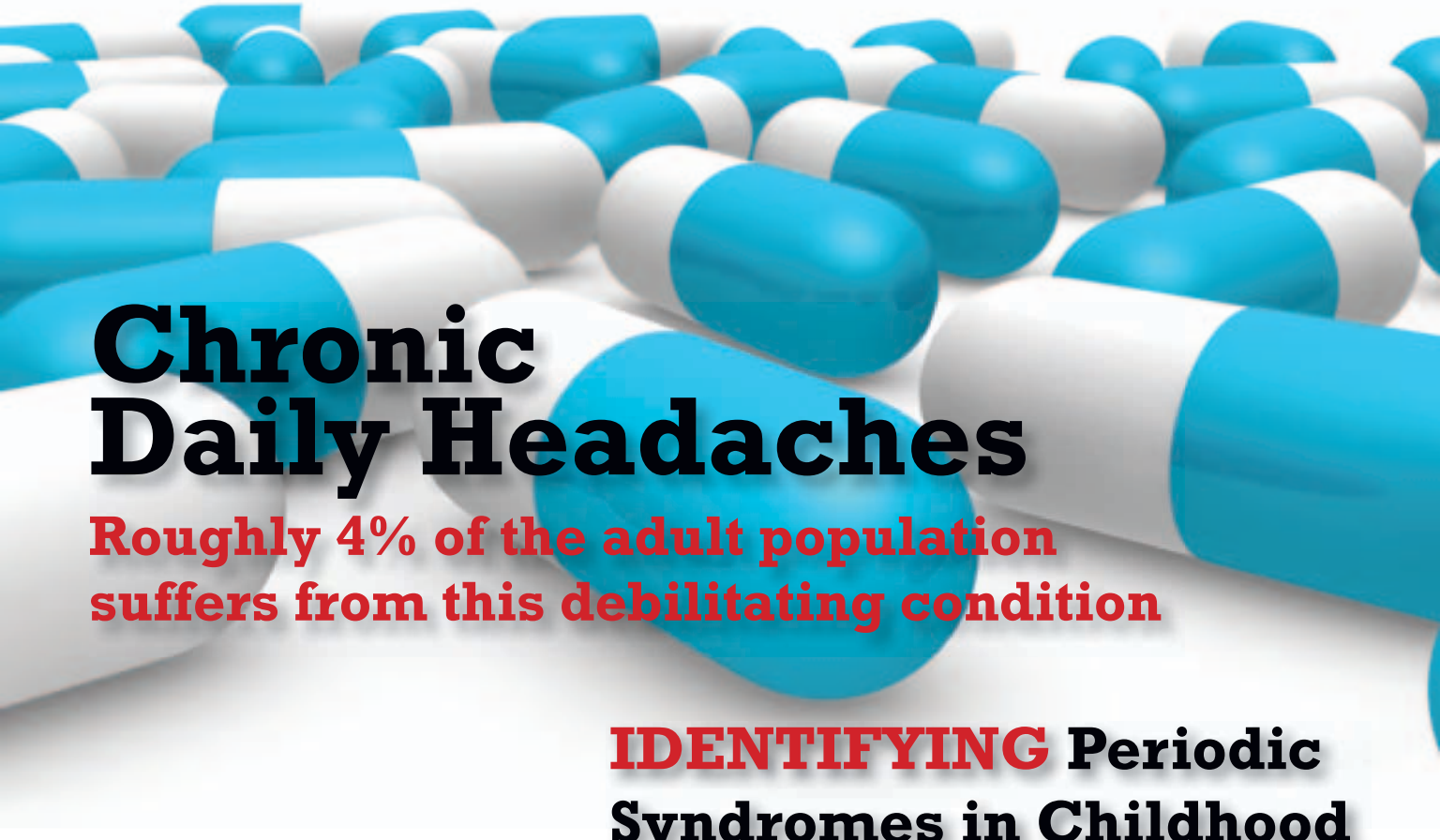
HeadWise

A Voice for People with Migraine and Headache Disorders
From the National Headache Foundation



Chronic Daily Headaches

Roughly 4% of the adult population suffers from this debilitating condition

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Volume 3, Issue 2 • 2013
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NATIONAL HEADACHE FOUNDATION

If you think a headache is just a headache, think again. Millions of Americans suffer from migraines, cluster headaches and other serious headache disorders. Chances are, headache disorders affect you or someone you love.

Join the cause by becoming a member of the National Headache Foundation, the world's largest voluntary organization for the support of people with migraine and headache disorders. For more than 40 years, the NHF has assisted millions of individuals seeking education and treatment for their various conditions.

Individual membership:	**$20 per year**
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FROM THE EXECUTIVE CHAIRMAN:

At the National Headache Foundation, we are happy to report that the comments we received were positive about the new format of *HeadWise*. Thank you for sharing your comments with us.

We also want to remind our readers that you can access the digital version of *HeadWise* at the Foundation's website, **www.headaches.org**. In addition to the magazine, you can read our e-newsletter, *NHF News to Know*, or view the podcasts of our bi-monthly chat rooms. If you would like a printed version of the newsletter, please contact our office at 1-888-NHF-5552 (1-888-643-5552). We are also promoting our objectives of public education and raising awareness of migraine and headache through social networking on Facebook and Twitter. We also encourage you to regularly check our website for news and information about headache and the NHF. For example, the video, *Legacy*, produced for presentation at the NHF gala, *Fête de Masque*, can be viewed at the website. If you, a family member, or friend are looking for a physician who treats headache in your geographical area, please review our *Physician Finder* on the website.

In fulfillment of one of our mission goals, the NHF is pleased to announce that for 2013, we will be granting $250,000 in support of research into headache causes and treatment. Some of the funds have been delegated for research into hemiplegic migraine. The award recipients will be announced in December. These research funds have been supported in part by grants from the Libby Fund as well as the Walter S. & Lucienne Driskill Foundation (Ronald L. Barnard, Esq., Executive Director).

Seymour Diamond, M.D.
Chicago, Illinois

HeadWise™

The National Headache Foundation • www.headaches.org

Mission

The National Headache Foundation exists to enhance the health care of individuals with headache. It is a source of help to their families, physicians and allied health care professionals who treat them, and to 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

The National Headache Foundation is the premier educational and informational resource for individuals with headache, their families, physicians, allied health care professionals, and health policy decision makers. The NHF advocates for those experiencing headache. The organization employs the most effective means to disseminate information and knowledge about headache.

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This publication discusses a broad range of headache information in an effort to inform and educate readers, but is not intended to substitute for the advice of your health care provider. Statements expressed herein are not necessarily those of NHF.

Send Us Your Feedback
Letters, manuscripts, stories, materials or photographs are welcomed but will not be returned. Submission of letters implies the right to edit and publish all or in part. Submissions may be sent to: mfranklin@headaches.org. Please indicate your name, address and phone number.

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Check out additional *HeadWise* and NHF content at www.headaches.org.

NATIONAL HEADACHE FOUNDATION ®

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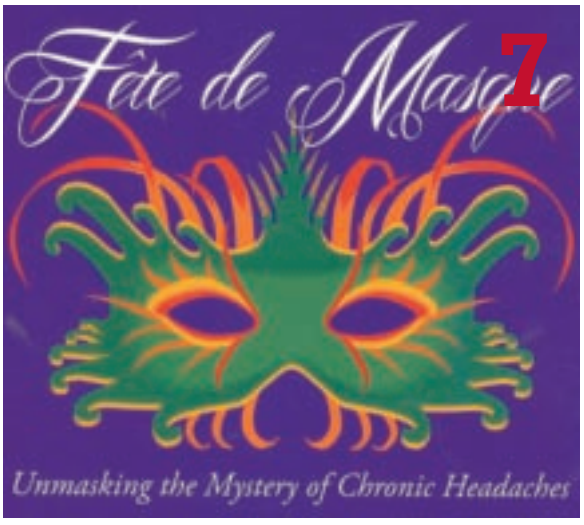

IN EVERY ISSUE

The National Headache Foundation gratefully acknowledges the following individuals and businesses whose support for *Fête de Masque* will further the NHF mission:

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Fête de Masque

Unmasking the Mystery of Chronic Headaches

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our sponsors:

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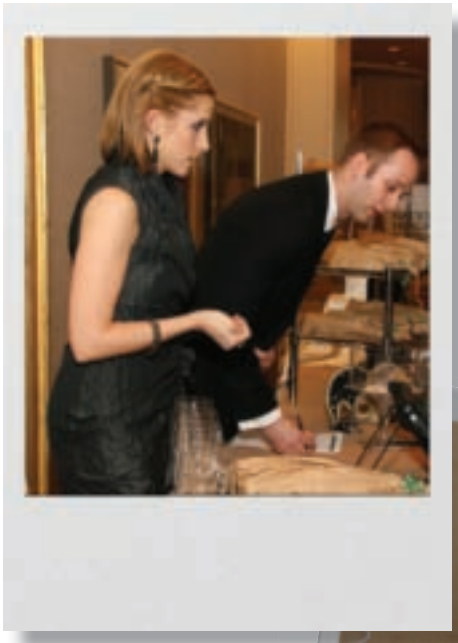

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Congratulations !!

to our happy raffle winner, Sandra Hughes, who lives in Bellevue, Washington, and has been an NHF member since 1999. Sandra shared a note from a friend who was reflecting on her win: "Thinking of the glass half-full: you wouldn't have won the car if you didn't have migraines!"

