



Clinical Review Criteria
Surgical Treatment of Migraine Headaches

- Surgical Deactivation of Trigger Sites

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Criteria

For Medicare Members

Source	Policy
CMS Coverage Manuals	None
National Coverage Determinations (NCD)	None
Local Coverage Determinations (LCD)	None
Local Coverage Article	None
Kaiser Permanente Medical Policy	Due to the absence of an active NCD, LCD, or other coverage guidance, Kaiser Permanente has chosen to use their own Clinical Review Criteria, <i>Surgical Treatment of Migraine Headache</i> for medical necessity determinations. Refer to the Non-Medicare criteria below.

For Non-Medicare Members

Kaiser Permanente has elected to use the MCG* Migraine Headache, Surgical Treatment (A-0578) for medical necessity determinations. These procedures are not covered per MCG. For access to the MCG Clinical Guidelines criteria, please see the MCG Guideline Index through the provider portal under Quick Access.

The MCG* are proprietary and cannot be published and/or distributed. However, on an individual member basis, Kaiser Permanente can share a copy of the specific criteria document used to make a utilization management decision. If one of your patients is being reviewed using these criteria, you may request a copy of the criteria by calling the Kaiser Permanente Clinical Review staff at 1-800-289-1363 or access the MCG Guideline Index using the link provided above.

If requesting this service, please send the following documentation to support medical necessity:

- Last 2 years of neurology notes
- Most recent clinical note from requesting provider

The following information was used in the development of this document and is provided as background only. It is provided for historical purposes and does not necessarily reflect the most current published literature. When significant new articles are published that impact treatment option, Kaiser Permanente will review as needed. This information is not to be used as coverage criteria. Please only refer to the criteria listed above for coverage determinations.

Background

Migraine headache is a common primary headache disorders that is characterized by a variety of symptoms such as nausea, vomiting, visual disturbances, and sensitivity to light and sounds. In the United States, approximately 18% of women and 6% of men have experienced at least one migraine in the previous year. Standard treatment for migraine involves identification and avoidance of triggers, and the use of pharmacotherapy to treat acute attacks and prevent further attacks (Goadsby 2010, Silberstein 2004).

Surgical treatment for migraine headache has been proposed for patients who are not receiving adequate benefit from standard treatment options. This approach was originally discovered as an unanticipated benefit of cosmetic

surgery. The first step to determining whether the patient is a candidate for surgery is to identify trigger sites. Most investigators use Botox to identify the trigger site; however, local nerve blocks can also be used. Patients who experience complete elimination or at least 50% improvement in intensity and/or frequency of headaches are considered candidates for surgery. The surgical approach varies by trigger site and involves removal of certain facial muscles, severing of a facial nerve, and/or surgical modification of the sinuses (Kung 2011).

Medical Technology Assessment Committee (MTAC)

Surgical Deactivation of Trigger Sites for Treatment of Migraine Headaches

02/11/2013: MTAC REVIEW

Evidence Conclusion: A RCT that included 125 subjects evaluated the safety and efficacy of surgical deactivation of migraine headache trigger sites. Patients in the treatment group were injected with Botox to identify trigger sites. Patients were eligible for surgery if they experienced at least 50% improvement in the intensity and/or frequency of headaches from the Botox lasting at least 4 weeks. Ninety-one patients out of the 100 patients in the treatment group underwent surgery. Patients in the control group receive injections of saline. After one year 31 patients in the treatment group and 3 patients in the control group experienced complete elimination. Both groups experienced significant improvement in headache intensity and duration compared to baseline; however, only the treatment group experienced a significant improvement in headache frequency. Compared to the control group, patients who received surgery experienced significantly greater reductions in headache frequency, intensity, and duration at one year. The most common surgical complications were: nasal dryness, rhinorrhea, recurrence of septal deviation, scalp itching, and minor hair loss. This study had several limitations: the inclusion and exclusion criteria were not provided, an ITT analysis was not performed, power was not assessed, the outcome data was self-reported, and it is not stated whether patients were taking pharmacotherapy during the trial (Guyuron 2005).

Headache outcomes at 1 year (Guyuron 2005)			
	Treatment	Control	P-value
	Number (%)		
Complete elimination	31 (35)	3 (15.8)	<0.001
Significant improvement*	82 (92)	0 (0)	<0.001
	Mean ± SE		
Frequency (migraine/month)	3.8 ± 0.4	10.2 ± 1.7	<0.001
Intensity (0 to 10, most severe)	4.0 ± 0.3	7.0 ± 0.3	<0.001
Duration (hour)	0.35 ± 0.05	0.99 ± 0.2	0.007

*A t least 50% improvement in intensity, frequency, and/or duration.

