HeadWise®

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

Migraine Preventive Therapy

What's in the Pipeline?

During the last few years, investigational drugs and devices are being increasingly evaluated for migraine prevention. What do we know?

Restless Leg Syndrome and Migraine

A common link between Restless Leg Syndrome and Migraine has been studied. What does it mean for those who experience both conditions?

Advocating for the Headache Patient: Another Opportunity

The annual lobbying event, *Headache on the Hill*, involves health care practitioners, advocacy groups, and patients. It represents another avenue for advocacy for headache patients.

Light and Headache Disorders: Understanding Light Triggers and Photophobia

Photophobia – light sensitivity – is a common symptom in migraine. Tinted glasses offer one method of reducing its impact.

Book Review: Discussing Migraine with Your Patients – *A Common Sense Guide for Clinicians.* By Dawn A. Marcus, MD and Duren Michael Ready, MD.

The Headache Clinics *Featuring*

The Comprehensive Headache Center in Franklin, Wisconsin.

$6.99

Volume 6, Issue 3 •2017
www.headaches.org

NATIONAL HEADACHE FOUNDATION™

Get HeadWise® at home

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 donating to the National Headache Foundation, the world's largest voluntary organization for the support of people with migraine and headache disorders. For 45 years, the NHF has assisted millions of individuals and inspired hope through awareness, advocacy, education, and research.

INDIVIDUAL Subscription: **$20 per year**

PROFESSIONAL Membership:

Physician (M.D. or D.O.)	**$125 per year**
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With your donation, you'll receive:

- **A subscription to *HeadWise*® magazine**
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  Plus, your donation will support the NHF and help advance headache advocacy, education, and research.

To join, go to www.headaches.org/become-a-member/ or call 1-888-NHF-5552

FROM THE EXECUTIVE CHAIRMAN:

The recent decision by the Supreme Court allowing the Federal Trade Commission (FTC) to sue pharmaceutical companies for potential antitrust violations was of particular interest to me. The fact that it hopefully will reduce drug costs by allowing generic medications to be marketed is important. Several issues need to be considered.

During the early 1950s, I was approached by a representative of Armour Laboratories, a division of the Armour meat-packing company, about a drug they had developed – adrenocorticotropic hormone – derived from a pig's pituitary gland. This hormone, ACTH, is produced and secreted by the anterior pituitary gland and increases production and release of corticosteroids from the adrenal gland. It was an important drug during that era because it predated the nascent corticosteroid drugs, including prednisone, dexamethasone, etc. The drug was synthesized by Klaus Hoffman at the University of Pittsburgh in 1960. Initially, it was used for infantile spasms, refractory nephrotic syndrome, and refractory autoimmune diseases.

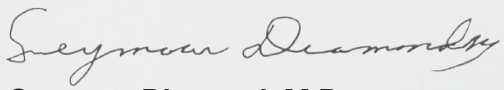
In my family practice, during the 1950s and 1960s, I prescribed ACTH gel selectively to treat patients with multiple sclerosis, acute gout, and flare-ups of rheumatoid arthritis. ACTH gel became a successful tool for my patients. For me, the purchase price for a 5mL vial varied from $4 to $10.

During the 1960s and 1970s, the drug became even more valuable for me. As my practice in headache medicine grew, I would prescribe ACTH gel for the treatment of prolonged migraine and cluster headache attacks. As newer corticosteroids were introduced, I would prescribe ACTH gel injections in combination with another steroid to potentiate and imitate an earlier response to the therapy. During the 1990s, the price for a vial of ACTH gel increased to $50. Managed care companies denied reimbursement for these injections, and I discontinued using it for my patients.

In June, 2013, Questcor Pharmaceuticals acquired the rights to the drug, Synacthen, from Novartis. Synacthen is a synthetic fragment of the hormone in H.P. Acthar Gel – the drug I used in the 1960s – and is sold in Europe but is not available for purchase in the U.S. Questcor's acquisition prevented the sale of Synacthen to a smaller, start-up company – Retrophin. When it acquired the rights to H.P. Acthar Gel in 2001, the drugs was selling for about $40 per vial. In 2007, Questcor raised the price from $1,650 to $23,000 per vial. Its current price is $28,000 per vial. By acquiring the rights to Synacthen, Questcor has eliminated any competition. Retrophin had hoped to offer Acthar/Synacthen at a few hundred dollars for a vial.

For me, several questions arose. Is a drug that received a patent in the 1950s, still have protection under that patent? How can the price of a 5mL vial increase from $50 to $28,000?

The consumer will certainly be helped by this Supreme Court decision. Further deals between pharmaceutical companies to keep generic drugs off the market should receive careful scrutiny by the FTC. Continued vigilance should also be directed to the pricing of drugs – generic and non-generic – with consideration of the cost of manufacturing.



Seymour Diamond, M.D.
Chicago, Illinois

HeadWise®

The National Headache Foundation • www.headaches.org

NATIONAL HEADACHE FOUNDATION™

Mission
To cure headache, and end its pain and suffering.

Vision
A world without 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.

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

contents

FEATURED ARTICLES

IN EVERY ISSUE

This issue features **The Comprehensive Headache Center** in Franklin, Wisconsin, and a conversation with its Medical Director, Ashley Holdridge, D.O.

