Headache is an extremely common problem. It is estimated that 10-20% of all people have recurring headaches. It 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, but not signify any underlying structural problem.

What causes head pain?

Pain in the head is carried by certain nerves that supply the head and neck. The trigeminal system serves the face. The cervical 1 and 2 nerves serve 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 headache.

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.

**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 migraine headache.

Migraine headaches are usually:

- Inherited
- Moderate to severe pain
- One-sided (but often 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. Auras precede the migraine headache. They are usually visual, but other symptoms can occur, such as numbness or tingling or difficulty with speech. 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.

Other auras include numbness of a hand or face, dizziness, difficulty with speech, and other complex symptoms.

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)

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 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.
These headaches are precipitated by alcohol, excitement, sleep, and are also associated with smoking. Cluster headache responds to certain types of medication and often can be treated with oxygen.

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 eyelid, and redness to the eye. Sometimes it will be a chronic daily headache with superimposed stabbing pain. It usually responds to a 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.

**Drug Rebound Headache (Medication Overuse Headache)**

Sometimes medications can cause headaches. Patients 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 rebound headache. The 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 more often, and daily medicines are taken to treat them. Medications like aspirin and acetaminophen, or those in combination with caffeine (Excedrin, Anacin), narcotics (codeine, hydrocodone; butorphanol (Stadol)), ergotamines, and other headache medications (including the triptans) –even sinus medicines–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, even nasal decongestants.

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 their headache. 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 and the nerve endings produce pain behind these areas. Sinus headaches are usually associated with a cold and worsens with coughing or changes in head position. The sinuses are 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 really a 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, 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 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

**Headaches Associated With Metabolic Abnormalities**
Headaches may occur when something goes wrong in the blood or metabolism, Common 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 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, and serious illness.

**Things That Travel With CDH**

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

- Depression - Biochemically linked to headache, depression seems to run in families with headache and visa versa. Treating depression often helps with headache.
- Psychological Conflict or Stress - Any time a person has been through a serious event of serious psychological conflict (for example, sexual abuse) chronic headaches can occur
- Pain Dysregulation
- Any chronic pain syndrome (fibromyalgia, chronic neck, back, stomach/IBS and pelvic pain) can worsen headaches, and vice versa
- Obesity

**KNOW YOUR HEADACHE**

You will get a list of all your headache types and any other relevant diagnoses. Since headache is diagnosed based on your history, it may be that you will need to keep track of your different headaches so that you understand the different types. It is also important that you and your provider consider how your other medical problems (depression, heart disease, sleep apnea) 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 headache and your triggers to help yourself get better.
MANAGEMENT OF 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 nitrates (hot dogs, sausage, smoked meats)
- Fruits - citrus, bananas, avocado
- Dessert - chocolate
- NutraSweet and other artificial sweeteners

The most important things to remember about diet:
- Avoid excessive sugar and processed foods
- Eat regularly and don’t skip meals (eat at least 5 servings of fruits & vegetables per day)
- Drink plenty of water, limiting intake of soda and caffeinated beverages to 64-80 oz per day (drink enough so that your urine is clear—if it is yellow, drink more)

Environment (minimize exposure to these triggers when possible—your provider can discuss tricks to manage these)
- Light - glare, fluorescent, strobos 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
• Sleep hygiene for headache - 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
• Massage may or may not be helpful
• Sexual activity can trigger headaches

Emotional Factors
• Stress releases many chemicals in our brains that can either trigger headache or make headache worse. During stressful times, chemicals such as epinephrine and cortisol are released into the blood. 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.

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 all medications, supplements, and vitamins to your visit.

HEADACHE MEDICATION MANAGEMENT

Medication treatment is divided into Prevention and Acute or Rescue medication. Prevention is always the primary goal. To accomplish this you must first know your trigger mechanisms (see previous section).

