

Headache

A Patient's Guide

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Headache is an extremely common problem. It is estimated that 10-20% of all people have migraine. Headache is one of the most common reasons people visit the doctor's office. Headache can be the symptom of a serious problem, or it can be recurrent, annoying and disabling, without any underlying structural cause.

WHAT CAUSES HEAD PAIN?

Pain in the head is carried by certain nerves that supply the head and neck. The trigeminal system impacts the face as well as the cervical (neck) 1 and 2 nerves in the back of the head. Although pain can indicate that something is pushing on the brain or nerves, most of the time nothing is pushing on anything. We think that in migraine there may be a generator of headache in the brain which can be triggered by many things. Some people's generators are more sensitive to stimuli such as light, noise, odor, and stress than others, causing a person to have more frequent headaches.

THERE ARE MANY TYPES OF HEADACHES!

Most people have more than one type of headache. The most common type of headache seen in a doctor's office is migraine (the most common type of headache in the general population is tension headache). Some people do not believe that migraine and tension headaches are different headaches, but rather two ends of a headache continuum. The diagnosis of headache type is important since treatment differs for each headache type. Over the course of your life, headache patterns and symptoms may change.

TYPES OF HEADACHE

Migraine Without Aura

Migraine generally runs in families. This means you may have a genetic predisposition to get headaches. You can have mild pain with the features listed below and it is still considered a migraine headache. Sometimes dizziness and blurred vision accompany a migraine headache.

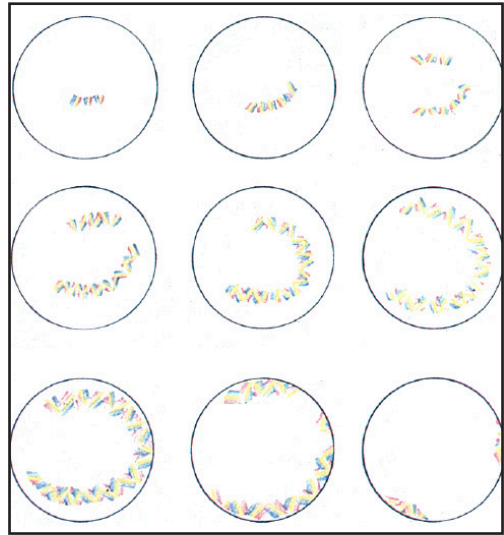
Migraine headaches are usually:

- Inherited
- Moderate to severe pain
- One-sided (can also be two-sided)
- Associated with nausea, vomiting, and/or light and sound sensitivity
- Aggravated by movement or activity
- Pulsing or throbbing

Migraine with Aura

Sometimes people have warning signs that they are going to get a headache. This is called an aura. Auroras precede the migraine headache. They are usually visual, but other symptoms can occur, such as numbness or tingling of a hand or face, dizziness, difficulty with speech, and other complicated symptoms. The aura symptoms occur in 15% of patients with migraine.

Typical visual auras include: zig-zag lines, spots, dots, and waves that shimmer and move. Sometimes vision can tunnel. Aura can be present with little or NO Headache.



From Pedersen DM, White GL, Digre KB. Migraine Without Pain. Clinician Reviews 1991. March 1991, pages 26-32, with permission.

Typical Visual Migraine Aura.

Tension Headache

Tension headache may occur in anyone. It is often triggered by fatigue, excessive reading, or stress. It can occur in a chronic (greater than 15 days per month) or episodic form.

Tension headaches are usually:

- Mild to moderate pain
- Both sides of head or band-like
- Pressing or tightening
- Not aggravated by activity or alcohol
- Mild light or sound sensitivity (not both), and never nausea

Cluster Headache and Related Disorders

Cluster headache is a disorder frequently seen in men (5:1 ratio of males to females). It generally starts in the second or third decade of life. The excruciating pain is characteristically over one side of the head and is associated with a drooping eyelid, a smaller pupil, sweating, tearing, and nasal congestion. The pain lasts 15-90 minutes and radiates to the eye, temple, jaw, nose, chin, or teeth. Cluster headaches occur in cycles lasting weeks or months. During the cycle, the attacks can occur 1-3 times in a day and can awaken the individual at night. In between cycle periods, the patient is headache free.

Cluster headaches are precipitated by alcohol, excitement, sleep, and are also associated with smoking. These headaches respond to certain types of medication

and often can be treated with oxygen. An FDA-approved medication, Emgality (galcanezumab-gnlm), for episodic cluster headache is available for treatment. This is a different dose than for migraine. (appendix p. 13)

A headache type seen in women and similar to cluster is Paroxysmal Hemicrania. This headache is unilateral, lasts only for a few minutes and occurs multiple times a day. It may have symptoms of nasal congestion, droopy eye lid, and redness to the eye. Sometimes it will be a chronic daily headache with superimposed stabbing pain known as *hemicrania continua*. It usually responds to a specific medication called indomethacin. Though it is less common, women can also have cluster headache. In addition, migraine can sometimes manifest in a "cluster-like" manner, either in groups of several headaches, or with some of the features of cluster headache.

Most people have more than one type of headache.

