Does EMS Muscle Stimulation Actually Work?

Whether you are an athlete or someone recovering from an injury, Electrical Muscle Stimulation (EMS) can help build muscle strength and help prevent muscle atrophy.

Wondering if this can help you? Let's take a look as some of the evidence from scientific studies.

Good for Non-Exercisers

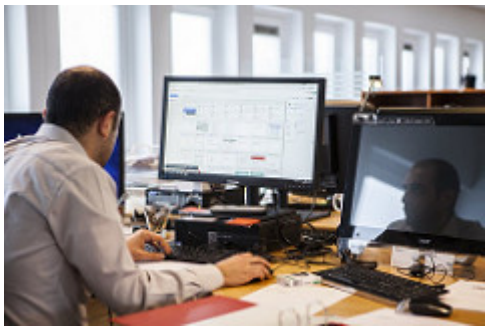


Photo by Tayloright

If you are like most people, you don't exercise enough. And, you may think that muscle building resistance type training is for the "lunks" doing squats and deadlifts in the gym. But, you need to know that after about age 35 your muscles start to shrink or atrophy if you don't exercise them with enough resistance and stress. Muscle fibers can be replace by fat cells so for a long time you don't even realize that you are losing muscle.

The article *Prolonged electrical muscle stimulation exercise improves strength and aerobic capacity in healthy sedentary adults* in the Journal of Applied Physiology described an experiment that showed the effectiveness of EMS for the average non-exercising person. It showed that you can now overcome muscle loss and retain a shapely physique.

The study looked at 15 healthy but sedentary men and women. They went through 20 hour-long electronic muscle stimulation sessions that exercised their large leg muscles without stressing their joints. The EMS signals stimulated the muscles to contract, similar to shivering. This exercised the muscles and increased the need for oxygen which had a physiological effect similar to exercise.

The results were amazing. The utilization of oxygen (peak VO2) improved, they could walk longer distances, and their quadriceps strength increased. These normally sedentary men and women improved their cardiovascular fitness and muscle strength while remaining sedentary with the help of electrical muscle stimulation.

The article concludes by indicating that electrical muscle stimulation could also be suitable for individuals suffering from joint discomfort such as arthritis where exercise, and even walking was painful.

Is Electrical Muscle Stimulation As Effective as Exercise?

An article, *Muscle Strength and Its Development New Perspectives*, in the journal Sports Medicine reviews a number of EMS studies. It indicates that "The general conclusion to emerge from these studies is that the strength gains associated with electro-myostimulation procedures are similar to, but not greater than, those that can be achieved with normal voluntary training.'

A wide range of pulse frequencies have been shown to produce favorable results in increasing muscle strength using electrical muscle stimulation. The article *Muscular Strength Development by Electrical Stimulation in Healthy Individuals* in the journal Physical Therapy indicates that frequencies from 33 to 200 pulses per second have been proven effective.

Different pulse rates affect the body in unique ways. For example:

- Around 9 pulses per second increase blood flow to the area and helps in recovery after exercise
- Between 10 and 20 pluses per second the body's slow twitch muscle fibers are activated which help endurance
- Between 50 to 70 pulses per second both slow and fast twitch muscle fibers are activated for resistance and muscle building
- Between 75 to 100 pulses per second only the fast twitch fibers are activated for building strength
- Between 100 and 120 pulses per second the body's very fast twitch fibers are activated for explosive strength

You can learn more about how the different pulse frequencies affect different muscle types from the following video.

How Compex Muscle Stimulators Work

A great video on how Compex Muscle Stimulators work by using EMS (electronic muscle stimulation) to increase strength and muscle development, improve recovery and allow you to train not only harder, but smarter.

Video Rating: / 5

EMS Good at Preventing Muscle Loss

EMS can also be helpful to prevent muscle loss in individuals who cannot exercise because of injury or illness. The article *Electrical muscle stimulation preserves the muscle mass of critically ill patients: a randomized study* in the journal Critical Care indicates that critically ill patients who cannot exercise can reduce muscle atrophy by use of electrical muscle stimulation.

Details of the Compex Sport Elite Muscle Stimulator

Learn more about how the Compex Sport Elite Muscle Stimulator work with this video:

The Sport Elite is the muscle stimulator model recommended for the competitive/high performance athlete who has a rigorous training and exercise regimen. It features a total of 9 programs, and 5 levels of progression will keep elite athletes challenged with every training session, resulting in a true competitive advantage!