Preventive Medications For Migraine
Preventive medications are taken every day whether or not you have a headache. Any preventive medicine should be tried at a high enough dose to prevent the headache and for a long enough time to be sure of whether it is helping (usually 2-3 months). Every medicine can have a side effect, and any side effect that is bothersome should be brought up with your provider. Many different kinds of medicines are used to prevent headache. Most are used for other diseases as well. The best medicine for you will depend on what other diseases you have, what side effects you are willing to tolerate, and what other medicines you take.
Examples of preventative medicines are:

**Beta-Blockers**
Are heart medicines which have been used to prevent migraines. They slow down headache and affect blood vessels in the brain that are associated with migraine. (see appendix, p. 13)

**Calcium Channel Blockers**
Are heart medications that can prevent headache. They also affect blood vessels in the brain and can help with other kinds of face pain. (see appendix, p. 13)

**Tricyclic Antidepressants**
Work for preventing migraine and tension headache. They increase serotonin and norepinephrine and help you to sleep. They can increase your appetite, so you must watch what you eat. Much smaller doses are used for headache than for treating depression. (see appendix, p.15)

**Other Antidepressants**
Are also used for preventing headache. These are especially helpful in patients who are also depressed. (see appendix, p. 15)

**Anticonvulsants Or Antiseizure Medicines**
Affect the way nerves transmit their signals. They may also help mood and nerve pain along with preventing headaches. (see appendix, pp. 13-14)

**Non-Steroidal Anti-Inflammatory Drugs (NSAIDS)**
Are more often used to treat joint and muscle pain, but can sometimes help prevent headaches when taken regularly. (see appendix, pp. 14-15)

**CAUTION:** Antidepressant and antiepileptic medications have been shown to increase the risk of severe depression and suicidality in a small percentage of patients. More details on each of the above medicines are included in the appendix of this booklet.
Sleep Medications
Some of these can also be used only as needed for acute treatment to help you sleep with a bad headache. (see appendix, p. 16)

COMPLEMENTARY MEDICINE HEADACHE TREATMENTS

Vitamins & Herbs
Can be quite helpful for some patients, but it is important to remember that these are drugs that affect the body, and can have side effects just like any other medication. (see appendix, p. 16)

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. SLEEP, IF ALL ELSE FAILS

NAUSEA CONTROL

These 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. 18)

ACUTE HEADACHE PAIN CONTROL

Migraine Specific Medications:

Triptans
Affect a specific type of serotonin receptor in the brain and are a specific treatment for migraine. There are many triptans available, all are slightly different. 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 nausea, dizziness, drowsiness, and dry mouth.

Ergotamines (Ergots)
Are old, effective medicines used to treat migraine. These can cause nausea, so you should take a nausea medicine first. Ergots 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. These medicines should not be used if you have heart disease, stroke, or uncontrolled high blood pressure.

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

Isometheptene/Acetaminophen/ Dichloralphenazone (Midrin)
There are no FDA approved versions of Midrin available, but it may be obtained from a compounding pharmacy.

Combination Analgesics
Combination of aspirin or acetaminophen, butalbital and caffeine. (e.g. Excedrin, Fiorinal/Fioricet)

Narcotics
Medications usually used for pain from surgery or cancer and should be avoided in migraine treatment.

Other pain medications may occasionally be useful but 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, oxycodone, and codeine.

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

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.
On occasion we will use sleep aids for acute headache treatment. Keep in mind that good sleep also can refresh your brain.

**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 diary
- Learn all you can about your headaches
- Do not overuse acute/rescue medications
- Follow through on your treatment plan (e.g. preventive medications)

**NON-MEDICATING WAYS TO PREVENT & TREAT HEADACHES**

- Light sensitivity can be treated with FL-41 tint glasses which seems 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
- Icing, massage
- Energy management
- Muscle stimulators
- Hypnosis
- Acupuncture
- Physical therapy body tools (e.g. theracane, body foam roll)
- Exercise - Do at least 20-30 minutes of aerobic exercise per day, plus stretching. Yoga, pilates, and tai chi can be helpful.