Sandra Hughes in her 2013 Mazda3

Fête de Masque

1) Emcees Mary Frances Bragiel and John Garcia, with Dr. Seymour Diamond 2) James Beasley receiving award from Dr. Arthur Elkind 3) Dr. K. Michael Welch receiving award from Dr. Roger Cady 4) Drs. Jan Brandes, Seymour Diamond, and K. Michael Welch 5) Drs. Roger Cady, Seymour Diamond, Timothy Smith 6) Dr. and Mrs. Arthur Elkind

The National Headache Foundation's annual fund-raising benefit was held on Saturday, May 4, 2013, at the Ritz-Carlton, Chicago. This year's event, ***Fête de Masque*—Unmasking the Mystery of Chronic Headache Disorders,** was a great success, raising over $200,000. The 230 attendees were welcomed by the Executive Chairman, Seymour Diamond, MD, the co-chair of the evening—June Barnard, and our emcees—Mary Frances Bragiel from WLS AM-890 and John Garcia of ABC-7 Chicago.

In addition to a delicious dinner and dancing to the Roy Vombrach Orchestra, evening festivities included a silent auction which offered over 100 items for bidding, the Wall-of-Wine, and the annual raffle. John Garcia served as our Guest Auctioneer for the Live Auction which included a ride in a vintage T-34 with John Rippinger of the Lima Lima Flight Team, a trip to Costa Rica, 2-city package for Paris and Prague, a South African Photo Safari, and a one-week stay in a Vail, Colorado condo.

The Elaine Diamond Service Award was received by long-time Board member, James Beasley. K. Michael Welch, MB, ChB, FRCP received the Lifetime Achievement Award of the National Headache Foundation. The video, ***Legacy***, featuring Doctor Seymour Diamond, was presented during the evening and is now available for viewing at our website, **www.headaches.org**.

The National Headache Foundation would like to thank our co-chairs, June Barnard and Katie Biggs, as well as our Volunteer Board: Carolyn Achepohl, Colleen Albrecht, Marsha Beste, Rhonda Biller, Jane Canepa, Christina Cordova, Allison DeGeorge, Erika Douglas, Juan C.H. Herrera, Dan Mulka, and James Staulcup, Esq.

Save the date for next year's fund-raiser:
Saturday, May 3, 2014,
Ritz—Carlton, Chicago.

reader mail

You ask. Our headache experts answer.

Tired of searching the internet for answers?

It's time to learn from those in the know. In every issue of *HeadWise*, our experts respond to reader-submitted questions about migraine and headache disorders.

TENSION HEADACHES AND PREGNANCY

I am currently being treated by a neurologist for tension headaches. I am now 13 weeks pregnant. I've been prescribed Tylenol #3, but can only take it up to 4 times per month. I currently have a headache every day that is severe. Do you have any recommendations? I was on a regimen that helped prior to getting pregnant. I know hormones can make it worse. – *Jamie B.*

There really is not much data on the effects of pregnancy on tension-type headaches. However, migraine headaches generally improve during the second and third trimesters of pregnancy. This is probably the result of high levels of estrogen and progesterone that occur during this time. These high hormone levels tend to have a "pain relieving" effect on migraine headache for many pregnant women.

Medications used during pregnancy are rated based on their safety by the Food and Drug Administration. Category A is "controlled studies show no risk;" category B is "controlled studies in humans shows no risk, but animal studies showed risk"; category C is "risk to humans cannot be ruled out"; category d is "possible evidence of risk to humans from human studies"; and category X is "drug is contraindicated".

Acute meds used for tension headaches that are considered low risk include nonsteroidal anti-inflamatories (NSAIDs) and acetaminophen. Acetaminophen is category B throughout pregnancy and so are NSAIDS as long as they are used prior to the 32nd week of pregnancy. There really are no preventatives for tension headache that have a low risk during pregnancy. For example, amitriptyline is considered a category D drug during pregnancy.

Vincent Martin, MD
Department of Internal Medicine
University of Cincinnati Medical School
Cincinnati, OH

IDENTIFYING CLUSTER HEADACHES

I had three major episodes happen between 4 and 7 in the morning and last for two hours. I cannot walk for a couple more hours and don't feel normal until about 8 pm. I wake with a headache or head pressure, very hot, dry mouth, difficulty swallowing, heart racing, muscle weakness, loss of consciousness in and out, vomiting and difficulty speaking. I cannot get up to get help. The first time it took an hour to get to a phone which was right by the bed. I am very hot for about an hour. I then begin to shake and have extreme pain in the cervical area and lower back. It is horrific to experience these episodes. They checked my brain for stroke, tumors, seizures, and then placed a heart monitor on me—with nothing found, no diabetes, no cervical problems. My GP decided they were cluster migraines. I refused the calcium channel blockers (because he seemed uncertain and I felt he had overprescribed proton pump inhibitors and ignored me when I complained of side effects). I had discovered they deplete the system of magnesium. I have been taking 800 mg. magnesium and b-complex and a low dose premarin. I have done very well for 7 months. I started having major acid reflux again though my diet has been greatly altered. I sporadically started taking protonics again. – *Sandy H.*

The episodes do sound alarming and given the assortment of symptoms in addition to headache they may represent any number of diagnostic possibilities. The headache may either be primary (migraine, cluster, tension), as the source of the problem, or secondary, merely a symptom of another problem. Of the primary headaches, cluster attacks may indeed be as short as 2 hours, but the muscle weakness and shakiness and the impairments in speech, swallowing and consciousness are not seen with cluster. A variant of migraine known as basilar-type can be associated with a number of other symptoms such as difficulties with speech and swallowing but these typically begin at a young age and the attacks almost always last for many hours or days. The headache may merely be a secondary symptom of another medical condition, and it appears your physicians have considered options such as seizures, stroke-like episodes, or problems with your heart. Other possibilities can include unusual reactions to medications or metabolic/hormonal imbalances. I have seen several cases similar to yours which have eventually been diagnosed as panic attacks. Often patients are surprised to learn such attacks can awaken them from sleep without any cause, and these can provoke a number of different symptoms beyond the expected sense of fear or anxiety.

Robert Kaniecki, MD
The Headache Center
University of Pittsburgh
Pittsburgh, PA

IDIOPATHIC STABBING HEADACHE

I have what they call stabbing or icepick headaches. Why do people get this?
– *Rosemary C.*

I wish we knew! These sharp pains in the head have carried a number of different labels over the years, including idiopathic stabbing headache, needle-in-the-eye syndrome, and jabs-and-jolts syndrome. The "idiopathic" term is illuminating since this implies the cause is unknown. Now known formally as primary stabbing headache, I have always preferred the term you used, "ice pick" headaches, since patients immediately identify that term with their own experiences. Such head pains are brief, lasting seconds with perhaps minutes of lingering pain, and may be isolated to a single location in some people while others experience

them in random spots of the head. Often they are seen in conjunction with other primary headache such as migraine, although the stabbing headaches and more typical migraine attacks do not typically occur simultaneously. They are too brief to treat as they occur, but if they become quite frequent a medication known as indomethacin may be helpful.

Robert Kaniecki, MD
The Headache Center
University of Pittsburgh
Pittsburgh, PA

VISUAL FIELD LOSS AND HEADACHE

I feel as though there are times when I get a migraine that I take too much medicine. Would this cause the headache to not go away? –Sherry P.