Medication Overuse Headache (previously called Rebound Headaches)

Sometimes medications can cause headaches. Patients can experience daily headache when they take certain medications on a regular basis. When patients take a medicine for quick relief more than 3 days in a week, they are at risk for developing medication overuse headache. This headache occurs every day, is present upon awakening, and goes away for a short time after taking a medicine. Frequently sleep problems and depression are seen. A vicious cycle occurs.

Typically, people start with headaches that come and go, then something happens, and headaches occur frequently, and daily medicines are taken to treat them. Medications like aspirin and acetaminophen, or those in combination with caffeine (Excedrin, butalbital/Fioricet), opioids (codeine, hydrocodone, oxycodone, dilaudid), migraine-specific medications (ergotamines and triptans) – even sinus medications (nasal decongestants)–can cause rebound headaches when used more than 3 days per week. Rebound headache is not limited to pain medicines; it can occur with other medications such as sleep aids, anxiety medications, caffeine, and stimulants.

Daily use of pain killers may interfere with the brain's pain-fighting mechanisms. As the medicine wears off, you are even MORE vulnerable to get a headache! Fortunately, just getting off the daily medication gives you a good chance of decreasing headache frequency. However, it often takes several months of being off the offending medication before rebound headache improves.

Sinus Headaches

Sinus headache usually occurs as the result of an infection or inflammation and congestion in the sinus cavities. Sinuses are located around the eyes, nose and cheeks. The nerve endings produce pain behind these areas. Sinus headaches are usually associated with a cold and worsen with coughing or changes in head position. The face is usually tender to pressure or touch.

Sinus headache is RARE, not common like some people believe. In fact, migraine can occur around the face and feel like it is coming from the sinuses, leading people to treat sinus headache when the problem is usually migraine.

Trigeminal Neuralgia and Other Types of Facial Pain

These are face and head pains that are unlike migraine but diagnosable by your health care provider. Trigeminal neuralgia is a pure facial pain with seconds-long jabs and no features of migraine.

Headaches from Abnormalities in Your Head or Neck

Your doctor will examine you and determine if these may be present. Possible causes include tumors, abnormally formed blood vessels, blood vessel disease, infection or inflammation, and consequences of head or neck trauma. Some of the warning signals of a potentially life-threatening headache include:

- A sudden onset of the most severe headache in one's life
- A one-sided or side-locked headache that is progressively worsening
- Headache occurring with coughing, straining or sexual activity
- Headache associated with confusion, fever, or drowsiness
- New headaches after age 50
- Headaches associated with abnormalities of the neurological examination (loss of vision, slurred speech, weakness)

Headaches Associated with Metabolic Abnormalities

Headaches may occur when something goes wrong in the blood or with metabolism. Causes include anemia, diabetes, thyroid problems, sleep apnea, or inflammatory conditions such as arthritis. Low levels of certain vitamins (Vitamin D, B12) as well as overly high vitamin levels (from supplements) may also result in headache.

Depression is chemically linked to headaches. Treating depression is key.



Chronic Daily Headache (CDH)

CDH (headache more than 15 days in a month) may be caused by chronic migraine, chronic tension-type headache, chronic cluster headache, hemicrania continua, and new daily persistent headache. The most frequent cause of CDH is medication overuse headache or rebound headache.

New Daily Persistent Headache

These headaches start one day, are persistent, and are difficult to treat. They are experienced after viral illnesses and other causes.

Transformed migraine (old terminology) is a migraine that occurs almost daily after several events such as infections, meningitis, head injury or trauma, overuse of medications (Drug Rebound), fibromyalgia/myofascial, and serious illness.

What can Travel with CDH and May Put You at Risk?

It is extremely important to recognize all of the factors that fuel your chronic daily headaches:

- Frequent headaches, nausea, medication overuse
- Depression/Anxiety - Biochemically linked to headache, depression seems to run in families with headache and vice versa. Treating depression often helps with headache.
- Psychological Conflict or Stressful life experiences - (for example, sexual abuse, PTSD) chronic headaches can occur
- Any chronic pain syndrome (fibromyalgia, chronic neck, back, stomach/IBS, dry eyes, and pelvic pain) can worsen headaches and vice versa
- Obesity
- Not getting enough sleep, snoring, and sleep apnea

KNOW YOUR HEADACHE

You will get a list of all your headache types and any other relevant diagnoses that can contribute to headaches. Since headache is diagnosed based on your history, **you will need to keep track of your different headaches so that you can begin to understand the different types.** It is important that you and your provider consider how your other medical problems (depression, heart disease, sleep apnea, etc.) can affect your headaches and vice versa.

Education is Power – The More You Know the Better You Do!

You are the primary guardian of your own health. Your job is to learn all you can about your headaches and triggers to help yourself feel better.

MANAGE YOUR HEADACHE

Know Your Triggers!

