

HEADLINES

A PUBLICATION OF THE EAST BAY HEADACHE SUPPORT GROUP
A member of the American Council for Headache Education (ACHE) support group network

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February 3rd Meeting:

East Bay Headache Support Group Celebrates 101st Meeting

The East Bay Headache Support Group is pleased to invite you to its 101st meeting. Dr. Michael Stein, a Walnut Creek neurologist and co-founder of the group, will present the latest information on headache treatment and research. This meeting also marks the beginning of our 14th year of providing education and support to headache sufferers.

Dr. Stein is a member of the American Headache Society and the International Headache Society and specializes in the diagnosis and treatment of headache. He has participated in a number of clinical trials in migraine and recently affiliated with Diablo Clinical Research. Currently Dr. Stein is working on two drug trials, one a very new and novel preventative medicine and the other a new and different inhaled medicine to abort headaches.

We will meet in the Ball Auditorium, downstairs at John Muir Medical Center—Walnut Creek Campus, **Tuesday evening, February 3rd, from 7:30 to 9:00 p.m.** Call Carol at 925-229-5550 for more information.

Why Migraines Strike

Editors Note: Carol Bartlett has written a synopsis of an interesting article from the August 2008 issue of *Scientific American*.

More than 300 million people suffer from the excruciating pain of migraines. Although it's hard to explain to non-sufferers, it could be compared to a severe form of altitude sickness: nausea, acute sensitivity to light and a searing, bed-confining headache.

Although migraine has been recorded for at least 7,000 years, it is still not understood and is many times dismissed as unimportant. As Joan Didion wrote in her article "In Bed" from her book *White Album* (1979), "For I had no brain tumor, no eyestrain, no high blood pressure, nothing wrong with me at all: I simply had migraine headaches and migraine headaches were, as everyone who did not have them knew, imaginary."

Now, however, epidemiological studies have shown how serious migraines can be. A World Health Organization report has described migraine as one of the four most disabling chronic medical disorders, costing the U.S. economy \$17 billion a year in lost work, disability payments and health care expenses.

Migraine experiences vary from one or two day-long attacks every month up to more than 15 days a month. They can be brought on by many events such as emotional distress, weather changes, allergies, sleep deprivation and more. Two-thirds of victims are women, indicating hormones must be involved.

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Future Meetings:

May 5, 2009: Alan Brast, PhD, CCHT
Sleep Disorders and Headache

September 15, 2009: To be determined

To recommend a speaker or suggest a topic, contact Leslie at davisgold@gmail.com, or Carol at 925-229-5550.



Please post or give the enclosed flyer to your doctor or friends to help publicize the meeting.

Why Migraines Strike

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Over the years many reasons for why these headaches arise have been proposed, but as early as the 17th century blood flow was proposed and this theory held sway until the 1980s. It was thought that migraine pain stemmed from the dilation and stretching of brain blood vessels which activated pain-signaling neurons, and that the headache was preceded by a drop in blood flow.

However, brain scans have since shown that in many patients pain is preceded by an increase of blood flow by about 300 percent. Migraine is now thought to arise from a disorder of the nervous system.

Two aspects of migraine are now under study, the headache and the aura which precedes the pain in about 30% of sufferers. The aura is a visual illusion of flashing lights, sparks, and geometric patterns. It might be followed by dark spots, tingling, weakness on one side of the body, and speech impairment.

The aura is thought to be caused by cortical spreading depression, also sometimes described as a “brainstorm.” It’s a wave of intense nerve cell activity spreading through the cortex, the furrowed outer layer of the brain. Neuronal activity is controlled by a carefully synchronized flow of sodium, potassium and calcium ions across the nerve cell membrane through channels and pumps.

During the next phase the neurons are in “suspended animation” and can’t be excited. They return to their resting state soon after, but some can stay inhibited for a long time after the brain-storm recedes.

Migraine is thought to be a common complex polygenetic disorder, such as diabetes, cancer, autism, and hypertension. It’s not caused by a single genetic mutation but by small mutations in many genes; nongenetic components are involved as well.

It’s not known which genes increase susceptibility to migraine, but studies of people with a rare form of migraine called familial hemiplegic migraine have shown three genes that carry mutations, each of which are strong enough to cause the disease. These genes are altered by mutations that increase the excitability of nerve cells, presumably by altering properties of the encoded ion channels and pumps. These findings strongly indicate that migraine could be a channelopathy, a newly recognized type of disease that arises from disturbances in ion transport systems, like cardiac arrhythmia and seizures.

