

# Weight loss surgery reduces brain pressure in patients with neurological condition

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Weight loss surgery is more effective than dieting to reduce brain pressure that can cause blindness in patients with a neurological condition, finds a study led by the University of Birmingham and

University Hospitals Birmingham NHS Foundation Trust (UHB).

Idiopathic Intracranial Hypertension (IIH) is a debilitating condition that raises pressure in the brain and can lead to chronic headaches and even permanent sight loss. The illness, which often leaves patients with a reduced quality of life, predominately affects women aged 25 to 36 and [weight gain](#) is a major risk factor of developing IIH and relapses of the disease.

Weight loss has been shown to be an [effective treatment](#), with a reduction in [body weight](#) of between three to 15% inducing disease remission. However, maintaining [weight](#) loss is notoriously difficult, as most patients regain weight over a two to five year period.

In the first clinical trial of its kind, the research team set out to analyse whether bariatric surgery or a 12-month community weight management intervention (delivered through Weight Watchers™) would be the most effective for reducing brain pressure in women with IIH.

The trial, supported by the National Institute for Health Research (NIHR), involved 66 women with IIH with an average age of 32 years and a body mass index (BMI) of 35 or more. Half underwent bariatric surgery, while the other half took part in Weight Watchers™. Brain pressure was measured by lumbar puncture at the start and after 12 and 24 months.

The results, published today (April 26) in *JAMA Neurology*, showed that bariatric surgery was significantly more effective than community weight management, with those having had surgery seeing an average intracranial pressure reduction of 25% after 12 months.

The results also showed that the surgery group lost on average 23Kg, as compared to losing 2kg in the Weight Watchers™ group at 12 months.

This difference was greater at 24 months with 24% more weight lost in the surgery group as compared to Weight Watchers™. This was because the bariatric surgery group continued to lose more weight over time (28Kg from the start of the study to 2 years), whilst the community weight management group had regained weight lost and, on average, were only 1kg lighter than at the start of the study.

Senior author Alex Sinclair, Professor of Neurology at the University of Birmingham and Neurology lead of the Idiopathic Intracranial Hypertension Service at UHB, said:

"A link between weight and IIH has long been observed but, until now, there has been no robust evidence that weight loss can reduce brain pressure.

"We have shown that weight loss achieved through bariatric surgery is significantly more therapeutic than community weight loss management interventions both in the short and longer term to treat IIH brain pressure.

"Whilst we recognize that bariatric [surgery](#) may not be an appropriate approach for all patients with IIH and increased weight, it is important to now have the evidence that a surgical approach can lead to significant sustained disease remission."

First author Miss Susan Mollan, Director of Ophthalmic Research at UHB, added: "We hope that as a consequence of this research, current NHS and NICE guidance can change to include [bariatric surgery](#) as a treatment for women with IIH and a BMI greater than 35 when appropriate and in line with the patient's best interests and wishes.

"Weight stigma is a major barrier to patient care in IIH. We also hope this research will prompt discussion and education around weight

management to ensure this sensitive topic is approached with care and dignity."

Co-author James Mitchell, Lecturer in Neurology at the University of Birmingham, added: "Weight regain is often driven by biology rather than willpower, and obesity is a chronic relapsing disease that requires lifelong treatment. Therefore, it's essential that patients are given appropriate support to achieve [weight loss](#) and further work is done to ensure they have good access to weight management services."

**More information:** Susan P. Mollan et al. Effectiveness of Bariatric Surgery vs Community Weight Management Intervention for the Treatment of Idiopathic Intracranial Hypertension, *JAMA Neurology* (2021). [DOI: 10.1001/jamaneurol.2021.0659](https://doi.org/10.1001/jamaneurol.2021.0659)

Provided by University of Birmingham

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