[IMAGE]

Jump-Start Your Metabolism

And Get Your Body to Work for You

By Ronald Klatz, MD and Robert Goldman, MD

On a cellular scale, metabolism is the breakdown of fats, proteins or carbohydrates and how our cells, organs, and tissues process these fuels. On a broader scale, metabolism is not merely the process of burning up the calories we consume from food, but rather how the various nutrients from that food help us maintain a healthy body.

Metabolism slows with age, thereby contributing to weight gain in our older years. After age 45, the average individual loses around 10 percent of their muscle mass per decade. This equates to losing about one-third to one-half a pound of muscle each year and also *gaining* that much in body fat.

A comprehensive study funded by the Agricultural Research Service suggests metabolism may slow with age because of a gradual loss of body cells, especially high-energy-consuming muscle cells. As a result, people burn fewer calories while at rest when they're older, which often leads to weight gain over time.

Fruits and jump rope - Copyright â Stock Photo / Register Mark Some scientists have suggested that changes in hormones, immune function or other factors may depress resting metabolism with aging. This study, a statistical analysis conducted by researchers at the Human Nutrition Research Center on Aging at Tufts University in Boston, showed a direct association between metabolic rate and cell mass, also known as lean- or fat-free mass. This means that older people may actually be able to regain some of the resting metabolic rate they had when they were younger by doing regular muscle-building exercises. Increasing muscle mass would help seniors ward off obesity, according to the researchers.

Exercise isn't the only way to boost metabolism, of course; research also suggests proper nutrition can play a key role in getting your body to work for you. People who are physically fit, eat a healthy, balanced diet, and take nutritional supplements can measure out to be up to 20 years biologically younger than their chronological age. Let's take a look at what the science is saying about ways to jump-start your metabolism and keep it working for you for a lifetime.

Metabolism Booster #1: Consistent Exercise

At present, exercise is the closest thing to a anti-aging pill that exists. Just 30 minutes of exercise each day can reduce a person's risk of developing heart disease by 50 percent, according to the World Health Organization. Research has shown that three 10-minute burst of activity are just as beneficial as one long session, so the recommended daily quota could be achieved simply by taking a few short walks during the day, taking the stairs instead of the elevator or parking your car a few minutes from school and walking to pick up your kids. According to the WHO, such simple measures to incorporate 30 minutes of exercise into our daily life could halve our risk of developing inactivity-related disease such as obesity, type 2 diabetes, and heart disease.

In support of this, results of a recent study led by Dr. Philippe Meyer showed that simple lifestyle changes can have a major impact on health. Results of this study showed that choosing to walk up stairs instead of taking the elevator cut the risk of premature death from any cause by 15 percent. Furthermore, at the end of the 12-week study, participants who swapped the stairs for the elevator had less body fat, trimmer waistlines, better lung capacity, and an improved capacity for aerobic exercise.

Jumper Cable - Copyright â Stock Photo / Register Mark It takes 12 weeks of regular exercise to become "fit," meaning that your oxygen capacity has improved. It takes only one brisk walk, however, to improve your health; that is, to lower indicators such as blood pressure, blood sugar, and triglycerides. Exercise reduces the risk for stroke, lowers LDL cholesterol and raises HDL cholesterol, lowers the risk for sleep disorders, improves mood, boosts creativity, preserves mental acuity, and maintains muscular strength, flexibility, and balance. Regular stimulation of the immune system may have a cumulative effect.

Recent research suggests regular exercise may boost levels of telomerase, an enzyme that protects against cellular aging. Professor Dean Ornish and colleagues at the Preventive Medicine Research Institute in California conducted a study to assess whether three months of intensive lifestyle changes would increase telomerase activity in what are known as peripheral blood mononuclear cells. The 24 participants ate a diet high in fruit and vegetables, took supplements of vitamins and fish oils, followed an exercise program and attended classes in stress management, relaxation techniques, and breathing exercises. Results showed that the lifestyle changes led to an average 29 percent increase in telomerase levels. Increases in telomerase activity were also linked to a significant decrease in low-density lipoprotein (LDL) cholesterol levels. [LDL cholesterol has been described as "bad" cholesterol, compared to high-density lipoprotein (HDL) or "good"

cholesterol. To learn more about cholesterol, visit **www.toyourhealth.com**.]

Remember, it doesn't matter if you were physically active in your younger years; if you're not currently engaged in a physical activity program on a regular basis, your body is not receiving the innumerable health-related benefits of exercise.

