



Advances in Headache Treatment

If you're unsatisfied with your headache treatment, you're not alone. While there have been tremendous advances in headache care—particularly migraine—in the last two decades, many people still struggle to find medications that work consistently without troublesome side effects. Fortunately, there are over 30 pharmaceutical and biotech companies currently researching or developing new

drugs, medical devices, delivery systems and procedures.

Every two years, we bring you an update on these products in the pipeline. This year, we asked Robert Kaniecki, MD, Director of the Headache Center, Chief of the Headache Division, and Assistant Professor of Neurology at the University of Pittsburgh, to talk with us about what's new, what's coming, and some exciting leaps

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forward in genetic research.

Q: It's been two years since we last shared what's on the horizon for headache treatment in NHF

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Lesley Reed

This publication discusses a broad range of headache symptoms, medications and treatments in an effort to inform and educate readers and it is not meant to substitute your healthcare provider's advice. Because each patient is different, your healthcare provider should always be consulted prior to beginning or changing any treatment.

Fighting the Battle Against Migraine and Headaches

*A Letter from Dr. Arthur Elkind
President of the National Headache
Foundation*



Dr. Arthur H. Elkind

Dear Friends,

It is my privilege to serve as the President of the National Headache Foundation Board of Directors. I am pleased to have this opportunity to address our members directly about the changes occurring in NHF services for you and for the millions of people who work so hard to overcome their headache symptoms.

Far and away, our biggest service in 2011 will be the NHF Regional Educational Conference series. Although a scheduling problem delayed the start of these programs, we're ready to proceed with events in 2011. Let me share more specific information.

The first regional conference will be a special program aimed at the men and women of our armed services. Veterans of the conflict in the Mideast are returning with migraine and other headache disorders at an alarming rate—at least double and perhaps more than four times the rate of the general population. The NHF is hosting this event specifically for them.

Any active duty, reservist, or former member of any branch of the armed services who served in the Mideast (or whose headaches may be linked to other hazardous military duty) is invited to attend the patient portion of the conference, at 12:30 PM on March 5 at the Doubletree Hotel and Conference Center in Augusta, Georgia. ***If you know anyone who fits the criteria for attendance at this session, especially if they live in Augusta or the surrounding area, please make them aware of this opportunity.***

Additionally, any medical professional who has a specific interest in the veteran population or headache related to traumatic brain injury or post-traumatic stress disorder is invited to come to the accredited

CME conference at 7:30 AM at the same location.

There is no charge for a veteran and one guest to attend the patient education portion or for a health-care professional to attend the CME portion, but registration is required. (Call 888-NHF-5552 for more information.) Please let us know right away if you are interesting in attending. The NHF is considering making group transportation available from Atlanta or other nearby communities. The sooner we hear from you, the sooner we can confirm the availability of transportation.

The NHF has also scheduled regional conferences for the general population in St. Louis, Houston and Chicago. *For more information about the regional conferences, turn to page 11.*

The NHF exists to serve the headache community. We know that money is tight for many people right now, so we will be providing a number of free admissions for each regional conference. Watch the NHF website, www.headaches.org, for more details.

We look forward to meeting you at one of the regional conferences. And don't forget to pass this newsletter on to other people who would benefit from learning how to better manage their headaches.

Sincerely,

Arthur H. Elkind, M.D.

HeadLines. Some of the products that were in development then are now out on the market. Tell us about some of the more exciting recent releases.

The triptans have been available to treat acute migraine for 20 years, but we've been learning important lessons in recent years about how to use them well, including creating new formulations that are more effective for various people. A needle-free version of injectable sumatriptan, called Sumavel DosePro® is now available and my headache

There are two issues with new drugs one is how well they work to stop a headache and the other is how quickly they get to the brain to start working.

center has found it to be a marvelous addition to what we can provide patients to treat severe migraines. It is an extraordinarily simple device that can be easily used even in the midst of a severe migraine attack with visual disturbance. There are also no needle disposal or needle phobia issues to deal with. I have not had one patient who was interested in doing injections not consider it, and I have yet to see somebody switch back.

While Sumavel DosePro is needleless, it is not painless. Most patients feel that the discomfort is less than that felt with needle injections, but it still has a bang to it, like a rubber band snap. Should the discomfort be too troublesome, we recommend an application of local ice for one to five minutes before the injection. That numbs the area and then the injection can

be delivered without much trouble.

Good candidates for this or other injectable therapies are those patients who wake up with migraine, have significant nausea or vomiting with their migraines, or need backup resources at times, such as an emergency room or a doctor's office where they receive an injection. So if you wake up with migraines, throw up from migraines, or you need backup injections, you might as well have an injection at your disposal in your own medicine cabinet.

Nonsteroidal anti-inflammatories (NSAIDs) have also been around for decades and we've learned important lessons about how well they work in migraine. We now have a combination of an NSAID (naproxen) and a triptan (sumatriptan) called Treximet®. More recently, Cambia® came on the market. This is a combination of the NSAID diclofenac and potassium bicarbonate, which creates a powder form that is dissolved in water and drunk. The key factor here is speed.

There are two issues with new drugs—one is how well they work to stop a headache and the other is how quickly they get to the brain to start working. Diclofenac has been used to treat migraine attacks for years and we know it can be quite effective, but now we have a preparation that delivers it more rapidly—it's dissolving even before it hits the stomach—and anything that gets the medication to the nervous system quickly is beneficial for migraine sufferers. As it falls into the category of anti-inflammatory agents, Cambia clearly becomes one of our first-line considerations for acute migraine treatment.

The recent FDA approval of Botox® injections for migraine



Needle-free sumatriptan injection: With this very simple device, which can be delivered either to a pinch of skin in the abdomen or to the thigh, an air canister generates the force that propels the liquid through a laser-drilled hole at the end of the device at such velocity that it pierces the skin and delivers the medication to the system.

prevention has been big news.