Thank you for an important question. The fact is that most medicines used to treat attacks of migraine can make future attacks more frequent and challenging to treat. This condition is called medication overuse headache and is an important risk factor for migraine to go from being episodic to chronic (more than 15 days of headache per month). The acute medications most incriminated in this process include opioids, butalbital, triptans, ergotamines, and caffeine–containing analgesics. For this group of medications a person is at risk if they use the medication 10 or greater days per month. For nonsteroidal anti-inflammatories and simple analgesics, the limit is generally set at 15 or more days per month. When migraines are becoming more frequent and the use of acute medication is increasing, it is wise to see your healthcare professional and consider preventive medications and behavioral adjuncts that can reduce the frequency of migraine.

Roger K. Cady, MD
Headache Care Center
Springfield, MO

NEW DAILY PERSISTENT HEADACHE

My headache began January 21 of last year 2012 and I have had it every day since. From what I have read, my situation is like others who have this condition. Meds don't seem to work so you continue to try new ones via a neurologist who specializes in headaches. All tests are clear – MRI, MRA, MRV, CT scans, blood work, spinal tap. I occasionally try alternative methods– Botox, occipital nerve block, chiropractic care, naturopath, Chinese herbalist, massage, yoga, Thai yoga therapy-none of which help with the headache either.

I have read that this can last from months to decades. Is there any current information on the most successful approaches to make the headache go away? –Amy K.

New Daily Persistent Headache (NDPH) is unfortunately a poorly understood headache disorder. It is characterized by the onset of a headache that becomes chronic very rapidly. In many cases, as is your history, people identify the very day the headaches started and report that it has been present since that time. The headache typically waxes and wanes throughout the day and is of moderate intensity. Associated symptoms similar to migraine are often present though less intense. Sometimes this headache is preceded by a viral infection but no specific virus has been identified and this is certainly not the case for everyone.This headache pattern can persist for years and as such it can be a very disabling headache syndrome.

There is no specific treatment for NDPH and generally migraine preventive medications are tried to see if they can be beneficial. Some specialists feel gabapentin may be effective in some cases, but there is little data to support this and most of the time it is a trial and

error process. Non-pharmacological headache management is often beneficial. Hopefully, future research will shed light on this headache syndrome and with it effective treatment.

Roger Cady, MD
Headache Care Center
Springfield, MO

MELATONIN FOR HEADACHES

I read the abstract on the use of Agomelatine to treat migraine in several patients. I was wondering if you knew more about the use of melatonin itself to help prevent migraines. – *John P.*

Melatonin is a hormone produced in the pineal gland in the brain that regulates sleep. Many studies have linked sleep with migraine. For example, studies show that headaches become more frequent when people regularly sleep 6 or fewer hours per night. Melatonin may also affect pain centers in the brain.

Melatonin has been directly studied as a migraine prevention treatment. In one study, 3 mg of melatonin was taken 30 minutes before bedtime for 3 months, the number of migraines decreased by almost two-thirds and migraine severity decreased by half. A few people taking melatonin reported side effects of excessive sleepiness, hair loss, and increased sexual libido.

Interestingly, melatonin levels have been shown to decrease during menses in women with menstrual migraine, which may suggest that taking melatonin around your menstrual period may help reduce menstrual migraines.

Dawn A. Marcus, MD
University of Pittsburgh
Pittsburgh, PA

In response to Dr. Seymour Diamond's request for comments on the revised ***HeadWise*** format:

Thank you, Dr. Diamond and *HeadWise* staff and contributors, for the much improved *HeadWise*. The more direct approach to the science and headache education and discussions is welcome as the primary format, but the occasional articles on patient successes based on folk medicine, heresay, or trial and error are also very interesting and stimulating and I hope will also appear! Having endured migraines since about nine years old, 70 years ago, poor toleration of medications have limited success in preventing the problem.
Harvey B.
Studio City, California

As a long time subscriber, I just want to thank you for the new approach in the *HeadWise* magazine. I pretty much skimmed over it when it was all the lifestyle information, things available in more general magazines. I'm interested in research. As a migraine and CDH sufferer for the past 45 years, and siblings with the same, I'm looking for what's down the road in treatments as well as understanding new theories for the causes of headaches. I'm 68 and don't expect any answers in my lifetime, but if better pain medications could be found, something not in the Imitrex or Botox lines, neither of which helps, I'd sure have more hope that these next 30 years for me will be better.Thanks for all the work you do for those of us out here!
Marge
Tucson, AZ

CHRONIC DAILY HEADACHES

Kathleen Mullin, MD
Assistant Professor Department of Neurology
Headache and Pain Medicine
Ichahn School of Medicine
Mount Sinai Medical Center
New York, NY

Chronic Daily Headache (CDH), while not an officially recognized diagnostic entity at this time, is a well-known condition commonly seen in headache clinics throughout the country. In practice, when patients have 15 or more days of headache a month for 3 consecutive months, and no underlying medical condition explaining the headaches, they are said to suffer from "Chronic Daily Headache." Roughly 4% of the adult population suffers from CDH. It is a painful and debilitating condition that affects its sufferers physically, socially, and mentally.

DIAGNOSIS

Chronic Daily Headache is a primary headache disorder, as the pain is not secondary to an underlying condition such as infection, inflammation, or tumor. Most patients with CDH have long-duration headaches, which by definition last 4 hours or longer. Within this category are various headache subtypes including Chronic Migraine, Chronic Tension-Type Headache, Cluster Headache Variant (Hemicrania Continua), and New Daily Persistent Headache.

Chronic Migraine is defined as a headache on 15 or more days per month, and at least half of which must fulfill the criteria for migraine headache, and for 4 or more hours. Migraine headaches are generally one-sided, pulsating headaches that are moderate to severe in intensity and accompanied by light and sound sensitivity, nausea, and made worse by routine activity. Frequently, patients transform from episodic migraines (less than 15 days a month) to chronic migraines over time. There are certain factors discussed later, which make certain individuals more likely to transform than others.

Chronic tension-type headache is defined as a tension type headache on 15 or more days a month. Tension-type headaches cause mild to moderate pain described as a "band-like" pressure around the head. They are not associated with nausea or vomiting and can have either light or sound sensitivity but not both.

New Daily Persistent Headache (NDPH) is also a pressure-like, bilateral headache. However, it must occur daily within 3 days of onset. This differs from Chronic Tension-Type and Chronic Migraine, which usually transform from episodic to chronic over months to years. Many patients with NDPH, because they have no previous episodic headache history, are able to tell the physician precisely what day the headache started. The onset of NDPH may directly follow a viral illness or surgery but this is not required for diagnosis.

Finally, Cluster Variant Headache (Hemicrania Continua) is a continuous baseline pain on one side of the head with superimposed painful exacerbations. These exacerbations are accompanied by redness or tearing of the eye, nasal congestion or runny nose, or eyelid drooping—all occurring on the same side as the pain.

Medication Overuse Headache, while not a primary headache disorder, is often very difficult to separate from the other long-duration chronic headaches. They are likely to occur when a prescription for acute therapy such as a triptan, opioid, or butalbital-containing drug is used more than 10 days in a month, or an over-the-counter medication such as Advil, Excedrin, or Tylenol, on more than 15 days, for 3 consecutive months. CDH patients often develop Medication Overuse Headaches in addition to their underlying primary headache disorder, such as migraine or tension-type headache. Because people experiencing daily pain frequently take something daily to alleviate their symptoms, it is difficult to distinguish which headaches are caused by the overuse of medication and which are part of their underlying primary headache disorder.

RISK FACTORS FOR CHRONIFICATION

Studies have shown that certain risk factors make some patients more likely to develop chronic headaches than others. For example, we know being female increases your chances of developing more frequent headaches. The same is true for obesity, low socioeconomic status, sleep apnea, medication overuse, and having a positive family history for chronic headaches. Patients who suffer from anxiety, depression, undergo a major life stressor, or suffer head trauma are also at an increased risk for the development of chronic daily headaches. Some of these risk factors cannot be avoided or altered. Those which can, such as sleep apnea, obesity, depression, and anxiety should be diagnosed and addressed to improve headache outcomes.

