

the science of metabolism

You've probably heard it dozens of times – "I've just got a slow metabolism." There is a good chance whoever said it may in fact be correct. For these individuals, there is both good news and bad news.

Experts indicate that a slow metabolism may be evolutionarily superior to a fast metabolism. In the days when food was in short supply, a person with a slower metabolism needed less food to maintain their basic bodily life-support systems, such as breathing, brain function, blood circulation and digestion. That meant those with faster metabolisms processed food quicker and needed more food to survive. Ultimately, the people with faster metabolisms would die first.

The bad news? When food is abundant and you overeat, weight gain occurs more easily and quickly for those with a slow metabolism. And despite the claims of companies pushing wonder pills and fad diets, the true secret to weight loss has been with you the whole time. That secret is your unique metabolic process.

The metabolic process is the breaking down of food through chemical reactions in your body to produce the energy needed to survive and function. Everyone has a base metabolism rate – the specific amount of calories needed for the body to complete its basic functions. Weight gain, therefore, happens when you take in more calories than you burn, either through basic life functions, or through movement, such as walking, brushing your teeth or even pressing the buttons on the remote control.

The metabolic process begins in the hypothalamus, an area of the brain that regulates such areas as hunger, thirst, temperature, sleep, sexual activity and other mood sensors. The hypothalamus sends hormones to the pituitary gland, sometimes known as the master gland because it controls many other glands in the body. In particular, the pituitary gland sends signals to the thyroid gland, which is crucial to the metabolic process.

The thyroid gland, located in the neck, is responsible for producing the thyroid hormone that helps determine the metabolic rate. A thyroid gland that produces too much or too little of this hormone can affect the rate at which the breakdown occurs. Both of which can lead to more serious health problems.

knowing your metabolic rate is key to weight loss

Understanding the metabolic process, and more specifically, your particular metabolic rate, is crucial to long-term weight loss and health. Your base metabolism rate can be measured through a Resting Energy Expirations test. That rate becomes the magic number of calories you need per day. Find that number, and a nutrition plan can be established for optimal weight loss.

The base metabolism rate is important not only so you don't overeat, but also so you don't eat too little. Starvation or crash diets negatively affect your metabolism and can actually cause weight gain. If you consume less than the amount of calories you need to survive, your body automatically goes into survival mode. Your metabolism slows down and your body begins to store up food, resulting in weight gain.

Metabolic rate changes as muscle mass is added or reduced. Increasing your lean muscle mass will speed up the metabolic process and will burn calories faster. Keeping up lean muscle is important, because as you age, your metabolism naturally tends to slow down as your activity level slows. For women, metabolism also tends to slow down after menopause.

combining nutrition with exercise

The most effective way to lose weight is to combine proper nutrition with exercise. By restricting the number of calories to your base metabolism rate and incorporating exercise routines, you maintain what your body needs and convert stored calories into energy to burn.

Balancing the two types of exercise – aerobic and anaerobic – accomplishes the goal of speeding up the metabolism and burning calories. Aerobic exercises, commonly known as cardiovascular workouts, burn calories with oxygen and burn fat as the main source of fuel. Such exercises include walking, jogging, dancing or bicycling.



Anaerobic means to burn calories without oxygen. Typically, weightlifting, sprinting, boxing and other high intensity activities are considered anaerobic. The reason is because the activity crosses the metabolic threshold, or the point at which you cannot take in enough oxygen to support the activity. The activity creates a system overload and begins to break down the muscle. The body responds by switching the fuel source from burning fat to burning carbohydrates to repair the muscles. So remember, to speed up your metabolism and lose weight, you need a combination of both aerobic and anaerobic exercise.

For more questions please contact nutritionist Julie Fortenberry, LDN, RD at East Jefferson General Hospital at 504.457.3100.