

Migraine Headaches: A Family Guide

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INTRODUCTION

Headaches are common in children and adolescents. About 20% of 5 year old children have occasional headaches, and as many as 75% of adolescents get headaches. Migraine headaches, a specific kind of headache, are very common in childhood, as well. About 2% (1 in 50) of 7 year olds and 5% (1 in 20) - or more - of 15 year olds have migraines. Many adults with migraines remember that their headaches began in childhood. Very young children as young can have migraines, other headaches or migraine equivalents.

The brain lacks nerve endings, as might be found in your fingers or toes, so the brain itself cannot "feel" pain. However, the blood vessels within or around the brain and the tissues covering the brain (the dura) have pain sensors. Activation of these sensors can produce the pain that we experience during a headache. Stretching of blood vessels and dura causes headaches when children or adults have brain tumors. Other headaches happen because of continuous, painful contractions of the scalp muscles. Scientists believe that migraine, one of the most common types of headaches, begins with the release of chemical serotonin into the blood stream. This release leads to chemical and electrical changes within the brain as well as to changes in blood vessels that produce the symptoms of migraines.

Because headaches can be caused by many medical conditions, they produce a lot of worry for both parents and physicians. For example, brain tumors can certainly cause headaches. However, the vast majority of children and adolescents with headaches do not have tumors or other severe medical conditions.

Our goals in evaluating and treating your child with headaches are to 1) make sure that the headache is not due to some other serious medical condition; 2) identify the cause or the type of headache your child is having; and 3) recommend the best treatment plan for your child. In most cases, your child will not have any another serious disease causing the headaches and in most cases your child's headaches will be able to be improved a great deal.

MIGRAINE HEADACHES

Migraines in children are occasional headaches that usually last several hours, produce nausea, vomiting or loss of appetite, and are relieved by rest or sleep. They are often made worse by bright lights and loud sounds. A migraine can have a pounding, throbbing or constant quality and can worsen with movement. Many children, adolescents, and adults with migraine have car-sickness. Children or adults with migraine can also have temporary neurological problems with their headaches such as problems with vision, speech, sensation, or movement of the body. Children under 7 years of age may not be able to describe many of these characteristics clearly.

In evaluating your child's headaches, the neurologist will carefully review information about the headaches and about your child's health. Health patterns in family members are also important to review. Possible triggers or things that make the headaches better or worst should be reviewed. A full examination will be performed. The neurologist will carefully decide which tests if any are needed in further evaluating your child. Many times, no additional tests are needed.

Possible Warning Signs (things that you should bring to your doctors' attention):

- Headaches that awaken your child from a deep sleep
- New problems with vision, personality, school performance or coordination
- A sudden headache that is the worst ever
- Signs or symptoms suggesting depression or anxiety

MIGRAINE TREATMENT

The main steps in treating your/your child's migraines are:

1. Proper general health measures
2. Recognizing and avoiding triggers
3. If necessary, medications to stop or interrupt headaches once they have started.
4. If necessary, medications to prevent the headaches from happening as often.
5. If all else fails, medicines to deal with a headache that will not go away ("rescue" options).
6. Non-medication (complementary) treatment options

Proper General Health Measures

This includes proper diet, sleep and exercise. If these basic health measures are ignored, other treatments are less likely to help!

Diet: A well balanced diet with healthy meals three times a day is recommended. Missing or delaying meals is a common trigger for headaches. Drinking high caloric beverages (sodas, energy drinks, etc...) can trigger migraines, and the frequent consumption of caffeinated beverages is not advised.

Sleep: Proper sleep is critical to good health and improving headaches. Unfortunately, many children with frequent or uncontrolled migraines do not sleep well, particularly adolescents. Your child's doctor will sometimes need to treat the sleep problem as well as the headaches.

Activity/exercise: Maintaining a healthy lifestyle requires daily physical activity and exercise. At least 30 minutes per day or some enjoyable activity such as walking, hiking, playing sports or swimming is recommended for all children and can be helpful for those with migraines. Remaining active improves mental health as well as sleep and improves a child's ability to cope with headaches as well.

Recognizing and avoiding triggers:

An important step in preventing migraines involves a search for triggers. Your doctor will give you a list of potential headache triggers. Remember that everyone is different and each person's triggers may be different. Sometimes triggers are not obvious or cannot be identified. It may be helpful to track your child's headaches on a calendar to try to recognize which triggers might apply to your child. Many foods (table 1), including prepared meats, cheeses, and chocolate can trigger migraines. Dehydration (not drinking enough fluids throughout the day), stress (both good and bad), high altitude, lack of adequate sleep, and irregular routines can also trigger migraines. Peaceful sleep and adequate meals of the correct foods are the foundations of the best management of migraine.

Medications to stop or interrupt headaches:

Infrequent migraines (less than 4 per month) that last less than 24 hours and do not interfere with school attendance or other activities can be treated with *interruptive* medications (table 2). These medicines, sometimes called *rescue* medications, all work best when given as early as possible after the headache starts; in general, the longer a headache lasts, the harder it can be to stop. We usually recommend ibuprofen (Motrin, Advil), or naproxen sodium (Aleve). These work best if combined with rest. If ibuprofen alone does not help, a combination of ibuprofen

plus caffeine (60 to 90mg) may be better. Caffeine tablets can be purchased over the counter in your local pharmacy.

