



A MONTHLY NEWSLETTER FOR OUR HIGHLY VALUED CENEGENICS PATIENTS.



BELLY FAT MAY INCREASE DEMENTIA RISK

That middle-age bulge may do even more harm than previously expected. A recent study suggests it might increase your chances of having Alzheimer's or other types of dementia later on, in your senior years.

The study—*Central obesity and increased risk of dementia more than three decades later*—was published in the online March 26, 2008 *Neurology* journal and authored by research scientist Rachel A. Whitmer, PhD, from the Kaiser Permanente Division of Research in Oakland, California.

In the past, other reports have demonstrated that being overweight or obese (particular with a centralized distribution of adiposity) puts you in a higher-risk category for chronic conditions, from insulin resistance, Type-2 diabetes, high blood pressure, high cholesterol, stroke, heart attack, congestive heart failure, gallstones, gout, osteoarthritis, sleep apnea and a liver disease called nonalcoholic fatty liver disease (NAFLD).

However, motivating the Whitmer research was the fact “no studies have evaluated whether the same pattern exists with dementia.” Researchers conducted a longitudinal analysis of 6,583 Kaiser Permanente members who had their visceral fat (belly fat) determined via a sagittal abdominal diameter (SAD). The SAD measurement has been shown as a viable marker for cardiovascular risk factors (such as insulin resistance), inflammation and raised serum lipids.

The study's SAD measurements occurred from 1964 to 1973. For the sake of the study, dementia diagnoses were determined using medical records approximately 36 years later (January 1, 1994 to June 16, 2006).

Toxic fat. According to an interview in a March 27 *Washington Post* article by Rob Stein, Whitmer said, “A large belly, independent of total weight, is a potent predictor of dementia. . . the effect of the belly is over and above being overweight . . . There's a lot of work out there that suggests that the fat wrapped around your inner organs is much more metabolically active than other types of fat right under the skin . . . it's pumping out toxic substances. It's very potent toxic fat.”

There are two types of fat: subcutaneous and abdominal, which is found inside the abdominal cavity. Most of that fat is found on the greater omentum—a large apron-like sheet that drapes over all the organs. Some people are prone to storing their body fat in their abdomen as part of this greater omentum. As a result, large, globule clumps of fat attach to the omentum, where they release toxic materials into the venous drainage and onto the bloodstream, ultimately causing adverse effects. This kind of fat releases adipokines, harmful chemicals that can cause Alzheimer's, Type 2 diabetes, insulin resistance, high blood pressure, etc.

Study results:

- 15.9% of the study subjects were diagnosed with dementia
- Subjects with the highest SAD had nearly three times the risk of dementia
- Subjects with a high SAD level (equivalent to a 39-inch waist) and normal BMI showed an increased risk of dementia
- Subjects with both obese (BMI >30 kg/m²) and with high SAD had the highest risk of dementia

Study conclusions:

- Central obesity in midlife increases risk of dementia independent of diabetes and cardiovascular comorbidities
- 50% of adults have central obesity; therefore, mechanisms linking central obesity to dementia need to be unveiled

Also in the *Washington Post* article, Dr. Jose A. Luchsinger, assistant professor of medicine at Columbia University College of Physicians & Surgeons, explained “stomach fat may increase the risk for dementia in the same ways it promotes heart disease—by boosting blood pressure and constricting blood flow.”

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Toxic belly fat is thought to promote amyloid accumulation, existent in various diseases. Amyloid is an abnormal protein, which deposits in the body's tissues or in more organ-specific areas, such as in the pancreas (type 2 diabetes) or central nervous system (Alzheimer's, Parkinson's, Huntington disease).

In the same article, Sam Gandy—Chair of the Alzheimer's Association's advisory council, Sinai professor of Alzheimer's Disease Research and professor of Neurology and Psychiatry at Mount Sinai School of Medicine—said, "We think the buildup and clumping of this material is an important risk factor."

Obese individuals have demonstrated high amyloid levels in past research. Yet, further investigation is needed to determine if any other factors play into the raised risk for dementia.

Action course. Whitmer gave hope in the *Washington Post* article, saying belly fat isn't "as stubborn as the fat under the skin . . . it's a modifiable risk factor."

