



A MONTHLY NEWSLETTER FOR OUR HIGHLY VALUED CENEGENICS PATIENTS.



STUDY SHOWS EXERCISE REDUCES MORTALITY RISK

Up your exercise capacity—and lower your mortality risk. That's what a new, significant study of more than 15,000 U.S. military veterans shows.

Circulation—a journal of the American Heart Association—published the study that was led by Peter Kokkinos, director of the Exercise, Testing and Research Lab in the cardiology department at the Veterans Affairs Medical Center in Washington, DC.

The researchers assessed “the association between exercise capacity and mortality” in 6,749 black and 8,911 white men—subjects whose average age was 60, who did or didn't have cardiovascular disease and who successfully completed a treadmill test (between May 1983 and December 2006) at the Veterans Affairs Medical Centers in Washington, DC, and Palo Alto, California.

The determined fitness categories were based on “peak metabolic equivalents (METs) achieved.” At rest, a person would use 1 MET; using over 1 MET denotes “work.” Therefore, achieving a higher MET level equates to being more fit.

Fitness categories were low (5 METs), moderate (5-7 METs), highly (7.1 to 10 METs) and very highly fit (over 10 METs). Subjects were to exercise until tired; follow-ups were done for 7.5 years on average. As VA patients, all participants had equal access to healthcare.

The findings . . .

- Men who achieved >7 METs (highly to very highly fit)—demonstrated a 50%-70% lower mortality risk than “low fit” subjects
- Mortality risk—13% lower for every 1-MET increase in exercise capacity
- Achieving “highly fit” level—no personal trainer or gym membership needed
- Cutting death risk in half—with exercise capacity attained with 30 minutes per session, 5-6 days per week; if 30 minutes is too much for some people, splitting the routine into 10-15 minute segments (morning/evening) gives the same benefits

In a Reuters article (“Exercise sharply cuts older men’s death rate: study”) by Julie Steenhuisen, Kokkinos said, “The message here is exercise works on anybody, regardless of race or income.”

According to Kokkinos, “It is important to emphasize that it takes relatively moderate levels of physical activity—like brisk walking—to attain the associated health benefits. Certainly, one does not need to be a marathon runner. This is the message that we need to convey to the public.”

Word to patients and healthcare professionals.

The study also made this suggestion: “Because higher exercise capacity is associated with a lower risk of mortality, physicians and other healthcare professionals should encourage individuals to initiate and maintain a physically active lifestyle consisting of moderate-intensity activities (brisk walking or similar activities). Such programs are likely to improve exercise capacity and lower the risk of mortality.”

The aerobic factor. An aerobic workout funnels oxygen to large muscle groups. Performed at moderate intensity, aerobics use stored carbohydrates and fats for fuel. The longer and more vigorous the workout—the more total calories burned.

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Aerobic exercise also offers several health benefits.

- **Increased health span:** A study following Harvard grads for 30 years showed those moderately active were at substantially decreased risk of death.
- **Decreased health risks:** Strengthening the heart muscle for good circulation, decreased blood pressure and reduced stroke risk.
- **Reduced stress:** With a moderate intensity workout of 20 minutes or more.
- **Increased muscle endurance:** Making daily activities easier.
- **Improved sleep quality:** Researchers at Stanford, Emory and the University of Oklahoma reported older people doing brisk walking and/or low-impact aerobics four times a week went to sleep faster and slept an hour longer than before (*Harvard Health Letter*, March 1997).

TESTOSTERONE'S EFFECTS ON THE BRAIN

In the film "Sleeper," Woody Allen described the brain as his second favorite organ. The same can be said of testosterone's favorite organs. The brain is second only to the heart in terms of testosterone receptors' number and concentration. Testosterone features prominently in the neurological literature.

It is well known that testosterone levels decline by about 1% - 2% per year beginning as early as 30 years old. As levels diminish, a common complaint in men is a vague alteration in their overall sense of well-being. Mild alteration in mood, while not always causing full-blown depression, is called dysphoria and may affect self-esteem and vitality.