Botox (Onabotulinumtoxin) was approved by the FDA in October of 2010 specifically for chronic migraine, meaning an average of 14 or more migraine days per month. It is not approved for episodic migraine or other types of headaches such as tension-type headache or cluster headache.

Botox has been used off-label (without FDA approval) for migraine for some time. We have found that it is indeed effective for a significant fraction of patients who have not benefited from other options, but I would not say it's effective for the majority of the people we've treated. Those who do benefit usually need two to

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three courses of treatment before they achieve their maximum benefit.

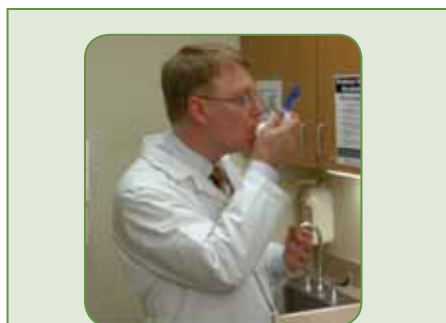
The issue that remains is cost. Insurance providers are not necessarily keen on covering it, even given this indication from the FDA, but I suspect that most of the large insurers will have to develop policies that include consideration of Botox for refractory chronic migraine.

Tell us about some of the products that may, one day, be used to treat migraine attacks.

There's a whole host of advances in the technology of drug delivery systems that are very exciting and among the most productive areas of research in acute migraine management. For example, there are trials being done on sumatriptan in patch form and a new nasal spray. In addition, there are new novel inhaled ways of getting migraine drugs into the system. These are not typical nasal spray inhalers, but pulmonary inhalers that deliver old drugs in very rapid fashion and at very high concentration and, according to the data so far, in a very effective manner.

If all goes well with the ongoing trials, we will finally have matched a solid drug to a delivery system that is innovative, easy and quite effective.

Levadex, which delivers dihydroergotamine (DHE) through what's called the TEMPO® inhaler, looks extraordinarily promising. DHE is a great drug that has been used to treat acute migraine for over 50 years, but has always been in search



LEVADEX™ inhaler: This metered, multiple-dose inhaler is breath activated. The medication flows to the pulmonary alveoli and is rapidly absorbed.

of a good delivery system. Currently, it works best when administered intravenously in the clinical setting, though there is also a nasal spray and subcutaneous injections for home use. If all goes well with the ongoing trials, we will finally have matched a solid drug to a delivery system that is innovative, easy and quite effective.

Another similar device in trials delivers prochlorperazine, which is one of the most effective anti-nausea medicines for migraine. When delivered in IV form, prochlorperazine can actually turn a migraine off. It is also available in oral and suppository forms, but there is no home injection, so if you have somebody who's vomiting or significantly nauseated and they can't take a tablet, they're left with just the option of a suppository. The inhaler is another way of getting it into the system.

In addition to new devices that deliver older drugs, there are new devices working in brand new ways. The transcranial pulse stimulator, which delivers a pair of pulses to the brain, has been shown to interrupt the cascade of events between aura and headache.

We understand aura as a wave of

“cortical spreading depression,” which can be pictured as waves of excitation that travel across the brain, followed by depression of the neurons. In essence, it's like you have a stone dropped in a pond and a wave is going across the brain. Delivering the pulse from the stimulator is like throwing another stone that sends ripples in the opposite direction and knocks the wave down.

We've also had exciting new developments in new drugs working at receptors that had previously been unexplored. Receptors are chemicals that allow cells to communicate amongst each other and with their external environment. These receptors provide drug researchers with targets to stop or prevent a migraine.

Many preventive agents work on chemicals or receptors to try to reduce the sensitivity of the nervous system, kind of like keeping the temperature of the engine lower so it's harder to overheat.

This new drug research offers an opportunity to address migraine at the neuronal level while sparing the vascular level, therefore giving us an opportunity to treat patients who don't respond to the triptans or have triptan contraindications, such as vascular disease.

For example, blocking the action of a chemical called calcitonin gene-related peptide, or CGRP, could stop a migraine. Figuring out how to prevent its release is another active area in headache research, and these drugs are perhaps among the most exciting and closest to market. In particular, Telcagepant has been shown to be effective in phase II and phase III trials

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for acute migraine.

What's in the works for migraine prevention?

Let's start with a "state of the union" of migraine prevention. We have a number of drugs that have been labeled as "top shelf" according to evidence-based guidelines: beta blockers, tricyclic antidepressants and the anticonvulsants topiramate and divalproex. Yet when we look at the data behind these drugs, it's a 50-50 proposition—50% of patients getting 50% better is defined as success. Certainly we do see good results in many patients, but many of our other patients don't respond. I've been practicing for 20 years and I often struggle for the right drug or natural approach to offer a patient to diminish their migraine frequency. We need new options.

Again, researchers are looking at new ways of using old drugs, developing new drugs, and creating new devices. In particular, we have a wealth of opportunities to prevent migraine that involve targeting receptors in the brain that are involved in the chain of events that lead up to migraine.

Cracking the genetic code of migraine is a long-sought goal and could result in much-improved therapies.

The simplest way of understanding how these drugs would work is by recognizing that the nervous system of migraineurs is hypersensitive by nature. In a sense, the engine runs hot and a headache occurs when the hypersensitive or hot engine overheats. Many preventive agents work on chemicals or receptors to try to reduce the sensitivity of the nervous system, kind of like keeping the tem-

perature of the engine lower so it's harder to overheat. (The acute agents like the triptans, on the other hand, work on chemicals that provide a quick fix to turn the heat down when the engine has already overheated.)

In a sensitive nervous system, there are many excitatory chemicals. The most prominent is glutamate, which is like the nervous system's stimulant, its driver, and that's where the most interesting findings are happening right now. Drugs are also being developed to work on nitric oxide pathways. Nitric oxide is a gas that the body generates to dilate blood vessels and is believed to play a role in causing migraine pain. The data is very preliminary on these drugs, but it appears they may be useful for both prevention and symptomatic treatment.

