

# Headaches and Their Types, Prevention and Treatment of Headaches

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**Annotation:** *This article tells about one of the most common diseases in human life, headaches and their types, prevention and treatment of migraines, medications used in the treatment, the article also discusses the types of headaches, their causes.*

**Keywords:** severe, estimate, reasons of headaches, salicin, acetylsalicylic acid, primary headaches, migraine headache, Cluster headaches, sedalgin, pentagin, spazmoveralgin, 3 groups of drugs.

## I. INTRODUCTION

Headaches are a big problem. But they are not just a problem for the person suffering from the headache. They are a problem for society as well. Each year, millions of people suffer from severe headaches that keep them from doing their jobs. In fact, according to one estimate, headaches cost individuals and businesses more than \$50 billion each year.

This is one of the reasons research into headaches has become a worldwide effort. Although he did not know much about how headaches work, Hippocrates was the first doctor to find a way to treat them. Before 400 B.C., Hippocrates discovered that the bark from willow trees was useful in treating pain. He made a white powder from the tree's bark and gave it to his patients. Hippocrates did not know it, but he was actually prescribing a natural chemical in willow bark called salicin. When a person eats salicin, the chemical is changed inside his or her body into salicylic acid. It turns out that salicylic acid is good for stopping pain, including headache pain, but it is bad for a person's stomach. In the 1800s, a chemist in Germany changed the acid's form a little to make it easier for people to take. This new form of the chemical was called acetylsalicylic acid, commonly known as aspirin today. Aspirin was used throughout most of the 1900s to treat headaches, but doctors had little idea about what really caused headaches. When doctors know the cause of a disease, they can find better ways to treat it. Therefore, as medical technology developed, doctors began to use the technology to learn more about the human brain and about headaches.

## II. THE MAIN FINDINGS AND RESULTS

Currently, doctors classify headaches into two general types: primary and secondary. A primary headache is a condition suffered as only the headache itself

On the other hand, a secondary headache is one caused by another condition. For example, someone who catches the flu may suffer from headaches along with other symptoms of the illness. Flu headaches are thus secondary headaches. For primary headaches, doctors have determined three possible causes. One kind of primary headache is caused by stress. Doctors usually call headaches of this kind tension headaches. Such headaches are characteristically felt on both sides of the head as a dull, steady pain. Another kind of primary headache is the **migraine** headache.

Aspirin may work well for fighting minor headaches, but it may not be the best choice for dealing with migraines. Doctors have found that after treating a migraine sufferer with aspirin, the next migraine attack becomes stronger. Therefore, doctors have searched for other ways to treat migraines. From brain research, doctors have learned that certain cells in parts of the brain release proteins during a migraine attack. By using a drug which acts like the natural chemical serotonin in the brain, the cells can be stopped from releasing protein. This has the effect of blocking the migraine. Now drug companies are producing even better products developed from this idea. However, the most effective of these drugs must be taken as liquid and put directly into the bloodstream. The drug is not yet available as a pill. The above example is only one kind of medicine doctors have found useful in fighting migraines. It also turns out that drugs used to fight depression work well to relieve migraines. And surprisingly, some migraine sufferers claim Botox has proven helpful for them. (Botox is a chemical injected into the face for the purpose of removing wrinkles.)

## III. ANALYSIS

Not all migraine sufferers are turning to medicine for help with their problem. Some of them use alternative remedies to fight migraines. For example, many people use yoga or meditation to relieve stress and reduce the number of migraines they

suffer. And in some cases, people know that certain foods or fluorescent lights trigger their migraines. These people simply try to avoid things that set off migraine attacks.

