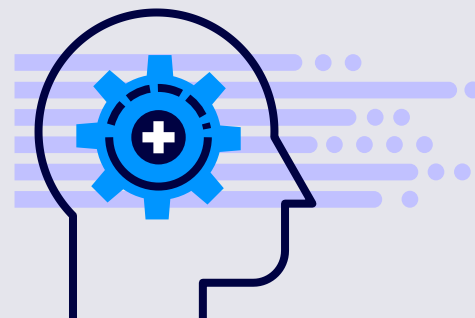


Diagnosis and Treatment of Migraine



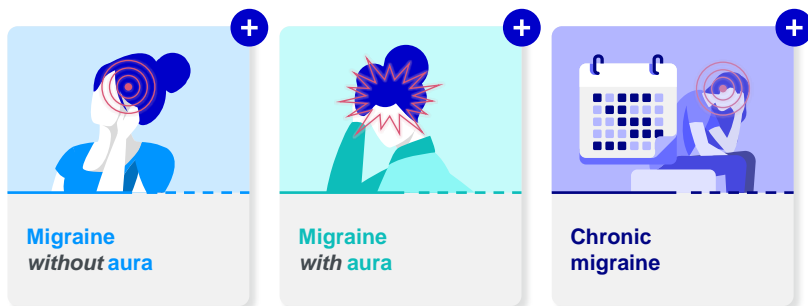
Start





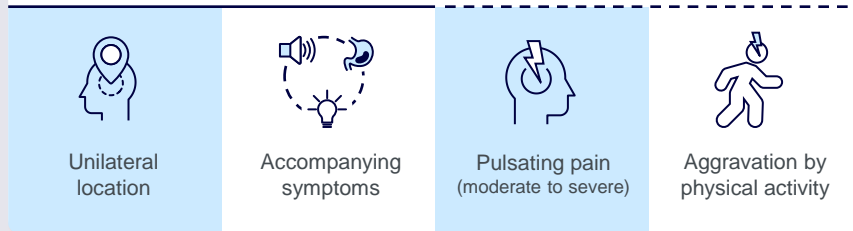
Diagnosis and treatment of migraine

The ICHD-3 provides diagnostic criteria for 3 main categories of migraine¹



Differential diagnoses for migraine include other primary headache disorders and some potentially life-threatening secondary headache disorders²

Distinguishing typical characteristics of migraine include^{1,2}:



Pharmacological treatment of migraine involves both acute and preventive therapies^{2,3}

Acute treatment:

For all patients with a confirmed diagnosis of migraine³



Goals include³:



Provide rapid symptomatic relief without recurrence



Restore functioning

Preventive treatment:

For patients whose attacks significantly interfere with daily routines despite acute treatment; for those who have frequent attacks, intolerance or contraindication(s) to acute treatments or failure or overuse of acute treatments; or based on patient preference³



Goals include³:



Reduce attack frequency, severity, duration, and disability



Improve responsiveness to acute treatment

ICHD-3, International Classification of Headache Disorders, 3rd Edition.

1. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211; 2. Martin VT, et al. Ann Med 2021;53:1979–90; 3. Ailani J, et al. Headache 2021;61:1021–39.



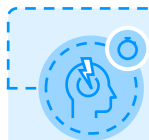
Diagnosis and treatment of migraine



Diagnosis of migraine *without* aura



History of ≥ 5 attacks fulfilling the following criteria¹:



Headache attacks lasting
4–72 hours

(when untreated or unsuccessfully treated)



With ≥ 2 of the following characteristics:

- Unilateral location
- Pulsating quality
- Moderate or severe pain intensity
- Aggravation by or causing avoidance of routine physical activity^a



Accompanied by ≥ 1 of the following symptoms:

- Nausea and/or vomiting
- Photophobia and Phonophobia



Not better accounted for by another ICHD-3 diagnosis

^ae.g., walking or climbing stairs.

Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211.

1. ICHD-3. 2. Eigenbrodt AK, et al. Nat Rev Neurol 2021;17:501–14; 3. Ailani J et al, Headache. 2021;61:1021–39.

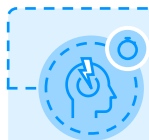


Diagnosis and treatment of migraine



Diagnosis of migraine *without* aura

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- Aggravation by or causing avoidance of routine physical activity^a



Accompanied by ≥ 1 of the following symptoms:

- Nausea and/or vomiting
- Photophobia and phonophobia



Not better accounted for by another ICHD-3 diagnosis



Patients may report **prodromal symptoms** up to 48 hours before the onset of headache

These may include:

- hyperactivity
- hypoactivity
- depression
- specific food cravings
- yawning
- fatigue
- difficulty concentrating
- neck stiffness/pain
- blurred vision
- sensitivity to light and sound

ICH Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211.

