Headaches, ranging from moderate discomfort to severe migraines, afflict millions of people each day. Sources vary, but the estimate is that anywhere from 2 million to 12.5 million people are experiencing a headache at any given moment. Headache sufferers are found throughout the world, but are most common in the United States.

Women are far more likely to suffer from or report headache pain than men are. Nearly 75% of chronic headache sufferers are women. What few women realize is that there may be a relationship between their headaches and their hormones. In his book, The Hormone Headache, Dr. Seymour Diamond states that “Hormones are one of the most important components in the biochemical chain of events that culminates in headache pain.”

Why do we get headaches?

Even though headaches have been around for a long, long time (having been documented since the Stone Age!), we still don’t know much about their specific causes. Headaches seem to occur for a variety of reasons and in conjunction with many different illnesses and conditions.

Over the years, different kinds of headaches have been identified by their symptoms, including tension-type headaches, cluster headaches, and migraine headaches. But researchers are now discovering that almost all headaches, with the exception of organic headaches such as those resulting from a tumor or aneurysm, may result from a hormone imbalance.

The onset of headaches is often the result of a temporary or chronic hormone imbalance. The frequency of headaches is typically linked to fluctuations in hormone levels, and the severity and duration of a headache can be symptomatic of hormonal dysfunction.

Hormones are now considered to be the second most common headache “trigger” and some practitioners contend that even headaches due to allergies (the #1 trigger) are also hormonally influenced. (See Allergies & Headaches on page 3.)

How do hormones influence headaches?

As most people know, hormones are produced and secreted by the endocrine glands to regulate a wide range of functions throughout the body. What most people don’t know is that hormones are also central to how we perceive and process pain. According to Dr. Diamond, “we couldn’t feel pain at all without hormones.”

Briefly, here’s how hormones work with regard to the body’s pain response: When we experience any type of dysfunction, disease, or trauma, our body reacts at a cellular level. The affected cells, which may occur anywhere throughout the body, become damaged or at least stressed.

These damaged or stressed cells secrete hormones such as serotonin and histamines to induce a pain response in the nerve endings. Other hormones (prostaglandins) enhance the nerve endings’ sensitivity to pain. Neuro-transmitters (also hormones) serve as the chemical
messengers that carry the painful sensation to the brain, crossing over the synapses between nerve cells.

The body’s normal biochemical reaction to pain is to produce naturally occurring pain-relieving hormones (endorphins) to block the neurotransmitters, thereby preventing the pain signals from reaching the brain. (It is interesting to note that people who suffer from chronic migraine pain tend to have less beta-endorphin, the primary natural pain-relieving hormone, flowing throughout their central nervous system.)

As this description implies, hormones are not the actual cause of headache pain, or any other type of pain, but part of the complex biochemical chain reaction by which our body processes that pain.

Frequently, this cascading pain response is initiated or influenced by another hormonal dysfunction or fluctuation related to the pituitary, thyroid, pancreas or adrenal glands.

**Pituitary**

The pituitary is sometimes called “the master gland” because it produces many of the hormones that control other glands. Pituitary hormones that have been linked to headaches include follicle-stimulating hormone (FSH), luteinizing hormone (LH), adrenal-cortex-stimulating hormone (ACTH), thyroid-stimulating hormone (TSH), and prolactin.

For example, during migraine attacks, many women experience some sort of dysfunction regarding their body’s prolactin-regulating systems, typically resulting in hyperactive prolactin production.

The explanation for this hormonal association with headaches is still unclear, but the evidence suggests a relationship may present itself with further research.

In Who Needs Headaches?, Dr. Cass Igram notes that your pituitary gland can become inflamed or swell when you are under prolonged stress. This swelling places pressure on the thousands of nerve endings around the area of the pituitary, causing pain. For this reason, Dr. Igram believes that pain behind the eyes is almost always related to the pituitary gland.

**Thyroid**

Thyroid hormones are critical to the proper function of nearly every aspect of your body. The three thyroid hormones most often associated with headaches are triiodothyronine, thyroxine, and calcitonin. With either an insufficiency or an overproduction of these hormones, chronic headaches may result, as well as a host of other serious health problems, which is why it is so important to talk with your healthcare practitioner if you suffer from chronic headaches. Continuous, prolonged headaches and/or migraines are one of the most common symptoms of hypothyroidism.