A trigger is something that can bring on a headache in certain people. The best way to know your triggers is to keep a diary and write down what was happening at the time the headache started. Examples of some triggers are:

Diet

Diet can affect headache in some people. Keeping track of what you eat in your diary is helpful. Here are a few examples of common food triggers:

- Monosodium Glutamate (MSG) - Contained in many foods, especially soups, pizza, chips, and Chinese food (read all Nutrition Facts labels)
- Caffeine - coffee, tea (no more than 2-3 cups per day), sodas, hot chocolate, energy drinks
- Alcohol - red wine, champagne, beer
- Dairy - aged cheese, yogurt, sour cream
- Meats - processed meats with nitrites (hot dogs, sausage, smoked meats)
- Fruits - citrus, bananas, avocado
- Dessert - chocolate and other "high sugar treats"
- NutraSweet and other artificial sweeteners

The most important things to remember about diet:

- Avoid excessive sugar and processed foods
- Protein servings: 5 - 10 grams every 3 hours
- Eat regularly and don't skip meals
- Aim to eat at least 5 servings of fruits & vegetables per day
- Drink plenty of water (enough that your urine is clear)

Environment (minimize exposure to these triggers when possible—for questions, talk to your provider)

- Light - glare, fluorescent, strobes and stripes, computer and television screens
- Sounds - loud noises
- Smells - strong odors
- Weather - marked changes in temperature, humidity, winds
- Travel - altitude changes, including airplane travel

Physical Factors

- Daily mild aerobic exercise is an important headache preventive
- Massage may or may not be helpful
- Sexual activity can trigger headaches

Eating healthy is an important way to avoid headache triggers.



Sleep Hygiene

- Spend at least 8 hours in bed overnight. Do no other activity in bed except sleep and sex
- Visualize sleep (you will fall asleep faster)
- Avoid large meals close to bedtime
- Do not nap during the day
- Sleep disorders may need additional evaluation and treatment. Talk to your primary care provider

Emotional Factors

- Stress releases many chemicals in our brains that can either trigger headache or make headache worse. As the stress subsides and the chemicals fall, people may experience headache (weekend let down headache). Learning stress management techniques are important in headache sufferers
- Anxiety: Fear of headaches and inability to manage the pain precipitates worsening headaches

Hormonal Factors

- Sex hormones can affect headache in certain people. For example, migraines can be associated with the menstrual cycle. Though it is less common, male hormones can also be associated with headache
- Pregnancy can exacerbate headache early on. Frequently in the later stages of pregnancy, headaches may improve. After delivery, headaches may resume

Medications

- A complete and accurate list of all your medications, supplements, and vitamins is essential to ensure a complete evaluation. Bring an updated list of all medications, supplements, and vitamins to your visit.

HEADACHE MEDICATION MANAGEMENT

Medication treatment is divided into Prevention and Acute or Rescue. Prevention is always the primary goal. You must first know your diagnoses, triggers, and medication management plan.

Preventive Medications For Migraine

The choice of therapy is individualized and depends on headache symptoms and frequency, other disease states, other medications you are taking, and many other pain-specific factors. Your provider will work closely with you to determine the best treatment for your situation. Preventive medicines are usually started at a low dose and increased gradually to reduce side effects and to find the lowest dose that works for you. Every medicine can have a side effect and any side effect that is bothersome should be brought up with your provider. The best medicine for you depends on what other diseases you have, what side effects you can tolerate, and what other medicines you take.

Migraine Specific Preventives

Calcitonin Gene Related Peptide (CGRP) Inhibitors - **This is the first class of medication specifically approved for headache prevention.** These are self-administered, once-monthly subcutaneous injections. (appendix, p. 13)

If you have frequent headaches, preventive medication may be recommended as part of your treatment plan.



Blood Pressure Medications

Heart medicines are often used to prevent headaches. Some beta blocker medicines are FDA-approved for migraine prevention. Calcium channel blockers, angiotensin receptor blockers, and angiotensin converting enzyme inhibitors are also used. (appendix, p. 13)

Tricyclic Antidepressants

This class of medication works for preventing migraine and tension headache. They increase serotonin and norepinephrine and help you sleep. They can increase your appetite, so you should watch what you eat. Much smaller doses are used for headache than for treating depression. (appendix, p. 15)

Other Antidepressants

These encompass a larger class of medications that are also used for preventing headache. These are especially helpful in patients who are also depressed and treat anxiety. (appendix, p. 15)

Anticonvulsants or Anti-Seizure Medicines

This class of medication affects the way nerves transmit their signals. They may also help mood and nerve pain along with preventing headaches. (appendix, pp. 13-15)

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

Typically, NSAIDs are used to treat joint and muscle pain. Sometimes they can help prevent headaches (appendix, p. 15). Risks associated with daily use: kidney failure, heart disease, stomach bleeding, and rebound headaches.

Sleep Medications

Some of these can also be used only as needed for acute treatment to help you sleep with a bad headache. (appendix, p. 17)

Botox: OnabotulinumtoxinA

FDA approved for chronic migraine (15 days or more per month). (appendix, p. 16)

CAUTION: Antidepressant and antiepileptic medications have been shown to increase the risk of severe depression and suicidality in a small percentage of patients.

