

THE TRUTH ABOUT BUILDING MUSCLE

Taking care of your muscles is important for overall health. One of the best ways to do this is to use them. Muscles respond well to regular challenges. Regular aerobic exercise—that type of exercise that makes your heart beat faster and makes you sweat, such as jogging or biking—helps reduce the risk of heart disease, stroke, diabetes and other health problems. Regular strength training (e.g. weight lifting), when done properly, helps keep muscles strong, which reduces the risk of falls and injury. And finally, regular participation in flexibility activities, such as yoga and stretching, keeps muscles supple, which also reduces the risk of injury as well as helps with balance and agility.

How to Build Muscle

Research indicates that engaging in regular physical activity that includes strength activities, endurance activities and flexibility activities is best for overall health. However, many people don't exercise just for the health benefits; rather they do it so that they can also "look good". For men, "looking good" often means adding muscle mass. In search for bigger muscles, some people compromise their physical health. They suffer from injuries related to over-exercising as well as side-effects from the use of substances—such as steroids—that promise to deliver larger muscles. Some also compromise their mental health. Studies show that those with

a drive for muscularity have higher rates of body dissatisfaction, which has been linked with poor psychological adjustment, eating disorders, depression, low self-esteem, social anxiety, and other health problems. In order to reduce the risk for physical and mental health problems, those wishing to add muscle should approach this goal with realistic expectations and use reliable information. Unfortunately, reliable information on building muscle is extremely difficult to find, especially on the Internet. Hundreds upon hundreds of websites claim to hold the key to building big muscles—usually through the purchase of a product that the site conveniently sells or through a program that is also available for purchase. Let's face it, if these products performed as well as they claim, everyone who wanted larger muscles would have them. This is clearly not the case. Here is what science has to say about building muscle.

The Four Indisputable Truths About Building Muscle

Truth #1: The Ability to Put on Muscle Mass is Limited

A person's ability to put on muscle mass is limited by their genetics. Just as someone cannot change their eye colour, someone cannot add more muscle than their genetics will allow. Through proper training, good nutrition and adequate rest, a person can



maximize their genetic potential, but they cannot exceed their genetic limitations. In fact, there is a limit as to how much muscle any person can put on without using steroids. The fat-free mass index (FFMI)—a calculation similar to the Body Mass Index (BMI)—is used to identify the proportion of a person's lean body weight (i.e. body weight that is not fat) in relation to their height. Studies reveal that a person cannot achieve an FFMI greater than 25-26 without using steroids. Winners of the Mr. America bodybuilding championships from the 1930's until the late 1950's had FFMI's that were about 25. However, since the introduction of steroids into the bodybuilding arena, the FFMI of champion bodybuilders has greatly increased. Phil Heath (175 cm, 111 kg, 3% body fat), who won the Mr. Olympia bodybuilding title in 2011 has an FFMI of 35!!!

On average, men have a greater potential to add muscle mass than women because their genes are "programmed" to produce more testosterone, which is a hormone that contributes to muscle growth. Among men, testosterone levels vary from person to

Men and Body Image

There is a misperception that body dissatisfaction is only a problem that women experience. However, studies reveal that a significant number of men are dissatisfied with their bodies and their appearance. Men who are dissatisfied with their bodies are at increased risk of health problems including depression, eating disorders, anxiety, low self-esteem, and sexual problems, which all contribute to a decreased quality of life.

Body Dysmorphic Disorder (BDD) is a psychiatric disorder characterized by excessive preoccupation with imagined defects in a person's physical appearance. It is an extreme form of body dissatisfaction and is relatively uncommon. More common is a general dissatisfaction with body shape and size. Some men wish to weigh less, but many who are dissatisfied would like to be bigger, leaner and more muscular.

Body image is a very complex issue. Many factors contribute to how we feel about our bodies. Of particular importance for men is the value that our culture places on a muscular male physique. Muscularity is believed to be associated with power and masculinity, both of which are revered in North American culture. These values are promoted through the media. The vast majority of times that we see an image of a man with his shirt off in a magazine on television or in the movies, he is lean and muscular, which is not a fair representation of the average male. Even children's toys (e.g. G.I. Joe), animated characters and super heroes are generally well muscled. The bombardment of these images has a tremendous effect on how men perceive their bodies. This fuels the drive for greater muscularity for those who believe that bigger muscles will make them more popular and respected. As with any body image dissatisfaction, the person does not want the ideal body; instead they want the feelings that they believe the ideal body will bring. Those feelings can be achieved in many other ways. Striving for an impossible ideal will only lead to disappointment and may negatively affect health.

person. Some people try to overcome their genetic limitations by using anabolic steroids (muscle growth hormones). The use of these substances can be very detrimental to health.