NHF News

National Headache Foundation Board


Sarah Rahal, MD


Mr. James Staulcup

The Board has added two new Board members. In October, 2016, **Sarah Rahal, MD**, joined the Board. She is Assistant Professor, Director of Pediatric Headache, Departments of Neurology and Pediatrics, Icahn School of Medicine at Mount Sinai, New York, NY. She is a *Magna Cum Laude* graduate of Georgetown University, Washington, DC, and received her MD from New York Medical College, Valhalla, NY. After finishing her pediatric residency at Maria Fareri Children's' Hospital at Westchester Medical Center, Valhalla, NY, Dr. Rahal then completed a residency in Child Neurology at Columbia University Medical Center, New York, NY. Under Dr. Mark Green, she completed her fellowship in Headache Medicine at Icahn School of Medicine, New York, NY. Dr. Rahal is Board Certified in Neurology with Special Qualification in Child Neurology from the American Board of Psychiatry and Neurology. She received subspecialty certification in headache medicine from the United Council of Neurologic Subspecialties in October, 2016. Dr. Rahal has previously contributed to *HeadWise*.

Mr. James Staulcup previously served on the Board from 1995 to 2002, when he became legal counsel to the Foundation. After resigning as our counsel, he rejoined the Board in December, 2016, when he retired from the practice of law. Mr. Staulcup received a Bachelor of Arts degree from Wabash College in Crawfordsville, IN, and a Juris Doctor Degree from DePaul University Law School in Chicago, IL. In 2001, he opened the Chicago office of the international law firm, Bryan Cave, where he served as counsel until 2011. Prior to joining Bryan Cave, he was Regional Corporate Counsel for Lucent Technologies Inc. in Naperville, IL with litigation and labor and employment responsibilities for a 15-state area. He served as Senior Attorney with AT&T Corp. in Basking Ridge, NJ and Chicago, IL with primary responsibilities for labor and employment matters (1987 - 1996) and General Attorney for AT&T Information Systems and AT&T Teletype Corporation in Skokie, IL. Before joining AT&T, he was a partner with Cummings & Wyman in Chicago. Prior to his retirement, Mr. Staulcup was a member of the Chicago Bar Association and the Illinois Bar Association where he has served on a number of committees. **HW**

We would like to thank the health care practitioners who led chatrooms from December, 2015 through December, 2016

Shannon Babineau, MD	Goryeb Children's Hospital, Morristown, NJ
Roger Cady, MD	Alder Pharmaceuticals, Bothell, WA
Ashley Holdridge, DO	Comprehensive Headache Center, Franklin, WI
Robert Kaniecki, MD	University of Pittsburgh, Pittsburgh, PA
Alexander Mauskop, MD	New York Headache Center, New York, NY
Sarah Rahal, MD	Icahn School of Medicine, New York, NY
Lawrence Robbins, MD	Robbins Headache Clinic, Riverwoods, IL
Denise Schneider, PT, FAAOMPT, COMT, ATC	Doctors of Physical Therapy, Lisle, IL

Certificate of Added Qualification in Headache Medicine

The next exam for qualified health care practitioners for the **Certificate of Added Qualification in Headache Medicine** will be held from **March 6 through 20, 2017**. For clinicians interested in the application process, please call the Foundation staff at **1-888-NHF-5552** or send an email to **nhf1970@headaches.org**.

For patients interested in locating health care providers who have received certification, please view the **Health Care Practitioner Finder** at **www.headaches.org** or call one of our staff members. To find a health care practitioner (HCP), in your geographical area, who manages headaches, please visit our website, **www.headaches.org**, and view the Health Care Provider Finder. On that list, you can note if the HCP has received the CAQ in Headache Medicine or the subspecialty in headache medicine from the United Council of Neurologic Subspecialties (UCNS). You can also phone the National Headache Foundation office at **1-888-NHF-5552** and speak to one of our staff members who will help you with the HCP Finder.

The following physicians who previously received CAQ, have renewed their certification:

Joseph S. Casaly, MD	*Lewisville, TX*
Steven Herzog, MD	*Dallas, TX*
Robert A. Schulman, MD	*Santa Rosa, CA*

A Night at the Museum – The Art of Managing Headache

Please save the date for the Foundation's 31st annual fund-raiser, *A Night at the Museum – The Art of Managing Headache*, to be held on Saturday, May 21, 2017. This year's event will be held at a new venue, The Drake Hotel, Chicago, and will include dinner, dancing to the Don Cagen Orchestra, a silent auction, and the annual raffle. The gala chairperson, Emily Kaplan Kandel, and the staff are busy with plans for the program and the evening's activities. *The National Headache Foundation's Lifetime Achievement Award* will be presented to Merle L. Diamond, MD, the President and Managing Director of the Diamond Headache Clinic, Chicago. Also, she has served on the NHF Board since 2008. For information about the gala, please visit our website, www.headaches.org, or call our staff at 1-888-NHF-5552.

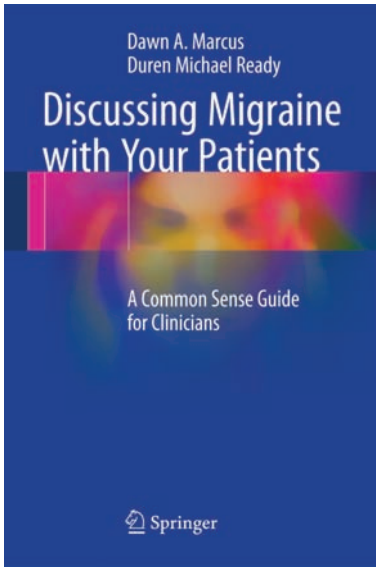
New Address

The National Headache Foundation has moved (within the same building) to Suite 201, effective February 10. Our phone number, website, and email address remain the same. We are doing our spring cleaning a little earlier than normal!!!

