

Bigger Belly Bulge, Smaller Brain Volume?

Preliminary findings from latest research suggest a link

Just when you thought the battle of the bulge was problematic enough, research hints at yet another casualty of that war.

Published in the May 2010 *Annals of Neurology*, the cross-sectional study showed a “significant” link between visceral fat and lower total brain volume.

Per one of the study’s researcher, Sudha Seshardi, MD from Boston University, the data suggest a stronger association for “central obesity versus global adiposity” and that the association is more prominent and robust for the “visceral fat component of abdominal obesity.”

Their study confirms the inverse association of “increasing body mass with lower total brain volume” and expands it to a larger cohort. Equally important, their findings can help further prevention strategies.

Men often take the biggest hit since sex hormones cause them to store fat in their belly vs. women who tend to store fat in their buttocks, thighs and hips first.

Yet, neither gender is free from the ravages of visceral fat.

Study & Findings. In the study, investigators assessed 733 patients—average aged 60—who were among those in the Framingham Offspring cohort with an MRI for brain volume assessment as well as temporal horn volume, white matter hyper-intensity volume and tissue death from blood supply loss.

Since midlife obesity has been linked to higher dementia risk, the researchers examined body mass index, waist circumference, waist-to-hip ratio, CT scores of subcutaneous and visceral adipose tissue.

Regardless of vascular risk factors and independent of body mass index or insulin resistance, reduced total brain volume is linked to . . .

- Bigger waist circumference
- Higher waist-hip ratio
- Higher levels of body mass index
- Subcutaneous tissue
- Visceral adipose tissue

Yet, the findings are preliminary, researchers cautioned, and shouldn’t be linked to reducing weight to reduce Alzheimer’s risk.

Inflammation could be an important mediator since obesity is “highly associated with inflammatory markers.” The researchers also noted . . .

- Adipose tissue contains inflammatory cells; diabetes and insulin resistance are both strongly related to obesity and are potential mediators of the inverse association between adiposity and brain volume.
- Visceral fat is more likely to mediate insulin resistance.
- Adipose tissue-derived hormones (i.e. leptin, resistin, adiponectin, ghrelin) could have a part in the adipose tissue/ brain atrophy link.*

**Leptin has ongoing communication with your brain about fat storage. The hormone handles appetite control, energy and metabolic rate.*

Protein-based resistin is a signaling molecule, which not only instigates a tissue resistance to insulin paving the way to type 2 diabetes, but also is associated with inflammation and an increase in pro-inflammatory chemicals.

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Adiponectin, another protein hormone, influences several metabolic processes. When its presence in plasma levels rises, there actually is a decline in type 2 diabetes risk.

The hunger hormone ghrelin alerts your brain when it's meal time, which is why controlling the hormone may also control overeating and its consequences, obesity and abdominal fat.

The Skinny On Visceral Fat

What it is. You see that belly fat hanging over your midsection? Well, the real problem is what's lying behind it.

That bulge isn't made up of ordinary fat cells. No, the fat cells surrounding your abdominal organs are highly active, churning out hormones, chemicals and inflammatory molecules that endanger your health, impacting LDL/HDL/triglyceride levels, hormone levels, inflammation, blood sugars, etc. Of particular note is the increased level of circulating cytokines, a protein that affects cell interactions and can trigger inflammation.

This intra-abdominal fat sits inside your peritoneal cavity rather than the fat beneath your skin or the fat within your skeletal muscle.

If you've got the infamous "apple" shape, look out: This deadly belly fat tissue is linked to diabetes, cardiovascular disease, high blood pressure, metabolic syndrome, breast cancer, colorectal cancer, gallbladder issues, dementia and more.

Are you "normal" weight but have a large waist? You still could be at risk. Measure your abdominal girth. If it's over 40 inches (35 for women), you've got visceral fat problems.

The cause. Heredity plays a part—from 30% to 60%. But nutrition and exercise level have an even greater impact overall. Eating poorly, consuming saturated fats (ice cream, butter, cheese, coconut/palm oil) and living a couch potato lifestyle spell disaster and rack up an even bigger bulge around your middle.

And factor in hormonal changes that kick in as you age, altering how your body metabolizes and stores fat.

Winning the battle. Take the first steps . . . and start now.

- **Exercise regularly.** Strength/resistance training and aerobics form a solid foundation, built for your success.
- **Low-glycemic nutrition.** Control emotional and hormonal eating. Focus on delicious, healthier alternatives that keep sugar levels balanced and your energy levels going strong. The key is eating the right foods in six balanced, small meals daily.
 - Good protein sources (lean beef, chicken, turkey, fish)
 - Fruits (apples, apricots, berries, grapefruit, pears)
 - Whole grains, complex carbohydrates packed with fiber, minerals and vitamins like vegetables and legumes (steering clear of simple carbs that are digested quickly and contain refined sugars, i.e. fruit juices, white breads, pasta)
 - Good fats (extra virgin olive oil, canola oil, omega 3s)
- **Hormonal assessment.** Have your physician check your hormonal levels to determine options for balancing your endocrine system.

Need some help? Cenegenics can design an optimal health plan tailored to your specific needs. When it comes to nutrition, our low-glycemic focus is clear:

- Metabolic balance, centered on food combinations and smaller, frequent meals to stave off hunger, stimulate metabolism and even out blood sugar levels
- 40% quality carbohydrates, minimizing effect insulin has on hormone levels
- 30% protein (higher than Mediterranean diet), with natural complete, lean protein (eggs, chicken, turkey, fish and occasional red meat)
- 30% healthy fats (omega-3s and omega-9s)
- Maximize results of your hormone therapy program: Your personalized food program will be designed to keep blood sugar and insulin levels low.
- Nutrient-dense, whole foods
- Prevent illness and boost immune function

More Belly Fat/Brain Research

- An eight-year evaluation of 3, 054 elderly men revealed that all adiposity measures were linked to an increased cognitive decline—especially in men having the highest total fat mass.
- Approximately 16% of study subjects (1,049 with midlife central obesity) showed a prevalence for dementia in a study examining records after 36 years of the initial evaluation. The highest sagittal abdominal diameter equated to a three-fold rise in developing dementia vs. lowest sagittal abdominal diameter subjects. Even those with normal BMI and an increased sagittal abdominal diameter had twice the risk for dementia.

Brain Food

Berries
Omega-3 Rich Fish (Salmon)
Eggs
Spinach/Arugula
Beans
Walnuts
Sunflower Seeds
Pumpkin Seeds
Flaxseeds
Green Tea
Tomatoes
Broccoli
Red Cabbage
Eggplant
Low-Fat Yogurt



Give us a call today for a healthier tomorrow.