

## Help for Headache – Part 1

### Understanding your head pain

According to the American College of Physicians, “seven in 10 people have at least one headache a year. The majority of headaches last for only a few hours, but some can persist for weeks. Forty-five million Americans suffer from chronic headaches. Headaches cost billions of dollars in lost productivity every year.”<sup>1</sup>

#### What Hurts?

#### Nerves, muscles, & blood vessels

What hurts when you have a headache? “Although it may feel like it, a headache is not a pain in your brain. Your brain tells you when other parts of your body hurt, but it can’t actually feel pain.”<sup>2</sup>

“The bones of the skull and tissues of the brain itself never hurt



because they lack pain-sensitive nerve fibers.”<sup>3</sup> “Most headaches happen outside your skull, in the nerves, blood vessels, and muscles that cover your head and neck.<sup>2</sup> Several areas of the head can hurt, including a network of nerves which extends over the scalp and certain nerves in the face, mouth, and throat. Also sensitive to pain, because they contain delicate nerve fibers, are the muscles of the head and blood vessels found along the surface and at the base of the brain.”<sup>3</sup> Sometimes the muscles or blood vessels swell (get larger), contract (tighten or get narrower), or go through other changes that stimulate or put pressure on the surrounding nerves.<sup>2</sup>

“The ends of these pain-sensitive nerves, called nociceptors, can be stimulated by stress, muscular tension, dilated blood vessels, and other triggers of headache. Once stimulated, a nociceptor sends a message up the length of the nerve fiber to the nerve cells in the brain, signaling that a part of the body hurts.”<sup>3</sup> The nociceptors can send a rush of pain messages to your brain, and you end up with a headache.<sup>2</sup> “The message is determined by the location of the nociceptor. A person who suddenly realizes ‘My toe hurts,’ is responding to nociceptors in the foot that have been stimulated by the stubbing of a toe.”<sup>3</sup>

#### Underlying Problems?

#### Primary & secondary

Headaches fall into two main categories:

- **Primary headaches** “occur on their own and not as the result of some other health problem.”<sup>4</sup> Primary headaches include tension-type headache, migraine, and cluster headaches.
- **Secondary headaches** “result from some cause or condition, such as a head injury or concussion, blood vessel problems, medication side effects, infections in the head or elsewhere in the body, sinus disease, or tumors. There are many different causes for secondary headaches, ranging from [rare, serious diseases to easily treated conditions](#).”<sup>4</sup>

“The key to distinguishing a **secondary headache** from a primary headache lies in the features of the headache, other symptoms occurring at the same time, and the physical examination. Your doctor often looks for warning signs that would point to a secondary headache over a primary headache.”<sup>5</sup> These include:

- first or worst headache of your life;
- abrupt onset of headache without any warning or build-up;
- fundamental change in the pattern of recurrent headaches;

- headache beginning at unusual ages (5 years old or younger, 50 years old or older);
- the presence of cancer, HIV, pregnancy;
- abnormal physical exam; and
- headache onset:
  - with seizure or syncope (temporary loss of consciousness and posture, usually described as “fainting” or “passing out”<sup>6</sup>).
  - with exertion, sex, or Valsalva<sup>5</sup> (squeezing, for example, in strenuous coughing, straining during a bowel movement, or lifting a heavy weight<sup>5,7</sup>).

**Some symptoms are also warning signs that immediate care is needed.** See your doctor or go to the emergency room immediately if you have any of the following signs or symptoms:

- abrupt, severe headache, which may be like a thunderclap;
- headache with a fever, stiff neck, mental confusion, seizures, double vision, weakness, numbness, or speaking difficulties;
- headache after a head injury, especially if it gets worse; or
- chronic, progressive headache that is precipitated by coughing, exertion, straining, or a sudden movement.<sup>8</sup>

“There are also features that your doctor will look for that will be reassuring that a **primary headache** disorder exists:

- stable pattern of headache over many months or years;
- long-standing history;
- family history of similar headaches;
- normal physical exam; or

- headaches consistently triggered by hormonal cycle, specific foods, specific sensory input, light, odors, or weather changes.

Talk to your doctor if you have concerns that your headache may be due to some other medical condition. Being confident that there is no secondary cause for headache is an important first step to developing an effective treatment plan for headache.”<sup>5</sup>

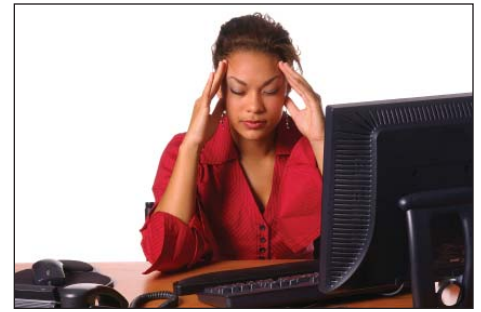
Once you and your doctor have ruled out any secondary cause, you can begin to work on getting help for your primary headache. The remainder of this issue of *HealthHints* will focus on primary headaches – tension-type headache, migraine, and cluster headache – and how to get the help you need to manage them.