It's important to know that visceral fat is the last reservoir people get rid of when they're losing body fat—and it's the first place they store it when they gain back body fat. To date, there are no ways to specifically target that fat, but there are things you can do to work your way down to healthier body fat levels (16% for men, under 22% for women).

- **Start making lifestyle choices now**—the roots of dementia develop years before presenting symptoms
- **Create a moderate exercise plan**—experts say it can reduce visceral fat; be sure to do plenty of cardio workouts to burn calories as well as resistance training, crunches, Ab workouts on an exercise ball, etc.
- **Opt for smarter food choices**—select olive oil and canola oil over saturated fats; lean meat, skinless poultry and fish; nutrient-dense vegetables and fruits; and avoid trans fats, overly processed/refined foods



Lose that bulge with your personalized Cenegenics program. As a Cenegenics patient, you already know the importance of maintaining a synergistic approach for optimal health.

Your low-glycemic nutrition eating plan and nutraceutical supplementation help you optimize your health potential and reduce belly fat. Consistent exercise can increase metabolic rates, lower heart disease risk and improve body composition, muscle endurance, flexibility, cardiovascular endurance, core strength/stability and posture.

More specifically, resistance training helps you lose abdominal fat and overall body fat while lowering cholesterol: Weight training is the best way to burn fat; it's more effective for losing weight than aerobic activity because it burns calories while you're exercising and at rest (Cooper 1998).

Remember, it's the science behind our medical specialty—age management medicine—that allows us to improve your health span by identifying and meeting criteria that places you in the lowest possible risk category for disease, including Alzheimer's, heart disease, diabetes, metabolic syndrome and stroke.



FATHER'S DAY GIFT OF HEALTH

No matter what the occasion—birthday, anniversary or holiday celebration—a gift certificate for the Cenegenics® Medical Institute opens the doorway to a totally new view on aging and the aging process.

Call 866.953.1510 to purchase your "Gift of Optimal Health" for those you love.

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



Male & Female Corner: DHEA

Dehydroepiandrosterone (DHEA) is a hormone produced predominantly by the adrenal glands in response to a stimulatory signal (ACTH) from the pituitary gland. It is the steroid hormone found in the greatest abundance in the circulation. Its levels peak during the mid-20s only to rapidly decline by 10% - 20% each decade. By age 70, DHEA levels reach a relatively stable low level that is only 10% to 20% of those found in young adults. DHEA is considered a “prohormone” or precursor to other critical hormones in both men and women. In both sexes, DHEA is ultimately converted into both testosterone and estradiol. It should be stressed that studies on the benefits of DHEA have demonstrated it has

beneficial effects in and of itself. Numerous studies have been published in the past few years, which we will review on a system-by-system basis in this issue of our patient newsletter.

General: A recent theory is that high circulating DHEA concentrations are a marker for longevity in primates.¹ Ethnic differences in DHEA levels suggest that life expectancy may be greatest in populations in whom DHEA levels are highest.² A recent study looking at the mortality rates in 1,000 older Taiwanese adults showed that after 3 years, those individuals with the lowest DHEA-S levels had a 64% greater risk of death (from any cause) than did individuals with higher DHEA-S levels.

A study published in the *Proceedings of the National Academy of Science* in 1996 followed 622 adults with an average age of 74 upon study entry. The study followed DHEA levels and total mortality risk, functional status, psychological state and mental status over a period of four years. In women, DHEA levels were directly related to scores of well-being, cognitive function and functional status. In men, DHEA levels were inversely related to total mortality risk.

Bone density and body composition: The decline in circulating DHEA levels parallels many age-related changes, such as loss of bone density and muscle mass.

Low levels of DHEA are associated with decreased mineral absorption and metabolism. DHEA is thought to both decrease the bone loss that occurs with aging and enhance formation of new bone. It affects inflammatory processes thought to contribute to bone loss and increases estrogen, known to build healthy bone matrix.

In general, long-term studies tend to show positive changes in body composition and muscle strength. Animal studies have shown that DHEA in the diet can either prevent weight gain or even cause weight loss. A study published in *JAMA* in 2004 showed that DHEA administration reduced accumulation of abdominal visceral fat and protected against insulin resistance in laboratory animals.

