

Migraine surgery reduces headache days, finds study

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For patients with chronic migraine, nerve decompression surgery

effectively reduces the number of headache days—the outcome measure preferred by neurologists—along with other measures including the frequency and intensity of migraine attacks, reports a study in the June issue of [Plastic and Reconstructive Surgery](#). The paper is titled "Comparing Migraine Headache Index vs. Monthly Migraine Days Following Nerve Deactivation for Headache: A Systematic Review and Meta-Analysis."

"Neurologists evaluating migraine treatments tend to focus on reduction in [headache](#) days, while [plastic surgeons](#) performing headache surgery are more likely to use a measure incorporating other headache outcomes, such as the Migraine Headache Index," said ASPS Member Surgeon and Professor of Plastic Surgery, Surgery, Neurosurgery and Neurology Jeffrey E. Janis, MD, of The Ohio State University Wexner Medical Center, Columbus.

"Our study adds new evidence that headache surgery improves both sets of measures, providing a more comprehensive assessment of the results of headache surgery."

Which outcomes are improved by headache surgery?

Peripheral nerve decompression surgery—sometimes called trigger point deactivation or headache surgery—has become an established surgical treatment for [chronic migraine](#) and certain other neurological causes of headache, such as occipital and supraorbital neuralgia. [Migraine surgery](#) seeks to relieve nerve compression at trigger sites in the head and neck, which are thought to contribute to headaches.

When plastic surgeons evaluate the outcomes of headache surgery, they typically use the Migraine Headache Index (MHI), which incorporates

the frequency, intensity, and duration of migraine attacks. In contrast, neurologists—"the traditional experts on nonsurgical migraine treatment"—focus on the change in monthly migraine days.

"This discrepancy is one reason why some headache specialists have been slow to recognize the growing body of evidence showing the effectiveness of headache surgery," says Dr. Janis. Current guidelines recommend against evaluating headache intensity or duration, citing a lack of standardization.

'Strong evidence in support of headache surgery efficacy'

To help bridge the gap between specialties, the researchers reviewed 19 studies of headache surgery that reported information on monthly migraine days. Performed between 2005 and 2020, the studies included a total of 1,603 patients. Five of the studies were randomized controlled trials, the highest level of research evidence.

Of eight studies assessing monthly migraine days before and after migraine surgery, six showed a significant reduction in days with migraine attacks. On weighted analysis, patients averaged 14.11 fewer migraine days per month, from before to after surgery. Based on 12 studies, total migraine attacks decreased by 8.65 days per month.

Other outcomes also improved after headache surgery, including an average reduction of 76.59 points (out of a maximum of 300 points) in total MHI score. This included improvements in migraine intensity, which decreased by an average of 3.84 points (on a 0–10 scale); and attack duration, which decreased by 11.80 hours per month. The studies reported no major complications of headache surgery.

The study "demonstrates the efficacy of headache surgery on the outcomes used in both the [plastic surgery] and neurology literature," Dr. Janis and co-authors conclude. They acknowledge some limitations of their study—notably including the variability in the trigger sites addressed by headache surgery. Nevertheless, the findings "provide strong evidence in support of headache surgery efficacy."

"We hope our study will help to foster common communication between plastic surgeons and neurologists in assessing the effects of headache surgery for patients with chronic headache pain," Dr. Janis comments. "Future studies of headache surgery should routinely include data on monthly migraine days, in order to better compare the outcomes of surgical and medical treatments."

The study's publication coincides with [National Migraine & Headache Awareness Month](#) (#MHAM). Observed in June each year, MHAM aims to spread awareness and education about headache and migraine diseases.

More information: Benjamin H. Ormseth et al, Comparing Migraine Headache Index versus Monthly Migraine Days after Headache Surgery: A Systematic Review and Meta-Analysis, *Plastic & Reconstructive Surgery* (2023). [DOI: 10.1097/PRS.00000000000010800](https://doi.org/10.1097/PRS.00000000000010800)

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