A recent study demonstrated that when plasma testosterone levels fall below 15nmol/l (still in the normal reference range), there is a loss of libido and vigor. With testosterone levels below 10nmol/l (deficient range), depression becomes a frequent occurrence.¹

Restoring testosterone levels to the normal range in deficient individuals within 3 months demonstrates an associated improvement in mood and reduction in fatigue, irritability and weakness. These positive effects were maintained over a period of three years with continued treatment.²

A recent study in the *Archives of General Psychiatry* (March 5, 2008) demonstrated low free testosterone concentration as a potentially treatable cause of depressive symptoms in older men. This is one of the more recent studies to substantiate this finding.³

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Exercise tips. Keep your routine fun with aerobics such as: brisk walking, jogging, running, swimming, roller skating, dancing, biking and fitness center activities using elliptical machines, exercise cycles, treadmills, stair-steppers, etc.

The best time to reduce your body fat is in the morning before breakfast, which increases your energy level for three to four hours after you eat. You can opt for evening exercise, two hours after a light dinner, but before 8 pm. (Exercising after a large meal can increase cardio risks; working out late disrupts your sleep.)

Efficient weight training is the second secret to decreasing body fat. Aim for 10-12 reps for upper bodywork and 12-15 reps for lower bodywork—with no more than a 60-second rest between each set. Shorter rest periods mean you're burning more fat.

Maintaining the right heart rate is essential for aerobic benefits. Aim at keeping your heart steady at a rate appropriate for your age: 220 minus your age times 70%. So if you're 60, a good training heart rate would be 220 - 60 x 70%, or 112. As with any sensible program, first get the "medical green light" from your physician.

The Cenegenics advantage. As a Cenegenics' patient, you already know about our innovative approach, customized programs and well-established protocols, based on solid science and comprehensive evaluation. Our patients undergo a **Gold Standard Fitness Assessment** during their comprehensive evaluation process, detailing these areas:

- body composition
- cardiovascular endurance—using sophisticated Vo₂ technology for dynamic evaluation of oxygen consumption
- muscular strength and endurance
- flexibility
- posture, balance and core strength
- stability testing

This information establishes a baseline for a patient's fitness level and allows for an appropriate exercise prescription to meet health goals.

Typically, Cenegenics recommends patients work out six days per week, which includes both cardiovascular exercise and strength training routines. The cardiovascular can be for as little as 20 minutes, including high-intensity intervals. Strength training can be done in 45 to 60 minutes, 3 days per week hitting each major muscle group at least once and working it to fatigue. Routine is changed every three weeks to avoid boredom and adaptation.

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Your Cenegenics medical team is dedicated to helping you live a fuller, healthier life.



THE WOMEN'S CORNER

Until recently, the traditional approach to treating the menopausal female involved “one size fits all” medicine. Physicians were trained to prescribe oral forms of synthetic hormones without regards to a patient’s circulating hormone levels or size. A 200-pound woman was frequently prescribed the same dose as the 110-pound woman. Many of us physicians were trained there was no need to monitor levels, nor adjust doses as long as the unpleasant symptoms of hot flashes, night sweats and vaginal dryness improved. While this approach served the best interest of the insurance companies and pharmaceutical industry, it was not in the best interest of the patient in the long run.

We know that individuals absorb medications differently no matter the route the medications are given. Various factors may influence the actual amount that enters the body. We know that we must achieve certain levels in order to protect target organs and have the greatest benefit while not over-stimulating other receptor sites. This provides the greatest safety profile while helping to minimize adverse side effects.

The hormone focus for this issue is estradiol. We will reserve discussion of progesterone, testosterone and DHEA for future patient newsletters. Estradiol is the predominant hormone in the reproductive-aged female. It is produced by the ovaries and serves to build the uterine lining in preparation for implantation of a fertilized ovum. This is the form of estrogen we measure as part of the initial Cenegenics® evaluation and on follow-up labs—and it is the hormone we most commonly use as replacement.

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Testosterone’s Effects on the Brain continued

The Journal of Experimental and Clinical Psychopharmacology (2007, Vol. 15) went so far as to recommend that hypogonadal men (those with deficient testosterone levels) who do not fully respond to conventional antidepressant therapy should be screened for low testosterone levels and treated accordingly.