You are the primary guardian of your own health. Your job is to learn all you can about headache and your triggers.

**CAUTION:** Chiropractic manipulation (quick twisting/cracking of the neck) can lead to stroke and should be avoided.
1. Reading about headache will help you understand what you can do for yourself to help with headache. Some suggested reading materials are:

- *Headache Relief*. Rapaport and Sheftell (Simon and Schuster)
- *Hope for Your Headache Problem (More Than Two Aspirin)*. Diamond and Vye
- *Understanding Migraine*. Migraine Trust
- *Living with Migraine*. Wilkinson
- *Overcoming Migraine*. Betsy Wycoff

2. Join a headache foundation to learn about the latest in news and information regarding headache.

- **American Council for Headache Education (ACHE)**
  875 Kings Highway, Suite 200
  Woodbury, New Jersey 08096
- **National Headache Foundation**
  428 West Saint James Place
  Chicago, Illinois 60614

3. There are also websites you can browse:

- **American Council for Headache Education**
  www.achenet.org
- **American Headache Society**
  www.americanheadachesociety.org
- **National Headache Foundation**
  www.headaches.org
- **American Academy of Neurology**
  http://patients.aan.com
- **Medline Plus**
  www.nlm.nih.gov/medlineplus

4. Electronic Diaries: There are several online and/or smartphone diary apps (e.g. *iHeadache*, *Headache Relief Diary*, *My Headache Log Pro*). These can be of significant value to your provider in determining your headache diagnosis.
**WARNING:** Medicines with a (*) are approved by the FDA for migraine prevention. Studies have shown that other listed medicines may be helpful, but the FDA has not approved them for preventing migraines.

## Prevention

<table>
<thead>
<tr>
<th>Medication Type</th>
<th>Examples</th>
<th>Uses</th>
<th>Sides Effects</th>
<th>Other Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beta Blockers</strong></td>
<td>Propranolol* 60-240 mg Timolol* 2.5-20 mg Nadolol 10-80 mg Atenolol 25-100 mg Metoprolol 25-100 mg</td>
<td><strong>Headache uses</strong> Migraine prevention <strong>Other uses</strong> High blood pressure Heart rate control Tremor Heart disease Chronic heart failure</td>
<td>Dizziness Fatigue Exercise intolerance Depression Reduces blood pressure and heart rate</td>
<td>Avoid in patients with slow heart rate or severe asthma May worsen aura</td>
</tr>
<tr>
<td><strong>Calcium Channel Blockers</strong></td>
<td>Verapamil 60-240 mg Diltiazem 12-360 mg Amlodipine 2.5-10 mg Felodipine 2.5-10 mg</td>
<td><strong>Headache uses</strong> Migraine prevention Face pain Cluster headache <strong>Other uses</strong> High blood pressure Heart rate control Circulation problems Heart disease</td>
<td>Constipation Water retention Flushing Dizziness Fatigue Abnormal heart rhythm</td>
<td>May reduce aura Many drug interactions</td>
</tr>
<tr>
<td><strong>Seizure Medications</strong></td>
<td>Topiramate* (Topamax) Dose = 25-200 mg/day</td>
<td><strong>Headache uses</strong> Migraine prevention Cluster headache <strong>Other uses</strong> Seizures Tremor Nerve pain Mood</td>
<td>Memory problems Fatigue Numbness/tingling Weight loss Taste changes Kidney stones Glaucoma Electrolyte changes</td>
<td>Increasing potassium intake can help with numbness Requires lab monitoring Interacts with birth control pills at high doses Avoid in pregnancy Drink plenty of fluids</td>
</tr>
<tr>
<td></td>
<td>Valporate* (Depakote) Dose = 250-2000 mg/day</td>
<td><strong>Headache uses</strong> Migraine prevention Migraine acute treatment (infusion) Cluster headache <strong>Other uses</strong> Seizures Bipolar Mood</td>
<td>Drowsiness Nausea Weight gain Tremor Abnormal eye movements Liver problems Blood count abnormalities Hair loss Rash</td>
<td>Avoid in pregnancy Requires lab monitoring Many drug interactions Injection form used for acute treatment of severe migraine</td>
</tr>
<tr>
<td></td>
<td>Carbamazepine (Tegretol) Dose = 200-1600 mg/day</td>
<td><strong>Headache uses</strong> Face pain Trigeminal neuralgia <strong>Other uses</strong> Seizures Mood Nerve pain</td>
<td>Nausea Drowsiness Dizziness Weight gain Blurry vision Blood count abnormalities Liver problems Kidney problems Bone density loss Rash</td>
<td>Many drug interactions Reduces effectiveness of birth control pills Avoid in pregnancy Lab monitoring required May make migraines worse Many drug interactions</td>
</tr>
</tbody>
</table>
## Seizure Medications (continued)