National Headache Foundation
820 N. Orleans, **Suite 201**
Chicago, IL 60610-3131

Phone: 312-274-2650
Email: info@headaches.org
Web: www.headaches.org

Book Review



By Dawn A. Marcus, MD and Duren Michael Ready, MD
Springer, 2017

Discussing Migraine with Your Patients – A Common Sense Guide for Clinicians

Discussing Migraine With Your Patients, an outstanding new book, was written primarily for clinicians. However, this handy book is very easily understandable for the lay public. The book includes a treasure of clinical pearls and wise advice.

The grey boxes throughout the book neatly summarize key points. All of the common types of headache are addressed. For example, the section on how to explain "tension" headache to patients is insightful. The basic message is to "medicalize" the condition, while not presenting tension headache as a psychiatric problem. There is a clear and practical exploration of the confusing topic on medication overuse headache. When to be concerned about more serious problems, such as a brain tumor, is tackled. Cluster and sinus headaches are also covered.

The genetics of migraine is examined in a clear and understandable fashion. An excellent section on "self-efficacy," empowers the patient with strategies other than simply relying on medications. Chronic central sensitization (the nervous system is very "excited") and allodynia (heightened sensitivity, mostly to touch) are important topics that apply to chronic migraine. The authors explore these topics with clear and understandable language. A good discourse is included on what is occurring in the brain during chronic pain.

The association of migraine with cardiovascular conditions (heart attack or stroke), as well as with other pain disorders (such as fibromyalgia), is addressed. The important topic of family and friend relationships is part of the discussion. Anxiety and depression are increased among those patients with frequent migraines and the authors examine these important conditions.

Acceptance of a chronic condition is crucial, and there is a well-written section on the importance of acceptance. The

"NOT YOUR TYPICAL DRY TEXTBOOK. IT IS FULL OF CLINICAL PEARLS AND CUTTING-EDGE ADVICE."

"road to acceptance" may take years, and often includes a frantic search for "cures" that do not exist. This book places a focus on what each patient can actively do to help themselves. The impact of "fear of headache" is discussed in a remarkably thorough section.

It can "take a village" to help those with chronic pain, and the authors discuss the collaborative approach. This involves recruiting other healthcare providers, as well as family members.

The importance of a headache diary is emphasized. Ideally, the diary will include the frequency and severity of headache, as well as a log of medications, moods, and triggers. The role of behavioral treatment is covered, including biofeedback, relaxation, meditation, stress management, yoga, and others. The importance of exercise and walking are considered.

Stress management and cognitive therapy are covered in depth. The important subject of "catastrophizing" is explored in a comprehensive section.

Medication management is addressed, including a discussion of "as needed (acute)" medications, versus daily preventive treatments. "Rescue therapies", or "what to do when nothing works" is part of the discourse. This section includes a protocol for in-office intranasal Ketamine therapy. The vital role of sleep and insomnia also occupies a major section.

This is an enjoyable book to read – not your typical dry textbook. It is full of clinical pearls and cutting-edge advice. Even for those without a medical background, the book is readable and accessible. It is highly recommended.

Lawrence Robbins, MD
Riverwoods, Illinois

DON'T LIE DOWN
STAND UP
TO CHRONIC MIGRAINE

BOTOX®
onabotulinumtoxinA injection

For adults with Chronic Migraine

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

BOTOX® prevents on average 8 to 9 headache days and migraine/probable migraine days a month (versus 6 to 7 for placebo). BOTOX® is not approved for adults with migraine who have 14 or fewer headache days a month.

Talk to a headache specialist
Go online for more information and to learn about savings

BOTOX® is the first and only FDA-approved preventive treatment for Chronic Migraine

- **BOTOX® is proven to prevent headaches before they even start**
- **BOTOX® is shown to prevent migraines before they even start**
- **BOTOX® is injected by a doctor once every 12 weeks**
- **BOTOX® is covered by most insurance companies**

BOTOXChronicMigraine.com

INDICATION

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. 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, trouble saying words clearly, loss of bladder control, trouble breathing, trouble swallowing.

Please see additional Important Safety Information on adjacent page.

Allergan

In Memory/Tributes

The practice of asking for donations to a favorite charity in memory of a deceased relative or friend is very thoughtful. A gift may also be given as a tribute in the name of a friend or relative to commemorate significant occasions, such as birthdays, anniversaries, or special events.

During the past year, such requests have resulted in donations which benefit the National Headache Foundation. Acknowledgments of memorial gifts and tributes are mailed to the family or individual. We thank those benefactors and their families who have supported the NHF and its mission.

In Memoriam

Evelyn King

JoAnn Fussell Leggett

Sue Miller

Michael H. Rohs

In Tribute

Rhonda & Dr. José Biller

Elizabeth Gaines

Libby Kandel

Robert Kunkel, MD

Mary & Ken Langer's 50th Wedding Anniversary

Raymond McLaughlin

The Migraine Cause

Alexa Moses

Debbie Moses' Yadda Yadda Yadda Party

Stephen Stern, Esq.

Robin Weintraub

Summary of Information about BOTOX® (onabotulinumtoxinA)

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

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, trouble saying words clearly, loss of bladder control, trouble breathing, trouble swallowing.

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.

BOTOX® may cause loss of strength or general muscle weakness, vision problems, or dizziness within hours to weeks of taking BOTOX®. **If this happens, do not drive a car, operate machinery, or do other dangerous activities.**

BOTOX® dosing units are not the same as, or comparable to, any other botulinum toxin product.

What is BOTOX®?

BOTOX® is prescription medicine a medical professional injects into muscles 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 and older.

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

Who should not take BOTOX®?