1. ICH Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211.
2. Eigenbrodt AK, et al. Nat Rev Neurol 2021;17:501–14; 3. Ailani J et al, Headache. 2021;61:1021–39.



Diagnosis and treatment of migraine



Diagnosis of migraine *without* aura

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Accompanied by ≥ 1 of the following symptoms:

- Nausea and/or vomiting
- Photophobia and phonophobia



Not better accounted for by another ICHD-3 diagnosis



Although pain is typically unilateral, **~4 in 10 patients** report bilateral pain during migraine attacks^{2,3}



^ae.g., walking or climbing stairs.

1. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211; 2. Evans RW. Pract Neurol 2014;26–32; 3. Rasmussen BK, Olesen J. Cephalalgia 1992;12:221–8.

1.1. 2. Eigenbrodt AK, et al. Nat Rev Neurol 2021;17:501–14; 3. Ailani J et al, Headache. 2021;61:1021–39.



Diagnosis and treatment of migraine



Diagnosis of migraine *without* aura

History of ≥ 5 attacks fulfilling the following criteria:



Headache attacks lasting
4–72 hours

(when untreated or unsuccessfully treated)



With ≥ 2 of the following characteristics:

- Unilateral location
- Pulsating quality
- Moderate or severe pain intensity
- Aggravation by or causing avoidance of routine physical activity^a



Accompanied by ≥ 1 of the following symptoms:

- Nausea and/or vomiting
- Photophobia and phonophobia



Not better accounted for by another ICHD-3 diagnosis



Attacks can also be associated with **cranial autonomic symptoms** (e.g., lacrimation and nasal congestion) and **cutaneous allodynia**



Diagnosis and treatment of migraine



Diagnosis of migraine *without* aura

History of ≥ 5 attacks fulfilling the following criteria:



Headache attacks lasting
4–72 hours

(when untreated or unsuccessfully treated)



With ≥ 2 of the following characteristics:

- Unilateral location
- Pulsating quality
- Moderate or severe pain intensity
- Aggravation by or causing avoidance of routine physical activity^a



Accompanied by ≥ 1 of the following symptoms:

- Nausea and/or vomiting
- Photophobia and phonophobia



Not better accounted for by another ICHD-3 diagnosis

Migraine without aura is the disease most prone to **accelerate to chronic migraine** with frequent use of symptomatic medication

It can also **coexist** with migraine with aura and menstrual migraine^a

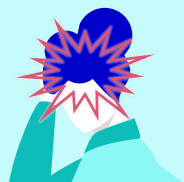
When a patient fulfils criteria for >1 subtype of migraine, **each subtype of migraine diagnosed should be individually documented**

^aAttacks occurring on days -2 to $+3$ of menstruation in at least 2 out of 3 menstrual cycles and at no other times of the cycle.

Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211.



Diagnosis and treatment of migraine



Diagnosis of migraine *with aura*^a



History of ≥ 2 attacks fulfilling the following criteria:



At least 1 of the following fully reversible aura symptoms:

- Visual
- Sensory
- Speech and/or language
- Motor
- Brainstem
- Retinal



At least 3 of the following characteristics:

- ≥ 1 aura symptom that spreads gradually over ≥ 5 minutes
- ≥ 2 aura symptoms that occur in succession
- Each individual aura symptom lasts 5–60 minutes
- ≥ 1 aura symptom is unilateral^b
- ≥ 1 aura symptom is positive, e.g., scintillations or pins and needles
- The aura is accompanied or followed by headache (within 60 minutes)



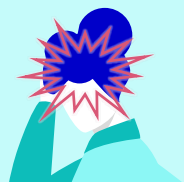
Not better accounted for by another ICHD-3 diagnosis

Transient ischemic attack excluded

^aMigraine with aura can be subcategorized as typical aura, brainstem aura (≥ 2 brainstem symptoms, e.g., dysarthria, vertigo, tinnitus, hypacusis, diplopia, ataxia, decreased consciousness), hemiplegic migraine (motor weakness) or retinal migraine (monocular visual disturbances); ^bAphasia is always unilateral while dysarthria may or may not be. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211.