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Dose Range</th>
<th>Headache Uses</th>
<th>Other Uses</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Levetiracetam (Keppra)</strong></td>
<td>250-3000 mg/day</td>
<td>Headache uses Migraine prevention Other uses Seizure</td>
<td>Drowsiness Dizziness Irritability Agitation Anxiety</td>
<td>Also available in injection form</td>
</tr>
<tr>
<td><strong>Gabapentin (Neurontin)</strong></td>
<td>300-3600 mg/day</td>
<td>Headache uses Migraine prevention Tension headache Face pain Other uses Seizures Nerve pain Fibromyalgia Mood Sleep Restless leg syndrome</td>
<td>Drowsiness Water retention Weight gain Dizziness</td>
<td>Gabapentin usually dosed 3 times per day</td>
</tr>
<tr>
<td><strong>Pregabalin (Lyrica)</strong></td>
<td>75-600 mg/day</td>
<td></td>
<td></td>
<td>Pregabalin usually dosed twice per day</td>
</tr>
<tr>
<td><strong>Oxcarbazepine (Trileptal)</strong></td>
<td>600-1200 mg/day</td>
<td>Headache uses Face pain Trigeminal neuralgia Other uses Seizures Mood Nerve pain</td>
<td>Nausea Drowsiness Dizziness Low blood sodium levels Blood count abnormalities Liver problems Rash</td>
<td>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</td>
</tr>
<tr>
<td><strong>Lamotrigine (Lamictal)</strong></td>
<td>25-200 mg/day</td>
<td>Headache uses Face pain Migraine prevention Chronic aura Other uses Seizures Mood Nerve pain</td>
<td>Drowsiness Nausea Rash Blood count abnormalities Liver problems</td>
<td>Many drug interactions Interacts with birth control pills Avoid in pregnancy</td>
</tr>
<tr>
<td><strong>Zonisamide (Zonegran)</strong></td>
<td>25-300 mg/day</td>
<td>Headache uses Migraine prevention Other uses Seizure</td>
<td>Drowsiness Memory problems Weight loss Numbness/tingling Taste changes Kidney stones Blood test abnormalities</td>
<td>Similar to topiramate, but not as well studied Avoid in patients with sulfa allergy Lab monitoring required Drink plenty of fluids Avoid in pregnancy</td>
</tr>
<tr>
<td><strong>Phenytoin (Dilantin)</strong></td>
<td>100-300 mg/day</td>
<td>Headache uses Face pain Other uses Seizure</td>
<td>Nausea Dizziness Rash Coordination problems Liver problems Dental problems Bone density loss</td>
<td>May make migraines worse Lab monitoring required May alter blood sugar levels Many drug interactions Avoid in pregnancy</td>
</tr>
</tbody>
</table>