Do not use BOTOX® if you are: allergic to any of the ingredients in BOTOX® such as botulinum toxin type A and human serum albumin; had an allergic reaction to another botulinum toxin product such as Myobloc® (rimabotulinumtoxinB), Dysport® (abobotulinumtoxinA), or Xeomin® (incobotulinumtoxinA); or have a skin infection at the planned injection site.

What should I tell my doctor before treatment?

Tell your doctor about all your muscle or nerve conditions, such as amyotrophic lateral sclerosis (Lou Gehrig's disease), myasthenia gravis, or Lambert-Eaton syndrome, as you may be at increased risk of serious side effects.

Tell your doctor if you have or have had breathing problems such as asthma or emphysema; swallowing problems; bleeding issues; plan to or have had surgery; have forehead muscle weakness such as trouble raising your eyebrows; drooping eyelids; or any changes to your face.

Tell your doctor if you are pregnant, plan to become pregnant, are breastfeeding or plan to breast feed. It is not known if BOTOX® (onabotulinumtoxinA) can harm your unborn baby or if BOTOX® passes into breast milk.

What Are Common Side Effects?

The most common side effects include neck pain; headache; migraine; slight or partial facial paralysis; eyelid drooping; bronchitis; musculoskeletal stiffness; muscular weakness; pain in 1 or more muscles, ligaments, tendons, or bones; muscle spasms; injection site pain; and high blood pressure. Other side effects have been reported including allergic reactions e.g. itching, rash, red itchy welts, wheezing, asthma symptoms, or dizziness or feeling faint.

These are not all of the possible side effects. Call your doctor for medical advice if you experience any side effects after treatment with BOTOX®.

What Should I Tell My Doctor About Medicines and Vitamins I Take?

Using BOTOX® with certain 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.** Tell your doctor if you have received an injection with another botulinum toxin product in the last 4 months, such as Myobloc®, Dysport®, or Xeomin®. Be sure your doctor knows which product you received.

Tell your doctor about all prescription and over-the-counter medicines and supplements you take including: vitamins and herbal products; recent antibiotic injections; anticholinergics; muscle relaxants; allergy or cold medicine; sleep medicine; aspirin-like products; and blood thinners. **Ask your doctor if you are not sure whether your medicine is listed above.**

To Learn More

If you would like more information, talk to your doctor and/or go to BotoxChronicMigraine.com for full Product Information.

You may report side effects to the FDA at www.fda.gov/medwatch or call 1-800-FDA-1088.

Based on 72511US15 Rev. 01/2016

APC05FR16

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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.

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

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

820 N. Orleans, Suite 201, Chicago, IL 60610-3132
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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.

MIGRAINE TREATMENT COMPLICATED BY CONCOMITANT DISORDERS

I suffered from migraines for over 30 years. I used to take Cafergot but my blood pressure is very high and was warned not to use it. In fact, I have aFib which gave me a stroke. I have now been using Fioricet with pretty good results. My neurologist said it's no good as it causes rebound headaches. Is this true? Now I get headaches from Trigeminal Neuralgia and use an anticonvulsant, Trileptal, but this doesn't help with headaches. Any advice?–Mike S.

The migraines are not related to the trigeminal neuralgia and those drugs will not help your migraines. Because of the high blood pressure, you cannot take anything with any possibility of constricting an artery, such as an ergot or a triptan. You could take Cambia which is a powder which you dissolve in water. If Fioricet helps, you can take it as long as it is not more frequent than twice a week. If your headaches occur more often than that, you should also work with your doctor to use a preventive medication as well, which hopefully would reduce the number and severity of your attacks. Some of these medications also treat high blood pressure.

Mark W. Green, MD
Mount Sinai Hospital
New York, NY

HUMIDITY AND HEADACHE

Someone said I have possibly barometric pressure headache. I began using a warm mist humidifier in my bedroom, door shut. I awoke in the morning, about an hour after the house heat turned on (have steam boiler and radiators). The room was very warm and I could feel some humidity in the air.

Problem: I had a headache. More like the inside of my head was pushing out from internal pressure (possibly sinuses?). I felt very groggy and a bit dizzy, it took a day for this to really shake out. I did not use the humidifier later as it has been warm outside. I'm thinking maybe the boiling water in the humidifier and the plastic may be a toxin. What is your take on this headache?

–Linda K

Although it is true that barometric pressure changes, usually rapid drops, can precipitate a migraine attack, high humidity from a humidifier is not the same thing. Some people note increased migraine frequency when they are very hot, so that is not unusual. The question is whether there was a scent or essence which was dispersed by the humidifier, otherwise, this was an atypical observation.

Edmund Messina, MD
Michigan Headache Clinic
East Lansing, MI

GIVE THE GIFT OF

HeadWise®

A VOICE FOR PEOPLE WITH MIGRAINE AND HEADACHE DISORDERS

DO YOU KNOW FAMILY, FRIENDS OR CO-WORKERS WHO STRUGGLE WITH A HEADACHE DISORDER? IF SO, EMPOWER THEM TO BE THEIR OWN ADVOCATE BY DONATING IN THEIR NAME TO THE NHF, WHICH INCLUDES A SUBSCRIPTION TO *HEADWISE® MAGAZINE.*

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Be sure to place a check in the "I wish to give a gift"

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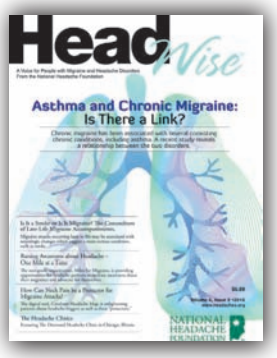
ORDER NOW AND THE RECEIPIENT WILL RECEIVE THE FOLLOWING:



PREVIOUS EDITION

E-NEWSLETTER VIA EMAIL

Gift Donation:

☐ $20.00 to send ***HeadWise®*** plus the monthly e-newsletter, ***NHF News to Know***.