Thought processes, or cognition, are improved via the action of testosterone and its breakdown products, estradiol and dihydrotestosterone, on the brain.

These hormones promote nerve cell growth and survival. Testosterone enhances cerebral perfusion in the areas of the brain responsible for strategic planning, higher motor action, wakefulness and memory. Androgens (male hormones) have been shown to enhance both memory and spatial skills in rats given testosterone.⁴

Higher blood testosterone levels have been associated with reduced beta-amyloid, a component of the “plaques” that are characteristic of Alzheimer’s disease. Therefore, it’s thought that higher testosterone concentrations may help protect against this devastating disease.

There is abundant evidence to show decreases in sexual thoughts, enjoyment and performance exist with aging. Studies have confirmed that in both younger and older men, testosterone replacement has marked benefits on these sexual parameters. Some cases of erectile dysfunction cannot be treated with well-known and advertised prescription medications. Testosterone actually increases the chemical substances necessary for these medications to work properly and is a useful adjunct to these medications in some individuals.

The literature and research continues to mount with regard to the benefits of hormonal optimization on the brain. We will continue to monitor the latest journal publications for new and exciting information on this important topic.

1. Zitzmann M, Faber S, Nieschlag E. Association of specific symptoms and metabolic risks with serum testosterone in older men. *J Clin Endocrinol Metab* 2006;91:4335-43
2. Wang C, Cunnigham G, Dobs A, Iranmanesh A, Matusmoto AM, Snyder PJ, et al. Long term testosterone gel treatment maintains beneficial effects on sexual function and mood, lean and fat mass, and bone mineral density in hypogonadal men. *J Clin Endocrinol Metab* 2004;89:2085-98
3. Almeida O, Yeap B, Hankey G, et al. Long free testosterone concentration as a potentially treatable cause of depressive symptoms in older men. *Arch Gen Psychiatry* 2008;65:283-9
4. Frye CA, Seliga AM. Testosterone increases analgesia, anxiolysis, and cognitive performance of male rats. *Cognitive, Affective and Behavioural Neuroscience* 2001;1:371-81



The Women's Corner continued

Other forms of estrogen include estrone or E1, which is the predominant form seen in the menopausal female. It is predominantly made in the fat cells; certain forms of estrone have been linked to breast cancer. Urine tests are available that can tell us if these harmful forms of estrone are elevated, which would put you at greater risk for breast cancer. You can discuss this with your Cenegenics® physician if you are interested in completing this test.

There are ways to lower your levels of this harmful estrogen, including a diet that is high in phytonutrients found in cruciferous vegetables. The supplements, Indol 3 Carbinol and DIM, block the formation of these harmful estrogens and protect against breast cancer in females and

Cenegenics recommends non-oral forms of estrogen because the oral delivery method has several adverse effects. The pills are known to have a negative impact on the liver and gallbladder. It is absorbed and processed immediately by the liver, causing induction of proteins that bind other hormones, including thyroid—affecting its levels. Oral forms of estrogen have been demonstrated to increase inflammation, and inflammation has been linked to increased risk for heart disease, stroke and various cancers.

Most of the traditional oral forms of estrogen are synthetic. Those made by the use of pregnant mares' urine—the most commonly prescribed form for many years—contain over 20 biologically active hormones belonging in a horse and not a human. The fact is that when the original reports for the Women's Health Initiative were released in 2002, it was not surprising that there seemed to be an increased risk of complications from the use of synthetic oral medications.

This study also had an average enrollment age of 62. These women had never been on hormone replacement therapy despite the fact the onset of menopause occurs on average around age 51. The benefits of hormone replacement therapy seem to be greatest in younger females who have recently gone through menopause. This includes alleviation of hot flashes, night sweats, decrease in vaginal dryness, protection against urinary incontinence, maintenance of bone mineral density and decreased risk for colon cancer.

As with any patient, you need to look at the risks vs. benefits of hormone replacement therapy for your individual needs. A thorough assessment based on personal history, family history and various other risk factors will determine if estradiol replacement is appropriate for your long-term overall health and improved quality of life.



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