Patients in the treatment group were followed for 5-years to determine the long-term safety and efficacy of surgery. Ten patients in the treatment group who underwent additional surgery were excluded from the analysis, leaving 69 patients. Results from this observational follow-up study suggest that the improvements in headache frequency, duration, and intensity that were achieved at 1 year were maintained at 5 years (Guyuron 2011).

Headache outcomes at baseline, 1 year, and 5 years (Guyuron 2011)

	Baseline	Year 1	Year 5
	Number (%)		
		N=89	N=69
Complete elimination	NA	31 (35)	20 (29)
Significant improvement*	NA	82 (92)	61(88)
	Mean ± SD		
Frequency (migraine/month)	10.9 ± 7.5	4.0 ± 6.4	4.0 ± 5.3
Intensity [0 to 10 (most severe)]	8.5 ± 1.2	4.0 ± 3.3	4.5 ± 3.2
Duration (days)	1.4 ± 1.4	0.42 ± 0.8	0.31 ± 0.9

*A t least 50% improvement in intensity, frequency, and/or duration.

A more recent RCT that included 75 subjects also evaluated the safety and efficacy of surgical deactivation of migraine headache trigger sites. Patients underwent injections of Botox to identify the trigger site. Patients who experienced complete elimination or at least 50% improvement in intensity and/or frequency of headaches were candidates for surgery. Patients were then randomized to receive either surgery based on migraine trigger site (frontal, temporal, or occipital) or sham surgery. Twenty-eight (57%) patients who underwent surgery experienced complete elimination compared to 1 (4%) who underwent sham surgery. Both groups experienced significant improvements in headache frequency and intensity from baseline. The treatment group also experienced a significant improvement in headache duration from baseline. The treatment group experienced significantly

greater reductions in headache frequency and intensity compared to the control group at one year. There was no significant difference between the treatment and the control group in headache duration. The most common adverse events were temporary hollowing and intense itching. This trial had several limitations: it was a small trial and power was not assessed, outcomes were self-reported, and it is not stated whether patients were taking pharmacotherapy during the trial (Guyuron 2009).

Change from baseline to 1 year (Guyuron 2009)			
	Treatment	Control	P-Value
	Number (%)		
Complete elimination	28 (57.1)	1 (3.8)	<0.001
Significant improvement*	41 (83.7)	15 (57.7)	0.014
	Mean ± SD		
Frequency (headaches/month)	-7.4† ± 5.8	-3.5† ± 5.4	0.005
Intensity (1 to 10)	-3.0† ± 3.5	-1.3† ± 2.9	0.03
Duration (days)	-0.30† ± 0.46	-0.87 ± 4.5	0.43

*At least 50% improvement in intensity, frequency and/or duration.

†Significant improvement from baseline.

Conclusion: Results from two RCTs with methodological limitations suggest that surgical treatment for migraine headaches may improve migraine headache frequency, intensity, and durations, and results in more patients achieving complete elimination compare to control (not surgery or sham surgery). However, the safety and efficacy of surgical treatment for migraine headaches compared to standard therapy is unknown and there is limited data on the long-term efficacy of this procedure.

Articles: Several observational studies and two randomized controlled trials (RCTs) were identified that evaluated the safety and efficacy of surgical treatment of migraine headaches. The two RCTs and a follow-up study of one of the RCTs were selected for review. All of these studies were conducted by the same investigator.

The following studies were selected for review: Guyuron B, Kriegler JS, Davis J, Amini SB. Comprehensive surgical treatment of migraine headaches. *Plast Reconstr Surg.* 2005; 115:1-9. See [Evidence Table](#). Guyuron B, Kriegler JS, Davis J, Amini SB. Five-year outcome of surgical treatment of migraine headaches. *Plast Reconstr Surg.* 2011; 127:603-608. See [Evidence Table](#). Guyuron B, Reed D, Kriegler JS, Davis J, Pashmini N, Amini S. A placebo-controlled surgical trial of the treatment of migraine headaches. *Plast Reconstr Surg.* 2009; 124:461-468. See [Evidence Table](#).

The use of Surgical Deactivation of Trigger Sites for Treatment of Migraine Headaches does not meet *the Kaiser Permanente Medical Technology Assessment Criteria*.