## Tension-Type Headache What’s a TTH?

Tension-type headaches (TTH) are the most common primary headache (accounting for 90 percent of all headaches<sup>3</sup>), followed by migraine, and cluster headaches. Though tension type headaches are the type most experienced, doctors see more patients for migraine and cluster headaches.<sup>11</sup>

“A tension-type headache may appear periodically (episodic, less than 15 days per month) or daily (chronic, more than 15 days per month). An episodic tension headache may be described as a mild-to-moderate, constant band-like pain or pressure. These headaches may last from 30 minutes to several days. Episodic tension headaches usually begin gradually and often occur in the middle of the day.”<sup>12</sup>

“The ‘severity’ of a tension headache increases significantly with its frequency.”<sup>12</sup> For chronic TTH sufferers, “this daily or almost



daily pain is usually throbbing and affects the front, top, or sides of the head. Although the pain may vary in intensity throughout the day, the pain is almost always present. Chronic tension headaches come and go over a prolonged period of time, but it is important to realize that they do not cause neurological symptoms or affect vision, balance, or strength.”<sup>12</sup>

About 30-80 percent of the adult U.S. population suffers from occasional tension-type headaches, with the chronic form affecting about 3 percent of the population.<sup>12</sup> Women are twice as likely to suffer from TTH as men.<sup>12</sup> Many patients with chronic TTH have usually had the headache for more than 60 to 90 days (while episodic TTH usually only occurs once or twice a month, though they can be more frequent<sup>12</sup>). For many chronic TTH sufferers, these headaches impair their daily activities.<sup>12</sup>

“The exact cause or causes of tension headache are unknown. Experts used to think that the pain of tension headache stemmed from muscle contraction in the face, neck and scalp, perhaps as a result of heightened emotions, tension, or stress. But research suggests that there doesn’t appear to be a significant increase in muscle tension in people diagnosed with tension headache.”<sup>13</sup>

“Researchers now suspect that tension headache may result from changes among certain brain chemicals – serotonin, endorphins, and numerous other chemicals

– that help nerves communicate. Although it's not clear why the chemical levels fluctuate, the process is thought to activate pain pathways to the brain and to interfere with the brain's ability to suppress the pain."<sup>13</sup>

"It's likely other factors also contribute to the development of tension headaches."<sup>13</sup> Potential triggers may include:

- [stress](#), including depression and/or anxiety;
- poor posture;
- working or sleeping in an awkward position or holding one position for a long time;
- inadequate rest, fatigue, sleep deprivation;
- irregular mealtime, hunger; or
- jaw clenching or teeth grinding.<sup>12, 13, 14</sup>

Tension-type headache can cause complications beyond the pain.

"When your head is 'gripped in a vise,' as the pain is often described, you may feel unable to attend family and social activities.



Fatigue is also a common factor in TTH. You might need to stay home from work, or if you do go to your job, you work at only a fraction of your normal efficiency."<sup>13</sup> "Because tension headaches are so common, their effect on job productivity and overall quality of life is considerable."<sup>13</sup>

## Migraine Headache

### Distinguishing migraine

"Migraine headaches are less common than tension-type headaches. Nevertheless,

migraines afflict about 28 million people in the United States alone. As many as 6 percent of all men and up to 18 percent of all women (about 12 percent of the population as a whole) experience a migraine headache at some time. Roughly three out of four migraine sufferers are female. It is important to recognize that children also get migraine, and it affects between 5-10 percent of children under the age of 18 years."<sup>10</sup> (For more information on identifying and helping children with headaches, see the following [resources](#).)

A typical migraine attack produces some or all of these signs and symptoms:

- moderate to severe pain, which may be confined to one side of the head (60 percent) or may affect both sides (40 percent);<sup>9</sup>
- head pain with a pulsating or throbbing quality;
- pain that worsens with physical activity;
- pain that interferes with your regular activities;
- nausea with or without vomiting; and
- sensitivity to light, sound, and smell.

When left untreated, a migraine typically lasts from four to 72 hours, but the frequency with which headaches occur varies from person to person. You may have migraines several times a month or just once or twice a year.<sup>15</sup> "About one in five migraine sufferers experiences an aura prior to onset of a migraine headache. Auras are neurological symptoms that may occur before, during, and after a migraine. There are many different types of either visual or other sensory auras, and they may differ between attacks."<sup>10</sup> When experiencing an aura, "you may:

- see sparkling flashes of light;
- perceive dazzling zigzag lines in your field of vision;
- experience slowly spreading blind spots in your vision;
- feel tingling, pins and needles sensations in one arm or leg; and
- (rarely) experience weakness or language and speech problems."<sup>15</sup>