### Nonsteroidal Antiinflammatory Drugs (NSAIDS)

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Dose Range</th>
<th>Headache Uses</th>
<th>Other Uses</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aspirin</strong></td>
<td>81 mg</td>
<td>Headache uses Tension headache Migraine prevention Acute migraine treatment Other uses Arthritis Other pain</td>
<td>Upset stomach Kidney problems Easy bleeding and bruising Small increased risk for heart attack</td>
<td>Take with food Aspirin can reduce aura Short term use preferred May also be used as needed for acute treatment of headache</td>
</tr>
<tr>
<td><strong>Diclofenac</strong></td>
<td>75-150 mg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Piroxicam</strong></td>
<td>10-20 mg</td>
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<tr>
<td><strong>Naproxen</strong></td>
<td>220-500 mg</td>
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</tr>
<tr>
<td><strong>Celecoxib</strong></td>
<td>200-400 mg</td>
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<tr>
<td><strong>Meloxicam</strong></td>
<td>7.5-15 mg</td>
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<tr>
<td><strong>Ibuprofen</strong></td>
<td>200-800 mg</td>
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</table>
## Nonsteroidal Antiinflammatory Drugs (NSAIDS) (continued)

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose</th>
<th>Headache uses</th>
<th>Other uses</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indomethacin (Indocin)</td>
<td>25-75 mg/day</td>
<td>Episodic stabbing, Paroxysmal hemi-crania, Hemicrania continua</td>
<td>Gout, Arthritis</td>
<td>Upset stomach, Easy bleeding/bruising, Ringing in ears, Dizziness, Take with food, Avoid long term use</td>
</tr>
</tbody>
</table>

## Tricyclic Antidepressants

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose</th>
<th>Headache uses</th>
<th>Other uses</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitriptyline (Elavil)</td>
<td>10-40 mg</td>
<td>Migraine prevention, Tension headache, Face pain</td>
<td>Depression, Anxiety, Sleep</td>
<td>Constipation, Drowsiness, Dizziness, Dry mouth, Difficulty uninating, 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</td>
</tr>
<tr>
<td>Nortriptyline (Pamelor)</td>
<td>10-40 mg</td>
<td></td>
<td></td>
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<tr>
<td>Desipramine (Norpramin)</td>
<td>75-200 mg</td>
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<tr>
<td>Imipramine (Tofranil)</td>
<td>10-40 mg</td>
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<tr>
<td>Doxepin (Sinequan)</td>
<td>5-20 mg</td>
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</tbody>
</table>

## Selective Serotonin Reuptake Inhibitors

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose</th>
<th>Headache uses</th>
<th>Other uses</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoxetine (Prozac)</td>
<td>10-40 mg</td>
<td>Migraine prevention, Other uses</td>
<td>Other uses</td>
<td>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</td>
</tr>
<tr>
<td>Citalopram (Celexa)</td>
<td>10-40 mg</td>
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<tr>
<td>Sertraline (Zoloft)</td>
<td>25-200 mg</td>
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<tr>
<td>Paroxetine (Paxil)</td>
<td>10-40 mg</td>
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<tr>
<td>Escitalopram (Lexapro)</td>
<td>5-20 mg</td>
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</tbody>
</table>

## Serotonin and Norepinephrine Reuptake Inhibitors

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose</th>
<th>Headache uses</th>
<th>Other uses</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duloxetine (Cymbalta)</td>
<td>20-60 mg</td>
<td>Migraine prevention, Face pain</td>
<td>Other uses</td>
<td>Dry mouth, Upset stomach, Trouble sleeping, Sexual side effects, Liver problems, Increased blood pressure, Do not stop suddenly</td>
</tr>
<tr>
<td>Venlafaxine (Effexor)</td>
<td>75-225 mg</td>
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<tr>
<td>Desvenlafaxine (Pristiq)</td>
<td>50-100 mg</td>
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<tr>
<td>Milnacipran (Savella)</td>
<td>12.5-100 mg</td>
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</tbody>
</table>