In addition, I'd like to make a tax-deductible contribution to the NHF in the amount of: ☐ $5 ☐ $10 ☐ $20 ☐ Other: $_____

Receipient's Name (Please Print)

Receipient's Address

City/State/Zip

Preferred Phone # E-mail Address (to get the e-newsletter)

Payment:

☐ Payment enclosed (Make check payable to National Headache Foundation)

Charge to my credit card:
☐ Amex ☐ Discover ☐ Mastercard ☐ Visa

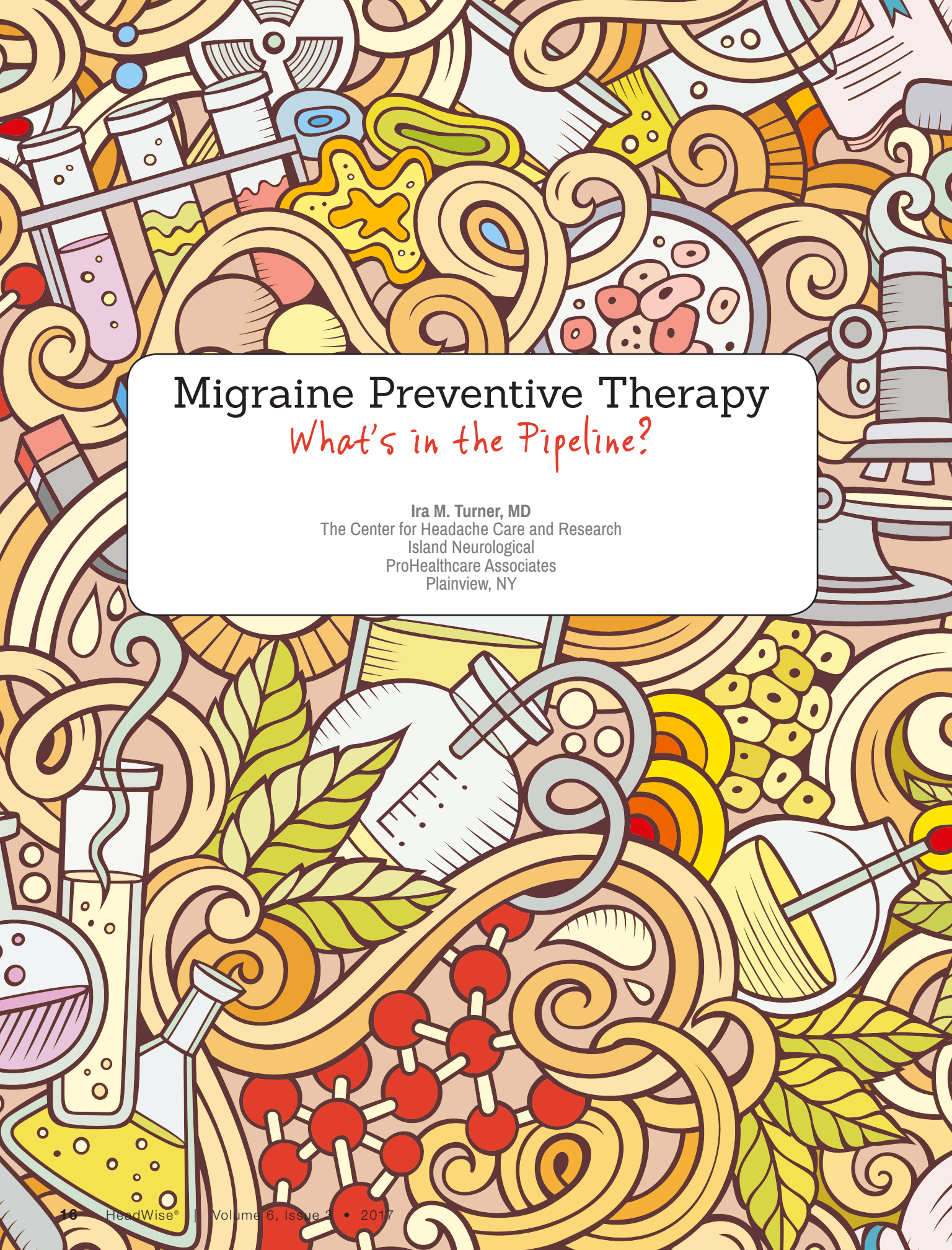
Credit Card Number Expiration Date

Cardholder's Name Cardholder's Signature

Billing Address City/State/Zip

Preferred Phone # E-mail Address

Please mail this form with your payment to: National Headache Foundation, 820 N. Orleans, Ste. 201, Chicago, IL 60610



Migraine Preventive Therapy

What's in the Pipeline?

Ira M. Turner, MD
The Center for Headache Care and Research
Island Neurological
ProHealthcare Associates
Plainview, NY

Migraine Preventive Therapy
What's in the Pipeline?

The American Migraine Prevalence and Prevention (AMPP) study showed that only 13% of migraine patients were receiving preventive therapy, while 38% of migraine patients could have potentially benefited from it. The US Headache Consortium guidelines suggested that migraine patients with 6 or more headache days per month should be offered preventive therapy, and they also suggested that those with 3 to 4 headache days per month should be offered this therapy if there is significant functional disability.

So why is migraine preventive therapy so severely underutilized? To understand this issue, we must look at what options are currently available and realize what their shortcomings may be.