Dr. Igram observed that people with hypothyroidism also tend to have an impaired immune system, he says “partly as a consequence of the role the thyroid gland plays in controlling body temperature.”

In essence, the lower body temperature associated with hypothyroidism hampers the proper synthesis of white blood cells. What this means for headache sufferers is that they have fewer white blood cells to ward off or combat allergic reactions, thus their headaches tend to be more frequent and/or more severe.

Improving thyroid hormone balance with the appropriate hormone supplementation will help maximize the immune system response, which may result in fewer and/or less severe headaches. However, Dr. Igram contends that the type of treatment does make a difference. He states that Synthroid®, the most commonly prescribed thyroid medication, provides very little headache relief and that a thyroid extract made from the thyroid glands of animals is more effective in blocking or preventing headaches.

**Adrenal**

The adrenal glands synthesize over 45 different hormones, including stress hormones (such as adrenaline and noradrenaline), sex hormones (such as progesterone and estrogens), glucocorticoids (such as cortisol and cortisone), dopamine, and others. Most notably, adrenal hormones trigger the “fight or flight” response when we are frightened or stressed. They are also essential for proper metabolism of proteins, fats, and sugar, and for maintaining fluid balance and glucose levels, among other things.

Although the sex hormones (discussed on page 4) seem to have the biggest influence on headaches, any adrenal dysfunction can also result in headache symptoms. Chronic, severe headache pain that is resistant to pain...
medication is often associated with an adrenal insufficiency, or another serious hormonal dysfunction.

Because the American diet is generally high in refined carbohydrates, and because this is a leading contributor to hypoadrenalism, many of us tend to have some level of adrenal insufficiency (even if it is not diagnosed). Add to that high levels of stress, plus alcohol or tobacco consumption, and our adrenal glands can easily become overworked to a point from which they cannot recover.

When this type of adrenal dysfunction occurs, the weakened adrenals are no longer capable of coping with the elements that provoke headache pain. Dr. Igram states that “if migraine patients had stronger adrenal glands, it is likely that the same stimulus which normally provokes headaches no longer would.”

**Pancreas**

The pancreas also plays a large role in maintaining proper glucose levels. The pancreas produces the hormones insulin, glucagon, and somatostatin, which work together to maintain blood sugar (glucose) so that your body has the energy it needs to function properly. When you stress the pancreas by skipping meals or consuming alcohol, blood sugar levels can fall dramatically, which can trigger or worsen a headache.

**Sex Hormones**

Hormonal fluctuations, particularly of progesterone and estrogens, seem to trigger headaches in most women.

Headache symptoms are commonly associated with premenstrual syndrome (PMS), pregnancy, and menopause. Although not all women get them, most women experience at least mild headaches during times of strong estrogen dominance, such as is present in each of these conditions.

Dr. Robert Milne (et al) also observed an increase in the serotonin levels of his patients during hormonal fluctuations. Given the role of serotonin in the pain response, headache pain (or any other pain) is likely to be exacerbated during these fluctuations.

Fluctuating levels of estrogen, especially when they are not balanced by progesterone, often trigger headaches. This explains why headaches occur with increasing frequency among girls after puberty, when their menstrual cycles start.

Dr. Diamond explains that “headache activity increases, for example, when estrogen activity levels are in flux, either rising or falling, or when there is a change in the estrogen-to-progesterone ratio.”

Many researchers have identified a direct connection between too much estrogen and migraine headaches. Women who experience migraine headaches tend to have higher than average levels of estrogen to begin with. It appears that these high estrogen levels “crash” during the premenstrual phase, making these women more susceptible to headache triggers.

In fact, taking estrogen in the form of birth control pills or another hormone replacement therapy may increase the frequency or severity of headaches, or actually induce headaches in women who had not previously reported them. For example, women who take birth control pills often report getting headaches in the middle of their cycle, when their own natural estrogen levels are rising most dramatically.

Some women think that their headaches will subside when they reach menopause because their hormone levels diminish. But not all women find relief from hormonal headaches at menopause because hormonal fluctuations may still exist, just in different amounts or ratios, or on a different timeframe.

**How can I relieve my headaches?**

Some practitioners believe that headaches may actually be one of your body’s warning signals.

Dr. Diamond explains that “In the same way that the pain resulting from touching a hot stove is meant to protect your skin from a serious burn, headaches may actually be a protective mechanism designed to safeguard you from damaging agents and situations.”