Diagnosis and treatment of migraine



Diagnosis of migraine *with* aura

History of ≥ 2 attacks fulfilling the following criteria¹:



At least 1 of the following fully reversible aura symptoms^a:

- Visual
- Sensory
- Speech and/or language
- Motor
- Brainstem
- Retinal



At least 3 of the following characteristics:

- ≥ 1 aura symptom that spreads gradually over ≥ 5 minutes
- ≥ 2 aura symptoms that occur in succession
- Each individual aura symptom lasts 5–60 minutes
- ≥ 1 aura symptom is unilateral
- ≥ 1 aura symptom is positive, e.g., scintillations or pins and needles
- The aura is accompanied or followed by headache (within 60 minutes)



Not better
accounted for by
another ICHD-3
diagnosis

Transient ischemic attack excluded



~40% of people with migraine experience aura, either with every attack or some attacks²

Aura most commonly manifests visually¹⁻³

Response	Percentage
Yes	90%
No	10%

of those affected

and as other sensory symptoms^{1,3}

~31%

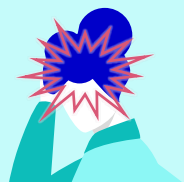
of those affected

^aVisual aura often appears as a fortification spectrum near the point of fixation that may spread left or right gradually and leave relative scotoma in its wake. Scotoma without positive phenomena may also occur. Sensory disturbances take the form of pins and needles that move slowly from the point of origin and affect one side of the body, face and/or tongue. Numbness may follow or be the only symptom.¹

1. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. *Cephalalgia* 2018;38:1–211; 2. Rasmussen BK, Olesen J. *Cephalalgia* 1992;12:221–8; 3. Russell MB, Olesen J. *Brain* 1996;119:355–61.



Diagnosis and treatment of migraine



Diagnosis of migraine *with* aura

History of ≥ 2 attacks fulfilling the following criteria:



At least 1 of the following fully reversible aura symptoms:

- Visual
- Sensory
- Speech and/or language
- Motor
- Brainstem
- Retinal



At least 3 of the following characteristics:

- ≥ 1 aura symptom that spreads gradually over ≥ 5 minutes
- ≥ 2 aura symptoms that occur in succession
- Each individual aura symptom lasts 5–60 minutes
- ≥ 1 aura symptom is unilateral^a
- ≥ 1 aura symptom is positive, e.g., scintillations or pins and needles
- The aura is accompanied or followed by headache (within 60 minutes)



Not better accounted for by another ICHD-3 diagnosis

Transient ischemic attack excluded

When 3 symptoms occur during an aura, the acceptable maximum duration is

 **3 x 60 minutes**

Motor symptoms may last up to

72 hours

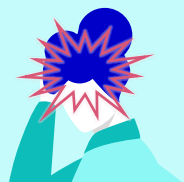
^aAphasia is always unilateral while dysarthria may or may not be.

Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211.

1. ICHD-3. 2. Eigenbrodt AK, et al. Nat Rev Neurol 2021;17:501–14; 3. Ailani J et al, Headache. 2021;61:1021–39.



Diagnosis and treatment of migraine



Diagnosis of migraine *with* aura

History of ≥ 2 attacks fulfilling the following criteria:



At least 1 of the following fully reversible aura symptoms:

- Visual
- Sensory
- Speech and/or language
- Motor
- Brainstem
- Retinal



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- ≥ 2 aura symptoms that occur in succession
- Each individual aura symptom lasts 5–60 minutes
- ≥ 1 aura symptom is unilateral
- ≥ 1 aura symptom is positive, e.g., scintillations or pins and needles
- The aura is accompanied or followed by headache (within 60 minutes)



Not better accounted for by another ICHD-3 diagnosis

Transient ischemic attack excluded



Aura symptoms can be **differentiated from transient ischemic attack (TIA)** symptoms by their gradual spreading and occurrence in succession versus sudden simultaneous onset in TIA



Diagnosis and treatment of migraine



Diagnosis of **chronic** migraine



≥15 headache days per month for >3 months and fulfilling the following criteria:



At least 5 attacks meeting criteria for migraine without aura or migraine with aura



**Any of the following on
≥8 days/month for >3 months:**

- Features of migraine without aura
- Features of migraine with aura
- Believed by the patient to be migraine at onset and relieved by a triptan or ergot derivative



