inside of you at all times. Even eating, digesting and processing food contribute to your metabolism.

In fact, every little cell in your body is like a tiny engine that burns fuel continuously in the process of doing its job. These tiny engines never shut off while you are alive. Even when you're sleeping or sitting still, your body's cells are still actively working. It's just like a car; when the engine is running, it's burning fuel-even if it's just sitting in the driveway.

**Move More to Increase Your Metabolism**

Your activity level is another significant part of your fuel needs. On top of your basal metabolism, your body's workload increases with any type of activity, from brushing your teeth and taking a shower, to walking around your home, school or office.

This extra work increases the number of calories the cells burn, because the "labor" of the cells has increased. For instance, your lung cells must work to take in oxygen and release carbon dioxide, but they work harder when you're walking at a brisk pace than when you're sitting in a chair.

**Increase Muscle Mass to Boost Your Metabolism**

Another piece to this metabolic puzzle is your body composition. Your body is composed of water, adipose tissue (better known as fat) and lean tissue, which is everything else (muscle, bone, hair, and other tissues).

Your muscle mass is an important part of your lean tissue. In fact a majority of your body's machinery is composed of muscle, including many of your internal organs. The tiny engines of muscle cells are "metabolically active" because they require energy to perform their work. Muscles help you breathe, digest food, move your body, lift and carry objects and even stand upright.

Not only do muscle cells require more energy to do their work, but it also takes energy to build and maintain them. Whenever you do a little more than your body is accustomed to, your body will build more muscle to accommodate the new workload. Building this new muscle tissue requires more fuel. It's like a factory; as the number of workers increases, the productivity or output goes up.

**Diets Affect on Metabolism**

There is another significant part of metabolism-food. To your body, food is the fuel that keeps this process running smoothly. Your cells must have an energy supply in order to perform their required tasks. Without an adequate amount of fuel, your cells cannot function properly, resulting in unfavorable consequences.

Think about your car again. If it runs out of gasoline, it will putter and stop. However, in order to stay alive, your body's cells cannot all just shut off. When your cells are low on fuel from food, your body will turn to its "reserve tanks" to utilize other energy sources. Initially, it will use up carbohydrate that has been stored as glycogen in your muscles and liver. When that is gone, it will begin to break down certain tissues to use for its energy supply, specifically, fat and muscle.

In a state of ongoing fuel shortage or semi-starvation, your body must pick and choose which cells to continue supporting and which ones to "drop." A priority list is developed, and needless to say, the cells that provide vital activities take top priority. Remember, muscle cells require a lot of energy, so those that aren't being used regularly will be given the pink slip!

When your food supply remains low, your cells must also become more efficient. That is, they attempt to perform their jobs without burning as many calories; they adapt to the lower energy intake by expending less energy. If this happened in your car, you'd be thrilled, but when it happens in your body you will burn 20-36% fewer calories per day by becoming more fuel-efficient.

This is all the result of your body's primitive, complex survival mechanisms that try to keep you alive during limited periods of starvation. In days long ago when food was not as plentiful or easy to obtain, people worked quite strenuously hunting and gathering their food. Perhaps they chased wild game or walked miles to find edible berries and roots. When they were able to eat freely, their bodies used the fuel as needed for activities and stored any extra fuel as fat for later use. When food supplies were scarce during cold winters or summer droughts, their bodies could draw on the stored fat for fuel.

If a famine persisted, their bodies would sense the lack of sufficient fuel and conserve energy by eliminating non-essential functions and slowing down the essential ones. Fat stores and muscle tissue would be broken down for energy to meet their bodies' caloric demands. When the famine was over and they could eat whenever they were hungry, their bodies would rebuild lost fuel stores. Their muscle mass would also be rebuilt as their tasks of hunting and gathering of food were supported by adequate nourishment.

Your body still has this primitive survival mechanism but most modern "famines" self-imposed. Under strict dieting conditions, the same old survival mechanisms still exist. Initially you will lose water and some of the stored fuel. Eventually survival mechanisms kick in and your metabolism decreases to conserve energy and some of your muscle mass may be lost. This is simply the way your body adapts to being under-fueled.

On the other hand, to optimally support your metabolism you can choose to take three important steps: live an active lifestyle, engage in a reasonable exercise program to maintain and build muscle, and eat an appropriate amount of food to fuel your cells. With a greater appreciation for the processes that affect your metabolism, you can take these critical steps to boost and fuel your metabolism so it will work for you.

Michelle May, M.D. is a recovered yoyo dieter and the award-winning author of Am I Hungry? What To Do When Diets Don't Work. Learn to manage your weight without deprivation and guilt with Dr. May's complimentary mini