COMPEX SPORT ELITE HAS 9 TRAINING PROGRAMS:

-ENDURANCE PROGRAM
Helps you cope with long-duration aerobic activities and increases muscle resistance to fatigue by building slow-twitch muscle fibers

-RESISTANCE PROGRAM
An all-around program for endurance and strength, building both slow-twitch and fast-twitch muscle fibers

-STRENGTH PROGRAM
Increases sheer muscle strength better than conventional weight lifting alone, with less risk of muscle-tendon injury

-EXPLOSIVE STRENGTH PROGRAM
For developing short bursts of power without the traumatic or violent movements associated with conventional training

AND 5 ADDITIONAL PROGRAMS:

-POTENTIATION PROGRAM
Warms up muscle faster without psychological, muscular or cardiovascular fatigue.

-ACTIVE RECOVERY® PROGRAM
Facilitates relaxation of muscles and reduces muscle soreness and stiffness following competition or demanding workouts

-RECOVERY PLUS® PROGRAM
Does not contract the muscle. Helps clear lactic acid and increase blood flow at lower frequencies -perfect for muscles that are fatigued after a vigorous workout or competition..

-PRE-WARM UP PROGRAM
Does not contract the muscle. Runs at a frequency specifically targeted to increase blood flow that oxygenates the muscles prior to a workout or competition. This program is recommended if there is any risk of cramp.

-MASSAGE PROGRAM
Electrostimulation develops the blood capillary network of the exposed muscles. This improves irrigation and oxygenation.

Learn more about the Sport Elite here:

https://www.compexusa.com/compex-sport-elite.html

Compex Sport Elite Kit includes: Compex Sport Elite Muscle Stimulator, Battery Charger, CD with User Manual, Electrode Placement Guidebook, Carrying Case, Easy Snap Electrode Lead wires (set of 4), 2″x4″ Easy Snap Gel Electrodes (2 packs of 2) and 2″x2″ Easy Snap Gel Electrodes (2 packs of 4)

REACH YOUR GOALS WHEN TRAINING WITH COMPEX SPORT

Cyclists – Improve Endurance
Runners – Recover Faster and Avoid Muscle Injury
Triathletes – Build Muscle and Increase Strength
Sprinters – Gain Explosive Speed and Power
Football Players – Increase Your Maximal Strength
Baseball Players – Get Quicker to Your Strength Threshold
Basketball Players – Develop Quick Reactivity and Forceful Response
Other Athletes – Enjoy all these benefits and more!

No matter what sport you are into, they all require different physical preparation to achieve peak performance: Speed, Strength, Explosive Power, Resistance, Endurance and Muscle Recovery.

The Compex electric muscle stimulation device helps you maximize your muscles effort when working out to reach 100% of your muscle fibers, including slow twitch and fast twitch muscles. Muscle stimulation trains your muscles in ways your traditional workout can’t.

Take a look at the Compex Sport Elite Muscle Stimulator here:

Is Cardio or Strength Training Better for Fat Loss?

Photo by Gov.im

Practically everyone knows that to lose weight you need to consume fewer calories. So, most people try to reduce their calorie intake and hope for the best.

And, most people add exercise to their weight loss strategy. **But, which type of exercise is best for weight loss: Cardio or Resistance Training?**

Exercise is a very popular way to burn calories. You see more and more gyms being built and more people than every are paying for gym memberships. Statistic Brain tells us that there are 30,500 gyms and health clubs in the United States.

Photo by sportsandsocial

A recent article published in the journal Obesity investigate several factors involved in weight loss.

The authors used 249 older men and women with an average age of 66.9, ranging from 60 to 79. The participants had an average BMI of 34.4. All had a BMI greater then 28. This put nearly all of them into the obese category. They exercised for less than 1 hour per week and had symptoms of cardiovascular disease or metabolic syndrome.

The purpose of the 18 month-long study was to evaluate the effects of three weight loss strategies:

- **Calorie Restricted Weight Loss (WL) alone**. The calorie restrictions were intended to produce a weight loss of 7-10% body mass over the course of the study. This group was asked not to begin an exercise program.
- **Calorie Restricted Weight Loss Plus Aerobic Training (WL+AT).** In addition to calorie restrictions, this group walked four days a week for 45 minutes a day at a pace that was considered somewhat hard.
- **Calorie Restricted Weight Loss Plus Resistance Training (WL+RT).** In addition to calorie restrictions, this group performed resistance training 4 days a week for 45 minutes each day. The goal in each exercise was to perform 12 repetitions in three sets for two consecutive sessions before increasing the resistance.