Not better accounted for by another ICHD-3 diagnosis



Diagnosis and treatment of migraine



Diagnosis of *chronic* migraine

≥15 headache days per month for >3 months and fulfilling the following criteria¹:



At least 5 attacks meeting criteria for migraine without aura or migraine with aura



Any of the following on
≥8 days/month for >3 months:

- Features of migraine without aura
- Features of migraine with aura
- Believed by the patient to be migraine at onset and relieved by a triptan or ergot derivative



Not better accounted for by another ICHD-3 diagnosis



2.5% of patients with episodic migraine transform to chronic migraine each year²

Conversely, reversion to episodic migraine can also occur³

1. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211; 2. Bigal ME, et al. Headache 2008;48:1157–68; 3. Serrano D, et al. J Headache Pain 2017;18:101.

1.1. 2. Eigenbrodt AK, et al. Nat Rev Neurol 2021;17:501–14; 3. Ailani J et al, Headache. 2021;61:1021–39.



Diagnosis and treatment of migraine



Diagnosis of *chronic* migraine

≥15 headache days per month for >3 months and fulfilling the following criteria:



At least 5 attacks meeting criteria for migraine without aura or migraine with aura



Any of the following on ≥8 days/month for >3 months:

- Features of migraine without aura
- Features of migraine with aura
- Believed by the patient to be migraine at onset and relieved by a triptan or ergot derivative



Not better accounted for by another ICHD-3 diagnosis



When medication overuse is present,^a both chronic migraine and medication overuse headache should be diagnosed

^aDefined as use of ergotamines, triptans, opioids or combination analgesics on ≥10 days per month for >3 months, or nonopioid analgesics for ≥15 days per month for >3 months. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition. Cephalalgia 2018;38:1–211.



Diagnosis and treatment of migraine

Differential diagnoses: Characteristics of primary headache disorders

Migraine¹

Headache characteristics:



Usually unilateral
in location

4–72
hours

Moderate
or severe
intensity



Usually
pulsating pain



Accompanying symptoms:



Photophobia, phonophobia,
nausea, vomiting

Often aggravated by routine physical activity

Tension-type headache¹

Headache characteristics:



Typically bilateral or circumferential

Hours
to days^a

Mild or moderate intensity



Usually pressing or
tightening pain



Accompanying symptoms:



Often none; sometimes photophobia or phonophobia (but not both); sometimes mild nausea in chronic tension-type headache

Not aggravated by routine physical activity

Cluster headache¹

Headache characteristics:



Strictly unilateral
and orbital, supraorbital,
and/or temporal

15–180 minutes

Severe
or very
severe

Overwhelming
pain



Accompanying symptoms:



Ipsilateral to the headache:
cranial autonomic symptoms,
e.g., conjunctival injection,^b lacrimation
(tearing) and nasal congestion

Associated with restlessness or agitation

^aOr unremitting; ^bIncreased redness of the eye due to enlargement of conjunctival vessels.²

1. Eigenbrodt AK, et al. *Nat Rev Neurol* 2021;17:501–14; 2. Park IK, et al. *Invest Ophthalmol Vis Sci* 2013;54:5249–57.

2. Eigenbrodt AK, et al. Nat Rev Neurol 2021;17:501–14; 3. Allani J et al. Headache. 2021;61:1021–39.

Secondary headache disorders



Diagnosis and treatment of migraine

2021 AHS Consensus Statement:

Goals of acute migraine treatment



**Provide rapid
symptomatic relief
without recurrence**



Restore function



**Minimize the need for
rescue medications or
repeat dosing**



**Optimize self-care and
reduce healthcare
utilization**



Minimize adverse events



**Reduce overall
treatment costs**

AHS, American Headache Society.
The AHS Consensus Statement provides timely recommendations
for clinicians and is not intended to be, and should not be
understood or applied as, a Clinical Practice Guideline.
Adapted from: Ailani J, et al. Headache. 2021;61:1021–39.

