WHAT ARE MIGRAINES?
Migraines are intense headaches that typically cause throbbing in one area of the head and are accompanied by nausea, vomiting, and/or extreme sensitivity to light or sound.

Migraines are the second most common type of headache, with tension headaches being the most common. About 17% of women and 6% of men experience migraine headaches. Symptoms can begin at any age, though most people have their first attack during adolescence.

WHAT ARE THE SYMPTOMS?
Migraines classically consist of four stages: the prodrome, aura, headache, and postdrome, though not all stages may be present.

■ **Prodrome**: Some people experience subtle symptoms that warn them of an oncoming attack 1-2 days before the migraine begins. Symptoms may include changes in mood, irritability, food cravings, constipation, neck stiffness, or excessive yawning.

■ **Aura**: About 1 in 4 people with migraines experience auras, which are neurological disturbances that occur before or during the migraine. Auras are usually visual (flashing lights, zigzag lines, or small blind spots) but can also involve ringing in the ears, difficulty with speech, and numbness/tingling of the face, arm, or legs. Difficulty using the arm or leg is much less common. Auras may last 20-60 minutes. Some patients experience auras without the headache, which can be confused with a stroke.

■ **Attack**: Migraines are usually described as intense, throbbing headaches located on one side of the head, though they can sometimes be milder. They are typically accompanied by nausea, vomiting, and/or sensitivity to light, sound, or odors. Symptoms are usually worse with rapid head movements and/or physical exertion. Other symptoms may include a stuffy nose, watery eyes, scalp tenderness, lightheadedness, feeling cold or sweaty, and being tired or confused. Migraines usually resolve with sleep. Untreated, they can last anywhere from 4-72 hours. Attacks may occur only 1-2 times a year or up to every day.

■ **Postdrome**: After an attack, patients often report feeling tired and drained. Sudden head movements may also cause pain in the area of the head where the migraine was located.

WHAT CAUSES THEM?
The exact cause of migraines is unknown.

- Current research suggests that abnormal stimulation of neurons in the brain leads to a complex cascade of events that interacts with the trigeminal nerve, a major pain pathway, and activates an inflammatory response in the lining and blood vessels of the brain.

- Migraines also tend to run in families. Individuals prone to migraines are likely to have a genetic threshold that makes them more susceptible to a migraine attack.

WHAT ARE POSSIBLE TRIGGERS?
Many people with migraines can identify certain “triggers” that seem to set off symptoms. These can include:

- Estrogen changes (often just before or during menstruation)
- Stress (there may be a “let down” trigger after a stressful day or week)
- Alterations in sleep patterns
- Changes in meal times or being in a fasting state
- Bright lights, loud noises, or odors
- Eye strain, sun glare
- Intense physical exertion (including sex)
- High altitudes or changes in temperature or weather
- Certain medications (birth control pills, Viagra)
- Alcohol (red wine, in particular)
- Caffeine
- Nicotine
- Chocolate
- Monosodium glutamate (MSG)
- Nitrates (found in cured meats)
- Foods containing tyramine (aged cheeses, dried fruits, and pickled foods)
- Aspartame sweeteners

HOW IS IT DIAGNOSED?
Migraines are diagnosed based upon the pattern and frequency of your symptoms.

- Migraines without aura are diagnosed if you have had 5 or more attacks that meet symptom criteria.
- Migraines with aura are diagnosed if you have had 2 or more attacks meeting criteria.
No specific diagnostic test for migraines exists. However, labs and imaging tests may be ordered if your symptoms are unusual or concerning for other causes.

**WHAT TREATMENTS ARE AVAILABLE?**

Migraines cannot be cured, but a variety of effective treatment options are available to keep symptoms under control.

- **SELF-CARE**
  - **Identify and avoid triggers.** Keep a headache diary to help identify triggers. Do this on paper or use one of the many free smartphone apps. Record the type and location of pain, severity of pain (on a scale of 1-10), when symptoms started, how long they last, remedies tried (medications, rest, cool compresses, etc), and response to remedies. Also include foods eaten in the last 24 hours, how much sleep you had, stress levels, and what you were doing when the migraine began.
  - **Eat, sleep, and exercise regularly.** Regular meal times, sleep routines, and aerobic exercise can prevent migraines. Maintaining a healthy weight can also help since obesity may be a contributing factor in migraines.
  - **Reduce stress.** Relaxation techniques, aerobic exercise, and biofeedback can help decrease stress and prevent migraines.
  - **Rest.** Many people find relief from an attack by lying down in a dark quiet room. Placing a cool cloth or ice pack on the forehead and neck may also help.
  - **Reduce estrogen exposure.** If you are a woman and think your migraines may be triggered by estrogen (eg. menstrual migraines), review your medications with your medical provider. Avoiding or reducing medications containing estrogen (eg. birth control pills) can improve symptoms. It is also recommended that any woman who experiences migraines with auras avoid medications containing estrogen because of the increased risk of a life-threatening blood clots or stroke.

- **RESCUE MEDICATIONS**
  Rescue medications are taken during migraine attacks to stop symptoms that have already begun. They are most effective when taken as soon as you feel the attack coming on.
  - **Over-the-counter (OTC) pain medications** such as ibuprofen (Advil or Motrin), naproxen (Aleve), Excedrin Migraine, and acetaminophen (Tylenol) can be effective treatments for acute migraine headaches. However, avoid taking these medications more than twice a week, as overuse can lead to rebound headaches.
  - **Triptans** are a commonly used class of migraine medications available by prescription. They work by blocking pain pathways in the brain and constricting blood vessels.
    - Common examples of triptans include Imitrex, Maxalt, and Relpax. Some come in forms other than tablets, including nasal sprays and injections.
    - Treximet is a combination medicine that contains generic Imitrex and Aleve.
    - Triptans should not be taken more than 2 times a day or 4 times per week to avoid potential complications from constriction of blood vessels.
  - **Other prescription medications** are available, including nausea medications and other pain-relievers. Opioid medications are used only as a last resort.

- **PREVENTIVE MEDICATIONS**
  Medications taken on a daily basis to prevent migraines may be prescribed if symptoms occur more than 4 times a month or if they are very severe.
  - These medications take several weeks to work, and some can cause serious side effects. Once symptoms are well-controlled, your medical provider may recommend tapering off the drug to see if symptoms return.
  - For menstrual migraines that occur on a predictable basis, short-term preventive medication may be started 1-2 days before the onset of symptoms and continued through the expected duration of symptoms.

**SEE YOUR HEALTH CARE PROVIDER IMMEDIATELY IF YOU HAVE:**

- Recent onset or change in headaches.
- Headaches that are increasing in frequency, duration, or severity.
- Headaches that start suddenly with coughing, straining, or bearing down.
- Headaches that wake you from sleep.
- Fever and/or neck stiffness.
- New onset of nausea and/or vomiting with headaches.
- Any unusual neurological symptoms such as weakness, confusion, personality changes, or decreased alertness.
- Frequent headaches while taking birth control pills.

**RECOMMENDED WEBSITES:**

- [www.achenet.org](http://www.achenet.org)
- [www.familydoctor.org](http://www.familydoctor.org)
- [www.mayoclinic.org](http://www.mayoclinic.org)
- [www.uptodate.com/patients](http://www.uptodate.com/patients)