What devices are being developed for migraine prevention?

Occipital nerve stimulators are extraordinarily interesting and very promising, but still not ready for prime time. Occipital nerve stimulation involves implanting a small device at the base of the skull, near the occipital nerve. The device is connected to a power source (also implanted) that sends electrical impulses to the occipital nerve. It appears to be extremely safe.

The issues are portability, because the size is rather large, and applicability, because right now it seems to be helpful only for patients who have reliable aura preceding headache. The technologies are being refined and we might see an occipital nerve stimulator in the future for chronic migraine and cluster headache in patients who aren't responding to any options that are now available.

There is also renewed hope around the surgical closure of patent foramen ovale (PFO). PFO is an opening between the upper chambers of the

heart that is present in all fetuses, but closes after birth in most people. Four years ago, a trial done in the US had disappointing results and we thought the door had closed on this line of research. But recent results from Italy seem to show that there may be a subset of patients who will respond to PFO closure. These people have had a stroke, are at serious risk of embolism or stroke, or have had silent infarctions.

These new drug opportunities and devices may indeed prove to be the answers we need.

Are there any new developments in treatment of cluster headache?

We've been using oxygen to stop cluster attacks for years, but there has never been a big study that showed that it worked. Finally, in the past year, a large study proved that indeed oxygen is effective for acute cluster. The Sumavel DosePro needle-free injection also applies to patients with cluster, so that's been an exciting development for them as well. Neurontin®, which is sometimes used to prevent migraine, is being studied for cluster, but there's no data out yet.

On the medical device side, both the deep brain and occipital nerve stimulators continue to be researched. They may be an interesting approach for people with chronic cluster who are unable to break their cycles for extended periods of time.

There have also been new findings around the genetics of migraine. While gene mutations have been identified for rare forms of migraine with strong family links, this is the first time

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Book Reviews



The Keeler Migraine Method: A Groundbreaking, Individualized Treatment Program from the Renowned Headache Clinic

By Robert Cowan, MD

“The overwhelming majority of headache patients have one kind of headache and, usually, that is migraine,” writes Robert Cowan, MD, in *The Keeler Migraine Method*. “I believe triggers cause the confusion.”

Headache types and triggers are indeed powerful sources of confusion for headache sufferers (and even healthcare professionals), while research confirms that many headaches diagnosed as tension, sinus or other conditions are actually migraine. What distinguishes *The Keeler Migraine Method* is its emphasis on identifying your own set of headache triggers and setting up an anti-migraine treatment plan to reduce their impact.

Discovering personal triggers is key to reducing the number and severity of your headaches, says Dr. Cowan, because migraines are a response to a disruption in the external or internal environment. “Headaches start with triggers, so treatments that focus exclusively on pain do not work.” The challenge is that anything can be a trigger depending on the individual.

The Keeler Migraine Method takes readers on a trigger hunt, offering questionnaires and guidance, but skips rote lists of foods to avoid because Dr. Cowan wants readers

to find and manage their own triggers, not miss out on items they enjoy. Once triggers are identified, readers can strategize how to avoid or modify them or prevent a headache associated with an unavoidable trigger. Suggestions are given for “creative anticipation and strategic plan-

ning” for situations ranging from work to social life to exercise.

While lifestyle modification is the heart of the book, prevention and treatment are steps 2 and 3 of the detailed management plan that readers create for themselves. Dr. Cowan explains a huge range of treatment options and also offers comprehensive advice on how to build a support system.

The Keeler Migraine Method is an excellent book for people who are ready to take control of their headaches rather than be controlled by them. Dr. Cowan, with his funny, self-deprecating writing style and hard-earned wisdom from having migraine himself, is the perfect guide.

The Woman's Migraine Toolkit: Managing Your Headaches from Puberty to Menopause

By Dawn A. Marcus, MD and Philip A. Bain, MD

One out of six women has migraine and, depending on the time of life, its impact can be truly debilitating or recede to a memory. Why this fluctuating burden? “Hormones, hormones and more hormones,” write Dawn A. Marcus, MD and Philip A. Bain, MD in *The Woman's Migraine Toolkit*.

Written for women at any phase of life—and their daughters—this practical and easy-to-read guide gives clear explanations of the “why” of migraine for women and guide-

lines for each hormonal milestone. It's a book with depth, sharing important information readers likely aren't getting elsewhere. For example, did you know that estrogen and other sex hormones are made from cholesterol and that, while too much cholesterol is a bad thing, so is not enough?

The Woman's Migraine Toolkit is also a book with breadth, covering the gamut of treatment options for each life phase, details about effectiveness and side effects of drugs and natural remedies, check lists, and even photo illustrations of stretches.

Drs. Marcus and Bain offer “instructions and resources to take you from your first headaches in puberty through your adult years,” divided into chapters:

- “Controlling Migraine During Childhood and Adolescence” provides advice ranging from how to talk to your daughter about migraine to what to discuss with the school nurse, as well as treatment guidelines.
- “Controlling Menstrual Migraine” gives detailed information on approaches to manage migraine worsened by the menstrual cycle.
- “Safe Treatment of Migraines During Pregnancy and Nursing” answers key questions about drug safety and gives suggestions for natural remedies.
- “Tackling Migraine During Menopause” looks at the impact of hormone therapy and discusses medication decisions in later life when some drugs are contraindicated.

The Woman's Migraine Toolkit ends with an entire chapter devoted to “Learning How to Talk to Your Healthcare Provider.” Armed with the understanding and advice that this book offers, being an active partner in your healthcare just got a lot easier.

—By Lesley Reed

Naturally Headache Free

Stilling the Mind

By Kelsie Kenefick, MPS, BCB, LMHC

The mind and body are so intimately connected that they cannot be separated if one is to effectively treat any physical disorder. A term I like to use is the body-mind. In the last issue of NHF HeadLines you learned how to create deep relaxation in the body. When you create deep relaxation in the body, it is impossible to experience psychological stress. Likewise, when you still the mind, the body begins to relax. Deep relaxation of the body-mind is incompatible with anxiety, tension and many physical disorders.