## Other Antidepressants

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose</th>
<th>Headache uses</th>
<th>Other uses</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bupropion (Wellbutrin)</td>
<td>75-300 mg</td>
<td>Migraine prevention, Other uses</td>
<td>Other uses</td>
<td>Upset stomach, Dry mouth, Anxiety, Headache, Increased risk or seizures, Do not stop suddenly, Often helps fatigue</td>
</tr>
<tr>
<td>Mirtazapine (Remeron)</td>
<td>7.5-45 mg</td>
<td>Migraine prevention, Other uses</td>
<td>Other uses</td>
<td>Drowsiness, Weight gain, Increased appetite, Dry mouth, Constipation, Can help chronic nausea, Lower doses are more sedating than higher doses</td>
</tr>
<tr>
<td>Trazodone (Deseryl)</td>
<td>25-300 mg</td>
<td>Migraine prevention, Other uses</td>
<td>Other uses</td>
<td>Drowsiness, Dizziness, Dry mouth, Constipation, Changes in heart rhythm, Lower doses used for headache and sleep than for treating depression</td>
</tr>
<tr>
<td>Category</td>
<td>Drug/Compound</td>
<td>Headache uses</td>
<td>Other uses</td>
<td>GI upset</td>
</tr>
<tr>
<td>----------------------------------</td>
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<td>----------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Miscellaneous</td>
<td>Memantine (Namenda)</td>
<td>Migraine prevention</td>
<td>Alzheimer’s disease, Tremor</td>
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<tr>
<td>Sleep Medications</td>
<td>Tizanidine (Zanaflex)</td>
<td>Tension headache, Migraine prevention</td>
<td>Sleep, Muscle spasms</td>
<td>Drowsiness</td>
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<tr>
<td></td>
<td>Quetiapine (Seroquel)</td>
<td>Migraine prevention, Acute treatment of migraine</td>
<td>Bipolar, Schizophrenia, Depression, Sleep, Anxiety, Psychosis</td>
<td>Weight gain</td>
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<tr>
<td></td>
<td>Olanzapine (Zyprexa)</td>
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<td></td>
<td>Chlorpromazine (Thorazine)</td>
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<tr>
<td></td>
<td>Trazodone (Deseryl)</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Mirtazapine (Remeron)</td>
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<tr>
<td></td>
<td>Ramelteon (Rozerom)</td>
<td>Migraine prevention, Cluster headache</td>
<td>Sleep</td>
<td>Drowsiness</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>Dietary Supplements and Herbals</td>
<td>CoEnzyme Q10 150-300 mg</td>
<td>Migraine prevention, Chronic daily headache</td>
<td>Heart failure, Reducing heart attack risk, Parkinson’s disease, Huntington’s disease</td>
<td>Usually well tolerated</td>
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<tr>
<td></td>
<td>Riboflavin (Vitamin B2) 200-400 mg</td>
<td>Migraine prevention, Vitamin deficiency</td>
<td></td>
<td>Diarrhea, Orange/yellow urine</td>
</tr>
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<tr>
<td></td>
<td>Butterbur (Petadolex) 150 mg</td>
<td>Migraine prevention, Hay fever and allergies</td>
<td></td>
<td>Upset stomach, Drowsiness, Liver damage from pyrrolizidine alkaloids (PAs)</td>
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<tr>
<td></td>
<td>Magnesium 200-1200 mg</td>
<td>Migraine prevention, Acute treatment of migraine</td>
<td>Constipation, Heartburn</td>
<td>Diarrhea</td>
</tr>
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<td></td>
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</tbody>
</table>
Headache: A Patient’s Guide

Acute Treatment of Headache Pain

**WARNING:** These medications 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. They should not be used with ergotamines and should be used with caution with other serotonin drugs.