The Results

The good news is that all three groups lost weight. Average percentage weight losses for the groups was 6.1% for the WL group, 8.6% for the WL+AT group,

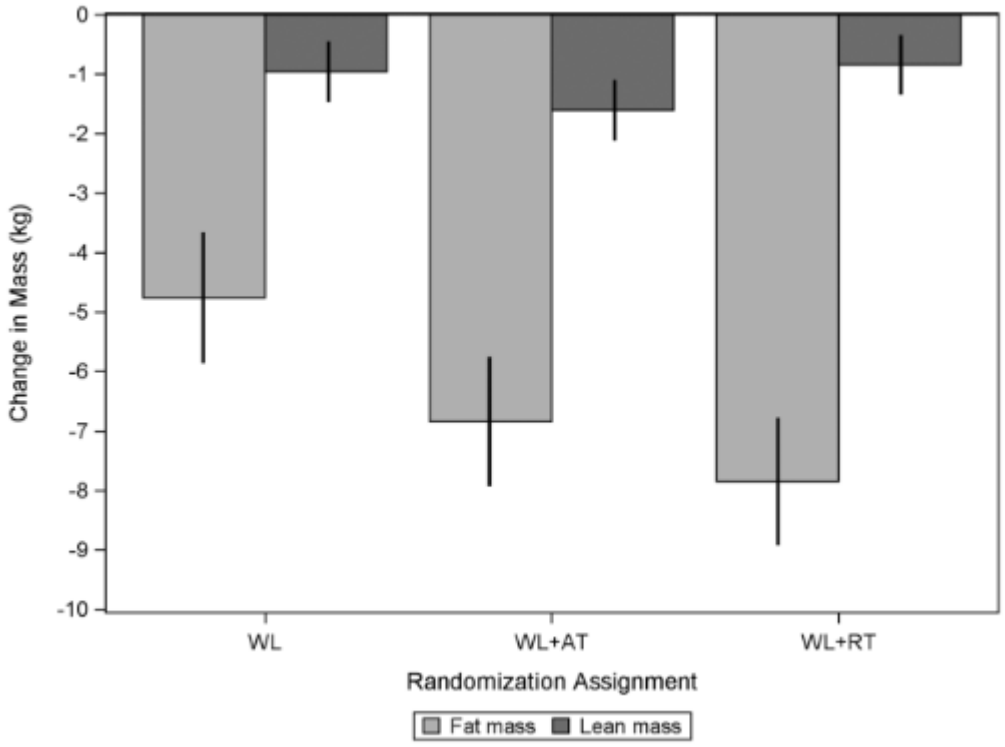
and 9.7% for the WL+RT group.

And, while these results are all good, we must ask what type of body mass was lost? The choices are lean mass (muscle) or fat?

Because, pound for pound, muscle burns 10 to 20 times more calories than fat, the loss of muscle mass reduces your resting metabolism. This makes it harder to burn calories and lose weight. The loss of muscle mass also reduces your ability to perform daily activities including walking, balancing, and doing daily chores.

Weight Loss Results

Let’s look at the breakdown of muscle loss and fat loss.



Body Mass Loss Results

In this chart, the lighter bars show fat loss. The darker bars show muscle loss.

Note that those who restricted calories and exercised lost more weight than those who just restricted calories.

As you can see from this chart, the most fat was lost from the group that both restricted calories and performed resistance training. This group also lost the least amount of muscle mass.

The most muscle mass was lost from those who both restricted calories and performed aerobic training. Their decrease in muscle mass lowered their resting metabolism and made it more difficult for them to continue to lose

weight.

The important point here is that it was the type of exercise that played an important role in the amounts of muscle and fat that was lost. The calorie restriction and resistance training group lost the most fat and lost the least amount of muscle. This is the best outcome.

What This Means for You

First, the good news is that you can lose weight. Restricting calories is an important key. Even if you are older.

Second, you can lose weight while retaining as much lean muscle mass as possible by combining calorie restrictions with resistance training.

While this study was done on senior citizens, younger people can put more effort into their resistance training and lose weight faster and even build muscle mass, thus raising their metabolism.

So, what are you waiting for? Modest calories restrictions and resistance training present the optimal path to losing that excess weight.

Nitric Oxide and Cardiovascular Disease

Nitric oxide (NO) is produced by the healthy endothelial cells that line the interior of blood vessels. The discovery of nitric oxide's function in the body is likely one of the most significant finds in the history of cardiovascular medicine. In 1998 three Americans (Robert F. Furchgott, PhD, Louis J. Ignarro, PhD, and Ferid Murad, MD, PhD) received the Nobel Prize for their discoveries relating to nitric oxide as a signaling molecule in the cardiovascular system.