Do you ever feel like your mind is racing out of control? Most of my patients experience this at times and some even report that they experience it all the time. Relaxing the mind is a skill that will serve you well. Many people find this to be one of the hardest skills to master, yet it is one of the most critical to calming down your over-aroused nervous system. A mind that is constantly busy can create dis-ease in the body.

Try these three techniques for calming your racing mind. Start each one by sitting in a comfortable position.

Setting the Mind Aside: Begin by imagining that your thoughts are tangible things that you can set aside. Imagine that you are setting any worries, concerns or busyness in the mind outside the door of the room you are in. Know that these problems, thoughts and concerns will be there when you leave the room if you choose to pick them up. It's okay to set all of it aside for

a little while. Those concerns may seem much smaller when you finish the exercise.

Try this if you have a busy mind at night that prevents you from sleeping well. Learning how to set your mind aside so that you can get a good night's sleep is critical to taking control of your headaches.

Stressful Thoughts Going Down the Drain: Try this after a stressful day. Get in the shower and imagine that all your stressful thoughts, and their resulting emotions, are coming out of your pores. The water washes the busy thoughts and any negative emotions down the drain. Allow all your tension to go. Visualize and feel those thoughts being washed away. You will be refreshed for the evening.

White, Puffy Clouds: Be aware of the thoughts in your mind, but imagine you are watching them from a distance... almost as if each thought were like a white, puffy cloud against a clear blue sky. You are fully aware of your thoughts, but you don't let any of them disturb your sense of inner peace. Don't cling to any of the thoughts... just watch them as they float on by. They don't need to control you or your life. The thoughts, just like the clouds, sometimes appear from nowhere... and sometimes they disappear. You just watch. Some of the clouds may seem very large and others much smaller. You remain undisturbed, a witness of the thoughts you see floating by. Now imagine the clouds, and the thoughts, beginning to disappear... evaporating into space... as your mind becomes



Kelsie Kenefick, MPS, BCB, LMHC

calmer and clearer... as it peacefully rests in quiet serenity. Finally, all you see is the clear blue sky.

Perhaps you have your own ways to calm your mind down. Use what works for you and notice how calm your body becomes when you still your mind. It will take some discipline to change the busy habits of your mind. Be patient as you learn how to shift your mind to a place of ease. Try doing one of these exercises before practicing deep relaxation of the body. Your goal is to learn how to master both calming the body and stilling the mind. Daily practice is recommended.

Remember, managing your headaches is an inside job!

*Kelsie Kenefick, MPS, BCB, LMHC, is the author of the award-winning book *Migraines Be Gone*. The founder of *Naturally Pain Free*, she has created a home program for headache sufferers to learn how to control their headaches. Learn more at www.naturallypainfree.com.*



Complementary and Alternative Therapies

*By Alexander Mauskop, MD, FAAN,
Director, New York Headache Center,
New York, NY*

Parents of kids with headache frequently ask about complementary and alternative approaches, hoping to avoid prescription medications and their associated side effects. As it turns out, scientific studies have shown that many of these alternative treatments can be beneficial in reducing headaches, with very few side effects. Taking these factors into account, the treatments described below are worth trying by most, if not all, headache sufferers.

However, before considering any kind of medication, whether conventional or alternative, the first step is to make sure that the child has healthy habits. Parents and children, especially adolescents, should be counseled about the importance of regular and nutritious meals without any caffeine, chocolate or other known dietary migraine triggers. Frequent exercise and regular sleeping patterns are also important factors in decreasing headaches.

Scientific studies have shown that many of these alternative treatments can be beneficial in reducing headaches, with very few side effects.

Stress is a major contributor to headaches, even in young children. One of the best treatments for migraine and tension-type headaches is biofeedback. Many studies have shown that biofeedback works

well, with long-lasting benefits. However, similar and less expensive techniques, such as self-taught progressive relaxation and meditation, work equally well. The advantage of biofeedback is that a biofeedback therapist can make the learning process easier and can act as a coach and motivator.

Supplements for Headache Prevention

Magnesium deficiency is a common contributor and, in some cases, the main cause of migraine and cluster headaches. Daily magnesium supplementation can be effective in preventing headaches, although oral supplementation does not help a small minority of magnesium-deficient patients who have poor absorption. These latter patients usually respond well to an intravenous infusion of magnesium. The recommended daily dose of magnesium is 400 mg. for adults and children weighing more than 90 lbs. Magnesium should always be taken with food; otherwise it can cause diarrhea and stomach pains. If one type of magnesium causes these side effects even when taken with food, another type should be tried.

Co-enzyme Q10 (CoQ10) is an ingredient present in each cell of our bodies and was found to be deficient in one third of children with migraines. Taking 300 mg. of CoQ10 daily can prevent migraine headaches in adolescents who are deficient. A proportionally smaller dose is given to younger children.

Feverfew is an herb that has been in use for the treatment of headaches for 100 years. It is very safe

except in those suffering from pollen and other allergies because they could also be allergic to feverfew. The dose of feverfew varies depending on the manufacturer.

Butterbur, unlike feverfew, is an herb that has to be purified to be safe for consumption. Butterbur products made by the German company Weber & Weber and sold under several brand names are considered safe. The usual dose for adolescents is 150 mg. daily.

Non-Drug Therapies

Acupuncture was studied in dozens of clinical trials and proven to relieve migraine and tension-type headaches. While patients frequently express concern about discomfort from acupuncture needles, treatment is usually not painful. Some people experience an immediate effect, but more often, weekly sessions are needed before beneficial effects are seen. A typical course is at least 10 weekly sessions.

