

The Resistance Training Factor: Mobility, Better Health

You can dramatically improve your health while also reducing your risk of diabetes, disability and disease with one simple plan. The key to it all, as revealed by a new study, is proper exercise. Just a few hours each week can lead to big health gains.

“People who trained aerobically lost abdominal fat, maintained muscle and became over 30 percent more insulin sensitive,” said Dr. Robert Ross, co-author of the study, which appeared in the January 26, 2009 issue of *Archives of Internal Medicine*.

In their “Effects of Exercise Modality on Insulin Resistance and Functional Limitation in Older Adults,” Dr. Ross and co-author Dr. Lance Davidson studied 136 participants over a five-year span to monitor the effects of resistance exercise, aerobic exercise and combined exercise on the body’s ability to reduce insulin resistance and functional limitation in “previously sedentary, abdominally obese older adults.”

From September 30, 2002 through November 15, 2006 researchers sectioned out the study participants, ages 60-80, into four exercise groups—resistance, aerobic, resistance/aerobic and non-exercise control—then monitored each group for six months.

They broke down the three lab-supervised exercise groups like this:

- Resistance exercise - 60 minutes of weight-training weekly
- Aerobic exercise - 150 minutes of treadmill walking weekly
- Combined exercise - 90 minutes of treadmill walking and 60 minutes of weight-training weekly

Results reviewed. According to the study, those who are abdominally obese can do two things to improve their overall health: exercise aerobically and lift weights. Aerobic exercise reduces that metabolically toxic abdominal fat, helping the body become less insulin resistant. Weight lifting builds up body muscle, creating more mobility. Doing both types of exercise is what helps your body the most.

Seniors who did both treadmill and weightlifting three times a week showed the greatest gains in both insulin sensitivity and functional fitness even though they previously had the 40-inch waist (men)/35-inch waist (women) trademark for developing disease. Per Davidson, thanks to the seniors' efforts, the message is out to physicians: Moderate exercise—even without dietary modification—reverses age-related disease or disability.

Exercise is the crucial element explains research group participant and PhD candidate, Peter Janiszewski. While many seniors gravitate toward dieting to solve health issues, that alone can lead to problems.

“Although diets may be effective in reducing the adiposity among obese older adults, they also have the unfortunate consequence of further exacerbating sarcopenia, and thus increasing risk of disability,” Janiszewski said.

What’s sarcopenia? It’s a serious degenerative condition—a decrease in muscle size leading to weakness, frailty and increased susceptibility to injury—and it’s becoming more of a societal problem as our hectic, tech-driven lives become less physically active. Without the proper activity level, the size of the muscle cell decreases, yet there is a corresponding increase in the size of the fat cell.

Resistance Training For Healthier Living

Resistance training builds, strengthens and tones muscle—an ideal complement to your cardio/aerobic activities (such as walking, cycling and swimming).

Consider getting a trainer, someone who can guide you on how to use weight equipment and help customize a regimen to suit your fitness levels and goals. And always consult your physician before starting any exercise routine.

Consider these resistance training ideas:

- Weight machines
- Free weights
- Stretch tubing
- Adding body weight to push-ups, standing squats, crunches
- Work out 2x per week—however, studies have shown maintained strength in older people with 1x per week
- Do 8 or 10 exercises targeting major muscle groups with 1 set per group, such as pectorals, deltoids, abdominals, gluteals, quadriceps, hamstrings, latissimus dorsi
- Systematically change between higher-intensity sessions and more moderate intensity



But aerobic exercise isn't enough to counter this insidious disease. According to the article "Strength Training for the Prevention and Treatment of Sarcopenia" in *The Journal of Nutrition, Health & Aging*, resistance training is key.

Perhaps more specifically, progressive resistance training, which would incorporate high-intensity and low-volume training sequences, customized to an individual's fitness level. A study done in 2000 by Roth, Ferrel and Hurley demonstrated the value of using resistance training as a preventive measure of sarcopenia.

While sarcopenia is an "age-related" health issue, it actually can start in your 30s or 40s. Its slow beginning, about 1% muscle mass loss annually for those in their 40s, can reach as high as 30% muscle mass loss per year. For the physically inactive beyond age 30, the muscle mass loss equates to an estimated 3% to 5% per decade with a corresponding reduction in muscle strength.

Many factors contribute to the sarcopenic process, from physical inactivity and diminished hormone levels (testosterone, growth hormone, insulin-like growth factor/IGF-1 as well as menopausal drops in estrogen in women) to reduced protein synthesis and shifts in the neuromuscular system. Nutrition certainly comes into play with inadequate protein intake, which ultimately reduces the ability to maintain/sustain muscle mass. However, current thinking is that sarcopenia can be reversed—or partially reversed—with exercise intervention.



Equally important is resistance training's positive impact on some of the other factors, previously mentioned as potential contributors to the disease: protein synthesis, neuromuscular system changes, hormone levels.

Where to start? Janiszewski recommends this approach:

- The easiest way to improve your health and physical function is by adding some refreshing walks to your regular schedule, eventually targeting about 90 minutes of walking every week.
- Once you're accustomed to this walking routine, try adding 20 minutes of resistance training, three days per week.
- With a total of 90 minutes of endurance exercise and 60 minutes of resistance exercise each week, you'll be performing the same routine as the study participants.

Better health approach. Cenegenics delivers customized programs and established protocols based on solid science and comprehensive evaluation to maximize your health potential, fight or prevent disease and reverse/partially reverse sarcopenia.

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After identifying your health strengths and weakest health links, we create programs built on synergistic components for optimal health and a higher-quality life: exercise, low-glycemic nutrition, nutraceuticals and hormone normalization, when clinically indicated.

Right in line with these recent study findings, our exercise programs are personalized for all patients with periodic follow-ups via their Cenegenics physician and exercise physiologist.

During the evaluation process, Cenegenics patients are given a *Gold Standard Fitness Assessment*, detailing these areas:

- Body composition
- Cardiovascular endurance—using sophisticated VO_2 technology for dynamic evaluation of oxygen consumption
- Muscular strength and endurance
- Flexibility
- Posture, balance and core strength
- Stability testing

Having this information establishes a baseline for your fitness level and paves the way for an appropriate exercise prescription to meet your health goals.

Cenegenics typically recommends patients exercise six days per week, which includes both cardiovascular, strength and flexibility training routines. These routines are customized to a patient's needs and lifestyle—and can be done in a gym, home or office.

Since heart rate ranges are based on the VO_2 results to maximize aerobic efficiency, one cardiovascular session can be for as little as 20 minutes with high-intensity intervals.

Strength training can be done just twice a week when hitting each major muscle group at least once and working it to fatigue. Routines are changed every three to six weeks to avoid boredom and maintain continued adaptation. By gradually increasing the intervals and weight yields the best results and decreases disease risks.

Live on the healthier edge. Learn more about personalized Cenegenics programs and the science behind age management medicine.

Getting Started with Aerobic Activity

Strengthening muscles is smart, but don't forget that critical muscle: your heart. Spend time weekly making it stronger.

Get the most out of your aerobic workouts by making sure they last at least 12 minutes, stay continuous and are practiced at least twice weekly.

Doing one or more of these activities works your arms and legs to give your heart a great continuous workout.

- Brisk walking
- Dancing
- Bicycling
- Skating
- Swimming
- Snow shoveling
- Lawn mowing
- Leaf raking
- Vacuuming

Information from the American Heart Association



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Discussions are always confidential and without obligation.