There are, of course, more people who experience pain without aura—about 70% of migraine sufferers. Researchers have been making headway in understanding this kind of headache also. Most regions of the brain do not transmit or register pain, but a network of nerves called the *trigeminal nervous system* does.



Pain is relayed from the trigeminal network to the trigeminal nucleus in the brain stem, through the thalamus to the sensory cortex where we feel pain and other senses.

So what activates the trigeminal nerves in migraine? There are two schools of thought:

1) Cortical spreading depression could directly stimulate the trigeminal nerves. As this wave of excitability travels across the cortex it releases chemicals which serve as messengers that cause the trigeminal nerve to transmit pain signals. This theory could cover both migraine with and without aura.

2) Others say the root of migraine pain is in the brain stem where information passes to and from the body and the brain. Positron-emission tomography has revealed three clusters of cells, or nuclei in the brain stem, which are active during and after migraine. It’s possible that abnormal activity in those nuclei could induce pain in two ways. The nuclei normally inhibit trigeminal neurons within the trigeminal nucleus, continually saying, in effect, “don’t fire.” The nuclei’s misbehavior could impair this ability and allow the trigeminal neurons to fire even when the meninges send no pain signals. The nuclei might also trigger spreading depression.

One of the most important functions of the brainstem nuclei is to control the flow of sensory information—such as light, noise, smell and pain—that reaches the sensory cortex. Dysfunction in these clusters of cells could therefore explain why migraine sufferers may experience sensitivity to light, sound and odors.

These brain stem areas receive input from only two areas of the cortex—the limbic and paralimbic cortices, regions that regulate arousal, attention and mood. This might explain how emotional and psychological stress could cause migraines, why mood fluctuates during migraine, and why there is an association between migraine and depression and anxiety disorders, both of which occur more commonly in migraine sufferers than in others.

The question then becomes, Does pain typically arise from the hyperexcitability of cortical neurons (which leads to cortical spreading depression, activation of meningeal trigeminal pain fibers and the pain of a migraine)? Or does some glitch in brain stem activity incite the pain by directly rendering the trigeminal neurons spontaneously active or by facilitating cortical spreading depression, or both?

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Why Migraines Strike

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Right now there are only a few drugs that can prevent migraine and all of them were developed for other diseases such as hypertension, depression and epilepsy. One of the effects of these drugs is to inhibit cortical spreading depression. Several new drugs are being tested in migraine sufferers that specifically inhibit cortical spreading depression. They work by preventing gap junctions, a form of ion channel, from opening, thereby halting the flow of calcium between brain cells.

The triptans, for use during an attack, were developed based on the mistaken idea that blood dilation caused the pain and thus constriction was necessary to alleviate it. They do ease migraines, though, by interrupting the release of messenger molecules—specifically calcitonin gene-related peptide—from trigeminal nerves that feed signals into the trigeminal nucleus. The new understanding of triptan activity has opened up possibilities for drug development, including a focus on calcitonin gene-related peptide. These and other drugs will be the first designed to combat migraine during an attack by targeting neurons without constricting blood vessels.

Scientists and physicians are finally coming to see migraine for the complex, biologically fascinating process it is and to recognize its powerfully debilitating effects. The disorder is “imaginary” no longer. ♦

Editor’s Note: To read the entire article “Why Migraines Strike,” written by Drs. David W. Dodick and J. Jay Gargus, visit <http://www.sciam.com/article.cfm?id=why-migraines-strike>.

The intention of the East Bay Headache Support Group is to provide information and resources. It does not provide medical advice, which should be obtained directly from a physician.

Living Well With Chronic Headaches

At the November 2009 meeting Cliff Kalibjian, “Mr. Health Search,” explained coping strategies for living with a chronic disease, and then gave a tutorial on searching for health information on the Internet.

Coping Strategies

Even though diseases may be totally different, coping strategies can be the same. Cliff developed Crohn’s disease at the age of 13, an inflammatory bowel condition which made his life difficult for years. He earned a PhD in clinical psychology and explored the mind/body connection in trying to cope with his disease. But it wasn’t until he had a colectomy 8 years ago that he finally got his life back, and he’s now dedicated to helping others with their struggles with chronic disease.