Botox® does not belong to the group of alternative therapies, but nevertheless it is a safer treatment than drugs. Botox injections were just approved by the FDA for the treatment of chronic migraines in adults. Chronic migraine, which is defined as headaches occurring on 15 or more days each month, affects more than 3 million Americans. In the past 15 years of using Botox, I have treated many children with chronic headaches aged 10 and older with excellent results. The main drawback of Botox is its cost, but, with the recent FDA approval, more insurance companies will be compelled to cover it.



Trigeminal Neuralgia

By Edmund Messina, MD, Medical Director of the Michigan Headache Clinic in East Lansing, Michigan

While headaches are typically thought to be located around the forehead or back of the head, there are types of headache that strike the face itself. Trigeminal neuralgia is a form of severe facial pain in which patients experience brief volleys of very painful electric shock sensations triggered by mild touch to the face or mouth. This touch can be from washing, shaving, eating, brushing the teeth or even talking. The trigger zones are particularly sensitive in the area between the nose and mouth or on the chin.

Trigeminal neuralgia is also sometimes called “tic douloureux.” This French term describes the muscle spasm caused by the nerve pain, sort of a one-sided-grimace. The pain begins and ends suddenly, lasting from a fraction of a second to up to two minutes. The attacks can occur several times a day and may go on for weeks or months at a time before going into remission. The pain of trigeminal neuralgia is so severe that patients fear its return. Untreated patients may even experience malnutrition because eating is so painful.

Trigeminal neuralgia is commonly misdiagnosed as a dental problem, leading to inappropriate extractions in desperate patients. Because there are rare headache conditions and other types of cranial neuralgia that may imitate many of the symptoms, it is best to be evaluated by a headache specialist. Patients with trigeminal neuralgia usually have normal neurological examinations,

except for the trigger zones.

Though not well known, trigeminal neuralgia is not a rare condition—approximately 15,000 new cases of trigeminal neuralgia are diagnosed each year. It is more common in people over age 40.

The pain of trigeminal neuralgia is so severe that patients fear its return.

The condition is believed to be due to a compression of a branch of the fifth cranial nerve, which carries pain and sensation from the face, ears, eyes and teeth. This compression is usually caused by a looped blood vessel touching the base of the nerve. In younger people, however, it can be caused by multiple sclerosis, tumors or aneurysms. For this reason, imaging studies such as MRI (magnetic resonance imaging) and MRA (magnetic resonance angiogram) are necessary. CT scans are much less useful in this condition. The term “symptomatic trigeminal neuralgia” means that a cause other than vascular compression has been found on testing.

Treating Trigeminal Neuralgia

Carbamazepine (Tegretol®, Carbatrol®) is the first-line agent used by most healthcare professionals who treat trigeminal neuralgia. The dose is tapered and adjusted to the needs of the individual patient. This medication should be monitored with blood tests, since it could affect the blood count. Most people respond to carbamazepine,

while others prefer phenytoin (Dilantin®). Baclofen may also be added or used by itself. In more recent years, oxcarbazepine (Trileptal®) has become popular in the treatment of trigeminal neuralgia and it, too, is a very effective agent. Some people need to be treated mainly during colder months, when they are more vulnerable.

When patients do not respond adequately to medications or do not tolerate the effective doses, surgical solutions may be offered. The longest lasting results are usually obtained through a neurosurgical technique known as microvascular decompression. This involves opening the skull and placing synthetic material between the nerve and the compressing blood vessel. Success rates are high and recurrence rates are low. It is particularly useful in younger patients.

In more recent years, Gamma knife radiosurgery has become a very popular treatment for older patients. It focuses a precise beam of radiation on the entry zone of the trigeminal nerve. CyberKnife™ is similar, but less precise, and multiple visits are needed, although it is a simpler procedure. These two techniques are noninvasive and often very successful. However, it may take months to see significant reduction of pain and the pain can reoccur over months or years.

Trigeminal neuralgia can generally be controlled by medication or neurosurgical techniques, but it is important to separate it from other conditions. If you or someone you know has similar symptoms, seek an expert opinion!

NHF Launches War Veterans Health Resource Initiative to Help Ease Transition Back to Civilian Life

Studies have shown that soldiers returning home from Iraq and Afghanistan have nearly double the rates of migraine compared to the general population, as well as higher incidences of post-traumatic stress disorder (PTSD), depression and anxiety. Now veterans returning from active duty with these conditions have access to a program that will ease their transition home. The NHF has launched the War Veterans Health Resource Initiative, which provides veterans with a single, comprehensive source for information on all aspects of post-deployment life, including headache and migraine.

Research has shown that migraine

“I have been seeing a lot of soldiers returning from Iraq and Afghanistan with migraines. It is a complex health care problem, with many factors that can increase or decrease the frequency and duration of attacks.”

headaches often occur with PTSD, traumatic brain injury (TBI) and depression, conditions that specifically affect war veterans. In one study of 3,621 U.S. soldiers screened within 90 days of returning from a one-year combat tour in Iraq, 19% were found to have migraine, with migraine suspected in an additional 17% of soldiers. In comparison, the expected prevalence of migraine in the general population is ap-

proximately 10%. The study also found alarming rates of depression (32%), PTSD (22%) and anxiety (13%). In addition, approximately 70% of people who have suffered from a mild TBI complain of post-traumatic headache. Another study has shown PTSD to potentially be a risk factor for chronic migraine headache.

“People need to understand that migraine is not just a bad headache. It is a neuro-biological disease that often comes with severe nausea, blinding light sensitivity, extreme noise sensitivity, vertigo and visual aura that makes handling weapons and heavy equipment nearly impossible,” said Marc Husid, MD, director of the Walton Headache Center of Walton Rehabilitation Health System in Augusta, Georgia. “It is a disease that can take a physically fit and mentally tough young soldier and remove him from active duty.”