"TREATMENT REGIMENS FOR CHRONIC HEADACHES CONCENTRATE ON WHAT TO TAKE TO PREVENT THE HEADACHE–NOT ON WHAT TO TAKE FOR ACUTE PAIN."

TREATMENT

Both for the patients as well as the practitioners, there is no magic bullet for the treatment of Chronic Daily Headaches. For Cluster Headache Variant (Hemicrania Continua), the most effective therapy is the use of indomethacin. This drug, which is a nonsteroidal anti-inflammatory agent (NSAID), virtually cures the headache, although not without side effects. For this reason, most patients who experience a side-locked daily headache are given a brief trial of indomethacin. The remaining primary chronic headache syndromes do not have a single effective medication. It often takes months, if not years, of trial and error and a strong working relationship between the doctor and the patient to find the optimal regimen. A key conversation between the patient and the physician regarding expectations should take place early in the treatment period. It is important for both parties to understand that the headaches may never completely resolve. Appropriate goals include positive changes: fewer headaches, less severe headaches, and less disabling headaches.

Lifestyle modifications should be addressed in all patients. Studies have shown that trigger avoidance, sleep, diet, exercise, and stress levels all play a role in headache frequency. Each headache sufferer is unique and therefore has unique triggers. Patients should pay attention to their own predictable provoking factors and avoid them, moving forward to help eliminate avoidable headaches It is imperative that all headache sufferers not only get at least 8 hours of sleep but that those hours are consistent, including weekends and vacations. Additionally, chronic headache patients should maintain relatively consistent blood sugars by eating many small meals throughout the day rather than fasting and then eating a large meal, which causes a rapid and large fluctuation in blood sugar. Regular aerobic exercise should be incorporated into every headache sufferer's day. Not only does exercise produce endorphins, which are our bodies' natural pain killers but it helps with weight loss -- reducing the chance of obesity, a known risk factor for frequent headaches. Exercise also helps patients sleep, eliminating another trigger. Stress management, cognitive behavioral therapy, relaxation techniques, biofeedback, etc. are all useful in helping headache patients cope with the stress of daily living and should be encouraged whenever possible.

There are various medications studied and shown to be effective for primary episodic migraine headache prevention, and are used traditionally for chronic headaches as well. These include: anti-seizure medications such as topiramate and valproate; blood pressure medications such as propranolol, metoprolol, and timolol; as well as, antidepressants such as amitriptyline and venlafaxine. As of now, the only medication that has FDA approval for the treatment of Chronic Migraine is onabotulinumtoxinA (Botox). In addition to prescription medications, herbal supplements, (namely magnesium), feverfew, and riboflavin (Vitamin B2) have good evidence for

helping prevent frequent headaches and are generally well-tolerated.

As important as the active prevention of these daily headaches is, is the understanding that they cannot be treated acutely. As previously discussed, using a prescription or over-the-counter medication on 10 or 15 more days per month respectively, can lead to Medication Overuse Headaches. Treatment regimens for Chronic Headaches do not concentrate on what to take for acute pain but rather, what to take to prevent it. This is a vital point that must be understood and followed as any attempt at treating the headaches will likely be thwarted by the effects of overusing acute medications. With time, patience, dedication, and a good working relationship with a headache specialist, many patients who suffer from Chronic Daily Headache do report significant improvement. **HW**

CASE REPORT

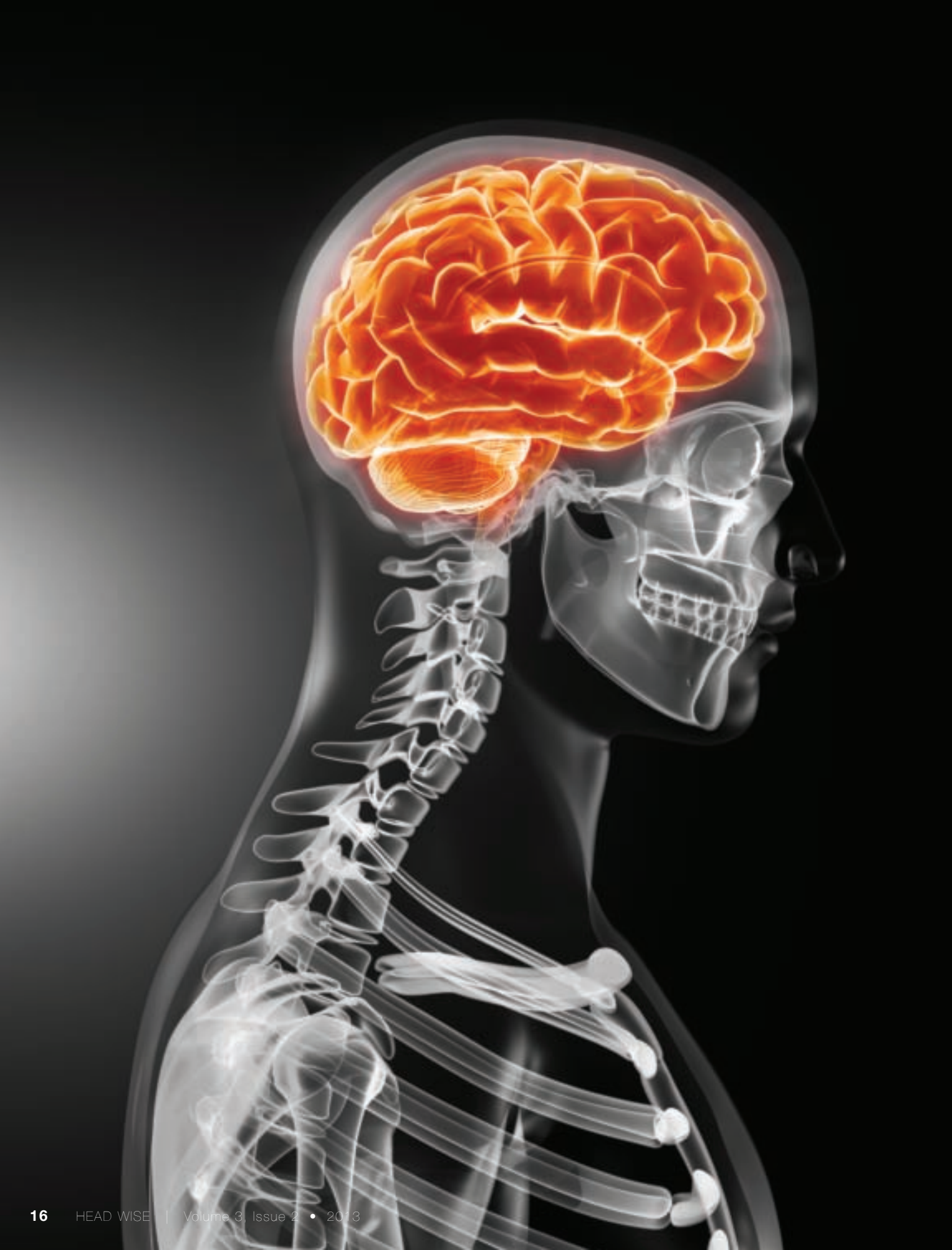
Sarah is a 26-year-old woman who initially presented with a right-sided, throbbing headache associated with mild nausea, light sensitivity, and tenderness of her scalp. Each attack would last approximately 6 hours and was not relieved by Tylenol or Advil. Upon initial presentation, she reported roughly two attacks per month. Her physical examination, including a thorough neurologic exam, was normal. She had no other medical history. Her family history was significant for a mother with severe headaches which she seems to have now "disappeared".

Sarah was initially diagnosed with episodic migraine without aura and given a prescription for sumatriptan 100mg tablets to be taken at the onset of her headache. For a few years, she continued to have a headache every few months that was aborted effectively with sumatriptan.

However, 5 years later she returned to the office. Her headaches had gradually increased to daily over that time period. She reported that every day she experienced some baseline discomfort, and 3 to 4 times a week, she had painful exacerbations that prevented her from doing her routine activities. She felt constantly sensitive to light and sound and felt her whole head was tender to touch. Upon further investigation, it was discovered that one year ago Sarah lost her job and was frequently arguing with her husband over finances. She was very tearful in the office and admitted to feeling anxious and depressed about her current situation. She often had difficulty falling asleep as she was up worrying. She was taking Advil at least 4 days a week and was using 12 pills of sumatriptan each month. General medical and neurologic exams remained normal.