The first medication specifically designed as a migraine preventive medication was methysergide. This was an extremely effective medication for migraine prevention, but it, unfortunately, had significant complications in the form of pulmonary and retroperitoneal fibrosis that could severely complicate lung and kidney function. In addition, some significant vascular risk was associated with methysergide. These issues have resulted in methysergide being removed from the US market (although the drug is still available in some foreign countries).

Until now, preventive medications that have been used for migraine were all originally utilized for other medical indications and found to be effective for migraine prevention after their introduction to the US market. These agents include: a variety of medications used for epilepsy (topiramate, valproate and gabapentin); hypertension (propranolol, metoprolol, timolol, verapamil, lisinopril, and candesartan); and, depression (amitriptyline, nortriptyline, and venlafaxine). OnabotulinumtoxinA (Botox) is also commonly used for patients who meet the criteria for chronic migraine. These drugs are a few of the more commonly tried preventive agents. All of these drugs are limited in varying degrees by tolerability issues, despite evidence of good efficacy.

So what does the future hold? Are there therapies being developed that are migraine-specific? Are there therapies "already out there" in the marketplace that may be of value for migraine prevention?

Areas of current research interest include:

A. CALCITONIN GENE RELATED PEPTIDE (CGRP)
   1. Monoclonal antibodies: targeting the receptor cell or the CGRP ligand itself
   2. Small molecules targeting the receptor

B. COMBINATION DRUGS OR NEW DELIVERY SYSTEMS
   1. Dextromethorphan/quinidine
   2. Oxytocin nasal spray

C. NEW NEUROSTIMULATORS
   1. Vagus nerve
   2. Sphenopalatine ganglion
   3. Supraorbital
   4. Temporo-auricular
   5. Occipital
   6. Transcutaneous magnetic (TMS)

Several factors may explain why CGRP modulation is currently such a popular area of migraine research. Neurotransmitters are messengers of neurologic information from one cell to another. CGRP is an excitatory (causing or having a tendency to cause excitation of a nerve cell) and inflammatory neurotransmitter released from trigeminovascular sensory nerve cells. The trigeminovascular system consists of cells in the trigeminal nerve that stimulate cerebral blood vessels. CGRP is a potent dilator (enlarger) of blood vessels. It causes extravasation (forces out a fluid, especially blood) from inflammatory plasma proteins and increases pain transmission in both the peripheral and central nervous systems. Levels of CGRP are elevated in the blood, spinal fluid, and the saliva of migraine patients. When injected intravenously, CGRP induces migraine-like headaches in susceptible individuals.

Monoclonal antibodies, such as CGRP, are produced

by a single clone of cells or cell line and consist of identical antibody molecules. CGRP antibodies are currently the most exciting potential preventive agents being studied. Four CGRPs are now being studied in Phase III clinical trials. Each of these appear to be working well in terms of efficacy and tolerability based on the Phase II data and early Phase III studies. CGRP is an extremely important player in the migraine process. It is involved in vasodilation (widening of blood vessels), inflammation, and pain transmission.

Serotonin is another neurotransmitter. The triptans work acutely by stimulating serotonin (5-HT1 B,D, and F) receptors. By stimulating the D receptor, the triptans inhibit the release of CGRP. It is felt that this action reduces not only vasodilation, but also inflammation and pain transmission. The effect of this action is short-lived, so the triptans are used almost exclusively for acute migraine abortive therapy. It is also believed that onabotulinumtoxinA may be working, at least in part, in the preventive therapy of chronic migraine by the prolonged inhibition of CGRP release for about 12 weeks.

Biologic agents, such as CGRP monoclonal antibodies, are manufactured in the laboratory starting with antibodies made in non-human species (such as mice or rats). Individual components of these non-human immunoglobulins are then gradually substituted, making them humanized (90% human) or even fully humanized (100% human). This substitution reduces the risks of immunological reactions against them that could either inactivate them or cause allergic reactions. These antibodies also have a long half-life, allowing them be administered monthly or possibly even at 3-month intervals. Currently, three of these potential therapeutic agents are being manufactured as a subcutaneous (SC) injection that will hopefully be easily self-administered by patients. The fourth CGRP is an intravenous (IV) preparation that will be administered by a nurse.

Another group of potential therapeutic agents for migraine prevention are referred to as gepants. The gepants are small molecules (in comparison to antibodies) that block the CGRP receptor cells. The first of the gepants to progress through Phase III testing was telcagepant. Telcagepant showed efficacy as both an abortive agent for acute attacks and as a preventive agent. Unfortunately, telcagepant was associated with liver toxicity and never became commercially available. Other agents in this class are currently in clinical trials for both acute and preventive therapy. These newer gepants appear to have no evidence of liver toxicity which hopefully, will be maintained through clinical trials.

A combination drug currently undergoing clinical trials contains a mixture of dextromethorphan and quinidine. Its efficacy is attributed to its effect against glutamate, an excitatory neurotransmitter that is important in the migraine process. This agent also could work through modulation of sodium, potassium, and the calcium channels. At this point, however, it is too early to tell if this agent will be of major benefit. Substantial data suggest good tolerability, as the drug is already commercially available as a treatment for pseudobulbar affect. PseudoBulbar Affect (PBA) symptoms are frequent, uncontrollable outbursts of crying or laughing in people with certain neurologic conditions, such as stroke or brain injuries.

One investigational product being evaluated is a nasal spray of oxytocin. Oxytocin is a hormone released by the pituitary gland that causes increased contraction of the uterus during labor and stimulates the release of milk into the ducts of the breasts. Oxytocin receptors are often found in the company of CGRP receptors in the trigeminal system. Early studies suggest that this drug may someday be an effective preventive therapy.