A Hub for Post-Deployment Life

“When the NHF first learned of the growing issue of headache disorders with returning soldiers, we turned to experts in the field for suggestions about how to help,” said Robert Dalton, NHF executive director. “The War Veterans Health Resource Initiative is our first program, providing active duty, reserve and discharged military personnel with the information that can help them manage their headaches and find the right treatment. We are pursuing more resources, including funding for research and support group locations in areas with a large military population. The NHF has helped a



Photo is courtesy of the US Army. Photograph credit: GS-9 Martin Greeson.

lot of civilians with similar problems and we want to go the extra mile for those who have served.”

The War Veterans Health Resource Initiative, housed on our Web site, www.headaches.org, is a hub for information and support. It puts veterans and their families in touch with trusted organizations that provide free brochures, books and other educational materials. Veterans can access links to a range of information including military discounts, medical experts, treatment facilities, physical therapy, mental health counseling, job training and disability claims assistance. There are also online forums available to share stories and discuss experiences.

“I have been seeing a lot of soldiers returning from Iraq and Afghanistan with migraines,” said Dr. Husid. “It is a complex health care problem, with many factors that can increase or decrease the frequency and duration of attacks. The NHF site is going to be useful to my patients and their families in dealing with this challenge.”

Join Us at One of Nine Regional Conferences in 2011: Bridging the Gap between Patient and Clinician

The NHF is holding a series of regional conferences for headache sufferers and healthcare professionals. Participants will have an opportunity to address their questions to leading authorities in the field of headache and to learn from patients who have found the right combination of healthcare providers, medications and lifestyle adjustments to manage their headache problems.

Conferences feature a morning session for doctors, nurse practitioners, and physician assistants and an afternoon session for people with headache disorders and the people who care about them. In both, experts will share best practices in diagnosing and treating migraine and related illness.

The first regional conference in Augusta, Georgia will be a special program for active duty, reservist, or former members of any branch of the armed services who served in the Mideast (or whose headaches may be linked to other hazardous military

duty). An afternoon session will be held for medical professionals who have a specific interest in the veteran population or headache related to traumatic brain injury or post-traumatic stress disorder. There is no charge for a veteran and one guest to attend the patient education portion or for a healthcare professional to attend the CME portion, but registration is required. Call 888-NHF-5552 for more information.

For our other regional conferences, attendance for patients costs \$20 and includes a one year membership in the NHF. It also allows you to bring one guest at no charge. A number of free admissions will also be available for qualified individuals.

The professional sessions will be fully accredited for all doctors, nurse practitioners and physician assistants and include one year's professional membership in the NHF. The fee for doctors is \$75 and \$35 for NP and PA professionals. Registered healthcare professionals will be able to pro-

vide free admission to the afternoon session for a number of their patients with migraine and their loved ones.

Please join us for a conference in your area and encourage your healthcare professional to come as well!

Regional Conferences 2011

Augusta, Georgia ~ March 5
 Doubletree Hotel & Conference Center
 7:30AM Session for Healthcare Professionals

12:30PM Session for Patients

St. Louis, Missouri ~ March 26

Houston, Texas ~ June 11

Chicago, Illinois ~ June 25

Dates to be announced for Anaheim, Dallas, Seattle, New York City and Cleveland.

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The winning ticket will be announced at the NHF Annual Fund Raising Benefit on Saturday, June 25, 2011. The winner need not be present to win. To purchase a ticket, complete this form and mail or fax it (312-640-9049) with payment to the National Headache Foundation. Or call (888) NHF-5552 with your credit card information to reserve your ticket now.

Mail entry to: National Headache Foundation, 820 N. Orleans, Suite 217, Chicago, IL 60610
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READER'S MAIL

We welcome your letters; please limit them to one page. We reserve the right to edit them. Send your letters to: Readers' Mail, NHF, 820 N. Orleans, Suite 217, Chicago, IL 60610-3132 or NHF1970@headaches.org.

Are Headaches Hereditary?

Q: During the summer months, I get lots of migraines because of the drop in barometric pressure. Can this be hereditary? My daughter also suffers with headaches.

A: Yes, migraine headache has a genetic predisposition. It does often run in families and it is more common in females who are past puberty. Studies have confirmed that the risk of migraine in first-degree relatives is increased 1.5- to 4-fold.

If your daughter's headaches are frequent and impacting her daily activities, she needs an evaluation by a child neurologist to decide on best treatment. I would not recommend trying your medications with her before seeing a healthcare provider.

Hossam AbdelSalam, MD, Medical Director, Child Neurology, St. Alexius Medical Center, Chicago, IL

Managing Hemiplegic Migraine

Q: My daughter has had hemiplegic migraines since she was eight. I am devastated for her as it is really debilitating. Do you have any suggestions?

A: Hemiplegic migraine is a rare form of migraine that is considered to be one of the more severe types. It is characterized by a fully reversible motor weakness, such as motor paralysis on one side of the body. This precedes the headache and totally resolves within 24 hours. It may be accompanied by numbness or a pins-and-needles sensation. The neurological symptoms usually leave when the headache appears.

The first step in management is a proper work-up to exclude other causes, including mitochondrial disorders that can mimic hemiplegic migraine. If possible, obtain genetic testing to confirm the diagnosis (hemiplegic migraine has a strong genetic component).

Once confirmed, treatment should consist of non-pharmacologic measures such as dietary modifica-

tion to avoid triggers, regular exercise and sleep, and dietary supplementation, such as magnesium. Topiramate, valproic acid and calcium channel blockers have shown the best pharmacologic results. Triptans must be avoided to prevent severe complications like stroke. Such care is best provided under supervision of a multidisciplinary headache clinic or a specialized neurologist.

Hossam AbdelSalam, MD, Medical Director, Child Neurology, St. Alexius Medical Center, Chicago, IL

(To locate a headache specialist in your area, check out the NHF's Physician Finder on our Web site, www.headaches.org. The NHF also has free lists of physician members. Call 1-888-NHF-5552 to get a copy.)