Cardiovascular disease: The Massachusetts Male Aging Study confirmed that men with higher DHEA levels were less likely to have heart disease.³ The possible mechanisms being investigated are reduced plaque formation even with a high fat diet, which leads to atherosclerosis and reduced platelet adhesion, which can lead to the blood clot formation seen in heart attacks and most strokes.

In a small study, it was shown that DHEA treated males experienced increased levels of substances that helped dilate blood vessels (improving blood flow), as well as decreased levels of a marker for blood clotting. The treated group also had lower LDL cholesterol levels. In another study looking at lipid levels in women, DHEA supplementation was shown to increase HDL levels by 11% and decreased LDL by 11% as well.

Mood and well-being: Several studies have demonstrated improved mood and sense of well-being with DHEA supplementation. Animal studies have demonstrated that DHEA increases serotonin levels—much like the prescription medications such as Prozac, Paxil, Zoloft, etc. It also increases levels of endorphins in the brain which cause an improved sense of well-being.



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A study published in the *Archives of General Psychiatry*, concludes “in the 50% of depressed outpatients who do not respond to first-line antidepressant treatments, or in those unwilling to take traditional antidepressants, DHEA may have a useful role in the treatment of mild to moderately severe midlife-onset major and minor depression”⁴

Cognitive Function: DHEA is thought to protect neural tissue (i.e. the brain). The exact mechanism by which this may happen is being actively studied, but preliminary data seems to indicate that DHEA may protect against Alzheimer’s disease by reducing free radical damage to specific areas of the brain. DHEA appears to protect brain tissue from the abnormal protein that is associated with Alzheimer’s disease. There appears to be a link between low DHEA levels and the incidence of Alzheimer’s disease. Evidence is also accumulating that high cortisol levels may damage the brain and DHEA is thought to modulate that response as well.



Libido and sexual function: In 2005, two studies were published supporting the fact that higher levels of DHEA were associated with higher levels of sexual satisfaction and functional status in women. Even low doses of DHEA may improve quality of life, sexual interest and libido in females. Also, as a precursor to testosterone it will increase sexual interest and response in both men and women. Low levels of DHEA in men have been associated with erectile dysfunction.

Insulin sensitivity: Recent studies have demonstrated improved insulin sensitivity in patients receiving supplementation. Animal models suggest that it may be the result of lower insulin levels thereby increasing the sensitivity of the receptors. Because of DHEA’s favorable effects on body composition, it may very well be that the decrease in fat mass leads to improved insulin receptor function and improved glucose handling. This could have beneficial long-term implications for treatment and management of diabetes and insulin resistance. Since both increase the risk for cardiovascular disease, ultimately DHEA holds great promise for lowering heart disease risk.



Immune function and inflammatory disorders: Substances contained within white blood cells modulate the immune response. High levels of these inflammatory modulators have been associated with rheumatoid arthritis, osteoporosis, certain cancers, atherosclerosis, and Parkinson’s Disease.

Improved Wound Healing: Researchers have reported faster wound healing in studies using DHEA supplementation, including improved rate of healing in nerve tissue, compared to placebo treated controls.

The recent attention given to research on DHEA is very exciting and encouraging. While much needs to be learned, we at Cenegenics believe that if you and your physician determine that you are a candidate for therapy, great benefits may be derived from supplementation.

*DHEA is not for everyone. Patients with a history of hormone-dependent cancers should, in general, avoid its use. You and your doctor may wish to discuss this.

¹Roth GS, Lane MA Ingram DK, et al. Biomarkers of caloric restriction may predict longevity in humans. *Science*. 2002;297:811.

²Lasley BL, Santoro N, Randolph JF, et al. The relationship of circulating Dehydroepiandrosterone, testosterone, and estradiol to stages of the menopausal transition and ethnicity. *J Clin Endocrinol Metab*. 2002;87:3760-3767.

³Feldman HA, Johannes CB, McKinlay JB, Longcope C. Low DHEA-S and heart disease in middle-aged men: cross-sectional results from the Mass Male Aging Study. *Ann Epidemiol*. 1998 May;8(4):217-28

⁴Schmidt P, *Archives of General Psychiatry*, Feb. 2005;62:154-162