Other investigational products are also in early

testing. Histamine dihydrochloride is a product planned to be used by SC injection. Histamine is a chemical found in some of the body's cells that causes many of the symptoms of allergies, such as a runny nose or sneezing. It is believed to be involved in the pathogenesis of migraine and cluster headaches. Also, in early testing, is the mineral supplement, magnesium L-lactate dehydrate (MLD10) taken daily. Magnesium has been used for several years for migraine prevention.

In addition to pharmacological agents, various medical devices are also currently being investigated and evaluated. The vagal nerve is the tenth cranial nerve, supplying the heart, lungs, upper digestive tract, and other organs of the chest and abdomen. A hand-held vagal nerve stimulator as well as transcranial magnetic stimulation are non-invasive options in the pipeline that are currently being used or migraine prevention as well as for acute therapy. Occipital (back of the head) nerve, supraorbital nerve (above the orbit of the eye), and temporo-auricular (pertaining to the temple and the ear) nerve stimulation are also being used but require surgical implantation. These devices are considered, at this time, to be investigational. Similarly, a sphenopalatine ganglion (SPG) (relating to the sphenoid bone at the lower part of the skull and the palate) implantable stimulator is currently being investigated for chronic cluster headache. Could this intervention also, in the future, be considered for prevention of intractable chronic migraine? In addition, an intranasal kinetic oscillation stimulation device is being evaluated for migraine treatment.

Conclusions

In summary, we have found in the last few years that investigational drugs and devices are being increasingly evaluated for migraine prevention. In my own practice, we are currently involved in the clinical trials of several of these pharmaceutical products and devices. As none of the commercially available agents are effective and tolerable for all migraine patients who need them, any new additions that become commercially available are always eagerly anticipated by patients. It remains most important, however, to remember that these patients first need to be appropriately diagnosed with migraine. Also the patients should be evaluated to determine if preventive therapy is needed in addition to properly utilized acute migraine-specific therapy. Overuse of acute medications must also always be avoided. **HW**

Recommended Reading

1. Lipton RB, et al. Migraine prevalence, disease burden, and the need for preventive therapy. *Neurology* 2007;68:343-349.

2. Silberstein SD, et al. Evidence-based guideline update: Pharmacologic treatment for episodic migraine prevention in adults. *Neurology* 2012; 78:1337-1345.

3. Silberstein SD, et al. Therapeutic monoclonal antibodies: What headache specialists need to know. *Headache* 2015; 55: 1171-1182.

RESTLESS LEG SYNDROME AND MIGRAINE

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RESTLESS LEG SYNDROME (RLS), OR WILLIS-EKBORM DISEASE, IS A NEUROLOGICAL CONDITION CHARACTERIZED BY A SENSE OF DISCOMFORT/URGE TO MOVE ONE'S LEG PRIOR TO RESTING OR FALLING ASLEEP IN THE EVENING.

The discomfort of RLS is alleviated by moving the limb. Often, patients who suffer from RLS complain of a range of abnormal sensations in the limb, describing the feeling as "creepy-crawly," "ants crawling," "jittery," "burning," "pain," or "shock-like." The exact neurological mechanism for RLS is unknown. In fact, patients can have the disease as a primary condition but the syndrome can be caused by a variety of physiological or pathological conditions that range from pregnancy and low iron levels, to kidney diseases, spinal cord diseases, or even Parkinson's disease.

The diagnosis of restless leg syndrome is made clinically. In 2012, the International Restless Leg Syndrome Study Group established a set of criteria to help clinicians confirm the diagnosis.

Essential Diagnostic Criteria (all must be met)

An urge to move the legs usually but not always accompanied by, or felt to be, caused by uncomfortable and unpleasant sensations in the leg.

The urge to move the legs and any accompanying unpleasant sensations begin or worsen during periods of rest or inactivity such as lying down or sitting.

The urge to move the legs and any accompanying unpleasant sensations are partially or totally relieved by movement, such as walking or stretching, at least as long as the activity continues.

The urge to move the legs and any accompanying unpleasant sensations during rest or inactivity only occur or are worse in the evening or night than during the day.

The occurrence of the above features are not solely accounted for as symptoms primary to another medical or a behavioral condition (e.g., myalgia, venous stasis, leg edema, arthritis, leg cramps, positional discomfort, habitual foot tapping).

Numerous studies have shown a connection between migraine headaches and restless leg syndrome. In a 2010 Taiwanese study of 772 migraineurs, 11.4% experienced RLS. In a study of 31,370 women in Germany, 24,513 subjects denied any migraine attacks and of those women, 2,749 had RLS. This compared to 6,857 women who reported migraine, and of those subjects, 996 complained of RLS. These researchers concluded that migraine is associated with an increase likelihood of having RLS.

A similar relationship has been demonstrated in men and children in studies lead by Harvard University and University of Vienna. Interestingly, migraine is not the only headache that is associated with RLS. A study of 77,520 patients in Taiwan, with and without tension-type headache, suggests that there is an increased risk for RLS in tension-type headache patients as well.

Age appears to play a role. In a population-based study of 2695 Koreans, patients with migraine in their 20s and 40s tend to have a higher risk of RLS than patients older than 49. The caveat though, is that this data did not capture the likelihood of secondary causes for RLS in older populations because of the population's comorbidities (other illnesses) and/or concurrent medication use.

It is an open question whether the characteristics of one's migraine attack influences the risk for getting RLS. The data are mixed when it comes to whether migraine with aura confers a higher risk of RLS. In a Turkish study involving 204 patients, migraine with aura confers higher risk for having RLS. In a study done in Madrid with 94 patients, however, migraine without aura seems to have a higher correlation. Regardless, the frequency of headaches does not seem to correlate with whether one is at risk for RLS. Patients who have less than 15 days of headaches or those who have more are both at risk. In contrast, those who are ex-migraineurs do not seem to be at higher risk for RLS.