COMPLEMENTARY MEDICINE HEADACHE TREATMENTS

Dietary Supplements

Some vitamins and herbs may be helpful for certain patients, but it is important to remember that these products affect the body and cause side effects and drug interactions just like any other medication. Dietary supplements are not regulated or FDA-approved and manufacturers do not have to prove their products are effective. (appendix, p. 17)

TREATMENT FOR ACUTE HEADACHE & RESCUE MEDICATIONS

Once a headache has started, it is important to remember 3 principles:

1. PREVENT NAUSEA
2. TREAT HEADACHE PAIN
3. IF ALL ELSE FAILS, SLEEP

NAUSEA MANAGEMENT

Gastroparesis is a state of partial paralysis in your stomach that occurs in migraine. It is difficult for oral migraine medications to work effectively when this is not treated. Even if you don't have nausea, it is important to treat the stomach. Medications improve the nausea that comes with migraine, improve absorption and tolerance of other medications, and may assist in reducing headache pain. (see appendix, p. 19)

ACUTE HEADACHE PAIN MANAGEMENT

Migraine Specific Medications: (appendix, p. 18)

Triptans

This class is a specific treatment for migraine and affect a specific type of serotonin receptor in the brain. Many triptans are available and are slightly different from each other. If one is not effective, it is still worth trying another. Do not take different triptans together or within a 24 hour time period of each other. Common side effects include chest and/or neck pressure/tightness, skin sensations such as burning or tingling, nausea, dizziness, drowsiness, and dry mouth.

Ditans

A class of abortive medication FDA approved October 2019 to specifically bind to the 5-HT_{1F} receptor subtype. (appendix, p. 18)

Ergotamines (Ergots)

Ergotamines are effective medicines to treat migraine and were developed prior to triptans. Ergots can cause nausea, so you should take a nausea medicine first. They often have more side effects than triptans.

Note: Ergots should not be used more than 2 days per week. Do not use a triptan within 24 hours of an ergot. Triptans and ergot medicines should not be used if you have heart disease, stroke, or uncontrolled high blood pressure.

Other Migraine Medications (appendix, p. 19)

Can be used in patients who do not tolerate triptans or ergots, such as:

- Isometheptene/Acetaminophen/
Dichloralphenazone (Midrin)
Combination analgesic of acetaminophen, relaxant, and vasoconstrictor. This may require compounding by a specialty pharmacy.
- Combination Analgesics
Combination of aspirin or acetaminophen, butalbital, and caffeine (e.g. Excedrin, Fiorinal/Fioricet)
- Narcotics/Opioids
Medications usually used for pain from surgery or cancer and should be avoided in migraine treatment due to abuse of potential and medication overuse.

Other pain medications, especially narcotics, carry a strong risk of rebound headache, habituation, and even addiction. Special caution should be used with these medications as they are habit forming, strong inducers of rebound headache, and potentially deadly in overdose. Examples include morphine, hydrocodone, dilaudid, oxycodone, and codeine.

Every medicine can have side effects and any side effect that is bothersome should be brought up with your provider.



Once a headache has started, remember the three principles.

CAUTION: ALL medications used to treat pain can cause rebound. Rebound headaches have been shown to occur when narcotics are used more than 8 days per month, when butalbital/caffeinated products are used more than 5 days per month, and when triptans are used more than 10-14 days per month.

SLEEP MANAGEMENT

On occasion, sleep aids are used for acute headache treatment. Keep in mind that good sleep can refresh your brain.

HEADACHE AND PREGNANCY

When you are pregnant, everything changes. The use of medications must be carefully reviewed and discussed with your provider.

- We use the FDA classification of drugs as a guideline for treatment (Preventive/Rescue)
- Pregnancy Risk Line is available for more information: (801) 328-2229

BEHAVIOR STRATEGIES AND TREATMENT IN CDH

- Regular routine including restorative sleep, diet, and exercise
- Lose weight if you are overweight (obesity = BMI of 30 or greater)
- Keep a headache diary
- Learn all you can about your headaches
- Do not overuse acute/rescue medications
- Follow through on your treatment plan (e.g. preventive medications)

DEVICES TO TREAT HEADACHE

- Many FDA-approved devices are available, such as Cefaly, Spring TMS, and Sapphire (appendix, p. 20)

NON-MEDICATION WAYS TO PREVENT & TREAT HEADACHES

- Light sensitivity can be treated with FL-41 tint glasses, which seem to decrease the flickering associated with computers, fluorescent lighting, and televisions
- Progressive muscle relaxation is practiced by alternately contracting then relaxing muscle groups
- Visualization
- Biofeedback/hypnosis/energy management
- Ice packs, massage
- Muscle stimulators
- Acupuncture
- Physical therapy body tools (e.g. Thera Cane, body foam roller)
- Exercise - Do at least 20-30 minutes of aerobic exercise per day, plus stretching. Yoga, pilates, and tai chi can be helpful

EDUCATION IS POWER

1. Reading about headache will help you understand what you can do for yourself to help with headaches. Recommended websites to consider joining and browsing include:

- American Migraine Foundation (this is your go-to resource with free membership)
www.americanmigrainefoundation.org
- National Headache Foundation
www.headaches.org
- American Academy of Neurology
<http://patients.aan.com>
- Medline Plus
www.nlm.nih.gov/medlineplus

2. Learning and implementing strategies regarding mindfulness, trigger point release, and movement therapies (tai chi, yoga, etc.) can enhance your treatment program. There are many free resources online, such as:

- Mindful Relaxation
www.dawnbuse.com
www.marc.ucla.edu
www.youtube.com/watch?v=YFSc7Ck0Ao0
- Trigger Point Workbook
www.pressurepointer.com/PressurePointerManual.pdf

3. Electronic Diaries: There are several online and/or smartphone diary apps (e.g. Migraine Buddy, iHeadache, Headache Relief Diary, My Headache Log Pro). These can be of significant value to you and your provider in understanding triggers and other symptoms impacting your headache diagnosis.