Cliff stressed personal advocacy, stating “You need to plead for your own cause—you are responsible for your own health—it really comes down to you.” He also explained the difference between blame and responsibility: blaming someone or something for your condition keeps you trapped in the past—you’re being a victim—in a powerless position. In contrast, taking responsibility helps you move forward. He said, “You can’t change the past—take responsibility in the present moment. Remember that you are worth it.”

It is important to control negative thinking. Cliff commented, “Worry is a very terrible waste of your imagination.” He used to have a lot of negative thoughts, but chose to reprogram his brain to substitute positive thoughts instead. He said we all need to surround ourselves with positive people, and added, “Work on changing yourself, as you can’t change other people. Others will then likely change toward you.” This concept also applies to your relationships with doctors—they are regular people who happen to be health care consultants. Interview them and make educated choices.

Finding meaning in life is also important. Think, “I’m not a human *doing*, I’m a human *being*.” Develop an attitude of gratitude. And, “Whatever we focus on, we attract more of.” Another suggestion is to visualize your health goals. Cliff feels very strongly about goal planning and said, “People who have written goals usually achieve their goals.”

To conclude the first part of his presentation, Cliff said, “Never give up hope...Find others who are living well with a headache condition, or who have totally overcome it. Whatever your situation with your headaches, or anything...believe that you can overcome it.”

Researching Headaches Online

Cliff said there are a lot of consumer resources and other sites geared to medical profit, and also that not all information on the Internet is free.

When surfing for medical information, he advised we should be wary of the following:

- Web sites with information supporting a product for sale
- Sites with personal testimonials
- Anything that promises miracle cures or miraculous healing
- Anything that talks of conspiracy or major cover-ups by those in the medical establishment

Cliff recommends Medline Plus, Web site of the U.S. National Library of Medicine, as a good source of reliable information geared for consumers. Visit <http://www.nlm.nih.gov/medlineplus/>. Another good site is PubMed located at <http://ncbi.nlm.nih.gov/entrez>. He also said to look for government Web sites (ending in .gov), and those of well-known educational institutions (ending in .edu). He added that Web site URLs ending in .com, .net and .org can be good or bad—you must be discriminating.

In conclusion, Cliff stated “You are responsible for your own health, and there are many resources available to help empower you.” ♦

Notes...The East Bay Headache Support Group features medical and other professionals as speakers at its meetings. Notes are taken of most presentations and made available for a suggested donation of \$2.00 each, or read them on our Web site at www.headachesupport.org.

Past topics include: Biofeedback therapy, genetics, caregiving, dietary headache triggers, chiropractic treatment, pharmaceutical remedies, hormonal triggers, reducing stress in the workplace, dealing with holiday stress, acupuncture and Chinese herbal therapy, children's headaches, temporomandibular joint disease (TMJ), somatic headache relief, compounding medications, allergies, experimental headache drugs, prevention of stress headaches, non-traditional therapies, tension-type headaches, menopause, head injury headaches, environmental medicine, emotional impact of headaches, sleep disorders, chronic pain management, exercise headaches, cluster headaches, 5-HTP, Emergency Room visits, dealing with frustrations, Botox injections, naturopathic medicine, the Alexander Technique, effective nutrition for headache pain management, acupuncture, medication overuse headache, and many more.

The East Bay Headache Support Group is a nonprofit organization dedicated to providing a forum for headache sufferers. The support group meets four times per year—selected Tuesday evenings in February, May, September, November—from 7:30 to 9:00 p.m., at John Muir Medical Center-Walnut Creek Campus. It is open to all headache sufferers and their families, and interested persons. The meetings are free; however, donations to cover printing, postage, and Web site expenses are appreciated! The support group meetings include lectures by guest speakers, question and answer sessions, and informational materials.

Directions to John Muir Medical Center-Walnut Creek Campus: Take Highway 680 to the Ygnacio Valley Road exit in Walnut Creek. Travel East toward Mount Diablo approximately 1-1/2 miles, and turn right onto La Casa Via at the top of the hill. Turn left into the medical center parking lot, and park in the parking garage. Take stairs or elevator to the lower level and follow signs to the meeting room.

We value your input! Call, write, or e-mail us if you have comments or suggestions, or would like to help. The planning committee welcomes new members to help organize meetings and find speakers, and publish and mail newsletters. Call Carol at 925-229-5550 or send an e-mail to Leslie at davisgold@gmail.com.

**MATERIAL
TIME DATED**

**Visit our Web site!
www.headachesupport.org**

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