Sarah was started on topiramate which was titrated up to 100mg daily. Additionally, she was counseled on the effect of medication overuse on her headaches and was asked to limit her usage of acute medications (both sumatriptan and Advil) to no more than 3 days a week. She kept a headache diary for 3 months and upon her return, noted that her headache frequency and severity had decreased. She was able to use biofeedback techniques to relax and tolerate the milder headaches and therefore was able to reduce her usage of acute medications. Her baseline discomfort was significantly reduced and she now had roughly two headaches a week that were effectively aborted with sumpatriptan. In addition, she had started to see a therapist with her husband and practiced relaxation techniques at night to help her sleep.

Unfortunately, Sarah transformed from episodic migraine into chronic migraine. She had multiple risk factors including a major life stressor, insomnia, depression, and anxiety. Additionally, she developed Medication Overuse Headache. By addressing and modifying her risk factors and making a concerted effort to reduce her usage of acute medication, Sarah was able to achieve the preventative effects of topiramate and subsequently noted a significant reduction in her headache frequency and severity.



Chiari Malformation Type 1

WHAT TO KNOW AND WATCH OUT FOR

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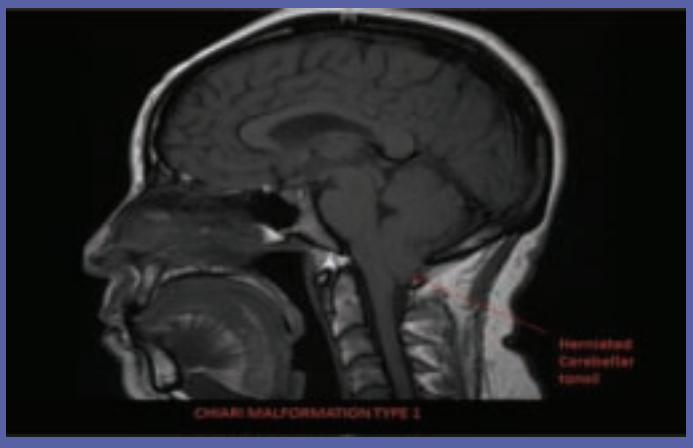
For individuals who complain of a headache due to exertion, there is often the question of a serious cause for their headache pain. It can be especially frightening to experience a severe headache because of coughing, exercise, or sexual activity. MRI, CT scans, and a thorough history are essential to rule-out a possible life-threatening basis for the pain. One of the causes that must be considered in exertional headache are the Chiari malformations. Chiari malformations are a group of developmental abnormalities that are located in the back of the brain. These malformations occur when the posterior or back region of the skull which contains the cerebellum is either too small or deformed, thus putting pressure on and crowding these nervous system structures. The lowermost portion of the cerebellum, known as the cerebellar tonsils, become displaced downwards into the upper spinal canal, and thus interferes with the normal flow of the cerebrospinal fluid (CSF) which circulates around the brain. These actions may lead to increased pressure inside the cranium and can also cause pressure on the upper spinal cord.

Chiari malformations are classified into four different types depending on the part of the brain tissue that is displaced into the spinal canal and whether other developmental abnormalities are present. This article will focus on Chiari malformation type I – the most common type of these malformations.

DEFINITION

Chiari malformations are a group of developmental abnormalities that are located in the back of the brain. These malformation occur when the posterior or back region of the skull which contains the cerebellum is either too small or deformed, thus putting pressure on and crowding these nervous system structures. The lowermost portion of the cerebellum, known as the cerebellar tonsils, become displaced downwards into the upper spinal canal, and thus interferes with the normal flow of the cerebrospinal fluid (CSF) which circulates around the brain. These actions may lead to increased pressure inside the cranium and can also cause pressure on the upper spinal cord.



Chiari malformations are classified into four different types depending on the part of the brain tissue that is displaced into the spinal canal and whether other developmental abnormalities are present. This article will focus on Chiari malformation type I—the most common type of these malformations.

CHIARI MALFORMATION TYPE I

Chiari Malformation Type I is usually diagnosed during adolescence or in adulthood. In this type of malformation, the cerebellar tonsils become displaced below the foramen magnum. The foramen magnum (from the Latin: "great hole") is a large opening in the occipital bone of the cranium. It is one of the several openings (the foramina), through which the medulla oblongata enters and exits the skull vault. Chiari malformation Type I is usually asymptomatic.

SYMPTOMS

Usually, Chiari Type I Malformation is an incidental finding; however, depending on the severity and extent of the abnormality, it can appear with different clinical symptoms. The onset of symptoms is usually in the second or third decades of life.

1. Headaches: Headaches are the most common symptom associated with Chiari type I malformation. These headaches often worsen with coughing, sneezing, or straining. Patients may also complain of headaches at the base of the skull which can worsen with exertion.
2. Neck pain: Individuals with Chiari Malformation Type 1 may also experience neck pain and stiffness. Pain radiating to the shoulders may be present.
3. Unsteadiness: These patients may complain of an unsteady gait and a feeling they are off-balance.
4. Difficulty with dexterity: Some patients may experience impaired fine motor skills such as trouble writing or using utensils.
5. Numbness and tingling of hands and feet: Tingling of the hands is more common.
6. Visual problems: Pain behind the orbit of the eye, and visual difficulties such as floaters, blurred vision, double vision, peripheral visual loss, and downbeat nystagmus (downward jerky movements of the eyes) may be reported.
7. Dizziness or vertigo.
8. Trouble swallowing.
9. Fluctuating hearing loss
10. Shooting facial or throat pain
11. Drop attacks: Rarely, patients will complain of unexplained falls due to leg buckling.
12. Syncope: Fainting associated with sneezing or coughing is unusual.

Pictured: Seymour Diamond, MD (photo by Linda Schwartz Photography)

SYMPTOMS IN ADVANCED CASES OF CHIARI MALFORMATION

When the Chiari malformation progresses, it can lead to serious complications including:

1. Hydrocephalus: Hydrocephalus is a build-up of fluid inside the skull. The word, hydrocephalus, means "water on the brain." When present, patients have severe headaches and episodes of blurry vision.
2. Paralysis: This can be caused by increased pressure and crowding of the upper spinal cord structures.
3. Syringomyelia: In some people, a cyst (called syrinx) may form within the spinal cord.

DIAGNOSIS

After obtaining a thorough history from the patient, the physician performs a detailed neurologic examination. The diagnosis of Chiari Malformation type I is corroborated with brain imaging preferably with magnetic resonance imaging (MRI). MRI of the brain provides a detailed, three-dimensional picture of the brain. A cine-phase contrast MRI can help determine the flow dynamics of CSF.

Computed tomography (CT) of the head can help identify any bony abnormalities or the presence of hydrocephalus. CT is usually done when an MRI is contraindicated. The severity of Chiari malformation depends on the presentation of symptoms and the extent of the descent of the cerebellar tonsils below the foramen magnum. Downward extension of the cerebellar tonsils up to 3mm is considered normal. When the cerebellar tonsils lie 3 to 5 mm below the foramen magnum, it is considered borderline. Extension of the cerebellar tonsils below the foramen magnum (more than 5mm) is considered abnormal.

TREATMENT

Chiari malformation type I is often an incidental finding and does not require treatment when patients do not have symptoms or if the symptoms are mild. If the malformation is considered abnormal, then more aggressive treatment may be required. Surgical treatment may be considered. The surgical intervention of choice is decompression of the posterior fossa. The posterior cranial fossa contains the brainstem and cerebellum.

In symptomatic patients, surgical decompression is recommended in the presence of a syrinx. Even if the patient does not have symptoms but does have an associated syrinx, surgical decompression may be needed. If hydrocephalus is present, a shunt system may be placed to drain the excess CSF in order to relieve the pressure.

HW

Save the Date

National Headache Foundation
28th Annual Fund-Raising Event

Saturday
May 3, 2014

Ritz-Carlton Chicago

IMPORTANT SAFETY INFORMATION (Continued)

Do not take BOTOX® (onabotulinumtoxinA) if you: are allergic to any of the ingredients in BOTOX® (see Medication Guide for ingredients); had an allergic reaction to any other botulinum toxin product such as *Myobloc*® (rimabotulinumtoxinB), *Dysport*® (abobotulinumtoxinA), or *Xeomin*® (incobotulinumtoxinA); have a skin infection at the planned injection site.

The dose of BOTOX® is not the same as, or comparable to, another botulinum toxin product.