<table>
<thead>
<tr>
<th>Triptans</th>
<th>Formulations Available</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Sumatriptan (Imitrex)     | Tablet 25, 50, 100 mg  
Nasal Spray 5, 20 mg  
Injection 4.6 mg  
Needless injection (Sumavel) 6 mg  
Combination with Naproxen (Treximet) 85/500 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 | Must use lower dose if also taking propranolol |
| Zolmitriptan (Zomig)      | Tablet 2.5, 5 mg  
Dissolving tablet (Zomig ZMT) 2.5, 5 mg  
Nasal spray 2.5 mg, 5 mg | 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 |

<table>
<thead>
<tr>
<th>Ergotamines</th>
<th>Formulations Available</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 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) | |

<table>
<thead>
<tr>
<th>Combination Products</th>
<th>Formulations Available</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Midrin, Migrazone, Migratene (Isometheptene + acetaminophen + dichloralphenazone) | Capsule | Only available from compounded pharmacies  
No FDA approved products available |
| 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 | |
# Nausea Control

<table>
<thead>
<tr>
<th>Anti-Nausea Medications</th>
<th>Formulations Available</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metoclopramide (Reglan)</td>
<td>Tablet 5, 10 mg</td>
<td>Helps improve absorption in gut</td>
</tr>
<tr>
<td></td>
<td>Injection</td>
<td>Typically not sedating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May cause abnormal, involuntary movements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Avoid in Parkinson’s disease</td>
</tr>
<tr>
<td>Promethazine (Phenergan)</td>
<td>Tablet 12.5 25, 50 mg</td>
<td>Typically cause drowsiness</td>
</tr>
<tr>
<td></td>
<td>Suppository 25, 50 mg</td>
<td>May cause abnormal, involuntary movements</td>
</tr>
<tr>
<td></td>
<td>Syrup 6.25 mg per teaspoon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Injection 25 or 50 mg per mL</td>
<td></td>
</tr>
<tr>
<td>Prochlorperazine (Compazine)</td>
<td>Tablet 5, 10 mg</td>
<td>Avoid in Parkinson’s disease</td>
</tr>
<tr>
<td></td>
<td>Suppository 25 mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Injection 5 mg mL</td>
<td></td>
</tr>
<tr>
<td>Trimethobenzamide (Tigan)</td>
<td>Capsule 300 mg</td>
<td>Typically not sedating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Less likely to cause abnormal, involuntary movements</td>
</tr>
<tr>
<td>Ondansetron (Zofran)</td>
<td>Tablet 4, 8 mg</td>
<td>Typically not sedating</td>
</tr>
<tr>
<td></td>
<td>Dissolving tablet 4, 8 mg</td>
<td>Less likely to cause abnormal, involuntary movements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More often used for nausea related to chemotherapy or surgery</td>
</tr>
</tbody>
</table>

# Acute Sleep Control (Active Sleep)

<table>
<thead>
<tr>
<th>Sleep Medications</th>
<th>Formulations Available</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloral Hydrate (Aquachloral Supprettes, Somnote)</td>
<td>Capsule Liquid Suppository</td>
<td>May cause drowsiness, upset stomach, vomiting, diarrhea</td>
</tr>
<tr>
<td>Lorazepam (Ativan)</td>
<td>Tablet Liquid</td>
<td>May cause drowsiness, dizziness, tiredness, weakness, dry mouth, diarrhea, nausea, frequent urination, blurred vision, changes in sex drive or ability</td>
</tr>
<tr>
<td>Zolpidem (Ambien, Edluar, Zolpimist)</td>
<td>Tablet</td>
<td>May cause drowsiness, tiredness, headache, dizziness, lightheadedness, gas, heart burn</td>
</tr>
</tbody>
</table>
BASIC MECHANISM OF MIGRAINE

TRIGGERS

Hunger
Fatigue
Hormones
Senses
Pain

HEADACHE CONTINUUM

holocranial headache
- rare vomiting
- non-descriptive pain

- tension

- mixed-muscle-vascular

migraine without aura

- severe nausea
- vomiting
- pulsatile pain
- unilateral headache
- neurologic symptoms

migraine with aura