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VA research on **OBESITY**

Overweight and obesity are terms used for ranges of weight that are greater than what is considered healthy. According to the U.S. Centers for Disease Control and Prevention, nearly 35 percent of American adults—more than 78 million—are obese.

ABOUT OBESITY

- Obesity results from a combination of causes and contributing factors, including individual factors such as behavior and genetics.
- Behaviors contributing to obesity can include dietary patterns, physical activity or inactivity, medication use, and exposures to various environmental factors. Additional contributing factors in American society include the food and physical activity environment, education and skills, and food marketing and promotion.
- Obesity is a risk factor for heart disease, type 2 diabetes (once known as adult-onset or noninsulin-dependent diabetes), stroke, and some types of cancer. In particular, diabetes and obesity have become a very prevalent combination.
- In 2013, VA [estimated](#) that more than 165,000 Veterans who receive their health care from the department have a body mass index (BMI) of more than 40, which indicates a serious condition called morbid obesity. Morbid obesity can interfere with basic physical functions and significantly increase the risk of obesity-related conditions.

VA RESEARCH ON OBESITY: OVERVIEW

- VA research on obesity looks at the biological processes of weight gain and weight loss. Researchers compare the safety and effectiveness of obesity treatments, and work to find ways to help Veterans keep from gaining weight—for example, through exercise and healthy eating.
- VA researchers work hand in hand with the department's [MOVE!](#) program, a national weight-management and exercise initiative designed and coordinated by [VA's National Center for Health Promotion and Disease Prevention](#).

SELECTED MILESTONES AND MAJOR EVENTS

- 2002** – [Reported](#) key findings on ghrelin, a “hunger hormone” that was first discovered in 1999
- 2006** – Implemented VA [MOVE!](#) program nationally, providing overweight Veterans with the largest and most comprehensive weight management program associated with a U.S. medical care program
- 2013** – [Found](#) that Iraq and Afghanistan Veterans with PTSD and depression are at the greatest risk of obesity and not being

able to lose weight, relative to all those who served in the two countries between 2001 and 2010

2015 – [Learned](#) that bariatric surgery helps overweight patients live longer

2016 – [Found](#) that as fat cells develop, they change the types of nutrients they metabolize to produce fat and energy—an important step towards finding new ways to treat both diabetes and obesity

RECENT STUDIES: SELECTED HIGHLIGHTS

- **Many health care providers have strong negative attitudes and stereotypes about people with obesity**—and these attitudes influence their perceptions, judgment, interpersonal behavior, and decision-making. A team of researchers with VA's Center for Chronic Disease Outcomes Research also found that these biases were more negative than those exhibited toward racial minorities, gays, lesbians, and poor people. The researchers believe that doctors should discuss weight issues with obese patients, but should do so in a less judgmental, more affirming way—making the discussion about feeling good, not about a number on a scale. ([Obesity](#), April 2014; [Obesity Reviews](#), April 2015)

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• VA MOVE! programs throughout the nation are helpful even when participants are at locations other than where the classes are taught.

Researchers at the Sioux Falls VA Health Care System studied weight loss outcomes among 120 Veterans, half of whom took 12 MOVE! classes to help them develop weight-management skills through videoconferencing. The others took no classes. The MOVE! participants lost weight, while the control group gained weight. The average weight difference between the groups was about 12 pounds after one year. ([Journal of Rural Health](#), Winter 2014)

• Fat cells, or adipocytes, are connective tissue cells that have become differentiated from other cells

and become specialized in the manufacture and storage of fat. Researchers at the VA San Diego Healthcare System and the University of California learned that as fat cells develop, they change the types of nutrients they metabolize (process). They create branched-chain amino acids, along with glucose, to produce fat and energy. Therefore, fat cells play an important role in regulating the body's levels of these amino acids, which are typically found in higher levels in people with diabetes and obesity. A better understanding of how these amino acids are created could lead to

new treatments for these conditions. ([Nature Chemical Biology](#), January 2016)

• More creative designs for weight-loss incentive programs are needed to overcome barriers to behavior change,

according to researchers from the Corporal Michael J. Crescenz VA Medical Center in Philadelphia and the University of Pennsylvania. The team looked at three incentive programs, two of which offered participants the opportunity to have their health care premiums reduced if they lost weight. Participants in the third intervention group could receive prizes in a daily lottery if their weight was reduced. A fourth group was offered no financial incentive. Twelve months after enrollment, the average weight of all the groups stayed about the same, with no statistically significant changes among them. ([Health Affairs](#), January 2016)

• Bariatric surgeries help severely overweight people live longer, not only to shed pounds they cannot otherwise lose. A study by researchers at several VA medical centers found that 2,500 severely overweight Veterans who had the surgery had a 53 percent lower risk of dying from any cause 5 to 10 years after the procedure, compared with 7,500 other severely overweight Veterans who had not. ([Journal of the American Medical Association](#), Jan. 6, 2015)

• Eating sweet foods causes the brain to form a memory of a meal.

A study by researchers at the Charlie Norwood VA Medical Center in Atlanta and two Georgia universities showed that neurons in the dorsal hippocampus, the part of the brain that is critical for episodic memory, are activated by consuming sweets. Meals consisting of a sweetened solution, either sucrose or saccharin, significantly increased the expression of activity-related cytoskeleton-associated protein (Arc) in dorsal hippocampal neurons in rats—a process that is necessary for making memories. ([Hippocampus](#), March 2016)

• The drug rapamycin reduces body fat and appetite in older rats,

according to a study by researchers at the Malcolm Randall VA Medical Center in Gainesville and the University of Florida. Rapamycin is a pharmaceutical used to coat coronary stents and prevent transplant rejection. The research team found that when treated with rapamycin, the body weight of 24-month-old rats dropped by approximately 13 percent. Rats of that age are about equivalent in their life cycle to 65-year-old humans. ([The Journals of Gerontology, Series A](#), July 2016)

For more information on VA studies on obesity and other key topics relating to Veterans' health, please visit www.research.va.gov/topics

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