Serious and/or immediate allergic reactions have been reported. These reactions include itching, rash, red itchy welts, wheezing, asthma symptoms, or dizziness or feeling faint. Tell your doctor or get medical help right away if you experience any such symptoms; further injection of BOTOX® should be discontinued.

Tell your doctor about all your muscle or nerve conditions such as amyotrophic lateral sclerosis (ALS or Lou Gehrig's disease), myasthenia gravis, or Lambert-Eaton syndrome, as you may be at increased risk of serious side effects including severe dysphagia (difficulty swallowing) and respiratory compromise (difficulty breathing) from typical doses of BOTOX®.

Tell your doctor about all your medical conditions, including if you: have or have had bleeding problems; have plans to have surgery; had surgery on your face; weakness of forehead muscles, such as trouble raising your eyebrows; drooping eyelids; any other abnormal facial change; are pregnant or plan to become pregnant (it is not known if BOTOX® can harm your unborn baby); are breastfeeding or plan to breastfeed (it is not known if BOTOX® passes into breast milk).

Tell your doctor about all the medicines you take, including prescription and non-prescription medicines, vitamins, and herbal products. Using BOTOX® with certain other medicines may cause serious side effects. **Do not start any new medicines until you have told your doctor that you have received BOTOX® in the past.**

Especially tell your doctor if you: have received any other botulinum toxin product in the last 4 months; have received injections of botulinum toxin such as *Myobloc*®, *Dysport*®, or *Xeomin*® in the past (be sure your doctor knows exactly which product you received); have recently received an antibiotic by injection; take muscle relaxants; take an allergy or cold medicine; take a sleep medicine; take anti-platelets (aspirin-like products) or anti-coagulants (blood thinners).

Other side effects of BOTOX®include: dry mouth, discomfort or pain at the injection site, tiredness, headache, neck pain, and eye problems: double vision, blurred vision, decreased eyesight, drooping eyelids, swelling of your eyelids, and dry eyes.

For more information refer to the Medication Guide or talk with your doctor.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch or call 1-800-FDA-1088.

Please refer to full Medication Guide including Boxed Warning on the following pages.

BOTOX® onabotulinumtoxinA

For adults with Chronic Migraine, 15 or more headache days a month, each lasting 4 hours or more,

BOTOX® is the first and only preventive treatment proven to reduce headache days every month.

BOTOX® is the only FDA-approved, preventive treatment that is injected by a doctor every 3 months for people with Chronic Migraine. BOTOX® prevents up to 9 headache days a month, versus up to 7 days for placebo. BOTOX® is not approved for adults with migraine who have 14 or fewer headache days a month.

FOR ADULTS WITH
CHRONIC MIGRAINE

BOTOX® onabotulinumtoxinA

Find a headache specialist near you at
BotoxChronicMigraine.com

BOTOX® is a prescription medicine that is injected to prevent headaches in adults with Chronic Migraine who have 15 or more days each month with headache lasting 4 or more hours each day in people 18 years or older. It is not known whether BOTOX® is safe or effective to prevent headaches in patients with migraine who have 14 or fewer headache days each month (episodic migraine).

IMPORTANT SAFETY INFORMATION

BOTOX® may cause serious side effects that can be life threatening. Call your doctor or get medical help right away if you have any of these problems any time (hours to weeks) after injection of BOTOX®:

- **Problems swallowing, speaking, or breathing,** due to weakening of associated muscles, can be severe and result in loss of life. You are at the highest risk if these problems are pre-existing before injection. Swallowing problems may last for several months.
- **Spread of toxin effects.** The effect of botulinum toxin may affect areas away from the injection site and cause serious symptoms including: loss of strength and all-over muscle weakness, double vision, blurred vision and drooping eyelids, hoarseness or change or loss of voice (dysphonia), trouble saying words clearly (dysarthria), loss of bladder control, trouble breathing, trouble swallowing. **If this happens, do not drive a car, operate machinery, or do other dangerous activities.**

There has not been a confirmed serious case of spread of toxin effect away from the injection site when BOTOX® has been used at the recommended dose to treat Chronic Migraine.

Please see additional Important Safety Information on adjacent page.

MEDICATION GUIDE
BOTOX® and BOTOX® Cosmetic (Boe-tox) (onabotulinumtoxinA) for Injection

Read the Medication Guide that comes with **BOTOX** or **BOTOX Cosmetic** before you start using it and each time it is given to you. There may be new information. This information does not take the place of talking with your doctor about your medical condition or your treatment. You should share this information with your family members and caregivers.

What is the most important information I should know about BOTOX and BOTOX Cosmetic?

BOTOX and BOTOX Cosmetic may cause serious side effects that can be life threatening, including:

- **Problems breathing or swallowing**
- **Spread of toxin effects**

These problems can happen hours, days, to weeks after an injection of BOTOX or BOTOX Cosmetic. Call your doctor or get medical help right away if you have any of these problems after treatment with BOTOX or BOTOX Cosmetic:

1. Problems swallowing, speaking, or breathing. These problems can happen hours, days, to weeks after an injection of BOTOX or BOTOX Cosmetic usually because the muscles that you use to breathe and swallow can become weak after the injection. Death can happen as a complication if you have severe problems with swallowing or breathing after treatment with **BOTOX** or **BOTOX Cosmetic**.

- People with certain breathing problems may need to use muscles in their neck to help them breathe. These people may be at greater risk for serious breathing problems with **BOTOX** or **BOTOX Cosmetic**.
- Swallowing problems may last for several months. People who cannot swallow well may need a feeding tube to receive food and water. If swallowing problems are severe, food or liquids may go into your lungs. People who already have swallowing or breathing problems before receiving **BOTOX** or **BOTOX Cosmetic** have the highest risk of getting these problems.

2. Spread of toxin effects. In some cases, the effect of botulinum toxin may affect areas of the body away from the injection site and cause symptoms of a serious condition called botulism. The symptoms of botulism include:

- loss of strength and muscle weakness all over the body
- double vision
- blurred vision and drooping eyelids
- hoarseness or change or loss of voice (dysphonia)
- trouble saying words clearly (dysarthria)
- loss of bladder control
- trouble breathing
- trouble swallowing

These symptoms can happen hours, days, to weeks after you receive an injection of **BOTOX** or **BOTOX Cosmetic**.

These problems could make it unsafe for you to drive a car or do other dangerous activities. See "What should I avoid while receiving **BOTOX** or **BOTOX Cosmetic**?"

There has not been a confirmed serious case of spread of toxin effect away from the injection site when **BOTOX** has been used at the recommended dose to treat chronic migraine, severe underarm sweating, blepharospasm, or strabismus, or when **BOTOX Cosmetic** has been used at the recommended dose to treat frown lines.

What are BOTOX and BOTOX Cosmetic?

BOTOX is a prescription medicine that is injected into muscles and used:

- to treat overactive bladder symptoms such as a strong need to urinate with leaking or wetting accidents (urge urinary incontinence), a strong need to urinate right away (urgency), and urinating often (frequency) in adults when another type of medicine (anticholinergic) does not work well enough or cannot be taken.
- to treat leakage of urine (incontinence) in adults with overactive bladder due to neurologic disease when another type of medicine (anticholinergic) does not work well enough or cannot be taken.
- to prevent headaches in adults with chronic migraine who have 15 or more days each month with headache lasting 4 or more hours each day.
- to treat increased muscle stiffness in elbow, wrist, and finger muscles in adults with upper limb spasticity.
- to treat the abnormal head position and neck pain that happens with cervical dystonia (CD) in adults.
- to treat certain types of eye muscle problems (strabismus) or abnormal spasm of the eyelids (blepharospasm) in people 12 years and older.

BOTOX is also injected into the skin to treat the symptoms of severe underarm sweating (severe primary axillary hyperhidrosis) when medicines used on the skin (topical) do not work well enough.

BOTOX Cosmetic is a prescription medicine that is injected into muscles and used to improve the look of moderate to severe frown lines between the eyebrows (glabellar lines) in adults younger than 65 years of age for a short period of time (temporary).

It is not known whether **BOTOX** is safe or effective in people younger than:

- 18 years of age for treatment of urinary incontinence
- 18 years of age for treatment of chronic migraine
- 18 years of age for treatment of spasticity
- 16 years of age for treatment of cervical dystonia
- 18 years of age for treatment of hyperhidrosis
- 12 years of age for treatment of strabismus or blepharospasm

BOTOX Cosmetic is not recommended for use in children younger than 18 years of age.