WARNING: Only medicines with a (*) are approved by the FDA for migraine or headache prevention. Other listed medications may be helpful based on expert opinion, or studies in patients with migraines or other types of headaches.

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PREVENTION

Medication Type	Examples	Uses	Sides Effects	Other Comments
Calcitonin Gene-Related Peptide (CGRP) Inhibitors	Erenumab (Aimovig) Fremanezumab (Ajovy) Galcanezumab (Emgality)	Prevention of chronic and episodic migraine Galcanezumab also has approval for episodic cluster headache	Injection site reactions Constipation (most often seen with erenumab)	Self-injections at home Cluster dosing is not the same as migraine dosing for Galcanezumab
Blood Pressure Medications/Beta Blockers	Propranolol* Timolol* Nadolol Atenolol Metoprolol	<u>Headache uses</u> Migraine prevention <u>Other uses</u> High blood pressure Heart rate control Tremor Heart disease Chronic heart failure	Dizziness Fatigue Exercise intolerance Depression Reduces blood pressure and heart rate	Avoid in patients with slow heart rate or severe asthma May worsen aura
Blood Pressure Medications/Calcium Channel Blockers	Verapamil Diltiazem Amlodipine Felodipine Nicardipine	<u>Headache uses</u> Migraine prevention Face pain Cluster headache <u>Other uses</u> High blood pressure Heart rate control Circulation problems Heart disease	Constipation Water retention Flushing Dizziness Fatigue Abnormal heart rhythm	May reduce aura Many drug interactions
Other Blood Pressure Medications	Candesartan Lisinopril Guanfacine (Tenex, Intuniv)	<u>Headache uses</u> Migraine prevention <u>Other uses</u> High blood pressure Heart failure (lisinopril and candesartan) Heart disease (lisinopril) ADHD (guanfacine) Tourette syndrome (guanfacine)	Dizziness Increased potassium (lisinopril and candesartan) Sedation (guanfacine)	Do not discontinue guanfacine abruptly
Seizure Medications	Topiramate* (Topamax) Topiramate ER* (Trokendi XR, Qudexy XR)	<u>Headache uses</u> Migraine prevention Cluster headache <u>Other uses</u> Seizures Tremor Nerve pain Mood	Memory problems Fatigue Numbness/tingling Weight loss Taste changes Kidney stones Glaucoma Electrolyte changes	Increasing potassium intake can help with numbness Requires lab monitoring Interacts with birth control pills at high doses greater than 200 mg daily Avoid in pregnancy Drink plenty of fluids

Medication Type	Examples	Uses	Sides Effects	Other Comments
Seizure Medications (cont'd)	Valproate* (Depakote)	<u>Headache uses</u> Migraine prevention Migraine acute treatment (infusion) Cluster headache <u>Other uses</u> Seizures Bipolar disorder Mood stabilizer	Drowsiness Nausea Weight gain Tremor Abnormal eye movements Liver problems Blood count abnormalities Hair loss Rash	Do not take during pregnancy Requires lab monitoring Many drug interactions Injection form used for acute treatment of severe migraine
	Carbamazepine (Tegretol)	<u>Headache uses</u> Face pain Trigeminal neuralgia <u>Other uses</u> Seizures Mood stabilizer Nerve pain	Nausea Drowsiness Dizziness Weight gain Blurry vision Blood count abnormalities Liver problems Kidney problems Bone density loss Rash	Many drug interactions Reduces effectiveness of birth control pills Avoid in pregnancy Lab monitoring required May make migraines worse
	Levetiracetam (Keppra)	<u>Headache uses</u> Migraine prevention <u>Other uses</u> Seizure	Drowsiness Dizziness Irritability Agitation Anxiety	Also available in injection form
	Gabapentin (Neurontin)	<u>Headache uses</u> Migraine prevention Tension headache Face pain <u>Other uses</u> Seizures Nerve pain Fibromyalgia Mood stabilizer Sleep Restless leg syndrome	Drowsiness Water retention Weight gain Dizziness	Gabapentin usually dosed 3 times per day Pregabalin usually dosed twice per day
	Oxcarbazepine (Trileptal)	<u>Headache uses</u> Face pain Trigeminal neuralgia <u>Other uses</u> Seizures Mood stabilizer Nerve pain	Nausea Drowsiness Dizziness Low blood sodium levels Blood count abnormalities Liver problems Rash	Similar to carbamazepine, but fewer side effects and drug interactions Lab monitoring required May make migraines worse Interacts with birth control pills Avoid in pregnancy

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Prevention(continued)