Optical Neuralgia a Trial for Family

Q: How would you recommend treating optical neuralgia? My daughter has suffered with pain around the top of her left eye for well over a year that never goes away. It is most upsetting and slowly tearing our family apart.

A: Facial neuralgias are a difficult group of disorders to treat. One type of medication that is sometimes useful is the sodium channel blockers, which presumably work on the more peripheral nerves, slowing the transmission of pain impulses back to the brain. Examples include carbamazepine and lamotrigine. Medications that work more centrally in the brain to inhibit pain transmission include baclofen, gabapentin and pregabalin. Tricyclic antidepressants can be helpful in combination with one of the other two classes of drugs.

Osteopathic approaches can be helpful, too, by reducing secondary muscle tension that can lead to a variety of head and neck pains. Alternative approaches such as acupuncture and training in self-hypnosis have also been shown to be effective. Many times a combination of medications and mind-body approaches turns out to be best for improving quality of life. Understanding and treating other family members who are stressed by the illness are also key to successful management.

Of course, before any therapy is undertaken, it is important to rule out underlying disorders that might be producing the type of pain around the eyes you described. Neurological consultation with



appropriate imaging and blood work are central to treatment.

Doug Mann, MD, UNC Professor of Neurology, Chapel Hill, NC

Could Worst Headache Ever Be an Aneurysm?

Q: I suffer from both migraines and tension-type headaches. Yesterday, I woke up with what seemed like a normal tension-type headache. I took a Fiorinal®, but steadily my headache worsened until the pain increased to level 8 out of 10. I worried it could be a migraine (although normally my migraines do not start like this) and took a Relpax®. The pain continued to a level 10 and my head felt like it would literally burst. For the first time in my 18 years of migraine I thought about going to the hospital. At one point I was worried it could be a brain aneurysm. It took almost 24 hours to ease up.

Can you please help me understand what kind of headache I had and what I can do next time I have such a headache?

A: It remains a puzzle in the headache world why someone with fairly typical migraine that is easily identified as such will, out of the blue, have a major change in symptom profile and intensity. We often see this kind of change in pattern in migraine sufferers in their 40s and 50s during menopause or with aging, but we also see it at other times for no apparent reason at all.

Sometimes it happens because the factors that lead to triggering a migraine—such as stress, lack of sleep, weather changes, consumption of certain foods, certain phases of the menstrual cycle and even a letdown from stress—pile up, leading to an atypical, severe episode of head pain. An example would be a student who is experiencing the stress of exams, along with poor sleep, too much cheese pizza and the start of her period. If you look back at the time of your bad headache, you may find a combination of such factors. Preventing similar headaches in the future may be a matter of good self care, including adequate hydration, rest and exercise.

The pain medication you mentioned (Fiorinal) is okay but probably could have been taken every two to three hours for three to four doses along with 400 mgs. of liquid ibuprofen. Relpax is a good choice for acute migraine treatment, but it needs to be taken

early. It may be taken again within two hours of the first dose if it is less than 70% effective.

If these episodes continue as you have described, it will be important to check your blood pressure during and in between headaches. A neurological consultation to go over your history and medication use, as well as an exam, would be the next step in deciding on other diagnostic tests, preventive strategies and acute pain management.

Finally, major head pain that comes on and intensifies over hours and then fades to no pain is not typical for a bleeding or leaking aneurysm or for brain infection. With an aneurysm, the pain is often sudden in onset and very severe. It is frequently accompanied by a depressed level of consciousness and stroke-like symptoms, such as weakness, loss of speech, nausea, stiff neck and sometimes fever. The pain lasts for days. I don't think you had a bleeding aneurysm, although if you had shown up at an emergency room with the report of the "worst headache of my life" you would have earned an MRI scan and maybe a lumbar puncture, "just to be on the safe side."

Doug Mann, MD, UNC Professor of Neurology, Chapel Hill, NC

The Who and Why of Migraine

Q: What causes migraine headaches? How many people have them?

A: Approximately 12% of the US population suffers from migraine, and up to 18% of women between the ages of 16 and 40 have migraine. Many patients with migraine have a positive family history of migraine in a first-degree relative.

Migraine is known as a neurovascular disease, meaning that both the nervous system and vascular (blood vessel) system play a role. We believe that the signal for migraine is generated in a primitive part of the brain called the thalamus. The trigeminal nerve also plays a role, and there is excitability in the brain that ultimately leads to the release of inflammatory substances. A number of external factors can trigger a migraine in some patients, from certain foods to barometric pressure changes.

George R. Nissan, DO, Co-Director, Diamond Headache Clinic, Chicago, IL

The Bequest of the Ex-Infantryman

By Rebecca Martin
NHF Board Member, Attorney
and Planned Giving Expert

"It is a myth. It is not true that headache victims are somehow, in ways subtle or obvious, weaker than the rest of us. It is not true that they collapse under stress. It is simply that they are attacked by a particular kind of pain for reasons which they themselves cannot altogether recognize. As an example, let me cite the case of Gregory Wilson."

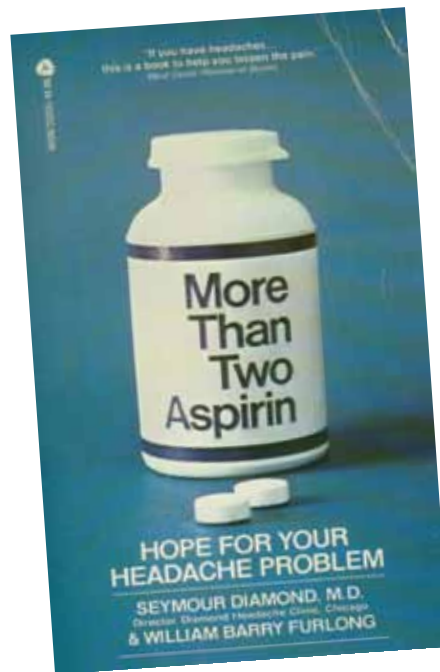
So began the story of "The Ex-Infantryman," a chapter in the book *More Than Two Aspirin* by Seymour Diamond, MD, published in 1976. "Gregory Wilson" was a pseudonym. His real name was Thomas E. Ward.

