

GOT METABOLISM?

November 2006

There is so much information, and misinformation, about our body's that it is nearly impossible to sift through it to determine what is right for you. In an effort to address this we, at EQUIVITA, started off 2006 with bi-weekly classes. We call these classes Fit U. These Fit U classes are free, open to anyone who wishes to attend and are designed solely to educate. This article on metabolism is based on one of our recent Fit U classes. More information can be found online at www.equivita.com.



What's Metabolism Got to Do with Our Health?

By Adam Milligan, President, EQUIVITA

Metabolism is the sum total of all the chemical processes in the body. Typically, it is expressed as the amount of energy units (calories) required for these processes and, thus, as the minimum energy required to maintain the body. This minimum is called the Basal Metabolic Rate (BMR). The easiest method of calculating BMR is to multiply your body weight in pounds by 10. Although rough, this calculation provides an estimate, or starting point, for the amount

of calories you need to maintain your current body.

The caloric requirement, or metabolism, of the body is controlled by the release of thyroid hormones from the thyroid gland. This complicated system begins in the hypothalamus, which acts on the pituitary, which acts on the thyroid, which primarily releases a thyroid hormone that will later be converted to an active form. Clearly, the system of hormones to control me-

tabolism is very complicated with many negative feedback loops, but for our purposes we will focus on how to increase one's metabolism through the one type of cell that we have the most control over: muscle.

Muscle cells are very energy expensive for the body. In fact, each pound of muscle requires somewhere in the range of 35-50 Calories each day to maintain. This is far more than a pound of fat, which requires only about 5 Calories per day.

Intuitively, this makes sense because muscle is dynamic and must stay alert and ready for use, while fat cells simply store fat.

Since muscle is expensive to maintain, the body tries to maintain as little muscle as possible. If the muscle is not being used, the body will break it down and consume it as energy. This leads to what has been called The Great American Trend. The estimates vary, but on average, after the age of 25 the typical American loses ½ pound of muscle every year and gains 1 pound of weight every year. This means that by the age of 45 the average American weighs 20 pounds more than they did at age 25 and has 10 pounds less muscle. For those watching the math, that equates to 350-500 fewer Calories being burned by muscle and 150 Calories more burned by fat, for a total of 200 –350 fewer Calories being used each day. At this rate it would take only 10 days at the same Caloric intake to have enough extra Calories to add one pound of fat (3500 Calories).

How does the body adapt to less muscle as we age? The answer lies in biomechanics. Remember, the goal of the body is to maintain as little muscle as is necessary. To achieve the state of “unnecessary”, the muscle simply needs to not be used. There are many examples of this throughout the body, but I will just describe two.

The first is our body’s change in gait. If the leg can be positioned to place stress on the knees, ankles and hips, then

the muscles don’t have to work as hard with each step. But, you still have to use muscle to propel the body forward and that muscle is typically the calf. So, as we age we develop nice calf muscles and the body can rid itself of those calorie-demanding large muscles of the thigh and butt.

Another common example is the back. If the body can round forward just enough to ease the amount of work the muscles in the back must do to support the upright posture, then it can begin ridding itself of those now “unnecessary” muscles, unfortunately often at the expense of the discs in the spine.

These two examples are common but certainly not the only ways the body has to decrease muscle. Every body is different and each has unique weaknesses that it is predisposed to develop. The only way to reverse the trend is to determine the individual body’s patterns and to create a specific exercise program for them. The Transitional Fitness Assessment offered at EQUIVITA is designed specifically to find these weaknesses and to develop a plan for strengthening them.

It is important to stress that a balanced program to an imbalanced body will only create a more imbalanced body because the biomechanical patterns have not been addressed. The body is resistant to adding energy-expensive muscle and it will strive to perform any exercise the easiest possible way. It will repeatedly find ways around having to build new muscle.

The easiest example is the slight shift in joint position when approaching fatigue during exercise. Rather than be pushed to the point of triggering the body that it needs more muscle, it will shift position to use different muscle or leverage the joint. Allowing this to happen is like stopping the exercise when you start to feel the muscle fatigue. You still will get some benefit from the exercise, but not nearly what you could have.

Now, I know that all of this sounds very hard and, perhaps, too difficult. I certainly don’t want to hinder, in any way, anyone’s exercise efforts. I just think that if you are going to take the time to exercise, you should get the most from it. Your goal is not to fight the body, but to understand it enough to work with it to achieve your goals. Create the right environment and the body will change. Think about the environment you are creating and how the body is changing. Is it what you want?

For more information on this and other health related topics, contact EQUIVITA or visit our website.



1508 Hess St. Suite D
Columbus OH 43212
614.298.8781 phone
888.883.5787 fax
amilligan@equivita.com
www.equivita.com