Medication Type	Examples	Uses	Sides Effects	Other Comments
Seizure Medications (continued)	Lamotrigine (Lamictal)	<u>Headache uses</u> Face pain <u>Other uses</u> Mood Stabilizer Seizure	Drowsiness Nausea Rash Blood count abnormalities Liver problems	Many drug interactions Interacts with birth control pills Avoid in pregnancy
	Zonisamide (Zonegran)	<u>Headache uses</u> Migraine prevention <u>Other uses</u> Seizure	Drowsiness Memory problems Weight loss Numbness/tingling Taste changes Kidney stones Blood test abnormalities	Similar to topiramate, but not as well studied Avoid in patients with sulfa allergy Lab monitoring required Drink plenty of fluids Avoid in pregnancy
	Phenytoin (Dilantin)	<u>Headache uses</u> Face pain <u>Other uses</u> Seizure	Nausea Dizziness Rash Coordination problems Liver problems Dental problems Bone density loss	May make migraines worse Lab monitoring required May alter blood sugar levels Many drug interactions Avoid in pregnancy
Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)	Aspirin 81 mg Diclofenac Piroxicam Naproxen Celecoxib Meloxicam Ibuprofen	<u>Headache uses</u> Tension headache Migraine prevention Acute migraine treatment <u>Other uses</u> Arthritis/Other pain	Upset stomach Kidney problems Easy bleeding and bruising Small increased risk for heart attack	Take with food Aspirin can reduce aura Short term use preferred May also be used as needed for acute treatment of headache
	Indomethacin (Indocin)	<u>Headache uses</u> Episodic stabbing Paroxysmal hemi-crania Hemicrania continua <u>Other uses</u> Gout Arthritis	Upset stomach Easy bleeding/bruising Ringing in ears Dizziness Kidney problems	Take with food Avoid long term use
Tricyclic Antidepressants	Amitriptyline (Elavil) Nortriptyline (Pamelor) Desipramine (Norpramin) Imipramine (Tofranil) Doxepin (Sinequan)	<u>Headache uses</u> Migraine prevention Tension headache Face pain <u>Other uses</u> Depression Anxiety Sleep Nerve pain Fibromyalgia	Constipation Drowsiness Dizziness Dry mouth Difficulty urinating Weight gain Changes in heart rhythm	Elderly patients are more prone to side effects Lower doses used for headache than for treating depression Do not stop taking suddenly Can worsen bipolar disorder

Prevention(continued)

Medication Type	Examples	Uses	Sides Effects	Other Comments
Selective Serotonin Reuptake Inhibitors	Fluoxetine (Prozac) Citalopram (Celexa) Sertraline (Zoloft) Paroxetine (Paxil) Escitalopram (Lexapro)	<u>Headache uses</u> Migraine prevention <u>Other uses</u> Depression Anxiety Hot flashes Obsessive compulsive disorder (OCD) Post-traumatic stress disorder (PTSD) Premenstrual dysphoric disorder (PMDD)	Dry mouth Diarrhea Upset stomach Trouble sleeping Sexual side effects	Do not stop suddenly Most helpful for patients with mood disorders plus headache Can worsen bipolar disorder
Serotonin and Norepinephrine Reuptake Inhibitors	Duloxetine (Cymbalta) Venlafaxine (Effexor) Desvenlafaxine (Pristiq) Milnacipran (Savella) Levomilnacipran (Fetzima)	<u>Headache uses</u> Migraine prevention Face pain <u>Other uses</u> Depression Anxiety Fibromyalgia Neuropathy OCD	Dry mouth Upset stomach Trouble sleeping Sexual side effects Liver problems Increased blood pressure	Do not stop suddenly Lab monitoring
Other Antidepressants	Bupropion (Wellbutrin)	<u>Headache uses</u> Migraine prevention <u>Other uses</u> Depression Smoking cessation ADHD	Upset stomach Dry mouth Anxiety Headache Increased risk of seizures	Do not stop suddenly Often helps fatigue
	Mirtazapine (Remeron)	<u>Headache uses</u> Migraine prevention <u>Other uses</u> Depression Sleep	Drowsiness Weight gain Increased appetite Dry mouth Constipation	Lower doses are more sedating than higher doses May help chronic nausea
	Trazodone (Desyrel)	<u>Headache uses</u> Migraine prevention <u>Other uses</u> Depression Sleep	Drowsiness Dizziness Dry mouth Constipation Changes in heart rhythm	Lower doses used for headache and sleep than for treating depression
Miscellaneous	Memantine (Namenda)	<u>Headache uses</u> Migraine prevention <u>Other uses</u> Alzheimer's disease Tremor	GI upset Dizziness Confusion Blood pressure changes	
	OnabotulinumtoxinA (Botox)	<u>Headache uses</u> Chronic migraine <u>Other uses</u> Cervical dystonia Facial wrinkles Excessive sweating Bladder problems Severe arm spasticity	Muscle weakness (rarely including weakness of muscles used for breathing) Blurry vision Drooping eyelids Trouble swallowing	Typically injected into several areas of the face and neck every three months Not FDA approved for reducing migraines in patients who have <15 migraine days per month

