

## Study shows that a larger abdomen in midlife increases risk of dementia

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People in their 40s with larger stomachs have a higher risk for dementia when they reach their 70s, according to a study published in the March 26, 2008, online issue of *Neurology*<sup>®</sup>, the medical journal of the *American Academy of Neurology*.

Previous studies have looked at central obesity (as determined by waist circumference) and body mass index in the elderly and its link to dementia risk. In addition, previous studies have shown that a large abdomen -- in midlife -- increases the risk of diabetes, stroke, and coronary heart disease. This is the first time researchers have demonstrated a longitudinal association between midlife belly fat and the risk of dementia.

Capturing abdominal obesity in midlife may be a much better indicator of the long term metabolic dysregulation that leads to dementia risk, said study author Rachel Whitmer, PhD, a research scientist at the Kaiser Permanente Division of Research in Oakland, CA. Measuring abdomen size in older age people may not be as good an indicator because as people age they tend to naturally lose muscle and bone mass and gain belly size, she explained.

“Considering that 50 percent of adults in this country have abdominal obesity, this is a disturbing finding. It is well known that being overweight in midlife and beyond increases risk factors for disease. However, where one carries the weight --especially in midlife -- appears to be an important predictor for dementia risk,” she said.

“Autopsies have shown that changes in the brain associated with Alzheimer’s disease may start in young to middle adulthood, and another study showed that high abdominal fat in elderly adults was tied to greater brain atrophy. These findings imply that the dangerous effects of abdominal obesity on the brain may start long before the signs of dementia appear.” She explained that additional research needs to be completed to determine the underlying mechanisms that link abdominal obesity in midlife to dementia risk.

Researchers studied 6,583 people age 40 to 45 in northern California who had their abdominal density measured. Belly fat was measured by using a caliper to determine the distance from the back to the upper abdomen, midway between the top of the pelvis and the bottom of the ribs. Belly density is highly correlated with visceral fat tissue, the fat tissue that is wrapped around the organs, according to the researchers. An average of 36 years later, 16 percent of the participants had been diagnosed with dementia.

The study found that those who were overweight and had a large belly were 2.3 times more likely to develop dementia than people with a normal weight and belly size. People who were both obese and had a large belly were 3.6 times more likely to develop dementia than those of normal weight and belly size. Those who were overweight or obese but did not have a large abdomen had an 80-percent increased risk of dementia.

Having a large abdomen increased the risk of dementia regardless of whether the participants were of normal weight overall, overweight, or obese, and regardless of existing health conditions, including diabetes, stroke and cardiovascular disease.

Non-whites, smokers, people with high blood pressure, high cholesterol or diabetes, and those with less than a high school level of education

were more likely to have abdominal obesity.

As with all observational studies, it is possible that the association of the abdominal obesity and dementia is not driven by the abdominal obesity, but rather by a complex set of health-related behaviors, for which abdominal obesity is but one part.

Source: Kaiser Permanente Division of Research

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