Not only is there a limit to overall muscle mass, but there is also a limit as to how quickly a person can add muscle. Contrary to what websites and trainers at the gym claim, it is not possible to add 10 pounds of muscle per month. Although numbers are difficult to find, one researcher claims that under ideal circumstances (good genetics, disciplined training and nutrition) a person can add no more than an ounce (28 grams) of muscle a day, which would translate into about two pounds a month. Of course, this gain cannot be sustained month after month for years. The same researcher indicates that the greatest gain in muscle mass he has recorded in an individual in a year is 18 pounds; again, under ideal circumstances and without the use of steroids.

The bottom line: respect your limitations and work within them. Work towards strong, healthy muscles that function well rather than big ones.

Truth #2. Challenge Your Muscles

Muscles only grow in response to being challenged. In fact, not using a muscle over time leads to it wasting away. When muscles are sufficiently challenged, small tears are created and muscle fibers are damaged. As these tears get “patched up”, the muscle grows.

The best way to challenge a muscle is to forcefully contract it against a resistance. This not only builds the muscle but also increases its strength. (By the way, muscles don’t have to be big to be strong). The most effective way to do this is to lift weights. To maximize results from weight lifting it is best to weight train the major muscle groups (shoulders, chest, back, arms, abdomen and legs) a few times a week by lifting the weight for a set of 8-12 repetitions (or “reps”), resting and then doing it again for another set or two. To best achieve muscle growth, the amount of weight lifted should be such that the last rep of each set is almost impossible to carry out. Many websites, magazines and other sources of bodybuilding information provide fine details about how to get maximum growth from your workout (such as which exercises to do first, how much time to rest between sets, what

time of day to exercise etc.), but these tricks are anecdotal and have not proven to add more mass. To find out more about weight training, consult a certified trainer or reliable sites on the Internet such as Medicinenet.com (www.medicinenet.com/weight_lifting/article.htm)

Truth #3. Rest Your Muscles

Muscle growth occurs when muscles that are damaged through forceful contraction are repaired. This repair takes place when the muscle are resting. If a person continues to work a muscle that has recently been challenged, it won’t have time to repair and grow. Therefore, a muscle should not be worked two days in a row. Rest the muscle a day or two before training it again. Those who weight train are familiar with alternating the muscles they work with rest. For example, a person may work a few muscle groups one day (e.g. chest and back), another few groups the next day (e.g. arms and shoulders) and another group the third day (e.g. legs), perhaps with a day of rest before starting the cycle all over again. This way, the same muscle group is not worked two days in a row.

Truth #4. Feed Your Muscles Properly

In order for damaged muscles to repair, they require energy and the proper nutrients to build tissue. Energy comes in the form of calories. Sources of calories are proteins, fats and carbohydrates. You must consume more calories in a day than you burn in order for muscles to grow. The extra calories will be used to fuel muscle growth. You cannot lose weight (fat) and build muscle at the same time because losing weight requires an opposite strategy. You need burn more calories than you eat each day to lose weight.

There is a misconception that building muscle requires a diet that is high in protein. Most of a muscle’s weight is water (70%), whereas protein makes up 22% of its weight. A person cannot add more than about two pounds (900 grams) of muscle a month under ideal conditions, which translates into just under 200 grams (900x22%) of extra protein needed for muscle growth. This means someone would need to consume an extra 7 grams of protein a day to put on two pounds of muscle in a month. This is about the amount of protein in two slices of bread. Therefore,

although one needs to add some extra protein to their diet to build muscle, it doesn’t have to be a large amount. Protein supplements are not necessary.

A healthy diet that includes plenty of plant foods such as fruit, vegetables, grains, beans, nuts and lentils along with moderate amounts of low-fat dairy and meat products or their alternatives in sufficient quantities is enough to meet the nutritional needs of someone who is looking to add muscle.

Steroids and Muscle Building Supplements

Whenever there is an area in our life where we are dissatisfied, there is someone out there who will capitalize on that insecurity and try to make money off of it. One example is the hundreds of ineffective weight loss gimmicks that promise quick and easy weight loss. Another is the muscle-building supplement industry. Hundreds of supplements are available that promise to make you quickly add muscle. But do they work?

A study published in the Journal of Applied Physiology in 2003 reviewed the research carried out on muscle building supplements and found that only six of the 250 compounds examined had sufficient research (at least two studies) to be included in the review. Of those six, only two had any evidence to support an effect on muscle building, but the researchers point out that the quality of the available studies made it difficult to draw any conclusions. Therefore, it appears that—like weight loss supplements—muscle building supplements are ineffective. They are a waste of money, and some may have detrimental side effects.

Anabolic steroids, however, are powerful synthetic compounds that act like testosterone, which is a hormone that contributes to building muscle. They have been used under medical supervision to help people add muscle or prevent muscle loss in times of illness. These compounds have gone “underground” and are used by bodybuilders and others looking to add muscle. Anabolic steroids have many negative health effects including severe acne, jaundice, heart disease, cancerous tumours, psychological effects (aggression, mood swings, paranoia and delusions) infertility, erectile dysfunction, and breast tissue growth in men. Their use has been linked to some deaths. It is clear that the use of these compounds is not conducive to good health.



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