Nitric oxide (NO) is essentially a signaling molecule that helps control a range of processes in the body, including nerve signaling, immune functions, and muscle growth. It also controls dilation of blood vessels which in turn leads to increased blood flow, oxygen transport, delivery of nutrients to skeletal muscle and a reduction in blood pressure.

Raise Your Metabolism

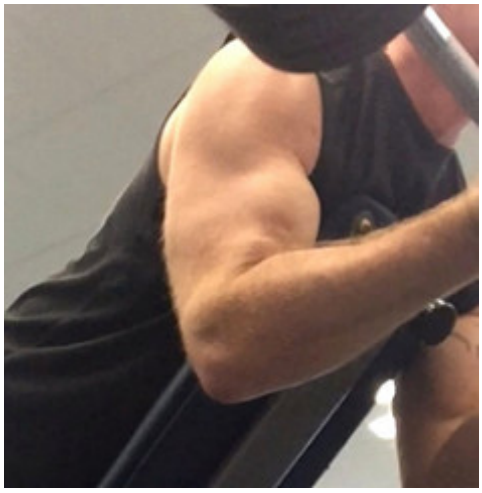


Photo by 2014uknz+

Controlling muscle growth and enhancing the blood flow to muscles during exercise are of special concern to those of you wanting to increase your lean muscle mass. As you know, muscles use energy even when at rest. A pound of lean muscle mass uses 30 to 50 Calories a day just because it exists. If you use your muscles, they burn even more. Building lean muscle mass is how you raise your metabolism over the long term.

And, your overall metabolism burns the calories you take in from food. The higher your metabolism, the less work you have to do to manage your weight.

The widening (dilation) of your arteries helps bring more blood and nutrients to your muscles during exercise. Athletes call this “the pump” because your muscles feel fuller, bigger during and after exercise. Increased blood flow helps you exercise harder and longer. And, the result is bigger muscle gains. Increased nitric oxide helps in the repair and growth processes for new lean muscle tissue. This is just what you want.

Dr. Louis Ignarro’s Interview on Nitric Oxide part 1

Louis J. Ignarro is a PhD pharmacologist who has spent over 40 years as a research scientist. In 1998, he was awarded the Nobel Prize in medicine for his research into Nitric Oxide. In this extensive interview Dr. Ignarro talks about the many benefits of nitric oxide including cardiovascular health, cholesterol reduction, enhanced learning, improved immune function, enhanced muscle building, lowering high blood pressure, and more.

Dr. Ignarros’ Nitric Oxide Enhancing Formula

Dr. Ignarro works with Herbalife to advance heart health around the world. He helped develop the following supplement that will help your body produce more nitric oxide. Because nitric oxide breaks down quickly when taken orally, this supplement contains the natural ingredients your body need to make nitric oxide naturally.

Strengthening Your Back – How To Build Wider Shoulders and Good Posture

Strengthening the back not only helps you look good. It helps your posture and helps prevent neck pain and back pain.

Photo by stevendamron

Your back supports your upper body and must be strong to avoid stress, strain, and eventual pain. While many people overemphasize the lower back, the upper back muscles must also be strong. Doing the right upper back strengthening exercises should be part of your exercise routine.

Some people who have let their muscles atrophy through lack of good exercise have poor posture, and actually have a "bent over" look. This bad posture crowds all the organs of the chest and reduces their functionality. Now is the time to decide to take care of this problem and restore good posture.

Not only will **strengthening the back** make you **look and feel better**, but they will **increase your metabolism**. This is important for anyone wanting to manage their body fat percentage. New lean muscle burns Calories. A pound of lean muscle burns 30 to 50 extra Calories a day, just because it's there. Do work with those new muscles and you will burn even more Calories.

Upper back exercises can be performed with dumbbells, barbells, or machines. If you are a member of a gym you have a wide selection of machines and weights that can help restore your posture and improve your overall health and sense of well-being.

This first video will help you understand the importance of your upper back muscles. Just look at the difference between the "rounded shoulder" look and the "good posture", shoulders back look.

Video Rating: / 5

Back Strengthening Exercises

Now take a look at a couple of short videos showing you the proper techniques for doing some simple upper back exercises. If you do not do these exercises with the proper form you will not receive the maximum benefits.

Scarecrows or Reverse Cable Fly
Scarecrows or reverse cable fly is performed on cable machines in which you pull outward to extend your arms. Here is the proper technique.

Seated Low Row
Here is the proper technique for doing a seated low row.

These and other exercises for the upper back will make you both look good and feel good. Make sure you do these exercises every week as part of your normal workout plan.