Acute treatments





Diagnosis and treatment of migraine



Acute treatment of migraine



All patients with a confirmed diagnosis of migraine should be offered acute pharmacological and/or nonpharmacological treatment¹

Nonpharmacologic interventions include counseling patients on the benefits of:

- Proper nutrition
- Regular exercise
- Adequate hydration
- Proper sleep
- Stress management
- Maintaining a migraine diary

Mild-to-moderate attacks

Moderate-to-severe attacks

OR

Mild-to-moderate attacks that respond poorly to nonspecific medications

NSAIDs, nonopioid analgesics, acetaminophen or caffeinated analgesic combinations

Migraine-specific agents (triptans, ergotamine derivatives, gepants, ditans)



Medication overuse headache²:

- Headache on **≥15 days/month** in a patient with a pre-existing primary headache due to **regular overuse^a** of acute or symptomatic headache medication for >3 months
- Discontinuation of the overused medication(s) usually resolves medication overuse headache and improves responsiveness to preventive therapy

Criteria for initiating gepants, ditans or neuromodulatory devices for acute treatment¹:

- Contraindication or inability to tolerate triptans or
- Inadequate response to ≥2 oral triptans

NSAID, nonsteroidal anti-inflammatory drug. ^aDefined as use of ergotamine derivatives, triptans, opioids or combination analgesics on ≥10 days/month for >3 months, or use of nonopioid analgesics, NSAIDs or simple analgesics on ≥15 days/month for >3 months.²

1. Ailani J, et al. Headache 2021;61:1021–39; 2. Headache Classification Committee of the International Headache Society. Cephalalgia 2018;38:1–211.

ICD

1.1

2. Eigenbrodt AK, et al. Nat Rev Neurol 2021;17:501–14; 3. Ailani J et al, Headache. 2021;61:1021–39.



Acute treatment goals



Diagnosis and treatment of migraine

2021 AHS Consensus Statement:

Goals of preventive migraine treatment



**Reduce attack
frequency, severity,
duration, and disability**



**Improve function
and reduce
disability**



**Improve
responsiveness to and
avoid escalation in use
of acute treatment**



**Improve
health-related
quality of life**



**Reduce reliance on
unwanted, poorly
tolerated or ineffective
acute treatments**



**Optimize self-care
and enhance
sense of personal
control**



**Reduce
psychological
symptoms and
headache-related
distress**



**Reduce overall
treatment costs**

AHS, American Headache Society.
The AHS Consensus Statement provides timely recommendations
for clinicians and is not intended to be, and should not be
understood or applied as, a clinical practice guideline.
Adapted from: Ailani J, et al. Headache 2021;61:1021–39.

Preventive treatments





Diagnosis and treatment of migraine



Preventive treatment of migraine



The AHS 2021 Consensus Statement recommends that preventive treatment should be considered for patients whose attacks significantly interfere with daily routines despite acute treatment; for those who have frequent attacks, intolerance or contraindication(s) to acute treatments, or failure or overuse of acute treatments; or based on patient preference^{1a}

The AHS 2021 Consensus Statement¹ and the 2024 Updated Position Statement²



Use evidence-based treatments^{1,2}

2024 Update: CGRP-targeting migraine therapies are a first-line option for migraine prevention. Initiation of these therapies should not require trial and failure of non-specific migraine preventive medication approaches.²



Classes of agents^b with an FDA-approved indication for preventive treatment of migraine^c include:

Oral treatments: anticonvulsants, beta-blockers, gepants
Intramuscular injection: neurotoxin
Subcutaneous injection: anti-CGRP monoclonal antibodies
Intravenous infusion: anti-CGRP monoclonal antibodies



Allow an adequate trial before switching¹



Oral treatments:
≥8 weeks at target therapeutic dose or usual effective dose

Neurotoxin:
After ≥2 quarterly injections (6 months)

Anti-CGRP mAbs:
≥3 months (monthly administration) or ≥6 months (quarterly administration)

CGRP, calcitonin gene-related peptide; HIT, Headache Impact Test; IV, intravenous; mAb, monoclonal antibody; MIDAS, Migraine Disability Assessment; MHD, monthly headache day; MMD, monthly migraine day.
^aOveruse defined as use of ergotamine derivatives, triptans, opioids or combination analgesics on ≥10 days/month for >3 months, or use of nonopioid analgesics, nonsteroidal anti-inflammatory drugs or simple analgesics on ≥15 days/month for >3 months. "Frequent attacks" includes ≥3 monthly headache days with severe disability, ≥4 monthly headache days with some disability or ≥6 monthly headache days without disability; ^bOnly specific medications within each class are recommended in the AHS 2021 Consensus Statement¹; ^cThe 2021 AHS Consensus Statement identifies additional agents with evidence of efficacy in migraine prevention which do not possess FDA approval for that use; see the Consensus Statement for the full list.¹
1. Ailani J, et al. Headache 2021;61:1021-39; 2. Charles AC, et al. Headache 2024; 64:333-41.