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Medication Type	Examples	Uses	Sides Effects	Other Comments
Sleep Medications and Muscle Relaxants	Tizanidine (Zanaflex) Cyclobenzaprine (Flexeril) Baclofen (Lioresal) Methocarbamol (Robaxin)	<u>Headache uses</u> Tension headache Migraine prevention <u>Other uses</u> Sleep Muscle spasms	Drowsiness Dry mouth Dizziness Low blood pressure Liver problems	Tizanidine can interact with ciprofloxacin and verapamil and may require lab monitoring
	Quetiapine (Seroquel) Olanzapine (Zyprexa) Chlorpromazine (Thorazine)	<u>Headache uses</u> Migraine prevention Acute treatment of migraine <u>Other uses</u> Bipolar Schizophrenia Depression Sleep Anxiety Psychosis	Weight gain Increased blood sugar or diabetes Increased cholesterol Drowsiness Dizziness Abnormal heart rhythm Abnormal blood counts Involuntary movements Pneumonia	Do not stop suddenly Chlorpromazine injectable form can be helpful for intractable migraine
	Ramelteon (Rozerom)	<u>Headache uses</u> Migraine prevention Cluster headache <u>Other uses</u> Sleep	Drowsiness Dizziness Nausea Hallucinations Worsening depression Behavior changes Liver problems Facial swelling	Works like melatonin
Dietary Supplements and Herbals	CoEnzyme Q10	<u>Headache uses</u> Migraine prevention Chronic daily headache <u>Other uses</u> Heart failure Reducing heart attack risk Parkinson's disease Huntington's disease Antioxidant	Usually well tolerated Upset stomach Rash	Can interact with blood thinners May be energizing
	Riboflavin (Vitamin B2)	<u>Headache uses</u> Migraine prevention <u>Other uses</u> Vitamin deficiency	Diarrhea Orange/yellow urine	Do not stop suddenly
	Magnesium	<u>Headache uses</u> Migraine prevention Acute treatment of migraine <u>Other uses</u> Constipation Heartburn	Diarrhea Abnormal heart rhythms (high doses)	Avoid in kidney disease
	Ginger	<u>Headache uses</u> Nausea	Heartburn Gas	Morning sickness
	Melatonin	<u>Headache uses</u> Sleep	Mood changes Increased blood sugar	Do not use if pregnant or breast feeding

ACUTE TREATMENT OF HEADACHE PAIN

The choice of acute treatment is individualized and depends on your headache symptoms, other disease states, other medications, how often your headaches occur, and how disabling your headaches are. Your provider will work with you to determine the best treatment plan for your specific situation.

Migraine-Specific Pain Management

Triptans	Formulations Available	Comments
Sumatriptan (Imitrex)	Tablet 25, 50, 100 mg Nasal Spray 5, 20 mg Injection 3, 4, 6 mg Needleless injection (Sumavel) 6 mg Combination with Naproxen (Treximet) 85/500 mg Nasal Powder (Onzetra) 22 mg	Generic available Widest variety of formulations Injection is fastest acting of all triptans Injection has highest rate of side effects of all triptans
Rizatriptan (Maxalt)	Tablet 5, 10 mg Dissolving tablet (Maxalt MLT) 5, 10 mg	Generic available Must use 5 mg dose if also taking propranolol
Zolmitriptan (Zomig)	Tablet 2.5, 5 mg Dissolving tablet (Zomig ZMT) 2.5, 5 mg Nasal spray 2.5, 5 mg	Generic available Nasal spray may have better taste than sumatriptan nasal spray
Eletriptan (Relpax)	Tablet 20, 40 mg	More drug interactions than other triptans Cannot be used with clarithromycin (Biaxin), ketoconazole, and some HIV medications
Almotriptan (Axert)	Tablet 6.25, 12.5 mg	May have fewer side effects than other triptans
Naratriptan (Amerge)	Tablet 1, 2.5 mg	Generic available Slower acting, but longer lasting than most other triptans
Frovatriptan (Frova)	Tablet 2.5 mg	Slower acting, but longer lasting than most other triptans

Ditans	Formulations Available	Comments
Lasmiditan (Revow)	Tablet 50, 100 mg	Sedation, depression, dizziness May cause driving impairment

Ergotamines	Formulations Available	Comments
Dihydroergotamine	Nasal Spray (Migranal 0.5 mg/spray) Injection (DHE 1 mg/mL)	May cause nausea Typically more side effects than triptans Many possible drug interactions IV form may be given for 3 days in the hospital
Ergotamine	Sublingual, 2 mg (Ergomar) Tablet, 1 mg + 100 mg caffeine (Cafergot) Suppository 2 mg + 100 mg caffeine (Cafergot)	May cause nausea Typically more side effects than triptans Many possible drug interactions

WARNING: Triptans and Ergotamines should be used with supervision. They have caused heart attack and death in individuals with underlying heart disease. Therefore, discuss the use of these medications with your provider. Triptans and ergotamines should not be used within 24 hours of each other and should be used with caution in combination with other drugs that increase serotonin, such as antidepressant medications.

Headache: A Patient's Guide

Non-Specific Pain Management

WARNING: These medications should not be used more than twice weekly to avoid rebound. Can be habit-forming.

Combination Products	Formulations Available	Comments
Midrin, Migrazone, Migratene (Isometheptene + acetaminophen + dichloralphenazone)	Capsule	Midrin and Epidrine are FDA approved brand names for tension and vascular headaches May require compounding at a specialty pharmacy
Fioricet, Esgic (Caffeine + Acetaminophen + Butalbital)	Tablet or Capsule	High risk of causing rebound headaches Also available in combination with codeine
Fiorinal (Caffeine + Aspirin + Butalbital)	Tablet or Capsule	High risk of causing rebound headaches Also available in combination with codeine

Upcoming Migraine Treatment

Oral Calcitonin Gene-Related Peptide (CGRP) Receptor Antagonist (small molecule) for the Acute Treatment of Migraine: under FDA review