Migraine treatment consists of relief of the attack and preventive treatment in the interictal period. The main requirements for modern means are efficiency, safety, speed of action. Relief of an attack. For relief of migraine attacks, 3 groups of drugs are used:

**First group.** With mild to moderate seizures, it can be effective paracetamol, acetylsalicylic acid and its derivatives, as well as combined drugs (sedalgin, pentalgin, spazmoveralgin) are also useful. Due to the short duration of the vasoconstrictor phase, analgesics and antispasmodics it is advisable to apply at the very beginning of the attack, before the onset of severe pain. Acetylsalicylic acid blocks the conduction of pain impulses, suppressing the synthesis of pain modulators (prostaglandins, kinins, etc.), and also has a central effect by activating serotonergic antinociceptive mechanisms of the brain stem. It is used in a dose of 500-1000 mg, preferably in the form of an effervescent solution (soluble aspirin). Paracetamol is used in the form of tablets and rectal suppositories of 500 mg (maximum daily dose of 4 g). Possible side effects: nausea, epigastric pain, allergic reaction. When using them, it is necessary to remember the presence of contraindications: diseases of the gastrointestinal tract, a tendency to bleeding, hypersensitivity to salicylates, allergies, as well as the possibility of the development of an abusive headache with prolonged and uncontrolled use of these drugs.

#### IV. RESULTS AND DISCUSSION

**Second group.** Dihydroergotamine preparations have a powerful vasoconstrictor effect due to the effect on serotonin receptors located in the vascular wall; they prevent neurogenic inflammation and thereby arrest the migraine attack.

Ergotamine is a typical specific anti-migraine drug; it is a vasoconstrictor with a lytic effect on alpha1 and alpha2-adrenergic receptors and increases their sensitivity to endogenous norepinephrine. Usually, a 0.1% solution of ergotamine hydrotartrate is used, 15-20 drops or 1-2 mg tablets at a time, but not more than 3 tablets per day.

Nasal aerosol of dihydroergotaminemesylate (diidergot) is also effective. The advantages of this drug are ease of use, speed of action and high efficiency (75% of seizures are stopped within 20-45 minutes). Serious complications are rare. For the treatment of migraine attacks, combined drugs are widely used, which are a combination of an analgesic or an ergot alkaloid with caffeine, codeine, isomeptene, butalbital.

**Third group.** Selective serotonin agonists (zolmitriptan, sumatriptan, naratriptan, eletriptan). They have a selective effect on the serotonin receptors of the cerebral vessels, prevent the release of substance P from the endings of the trigeminal nerve and neurogenic inflammation. Sumatriptan (imigran), an agonist of 5-HT serotonin receptors, is the best known of the group of serotonin agonists. Sumatriptan (imigran) is available in the form of tablets of 50 and 100 mg, a solution for subcutaneous injection of 0.5 ml containing 6 mg of sumatriptan (complete with an autoinjector) and in the form of a nasal spray of 20 mg of sumatriptan in one dose. Imigran nasal spray is especially convenient for those patients who have an attack with nausea and vomiting, as well as for patients who need to quickly stop the attack. The maximum daily dose of migraine tablets is 300 mg, and the maximum daily dose of Imigrant nasal spray is no more than two doses of Imigrant 20 mg each.

Doctors believe this headache is caused by reduced flow of blood to certain parts of the brain. A migraine sufferer usually feels intense pain on one side of the head. The sufferer also becomes sensitive to light and noise. If the migraine is severe, the sufferer may vomit repeatedly. The third kind of primary headache is known as the cluster headache. Cluster headaches typically occur around the same time each day for weeks or months at a time. The person suffering from this kind of headache usually feels pain on one side of her or his head, and the pain is centered around one of the person's eyes.

Doctors do not know much at present about cluster headaches, but they seem more common among men and could be related to alcohol or other things that affect a person's blood flow. Using computers and more advanced medical equipment, doctors continue to learn more about what happens in the brain before and during headaches. Especially in the case of migraines, some doctors believe they have found the part of the brain that sets off the reaction for severe attacks.

With this new insight into brain processes, doctors hope new ways will be discovered to disable headaches before they begin.

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