It is not known whether **BOTOX** and **BOTOX Cosmetic** are safe or effective to prevent headaches in people with migraine who have 14 or fewer headache days each month (episodic migraine).

It is not known whether **BOTOX** and **BOTOX Cosmetic** are safe or effective for other types of muscle spasms or for severe sweating anywhere other than your armpits.

Who should not take BOTOX or BOTOX Cosmetic?

Do not take **BOTOX** or **BOTOX Cosmetic** if you:

- are allergic to any of the ingredients in **BOTOX** or **BOTOX Cosmetic**. See the end of this Medication Guide for a list of ingredients in **BOTOX** and **BOTOX Cosmetic**.
- had an allergic reaction to any other botulinum toxin product such as *Myobloc®*, *Dysport®*, or *Xeomin®*
- have a skin infection at the planned injection site
- are being treated for urinary incontinence and have a urinary tract infection (UTI)
- are being treated for urinary incontinence and find that you cannot empty your bladder on your own (only applies to people who are not routinely catheterizing)

What should I tell my doctor before taking BOTOX or BOTOX Cosmetic?

Tell your doctor about all your medical conditions, including if you:

- have a disease that affects your muscles and nerves (such as amyotrophic lateral

sclerosis [ALS or Lou Gehrig's disease], myasthenia gravis or Lambert-Eaton syndrome). See "What is the most important information I should know about **BOTOX** and **BOTOX Cosmetic**?"

- have allergies to any botulinum toxin product
- had any side effect from any botulinum toxin product in the past
- have or have had a breathing problem, such as asthma or emphysema
- have or have had swallowing problems
- have or have had bleeding problems
- have plans to have surgery
- had surgery on your face
- have weakness of your forehead muscles, such as trouble raising your eyebrows
- have drooping eyelids
- have any other change in the way your face normally looks
- have symptoms of a urinary tract infection (UTI) and are being treated for urinary incontinence. Symptoms of a urinary tract infection may include pain or burning with urination, frequent urination, or fever.
- have problems emptying your bladder on your own and are being treated for urinary incontinence
- are pregnant or plan to become pregnant. It is not known if **BOTOX** or **BOTOX Cosmetic** can harm your unborn baby.
- are breast-feeding or plan to breastfeed. It is not known if **BOTOX** or **BOTOX Cosmetic** passes into breast milk.

Tell your doctor about all the medicines you take, including prescription and nonprescription medicines, vitamins and herbal products. Using **BOTOX** or **BOTOX Cosmetic** with certain other medicines may cause serious side effects. **Do not start any new medicines until you have told your doctor that you have received BOTOX or BOTOX Cosmetic in the past.**

Especially tell your doctor if you:

- have received any other botulinum toxin product in the last four months
- have received injections of botulinum toxin, such as *Myobloc*® (rimabotulinumtoxinB), *Dysport*® (abobotulinumtoxinA), or *Xeomin*® (incobotulinumtoxinA) in the past. Be sure your doctor knows exactly which product you received.
- have recently received an antibiotic by injection
- take muscle relaxants
- take an allergy or cold medicine
- take a sleep medicine
- take anti-platelets (aspirin-like products) and/or anti-coagulants (blood thinners)

Ask your doctor if you are not sure if your medicine is one that is listed above.

Know the medicines you take. Keep a list of your medicines with you to show your doctor and pharmacist each time you get a new medicine.

How should I take BOTOX or BOTOX Cosmetic?

- **BOTOX** or **BOTOX Cosmetic** is an injection that your doctor will give you.
- **BOTOX** is injected into your affected muscles, skin, or bladder.
- **BOTOX Cosmetic** is injected into your affected muscles.
- Your doctor may change your dose of **BOTOX** or **BOTOX Cosmetic**, until you and your doctor find the best dose for you.
- **Your doctor will tell you how often you will receive your dose of BOTOX or BOTOX Cosmetic injections.**

What should I avoid while taking BOTOX or BOTOX Cosmetic?

BOTOX and **BOTOX Cosmetic** may cause loss of strength or general muscle weakness, or vision problems within hours to weeks of taking **BOTOX** or **BOTOX Cosmetic. If this happens, do not drive a car, operate machinery, or do other dangerous activities.** See "What is the most important information I should know about **BOTOX** and **BOTOX Cosmetic**?"

What are the possible side effects of BOTOX and BOTOX Cosmetic?

BOTOX and BOTOX Cosmetic can cause serious side effects. See "What is the most important information I should know about **BOTOX** and **BOTOX Cosmetic**?"

Other side effects of BOTOX and BOTOX Cosmetic include:

- dry mouth
- discomfort or pain at the injection site
- tiredness
- headache
- neck pain
- eye problems: double vision, blurred vision, decreased eyesight, drooping eyelids, swelling of your eyelids, and dry eyes.
- urinary tract infection in people being treated for urinary incontinence
- painful urination in people being treated for urinary incontinence
- inability to empty your bladder on your own and are being treated for urinary incontinence. If you have difficulty fully emptying your bladder after getting **BOTOX**, you may need to use disposable self-catheters to empty your bladder up to a few times each day until your bladder is able to start emptying again.
- allergic reactions. Symptoms of an allergic reaction to **BOTOX** or **BOTOX Cosmetic** may include: itching, rash, red itchy welts, wheezing, asthma symptoms, or dizziness or feeling faint. Tell your doctor or get medical help right away if you are wheezing or have asthma symptoms, or if you become dizzy or faint.

Tell your doctor if you have any side effect that bothers you or that does not go away.

These are not all the possible side effects of **BOTOX** and **BOTOX Cosmetic**. For more information, ask your doctor or pharmacist.

Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

General information about BOTOX and BOTOX Cosmetic:

Medicines are sometimes prescribed for purposes other than those listed in a Medication Guide.

This Medication Guide summarizes the most important information about **BOTOX** and **BOTOX Cosmetic**. If you would like more information, talk with your doctor. You can ask your doctor or pharmacist for information about **BOTOX** and **BOTOX Cosmetic** that is written for healthcare professionals. For more information about **BOTOX** and **BOTOX Cosmetic** call Allergan at 1-800-433-8871 or go to www.BOTOX.com.

What are the ingredients in BOTOX and BOTOX Cosmetic?

Active ingredient: botulinum toxin type A

Inactive ingredients: human albumin and sodium chloride

This Medication Guide has been approved by the U.S. Food and Drug Administration.

Manufactured by: Allergan Pharmaceuticals Ireland a subsidiary of: Allergan, Inc.
2525 Dupont Dr.
Irvine, CA 92612

Revised: 01/2013

ALLERGAN

Based on 72284US15

YOM-KIPPUR HEADACHE

How to Cope with the "Fasting Headache"

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As the Jewish high holidays approach in September this year, one becomes aware that some religious and traditional practices may pose a problem for the headache patient, and in particular the migraine sufferer. Fasting is often reported by patients, and cited in medical textbooks, as a headache trigger.

Throughout Judaism, there are two days of fasting. Most readers will recognize Yom Kippur (the Day of Atonement), which is the most holy day in the Jewish calendar. The other day of fasting is Tish B'av, a holiday beginning on the night of July 15, which commemorates the many tragedies that have befallen the Hebrew people.

In a 1995 study in Israel of hospital employees before and after a 25-hour fasting period for Yom Kippur, it was found that subjects with a history of headache were more likely to experience a fasting-induced headache than those without a headache history. The headaches were described as mild to moderate, of a nonpulsating quality, and located bilaterally and frontally. The number of reported headache attacks was related to the duration of the fasting. The researchers noted that withdrawal from caffeine and nicotine did not seem to influence the occurrence of the headaches.

The International Classification of Headache Disorders, divides headache into two classes—primary and secondary. Primary headaches, which include migraine and tension-type headache, have no underlying cause or disorder for the headaches. Secondary headaches can be traced to a specific cause—brain tumor, aneurysm, exposure to a substance such as nitrites. The most frequent form of secondary headaches are due to a disorder of homeostasis—the internal system that regulates our bodily functions and maintains stability. Fasting headache would be an easily identifiable form of a disorder of homeostasis.