Applicable Codes

Considered Medically Necessary when criteria in the applicable policy statements listed above are met:

CPT® or HCPC Codes	Description
15824	Rhytidectomy; forehead
15826	Rhytidectomy; glabellar frown lines
21299	Unlisted craniofacial and maxillofacial procedure
30520	Septoplasty or submucous resection, with or without cartilage scoring, contouring or replacement with graft
30801	Ablation, soft tissue of inferior turbinates, unilateral or bilateral, any method (eg, electrocautery, radiofrequency ablation, or tissue volume reduction); superficial
31200	Ethmoidectomy; intranasal, anterior
31201	Ethmoidectomy; intranasal, total
31205	Ethmoidectomy; extranasal, total
31254	Nasal/sinus endoscopy, surgical with ethmoidectomy; partial (anterior)
31255	Nasal/sinus endoscopy, surgical with ethmoidectomy; total (anterior and posterior)
64732	Transection or avulsion of; supraorbital nerve
64734	Transection or avulsion of; infraorbital nerve
64744	Transection or avulsion of; greater occipital nerve
67900	Repair of brow ptosis (supraciliary, mid-forehead or coronal approach)

With diagnosis codes	
G43.001	Migraine without aura, not intractable, with status migrainosus
G43.009	Migraine without aura, not intractable, without status migrainosus
G43.011	Migraine without aura, intractable, with status migrainosus
G43.019	Migraine without aura, intractable, without status migrainosus
G43.101	Migraine with aura, not intractable, with status migrainosus
G43.109	Migraine with aura, not intractable, without status migrainosus
G43.111	Migraine with aura, intractable, with status migrainosus
G43.119	Migraine with aura, intractable, without status migrainosus
G43.401	Hemiplegic migraine, not intractable, with status migrainosus
G43.409	Hemiplegic migraine, not intractable, without status migrainosus
G43.411	Hemiplegic migraine, intractable, with status migrainosus
G43.419	Hemiplegic migraine, intractable, without status migrainosus
G43.501	Persistent migraine aura without cerebral infarction, not intractable, with status migrainosus
G43.509	Persistent migraine aura without cerebral infarction, not intractable, without status migrainosus
G43.511	Persistent migraine aura without cerebral infarction, intractable, with status migrainosus
G43.519	Persistent migraine aura without cerebral infarction, intractable, without status migrainosus
G43.601	Persistent migraine aura with cerebral infarction, not intractable, with status migrainosus
G43.609	Persistent migraine aura with cerebral infarction, not intractable, without status migrainosus
G43.611	Persistent migraine aura with cerebral infarction, intractable, with status migrainosus
G43.619	Persistent migraine aura with cerebral infarction, intractable, without status migrainosus
G43.701	Chronic migraine without aura, not intractable, with status migrainosus
G43.709	Chronic migraine without aura, not intractable, without status migrainosus
G43.711	Chronic migraine without aura, intractable, with status migrainosus
G43.719	Chronic migraine without aura, intractable, without status migrainosus
G43.A0	Cyclical vomiting, in migraine, not intractable
G43.A1	Cyclical vomiting, in migraine, intractable
G43.B0	Ophthalmoplegic migraine, not intractable
G43.B1	Ophthalmoplegic migraine, intractable
G43.C0	Periodic headache syndromes in child or adult, not intractable
G43.C1	Periodic headache syndromes in child or adult, intractable
G43.D0	Abdominal migraine, not intractable
G43.D1	Abdominal migraine, intractable
G43.801	Other migraine, not intractable, with status migrainosus
G43.809	Other migraine, not intractable, without status migrainosus
G43.811	Other migraine, intractable, with status migrainosus
G43.819	Other migraine, intractable, without status migrainosus
G43.821	Menstrual migraine, not intractable, with status migrainosus
G43.829	Menstrual migraine, not intractable, without status migrainosus
G43.831	Menstrual migraine, intractable, with status migrainosus
G43.839	Menstrual migraine, intractable, without status migrainosus
G43.901	Migraine, unspecified, not intractable, with status migrainosus
G43.909	Migraine, unspecified, not intractable, without status migrainosus
G43.911	Migraine, unspecified, intractable, with status migrainosus
G43.919	Migraine, unspecified, intractable, without status migrainosus

***Note:** Codes may not be all-inclusive. Deleted codes and codes not in effect at the time of service may not be covered.

**To verify authorization requirements for a specific code by plan type, please use the [Pre-authorization Code Check](#).

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03/05/2013	03/05/2013 ^{MDCRPC} , 11/04/2014 ^{MPC} , 09/01/2015 ^{MPC} , 06/07/2016 ^{MPC} , 04/04/2017 ^{MPC} ,	02/16/2022

	02/06/2018 ^{MPC} , 02/05/2019 ^{MPC} , 02/04/2020 ^{MPC} , 02/02/2021 ^{MPC} , 02/01/2022 ^{MPC} , 02/07/2023 ^{MPC}	
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MDCR^{PC} Medical Director Clinical Review and Policy Committee
MPC Medical Policy Committee

Revision History	Description
02/01/2022	Adopted Kaiser Permanente policy for Medicare Advantage members.
02/16/2022	Updated applicable codes