Mr. Ward was clearly not a "weak" man. In fact, he was at his best when his workload and responsibilities were heaviest. "As a combat infantryman in Europe during World War II, he suffered no particular stress under the most violent conditions," wrote Dr. Diamond. He even "snoozed soundly through a heavy German air raid."

As a combat infantryman in Europe during World War II, he suffered no particular stress under the most violent conditions.

After the war, he built a successful career that included working for many years at U.S. Steel where he handled the publicity for the construction of Chicago's Picasso statue, the Willis (then Sears) Tower and the John Hancock Building. He even ran for Congress.

In his 30s, he began having



severe, almost daily headaches. He consulted many doctors over the years with no success, until he found Dr. Diamond, who is the founder of both the Diamond Headache Clinic in Chicago and the National Headache Foundation. Dr. Diamond was able to finally find the right treatment for Mr. Ward.

"His headaches were greatly reduced right from the start," Dr. Diamond wrote. "As time went by, he seemed to overcome them altogether."

That might have been the last Dr. Diamond or the NHF heard from Mr. Ward, but in 1999, he wrote to Dr. Diamond with an update about his life and mentioned he was making a bequest to the NHF. With time, however, the bequest was almost forgotten.

In March of 2010, Mr. Ward passed away. His attorneys informed the NHF that it will be the beneficiary of a one-eighth share of his estimated \$19 million estate. This gift is a wonderful bonus for the future of the NHF.

It is the policy of the NHF to

hold bequests, unless otherwise directed by the donor, as part of our endowment fund. The endowment fund is intended to serve as a means of assuring the long-term success of the foundation. As a general rule, the principal is spent only in times of emergency at the board's direction, while the investment income is held to increase the principal unless the board approves its use to address unusual needs or opportunities.

The NHF is deeply grateful for Mr. Ward's generous gift. All gifts to the NHF—of any size—are important to us. Our endowment, like our day-to-day operations, succeeds primarily on the basis of smaller gifts from long-term members and donors.

What's most important to us at the NHF is that we help members like you find the best care for your headaches. If you're inspired to give back with a gift now or in the future, we will be deeply grateful for that as well.

(If you need assistance finding a qualified estate planning attorney in your area, visit www.findlaw.com and select the "Find a Lawyer" tab for a searchable directory.)



Rebecca Martin
NHF Board Member

mutations have been found for common migraine or migraine with aura. Can you tell us about this breakthrough?

Cracking the genetic code of migraine is a long-sought goal and could result in much-improved therapies. Finally, we have two studies that found genetic defects associated with common migraine. The first was what we call a genome-wide association study, which puts a grid of genetic tests on a large population. The study was a collaboration between 40 centers around the world and reviewed the genetic data of more than 50,000 people. This is the first genetic finding where it's not from a single family or a single subtype of migraine, but rather regarding migraine overall in a large group.

The variation they found is on Chromosome 8, located between two genes that are involved in glutamate homeostasis. This is intriguing because the variation allows glutamate to build up in nerve cell connections in the brain. This suggests that perhaps a migraineur's brain is

hypersensitive because the excitatory chemical glutamate is being produced in higher amounts.

In the second study, a group of researchers from Canada took a candidate gene approach, in which they decided that a particular gene might be related to migraine and looked for variations in the gene in one large family with migraine with aura. A mutation in gene KCNK18 was found to inhibit the function of a protein, called TRESK, which regulates the sensitivity of pain centers in the brain. Without adequate production of TRESK, electrical activity in the nerve cells is altered, making the brain more sensitive. So the hyperexcitable story continues.

These are very interesting genetic studies. The next step is to see how prevalent the findings actually are in broader populations. We also need to clarify the molecular physiology to understand exactly what's happening, i.e., what changes in the molecular structure of the DNA change the way the cells and neurons function to promote migraine? Once that

mechanism is clarified, therapies can hopefully be developed to approach the mechanism.

Any last thoughts for our readers?

It's an exciting time to be a migraine clinician with all these options to us presently and then a wealth of opportunities available to us in the future. I'm curious to see whether we find success or failure at the ends of all these lines of research. These new drug opportunities and devices may indeed prove to be the answers we need. I look forward to talking to my patients in five or ten years from now with a wider menu of options.

—By Lesley Reed

Mission Statement

The NHF exists to enhance the healthcare of headache sufferers. It is a source of help to sufferers' families, physicians who treat headache sufferers, allied healthcare professionals and the public. The NHF accomplishes its mission by providing educational and informational resources, supporting headache research and advocating for the understanding of headache as a legitimate neurobiological disease.

Vision Statement

The NHF will be the premier educational and informational resource for headache sufferers, their families, physicians and allied healthcare professionals. The NHF will advocate for headache sufferers. The organization will employ the most effective means to disseminate information and knowledge to headache sufferers and non-sufferers.

Thank You to Our Recent Individual Donors

The NHF wishes to recognize the following individuals for their generous contributions:

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Members with email addresses also automatically receive **NHF News to Know**, a monthly e-newsletter, containing up-to-the minute information on new drug approvals and the latest in headache research. Each issue will arrive in your e-mail inbox. Be sure to include your e-mail address in the below form.

You will receive both of these vital resources with information on living life more fully while living with headache when you join the NHF. To receive your copy of **NHF HeadLines** and **NHF News to Know** online, you pay just \$20 for the year.

Or, for \$25 annually, you can receive **NHF HeadLines** in printed form via the U.S. mail.

To join today, call toll-free 1-888-NHF-5552 with your credit card information. We accept VISA, MasterCard, American Express or Discover. If you prefer, make your check or money order payable to National Headache Foundation. **Start receiving information that can change your life today.**

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