When pursuing any kind of physical fitness, always obtain medical clearance from your doctor, especially if you have pre-existing cardiovascular disease or cardiac problems, chronic obstructive pulmonary disease (emphysema, asthma, chronic bronchitis), uncontrolled diabetes, osteoporosis, or arthritis. Always start out slowly and increase your level of exercise gradually. You should never feel any strange discomfort. It's also a good idea, especially for those with osteoporosis or arthritis, to exercise on a mat or padded floor to protect against serious injury.

Metabolism Booster #2: The Right Nutrition

Chromium is an essential trace mineral that helps the body to make glucose available for energy and to maintain normal blood sugar levels. It is also important for the metabolism of amino acids and fats. People ages 55 and older who exercise regularly are at risk of deficiency and therefore may benefit from taking supplementary chromium.

Chromium is widely believed to be useful in the treatment of diabetes. Chromium may lower the risk of heart disease. People with higher blood levels of chromium are at lower risk of developing heart disease, and chromium may also lower total cholesterol, LDL cholesterol, and triglyceride levels, while also raising levels of HDL cholesterol.

Green tea: Unlike black and oolong tea, green tea *(Camellia sinensis)* is not fermented; therefore, the active ingredients remain unaltered in the herb. Green tea increases fat metabolism and helps to regulate blood sugar and insulin levels. A study of overweight and obese people found that drinking a beverage containing 625 mg of green tea catechins enhanced exercise-induced weight loss - particularly in the abdominal area - and reduced fasting serum triglyceride levels. A study of green tea and weight loss in obese Thai men found the compound increases energy expenditure and fat oxidation.

Green tea is also thought to prevent cardiovascular disease by lowering cholesterol levels, inhibiting LDL cholesterol oxidation, and reducing the tendency of blood platelets to stick together. It also is a potent antioxidant. Green tea compounds not only directly scavenge free radicals, but also enhance the

effectiveness of the body's natural antioxidant systems.

Magnesium is essential for life, as it plays a major role in the metabolism of glucose. It is also used in the production of cellular energy and to create protein. In addition, magnesium may help to protect against cardiovascular disease. Epidemiological studies have found that eating a diet low in minerals, specifically calcium, potassium, and magnesium, is associated with hypertension (high blood pressure). Studies have also shown that people with diabetes tend to have low magnesium levels. In one study, middle-aged people with the lowest serum magnesium levels were twice as likely as those with the highest to develop type 2 diabetes.

Potassium is important for intracellular chemical reactions and regulates the transfer of nutrients to the cells. Potassium is required for proper carbohydrate metabolism. Severe potassium deficiency can lead to heart attack. Studies have found that potassium can reduce high blood pressure and help to prevent heart attacks. Additionally, potassium supplementation may help to prevent type 2 diabetes in people taking thiazide diuretics. Research published last year suggests depleted blood potassium levels may explain why people prescribed diuretics for the treatment of high blood pressure run an increased risk of developing type 2 diabetes. Always discuss dosing with your doctor before taking potassium or any other supplement, particularly if you are currently taking medication for a pre-existing health condition.

Metabolic Syndrome: Metabolism Gone Bad

Metabolic syndrome, also known as Syndrome X or insulin-resistance syndrome, affects an estimated 50 million Americans. According to the American Heart Association (AHA), this syndrome, which significantly increases the risk of coronary heart disease, stroke, type 2 diabetes and other significant health problems (particularly those related to plaque buildup on artery walls) , is actually a constellation of six metabolic factors gone bad:

1. Abdominal obesity (excessive fat tissue in and around the abdomen).
2. Blood fat disorders: low HDL ("good") cholesterol, high LDL ("bad") cholesterol high triglycerides, which promotes plaque buildups on artery walls.
3. Elevated blood pressure.
4. Insulin resistance or glucose intolerance (the body can't properly use insulin or blood sugar).
5. Prothrombotic state (which elevates the risk of blood clot formation).

6. Pro-inflammatory state (e.g., elevated C-reactive protein in the blood; linked to numerous diseases).

The AHA suggests primary interventions to manage or reduce the risk of metabolic syndrome include weight loss (goal is to attain a body mass index of less than 25 kg/m2); increasing physical activity (goal of 30 minutes or more of moderate-intensity activity on most days of the week; and adopting health eating habits, including reducing intake of saturated fat, trans fat and cholesterol. Talk to your doctor for additional information and visit www.americanheart.org.

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