---

**Allergies & Headaches: More Hormonal Influences?**

Most practitioners consider allergies to be the number one trigger of headaches. Allergies may also indicate a hormonal dysfunction, specifically adrenal stress. Dr. Cass Igram states that “The connection is clear; adrenal insufficiency allows allergic reactions to proceed to an excess which leads to headaches.”

Dr. Igram contends that “the severity and number of allergies is directly related to the degree of adrenal weakness.” As a case in point, he notes that people with chronic adrenal fatigue tend to also have approximately 40 to 50 food allergies, which is far more than the average individual.

Given Dr. Igram’s observations, there may be more to this connection than was previously thought. Further research into both allergies and headaches is needed to provide better insight into their potential relationships with hormones.
Consider the fact that certain habits that may be harmful to us—such as skipping meals, not getting enough sleep, or being under severe physical or emotional stress for long periods of time—often trigger headaches. As such, one of the first approaches to relieving headaches is to try to avoid those potentially harmful behaviors that seem to trigger headache pain.

Another approach that will most likely provide better long-term relief than simply numbing the pain with aspirin or other over-the-counter pain killers is to work with your healthcare practitioner to obtain hormone balance. Keep in mind that the hormones responsible for triggering headache pain exist as part of a delicate balance, which can be disrupted by many factors, including stress, diet, daily activities, and other health-related conditions.

Bio-identical hormone therapy, administered under the guidance of your healthcare practitioner, is an effective way to achieve optimal hormone balance and possibly eliminate or reduce hormonal headache triggers. Dr. Diamond and others have demonstrated that the use of bio-identical progesterone supplements can be an effective treatment for many of the symptoms associated with PMS, including headache pain.

In addition, Dr. Diamond contends that “The fact that oral contraceptives worsen PMS headaches for some women and help prevent them in others suggests that each woman has her own individual hormone profile.” The variance among women’s responses to treatments is a strong indicator that individualized custom dosing is key to achieving the proper hormone balance or ratio.

**Conclusion**

In summary, while a strong connection between hormonal fluctuations and headaches has been well established, the precise causes of headache pain remain elusive.

Dr. Milne notes that “Some women’s headaches end when they get pregnant, while other women experience headaches for the first time during pregnancy. The same can be said for women going through menopause, undergoing hysterectomies, or taking birth control pills or hormone replacements.”

Such puzzling inconsistencies have stymied researchers for decades, and frustrated both patients and their healthcare practitioners in finding a relief for headache symptoms.

Current research is investigating the role of blood platelets as a key aspect of headache pain. One basis for this avenue of investigation is that abnormal platelet aggregation initiates the release of serotonin (part of the cascading pain response), which constricts the blood vessels deep inside the brain, while simultaneously triggering the production of pain-enhancing prostaglandins.

Another possible theory is that severe headaches may stem from abnormalities in the autonomic nervous system, which controls involuntary body functions such as heart rate, blood pressure, and intestinal activity. Dr. Lawrence Odom observed that chronic, severe headache pain frequently accompanies a host of gynecological conditions, including severe menstrual cramps, ovarian cysts, and endometriosis. He also noted that migraine sufferers are often deficient in magnesium.

Dr. Odom contends that there may be a connection between

Headache activity increases, for example, when estrogen levels are in the flux, either rising or falling, or when there is a change in the estrogen-to-progesterone ratio.
pelvic pain and a susceptibility to headaches, and he has had some success in recommending magnesium supplements as treatment for both.

Until we have a better understanding of headaches, the best approach seems to be working with your healthcare practitioner to obtain hormone balance. While achieving and maintaining hormone balance may not totally cure your headaches, it should help eliminate or curtail some of the hormonal influences on their frequency, duration, and severity.

For more information …

- The Hormone Headache: New ways to prevent, manage, and treat migraines and other headaches, by Seymour Diamond, MD, with Bill Still and Cynthia Still; Macmillan; New York, NY; 1995.
- Who Needs Headaches? Why suffer — if you don’t have to? by Cass Igram, DO; Literary Visions Publishing; Cedar Rapids, IA; 1991.
- Pain Relief at Last, a pamphlet by Lawrence D. Odom, MD, and also available at: www.painrelief-twelve.com

... the use of bioidentical progesterone supplements can be an effective treatment for many of the symptoms commonly associated with PMS, including headache pain.