Nausea Management

Anti-Nausea Medications	Formulations Available	Comments
Metoclopramide (Reglan)	Tablet 5, 10 mg Injection 5 mg/ml	Helps improve absorption in gut Typically not sedating May cause abnormal, involuntary movements - Avoid in Parkinson's disease
Promethazine (Phenergan)	Tablet 12.5, 25, 50 mg Suppository 25, 50 mg Syrup 6.25 mg per teaspoon Injection 25 or 50 mg per mL	Typically cause drowsiness May cause abnormal, involuntary movements - Avoid in Parkinson's disease
Prochlorperazine (Compazine)	Tablet 5, 10 mg Suppository 25 mg Injection 5 mg/mL	Typically cause drowsiness May cause abnormal, involuntary movements - Avoid in Parkinson's disease
Trimethobenzamide (Tigan)	Capsule 300 mg	Typically not sedating Less likely to cause abnormal, involuntary movements
Ondansetron (Zofran)	Tablet 4, 8 mg Dissolving tablet 4, 8 mg	Typically not sedating Less likely to cause abnormal, involuntary movements

Acute Sleep Management

WARNING: These medications should not be used nightly. Can be habit-forming.

Sleep Medications	Formulations Available	Comments
Temazepam (Restoril)	Capsule 15, 30 mg	May cause drowsiness, dizziness, weakness, dry mouth, diarrhea, nausea, frequent urination, blurred vision, changes in sex drive or ability
Lorazepam (Ativan)	Tablet 0.5, 1 mg	May cause drowsiness, dizziness, weakness, dry mouth, diarrhea, nausea, frequent urination, blurred vision, changes in sex drive or ability
Zolpidem (Ambien, Edluar, Zolpimist)	Tablet 5, 10 mg Controlled release 6.25, 12.5 mg	May cause drowsiness, headache, dizziness, lightheadedness, heart burn, sleepwalking FDA recommendation 5 mg dose for women

Devices

A prescription is required.

Cefaly Device

www.cefaly.us

- FDA Approved March 2014
- Prevention and rescue of Migraine
- 20 minutes daily for prevention. 1 hour for migraine rescue

Spring TMS

www.eneura.com

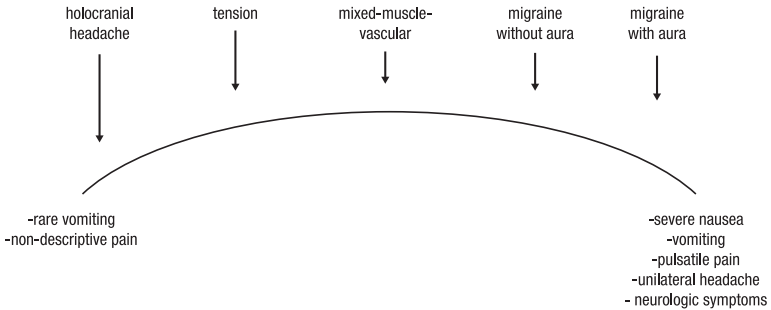
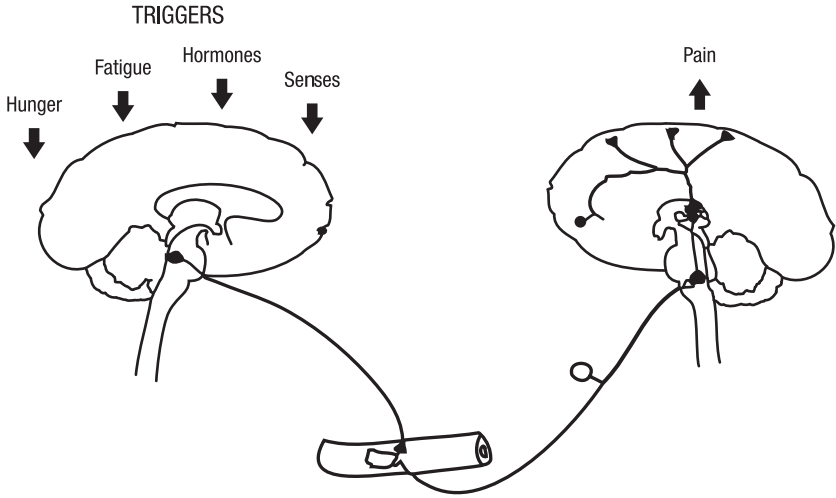
- FDA Approved May 2014, and Sep 2017
- Indicated for Acute and Prophylactic treatment for Migraine
- Brief pulse of energy with magnetic field. Passes through the skull and induces mild electrical currents in the brain

Sapphire (Exertnal Vagus Nerve Stimulation)

www.gammacore.com

- FDA approved for acute treatment of pain from migraines and episodic and chronic cluster headaches
- The gammaCore Sapphire device is portable and easy-to-use and can be self-administered
- GammaCore Sapphire can be activated monthly through a unique, prescription-only authorization code that is delivered through a radio-frequency identification (RFID) card that is sent through the mail to the patient
- Treatment for Episodic Cluster - After pain starts: 3 consecutive 2 minutes stimulation, 3 mins break and 2 mins 3 consecutive optional stimulation
- Treatment for Migraine attacks - At the start of pain 2 mins stimulation, wait for 20 minutes. If pain remains 2 mins stimulation. Wait 2 hours, if pain continues 2 mins stimulation.

BASIC MECHANISM OF MIGRAINE



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