

# Obesity and overweight linked to long-term health problems after traumatic brain injury

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Especially at longer follow-up times, overweight and obesity are associated with chronic disease risks for survivors of moderate to severe traumatic brain injury (TBI), reports a study in the July/August issue of the *Journal of Head Trauma Rehabilitation (JHTR)*.

"Being obese or overweight presents a [health](#) risk in the years following [rehabilitation](#) for TBI," according to the new research, led by Laura E. Dreer, Ph.D., of The University of Alabama at Birmingham. The findings highlight the need for a proactive approach to managing [weight](#) and related health conditions in long-term TBI survivors.

## High Body Weight Linked to Health Problems after Acute Rehabilitation for TBI

The study included 7,287 adults with TBI who had undergone inpatient acute rehabilitation. Inpatient rehabilitation consists of intensive therapy, provided by a team of specialists, designed to improve physical and mental functioning. Care was provided by rehabilitation centers participating in the [the Traumatic Brain Injury Model Systems \(TBIMS\) program](#), sponsored by the National Institute on Disability, Independent Living, and Rehabilitation Research.

About three-fourths of patients were men; the average age was 46 years. The relationship between body weight and functional and health outcomes was assessed from one to 25 years after TBI. At the most

recent follow-up, 23 percent of TBI survivors were classified as obese, 36 percent as overweight, 39 percent as normal weight, and three percent as underweight.

Overweight and obesity were less likely for patients under age 30, as well as those aged 80 years or older. While the percentage of overweight patients was relatively stable, the obesity rate increased over time—especially five years or longer after TBI.

Being overweight or obese was strongly associated with several chronic health conditions, including high blood pressure, heart failure, and diabetes. Overweight/obese patients also rated themselves as having poorer general health. The frequency of seizures—a common problem among TBI survivors—was also related to differences in [body weight](#) and health status.

The overall rate of overweight/obesity in the TBI patients (59 percent) was lower than reported in the general US population (over 70 percent). This may be attributed to several reasons in need of further examination—for example, a higher rate of health complications, rehospitalizations, medication side effects, or death among individuals who were already obese at the time of TBI and thus were excluded from the follow-up study.

"Achieving and maintaining a healthy diet and engaging in regular physical activity following a TBI are critical goals for recovery," Dr. Dreer and coauthors write. During the early recovery period, patients may lose weight due to increased metabolic rate and other physical effects of TBI. In the later phases, weight gain may occur due to a wide range of factors including medical conditions, medications, cognitive or behavioral changes, physical limitations, and lack of transportation or other resources.

Based on the large-scale TBIMS database, the new study confirms that being overweight or obese is associated with significant health problems for survivors of moderate to severe TBI who require acute rehabilitation. The researchers note some important limitations of their study, including the lack of information on the timing of weight problems and associated health conditions.

"However, these findings do highlight the potential importance of surveillance, prevention, and management of weight and related health conditions during the years postinjury," Dr. Dreer and colleagues conclude. "Lifestyle and health behaviors related to weight gain will need to be a component of any proactive approach to managing TBI as a chronic health condition."

**More information:** Laura E. Dreer et al, Obesity and Overweight Problems Among Individuals 1 to 25 Years Following Acute Rehabilitation for Traumatic Brain Injury, *Journal of Head Trauma Rehabilitation* (2018). [DOI: 10.1097/HTR.0000000000000408](https://doi.org/10.1097/HTR.0000000000000408)

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