A new headache is considered to be a headache due to a disorder of homeostasis if it occurs for the first time in close relation to the disorder, and if the headache resolves or improves once the disorder is improved. Fasting headache would definitely improve, and hopefully disappear, after its victim eats or drinks.

"For those adhering to religious rituals, a new set of problems arise. Rules vary throughout Judaism. For the migraine sufferer, the ultra-Orthodox may be less stringent on Tish B'av but not on Yom Kippur."

Hypoglycemia (low blood sugar levels) has been linked to fasting headaches, especially migraine attacks associated with fasting. As early as 1933, the great British neurologist, MacDonald Critchley indicated that migraine attacks associated with fasting and strenuous exercise, might be relieved by food intake. It has been recommended that to avoid fasting headaches and those migraine attacks associated with fasting, the patient should maintain a regular meal schedule, even when dieting for weight loss. Missing or skipping a meal should be avoided in order to maintain your homeostasis.

But for those adhering to religious rituals, a new set of problems arise. Rules vary throughout Judaism. For the migraine sufferer, the ultra-Orthodox may be less stringent on Tish B'av but not on Yom Kippur. Eating even a little bit of food on Yom Kippur is a Torah prohibition, and that rule applies even to a person who is ill. In cases in which migraine could precurse a life-threatening event (*chashash sakanat nefashot*), such as a stroke, eating minimal amounts would be permitted. But of course, they would need to have a previous history of such events related to fasting. Guidelines have been established and were printed on **www.israelnationalnews.com** last year:

- The individual has been diagnosed with migraine that can be caused by fasting
- The migraine appears after an aura, and the aura lasts for over one hour
- No migraine medications (such as suppositories or sprays) can prevent the onset of the migraine

These religious dilemmas are not limited to Judaism. Christians, and particularly Catholics, may face the issue during the Lenten season. Catholic adults, from 18 to 59, are expected to refrain from eating between meals during the 40 days before Easter, and all those from age 14 until death, are to abstain from eating meats and meat products on Ash Wednesday and every Friday during Lent. Rules may be bent for medical reasons, and dispensations can be granted.

For Muslims, the fasting headaches are called "First-of-Ramadan" (FAR) headaches which are triggered as a result of the ritualistic fasting. Those with previous histories of headache, either migraine or tension-type, are more likely to develop a fasting headache. Hypoglycemia did not seem to be a factor for this religious group, as most Muslims seemed to eat a meal before dawn and then a second meal after dusk. However, caffeine withdrawal from coffee and tea, and dehydration may play a factor in the FAR headaches. Consumption of a caffeinated beverage or water seemed to relieve the headache symptoms. For the migraine sufferer who is observing Ramadan, use of an abortive agent prior to fasting, may be effective at thwarting the "fasting migraine attack." **HW**

Further Reading

1. Mosek A, Korczyn AD. Yom Kippur Headache. *Neurology* 1995; 45:1953-1955.
2. Torelli P, Evangelista A, Bini A, et al. Fasting headache: A review of the literature and new hypotheses. *Headache* 2009; 49:744-752.
3. Melamed E. Yom Kippur Q&A: Revealing G-d's kingdom in Israel. **www.israelnationalnews.com**; accessed 9/24/12.

PERIODIC SYNDROMES IN Childhood

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One of the hallmark characteristics of migraine is its periodic occurrence. Migraine is not described as a daily headache—particularly in children. However, parents may note a pattern to bouts of vomiting, dizziness, fever, and limb pain. The symptoms may hint at migraine, particularly if there is a family history of migraine. However, it is essential that more serious conditions be ruled-out.

The periodic syndromes of childhood refer to a group of disorders that are identifiable because of the fixed rhythm of the symptoms. Although these syndromes are rare, they are scary to parents and children alike. Often, the diagnosis may be delayed for months to years. In each, the attacks are intermittent and the youngster returns to normal between attacks. Establishing this diagnosis is very important for treatment options as well as helping parents cope, recognizing the mystery that is making their child sick.

Many of these conditions eventually lead to migraine at an older age. In addition to explaining the condition to the parents, the physician must also warn the parents to expect the onset of migraine later in their child's life.

This list of symptoms are often called precursors or predictors of migraine. Children may experience one or a combination of these complaints:

- Cyclical vomiting – attacks of repeated vomiting with a pattern.
- Recurrent but vague stomach pains.
- Dizzy spells.
- Recurrent episodes of fever – up to 103 to 104 degrees F, over several days
- Periodic attacks of pain and/or stiffness in the limbs and joints

Benign paroxysmal torticollis occurs in infants. Babies are happy, wake up from a nap and appear to have their head stuck to one side or the other. The baby looks pale, acts cranky, and is light sensitive (sounds like migraine). The attack can last up to a few days. The work-up should include an MRI, as well as blood tests to rule-out metabolic defects. If this type of attack occurs more than once, and a pattern develops, the diagnosis becomes more obvious.

Benign paroxysmal vertigo occurs in toddlers as opposed to infants. Again, the youngster can be active and playing when the attack starts. The toddler will cling to the parent, because the child feels dizzy and unsteady. Other

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symptoms include pallor, nausea, and sound/ light sensitivity (sounds like migraine). The symptoms may not last as long as those associated with torticollis, but to the parent and child, it is equally frightening. The work-up includes MRI, an evaluation to rule-out metabolic defects, and an EEG to rule out seizures.

The onset of cyclic vomiting can begin at any age but usually starts during the preschool period. The youngster will go to sleep healthy, yet awakens in the middle of the night, vomiting to the point of retching. The vomiting episodes can occur as often as 15 times in one hour. These children will be brought to the ER repeatedly, and usually receive the diagnosis of gastroenteritis. Eventually, the parents will recognize the recurrent pattern. Other symptoms include pallor as well as light and sound sensitivity—reminiscent of migraine. The patient should undergo an MRI of the head, as well as metabolic panels and scoping of the gastrointestinal tract.

In school-age children, recurrent bouts of adominal pain may occur, which are separated by pain-free intervals. These attacks are recognized as abdominal migraine and are different than a child who complains of belly aches all the time. Again, the abdominal migraine attacks are accompanied by pallor as well as light and sound sensitivity. These children should undergo an MRI, and be referred for a pediatric GI evaluation.

If your child fits one of these patterns, it is important to advise your primary care physician or pediatrician. Once the MRI and blood tests are demonstrated as normal, treatment options may be considered. Migraine medications for both acute treatment and prevention may be prescribed. Identifying the diagnosis after 1 or 2 attacks will prevent unnecessary visits to the ER and relieve any undue concern. **HW**

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What's being done to help your headache problem? There is an unprecedented amount of research being undertaken regarding migraine and other headache pain. The National Headache Foundation is involved in this effort with the help of funding from you. Contributions are a key part of the financial support of important headache research. Your gift provides funds for (a) NHF-financed research projects, (b) advocacy with health policy decision makers, and (c) patient-education initiatives. You can help! The National Headache Foundation, the #1 source for headache help, provides these services and many others through the generosity of people like you.

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This information is not intended as legal advice, but is merely suggestions as to content. The specific language should be written or adapted by your legal counsel.

NATIONAL HEADACHE FOUNDATION

Keeping a headache diary can help your doctor help you

NHF suggests answering the following questions to compile your headache history:

- When did you start having headaches?
- How often do they occur? At what time of day? During the week or on weekends? How long do they last?
- Where is the pain?
- Which word best describes it: throbbing, pounding, splitting, stabbing, and blinding?
- Are your headaches associated with your menstrual cycle?
- What triggers your headache: certain foods, certain physical activities, bright light, strong odors, change in temperature or altitude, noise, smoke, stress, and oversleeping?
- What symptoms do you experience prior to the headache?
- Does anyone else in your family suffer from headaches?
- Do you notice visual disturbances before or after your headaches?
- Do you suffer from more than one type of headache?

It is important to make an appointment with your doctor for the specific purpose of addressing your headache history rather than discussing headaches as part of a physician visit for other reasons. The National Headache Foundation also recommends keeping a diary to track the characteristics of your headaches. Patterns identified from your diary may help your doctor determine which type of headache you have and the most beneficial treatments.

For more information about headache causes and treatments, visit the NHF web site at: www.headaches.org or call 888-NHF-5552

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Date	**Time**	**Intensity** rate 1-10 (most severe being 10)	**Preceding Symptoms**	**Triggers**	**Medication** (and dosage)	**Relief** (complete/ moderate/ none)

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