Migraines are considered vascular headaches, which involve dilation or swelling of the blood vessels in the head and scalp so that the normal pulsation of the vessels cause a throbbing type of pain.<sup>16</sup> Still, the precise cause of migraine headaches is unclear. "There seems to be general agreement, however, that a key element is blood flow changes in the brain. People who get migraine headaches appear to have blood vessels that overreact to various triggers."<sup>3</sup> Migraines may be triggered by stress, food, environmental changes, or some other factor; however, the exact chain of events remains unclear.<sup>17</sup> These events seem to be largely driven by the nervous system.<sup>18</sup>

Migraine pain can be disabling – "with symptoms so severe, all you can think about is finding a dark, quiet place to lie down."<sup>15</sup> Migraine pain can be excruciating and may incapacitate the sufferer for hours or even days.<sup>15</sup> "Fortunately, management of migraine pain has improved dramatically in the last decade. If you've seen a doctor in the past and had no success, it's time to make another appointment. Although there's still no cure, medications can help reduce the frequency of migraine and stop the pain once it has started. The right medicines combined with self-help remedies and changes in lifestyle may make a tremendous difference for you."<sup>15</sup>

## Cluster Headache

### Rare, but severe

Cluster headache is a very severe form of primary headache occurring in about 1 percent of the population.<sup>19</sup> Like migraine, cluster headaches have been classified as vascular headaches. The intense pain is caused by the dilation of blood vessels, which creates pressure on the trigeminal nerve (the fifth cranial nerve, emerging directly from the brain stem).<sup>20, 21, 22</sup> While this process may be the immediate cause of the pain, the underlying cause(s) is not fully understood. Current scientific thought is that cluster headaches are related in some way to the release of [histamine](#) or [serotonin](#).<sup>23</sup>

Cluster headaches are distinct from migraine and tension-type headaches on several levels:

- Attacks occur in clusters or periods, with weeks or months between new cluster periods; remission periods may be months or even years; 10-15 percent of patients do not experience long periods of remission.
- Most cluster headache sufferers are men, with onset between ages of 20-40 (where most migraineurs are women, with onset following the start of menstruation).
- Attacks are characterized by sharp, boring, severe, one-sided pain that is around the eye or along the side of the head and develops rapidly over minutes; pain usually presents on the same side during a series of attacks; pain can occur on the opposite side when a new series starts.

- Headache attacks last from 15-180 minutes and occur once every other day to up to eight times daily.
- Pain is localized behind the eye or in the eye region and may radiate to the forehead, temple, nose, cheek, or upper gum on the affected side.
- Attacks are associated with excessive sweating, flushed face, tearing, nasal congestion, runny nose, forehead and facial sweating, drooping eyelids, or eyelid swelling on the affected side.
- During an attack, patients may be restless or agitated due to excruciating pain.
- During a cluster period, attacks may be provoked or triggered by substances that cause blood vessel swelling such as smoking, alcohol, or selected drugs like histamine or nitroglycerin.<sup>10, 24</sup> Bright lights, stress, or certain foods may also trigger an attack.<sup>23</sup>

The degree of pain involved in cluster headaches is markedly greater than in other headache conditions, including severe migraines. Cluster headaches can be a severely disabling disorder when patients suffer from bouts of pain from 2-20 times a week during a cluster series.<sup>20</sup>



### Learn All You Can...

#### And see your doctor

Sometimes a primary headache may be confused with another type of headache or problem, such as sinus or visual problems. In fact, sinus headache and migraine are sometimes confused. To help educate yourself about headache and potential causes, see the following resources, and schedule an appointment with your doctor to diagnose your headache:

- [Flowchart to Help Identify Headaches](#)
- [Do I Need to Have My Eyes Checked If My Head Hurts?](#)
- [Headache and Sinus Disease](#)
- [Sinus Headaches, Allergies, Asthma, and Migraine: More Than a Casual Relationship?](#)
- [Sinus Headache or Migraine?](#)

If you have any [warning signs](#), see your doctor immediately, go to the nearest emergency room, or call 911. The next issue of *HealthHints* will focus on [Help for Headache: Getting the care you need](#) including diagnosis, self-care, trigger avoidance, and treatment.

To view the references used in this newsletter, go to:  
<http://fcs.tamu.edu/health/healthhints/2009/may/ref.php>

This document is meant for educational purposes only and is not intended to replace the advice of your doctor or other health care provider.

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## Children & Headaches

Identifying and helping children with headaches can be a challenge for parents and kids. For very young children, there may be inability to communicate and, thus, difficulty in identifying headaches. For older children, their *reactions to* or *descriptions* of headache pain may be different than that of an adult. It is important to be able to identify and describe your child's headaches, rule out any serious problems, and get a treatment and management plan to help. See your doctor, and use the following resources to help you in the process:

- [Headaches](#)
- [Headaches in Children](#)
- [Headaches in Kids: What Parents Can Do to Help](#)
- [Kids Headaches are Cause for Concern](#)
- [Oooh, Your Aching Head](#)