The **triptan** family of medications, such as sumatriptan (Imitrex), zolmitriptan (Zomig), frovatriptan (Frova), rizatriptan (Maxalt) and almotriptan (Axert), are believed by adult neurologists to be the best medications for the treatment of migraine headaches. Although triptans are not approved by the FDA for the treatment of children and younger adolescents, pediatric neurologists often recommend them when headaches do not get better with appropriate doses of ibuprofen or naproxen. The triptans are believed to be very safe in children, but they should be used cautiously and not more than three times per week.

Medications to prevent headaches from happening

When migraines happen as often as once per week, if they last several days at a time or if migraines interfere with school attendance or performance, or cause neurological problems, taking a daily medication to *prevent* the headaches may be a good idea. A variety of medicines (table3) are used to *prevent* headaches in children and adolescents. The “best choice” depends on the child’s age and weight, the side-effects of the medication, and the presence of other factors, such as depression, insomnia, or asthma. These preventive (or “prophylactic”) medications include cyproheptadine (Periactin), topiramate (Topamax), propranolol (Inderal), divalproex sodium (Depakote), amitriptyline, imipramine, gabapentin (Neurontin), verapamil and others. We often recommend cyproheptadine for children of normal weight under 10 years of age and topiramate for children over 10.

Medications to help with a migraine that will not go away

Your pediatric neurologist will assist you and your child’s primary care doctor to develop a plan that can be used at home to treat a headache that does not seem to be responding to the usual treatments listed above. This should help avoid having to call your doctors urgently and should keep you from having to bring your child to the emergency room for a severe headache. For a severe headache that is not improving, getting to sleep is the goal. We recommend that your child lie down in a darkened, quiet room. We may prescribe promethazine (an anti nausea medication) combined with either diphenhydramine (Benadryl) or hydroxyzine (Atarax, Vistaril) in order to induce a deep sleep that may break the headache cycle. If your child is vomiting, promethazine may need to be given as a suppository. Sometimes this combination may need to be given as often as every six hours for a day or two to maintain sleep for a longer period of time to stop the headache.

Sometimes your doctor may choose to prescribe a medication that is sprayed into the nose (intranasal Imitrex or dihydroergotamine [DHE; Migranal]) as a way of treating headaches that don't stop.

Non-medication (complementary) treatments.

Many other methods may help treat or minimize the severity of headaches. These can be used in parallel with medications. These include relaxation training, massage, physical therapy directed a reduction of muscle tension, biofeedback, self-hypnosis and imagery therapy (<http://imagerytraining-institute.com/imagery.html>). Specially tinted glasses (FL-41 tinting) may be effective for some people. These are all safe therapies that can be very helpful especially in children or adolescents who experience very frequent or prolonged migraines. You may hear or read about other strategies from friends or on the internet but in general we are not able to recommend any of these regularly.

Other Suggestions:

Ask your child's primary care physician to provide a letter for the school so that "rescue" (interruptive) medications can be given as soon as a headache begins. As described above, rescue plans typically start with over-the-counter medications, such as ibuprofen, naproxen sodium, or ibuprofen plus caffeine. These medications can be repeated in 4 to 6 hours if your child's headache persists.

Suggested Reading

Linder. SL, Winner P. Pediatric headache. Med Clin North Am 85:1037-53, 2001. A Useful article, written for physicians, that contains abundant medical information regarding migraine and chronic headache.

www.headaches.org/consumer/educationalmodules/chilrensheadache/agborne.html

An informative website with information written by Dr. David Rothner, headache expert and former head of child neurology at the Cleveland Clinic.

www.mayoclinic.com

Search the Mayo Clinic's website for up-to-date information regarding medications and non-medications approaches to treating headaches.

www.aafp.org/afp/20020215/625.html

An online medical article written by another headache expert, Dr Don Lewis.

www.achenet.org

An online website sponsored by the American Headache Society, with educational information for families and providers.

Table 1: Foods that May Trigger Migraine

- Aspartame
- Caffeine
- Cheeses (especially aged cheeses)
- Chocolate
- MSG (frozen dinners, processed food)
- Nuts (peanut butter)
- Pizza
- Processed meats (hot dogs, bacon, bologna, pepperoni, salami, sausage)

Table 2: Interruptive Medications

| Medication | Possible Side Effects |
|---|---|
| Ibuprofen (Advil) | Gastrointestinal pain or upset |
| Naproxen (Aleve) | Gastrointestinal pain or upset |
| Excedrin | Gastrointestinal pain or upset |
| Isometheptene –with other components (Midrin) | Tiredness, dizziness ****No longer available**** |
| Triptans: | |
| sumatriptan (Imitrex) plus many others | Pains elsewhere, tiredness, anxiety, tingling, flushing |

These medications are best used as soon as the headache starts. Your doctor will give you details on usage. Excedrin comes in various types many of which contain aspirin which we generally do not recommend in children. Excedrin tension does not contain aspirin. All of these are best used less than three times per week to avoid “rebound headaches.” Triptans have technically not been approved for use in children but many doctors in the United States do prescribe these cautiously in children.

Table 3: Medications for headache prevention (prophylactic medications)

| Medication | Possible Side Effects |
|-------------------|---|
| Cyproheptadine | Sleepiness, tiredness, weight gain |
| Topiramate | Tiredness, reduced alertness, tingling, decreased appetite and weight loss, memory problems, kidney stones. |
| Propranolol | Tiredness, less energy with exercise, depression |
| Amitryptiline | Dry mouth, tiredness, palpitations, weight gain |
| Valproic acid | Weight gain, tiredness, blood and liver side effects |
| Verapamil | Low blood pressure, dizziness |

All of these possible side effects are less common or rare at low doses. Other less commonly used medicines are not listed in this table. Valproic acid increases the risk of serious birth defects if taken during pregnancy.