

Research In Focus: A Weekly Digest of New Research from the NIDILRR Community

Being Overweight or Obese May be Linked to Poorer Health for People with Traumatic Brain Injuries

A study funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR).

A traumatic brain injury (TBI) is lasting brain damage from an external force, such as a fall or a car accident. TBI can be mild, moderate, or severe. People with TBI may face long-term challenges in their mobility or cognitive abilities such as thinking clearly or processing and remembering information. These challenges could have an impact on their ability to manage their weight through exercise and diet. In general, obesity rates among adults with disabilities are 58% higher than obesity rates among adults without disabilities, according to recent surveys. Some past research has found that although people may lose weight immediately after a TBI, they may gain more weight in the decades following a TBI, which could put them at risk for chronic health conditions like heart disease or diabetes. In a recent NIDILRR-funded study, researchers looked at height and weight data from a large sample of people with moderate or severe TBI. The researchers wanted to find out what percentage of people with TBI are underweight, normal weight, overweight, or obese. They also wanted to find out what factors might be related to higher rates of overweight or obesity for people with TBI.

Researchers at the [University of Alabama at Birmingham TBI Model System Center](#) analyzed data from 7,287 adults with TBI who were enrolled in the [TBI Model Systems National Database](#). The participants included in the study's analyses were at least 16 years old, had a moderate or severe TBI, and stayed in a rehabilitation hospital following their injury. The data came from interviews with the participants conducted 1-25 years after injury. The researchers calculated body mass index (BMI) for each participant at the time of the interview. BMI is a measure of body fat based on height and weight. The participants were classified as underweight if they had a BMI lower than 18.5; normal weight if their BMI was between 18.5 and 24.9; overweight if their BMI was between 25 and 29.9; or obese if their BMI was higher than 30. To find out what factors were associated with being overweight or obese, the researchers looked at the following data: age, number of years post injury, severity of injuries, and length of hospital stay for rehabilitation. As part of the National Database's data collection interviews, the participants were asked whether or not they had ever been diagnosed with several chronic health conditions including heart disease, high blood pressure, or diabetes. The participants also rated their overall health on a five-point scale ranging from poor to excellent.

The researchers found that:

- More than half of the participants were overweight or obese. About 3% of the participants were underweight; 39% were normal weight; 36% were overweight; and 23% were obese.

- The participants ages 30-80 had higher rates of overweight or obesity than the participants younger than 30 or older than 80 years old.
- The participants who had had their TBI for 20-25 years had a higher rate of being overweight or obese (66%) than the participants who had their TBI for only 1-2 years (55%).
- Injury severity and the length of hospital stay were not related to being overweight or obese.
- The participants who were overweight or obese reported higher rates of heart disease, high blood pressure, and diabetes than the participants who were underweight or normal weight, and the participants who were overweight or obese rated their overall health lower than the participants who were underweight or normal weight.

In this study's sample of adults with TBI, about 60% of the participants were either overweight or obese. This rate is lower than the national average of 71% for adults without TBI. According to the authors, this may be related to the fact that all of the participants in this study received rehabilitation in the hospital, which required them to be healthy enough to complete therapies. In addition, participating in rehabilitation may promote a stronger focus on healthy lifestyle choices. Further, individuals who are obese at the time of injury might be less likely to be enrolled in the TBI Model Systems National Database compared with individuals who are not obese, as people who are obese may experience complications that could impact their survival or otherwise prevent them from being referred for inpatient rehabilitation at a TBIMS center. Future studies may be useful to establish the prevalence of overweight and obesity among people with TBI who are not enrolled in the TBI National Database.

The authors also noted that rates of being overweight or obese became higher for people who have their TBI longer. Over time, people with TBI may have difficulty following healthy lifestyle habits such as exercising regularly or following a balanced diet. In this study, individuals who were overweight or obese were more likely to have other chronic health conditions, and they reported poorer overall health than those who were not overweight or obese. Healthcare providers serving people with TBI may wish to develop procedures for weight screening and obesity prevention for individuals with long-standing TBI.

[To Learn More](#)

The [Living Well with a Disability](#) program is a 10-week, peer-facilitated health promotion workshop for people with disabilities offered through independent living centers, area agencies on aging, and other organizations in communities across the US. It is currently being developed into an online program through the [Healthy Community Living project](#) funded by NIDILRR.

The [National Center on Health, Physical Activity, and Disability \(NCHPAD\)](#) is a central resource for fitness, wellness, and disability. They have an [extensive article on brain injury and exercise](#), including the impact of physical and cognitive impairments,

developing and delivering a fitness program, and benefits of stretching and strength training, among other topics.

[To Learn More About this Study](#)

Dreer, L.E., et al. (2018) [Obesity and overweight problems among individuals 1 to 25 years following acute rehabilitation for traumatic brain injury: A NIDILRR Traumatic Brain Injury Model Systems study](#). Journal of Head Trauma Rehabilitation, 33(4), 246-256. This article is available free from the publisher and from the NARIC collection under Accession Number J79171.

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