Besides a general correlation between the two diseases, the migraine attack itself temporarily correlates with RLS episodes. In a study done at China Medical University in Taiwan, Dr. Chen and his colleagues studied patient diaries that record both migraine headaches episodes and RLS episodes. They found that a patient is more likely to experience a RLS episode within 2 days of a migraine attack. In addition, there is a correlation between the severity of the migraine and the RLS – the worse the migraine, the worse the RLS episode that develops. This correlation, however, does not support the opposite as migraine attacks tend to follow RLS attacks only within one day.

The reason why the two diseases are correlated is unknown in part due to our lack of knowledge of the exact neurological mechanism for RLS. And, to some extent, what triggers a migraine attack. There are, however, various educated speculations. One theory is that sleep quality confers a common link between the two diseases. Patients with RLS tend to have poor sleep qualities (from both the symptom of leg discomfort as well as the syndrome itself) and as many migraineurs would agree, a poor night's sleep can often trigger a migraine attack. As Dr. Oosterhout from Leiden University Medical center stated: "Restless leg syndrome is associated with lower sleep quality and fragmented sleep, which are known triggers for migraine attacks."

Of course, he does not preclude the possibility of another hypothesis – that a neurochemical called dopamine is the cause of both conditions. Dopamine is a chemical in the brain that modulates rewards and risk-taking behaviors. It is also implicated in both RLS and migraine. Dopamine-blocking medications, for example, have been shown to help with migraine. Medications that act like dopamine in the brain (dopamine agonists), on the other hand, tend to help with RLS. Dr. Chen, who reported on the migraine diary study, postulates that as dopamine tends to be lower at night but higher during the day, this diurnal imbalance may precipitate the characteristic night time attacks of RLS. Incidentally, levels of serotonin, a sister neurochemical molecule that works against dopamine and prevents dopamine's release, are high after a migraine attack. This transient opposition after a migraine, Dr. Chen argues, maybe what provokes RLS after a migraine.

However, dopamine is not the only link between migraine and RLS. Researchers have also speculated that iron homeostasis (balance) might be a culprit. Iron is an important factor in dopamine and iron deficiency is one of the most common causes of RLS. Incidentally, while iron levels are normal in migraineurs, MRI studies offer some evidence that abnormal iron deposs in the brain may be involved in migraine attacks. It is possible that the iron imbalance between how the body allocates iron in the brain versus the rest of the body may play a part in both migraine and RLS. The iron hypothesis has support in genetic research. In a paper published in 2015, Dr. Fuh from Taiwan's National Yang-Ming University School of Medicine suggests that a gene called MEIS1 is associated with increased risk of RLS in migraine patients. This gene plays a part in the iron transportation pathway in the body. Dr. Fuh's team speculated that variations of MEIS1 gene affects iron transportation which in turn affects dopamine, causing RLS and migraine.

Regardless of the cause of restless leg syndrome and migraine, RLS is an important syndrome to recognize in migraine. As Dr. Chen suggests, if there really is a bidirectional link between RLS and migraine severity (and frequency), then improvement in one syndrome may benefit the other. **HW**

Leave a legacy to the National Headache Foundation.

Charitable Giving

There are different ways that individuals can support the mission of the National Headache Foundation through donations. A present donation of money or other items of value is the most frequent manner of support. Provisions for specific bequests or residual bequests in one's will or trust are often utilized. As part of one's estate planning or planned giving, an individual can provide for charitable giving that may minimize gift and estate taxes while providing for (a) the smooth transfer of ownership, (b) the care and support of dependents, and (c) the avoidance of disputes among survivors.

Three commonly used planned giving vehicles are:

1. **Charitable remainder annuity trust.** Assets (generally securities) are transferred to a trust. The trust makes fixed annual payments to the donor or other specified beneficiaries named by the donor. When the trust terminates upon the death of the donor or other specified beneficiaries, the remainder of the assets in the trust pass to the charity. A trust document is required. The donor retains the ability to change the designated charity.

2. **Charitable remainder unitrust.** Assets are transferred to a trust. The donor or other specified beneficiaries named by the donor receive fluctuating payouts from the trust (a percentage of the value of the principal) and, upon the death of the donor or other specified beneficiaries, the remainder of the assets passes to the designated charity. A trust document is required. The donor retains the ability to change designated charity.

3. **Charitable gift annuity.** The donor, under a contract with a charity, transfers cash or securities to the charity. The charity pays the designated beneficiary a fixed income for life. Upon the death of the beneficiary, the remaining balance passes to the charity. No trust document is required and the charity cannot be changed.

NATIONAL HEADACHE FOUNDATION™

Advocating for the Headache Patient – Another Opportunity

Erick Ward
National Headache Foundation

Since 1970, the National Headache Foundation has continued its mission to cure headache, and to end its pain and suffering. The vision of the Foundation is "A World Without Headache." In support of our mission and vision, advocacy plays an important role. The lobbying event, *Headache on the Hill*, provides the Foundation another opportunity to advocate for the migraine and chronic headache patient.

The Foundation is happy to again be participating in Headache on the Hill (HOH) on February 13 to14, 2017. The annual event in Washington D.C. is organized by the Alliance for Headache Disorders Advocacy (AHDA) and unites healthcare professionals and patients in efforts to improve the lives of headache patients across the United States.

Participants, which include health care practitioners, researchers, members of advocacy organizations, and patients, will visit the offices of members of Congress to discuss issues on behalf of those with disabling headache and migraine. In 2017, we hope to build on the success of 2016's efforts.

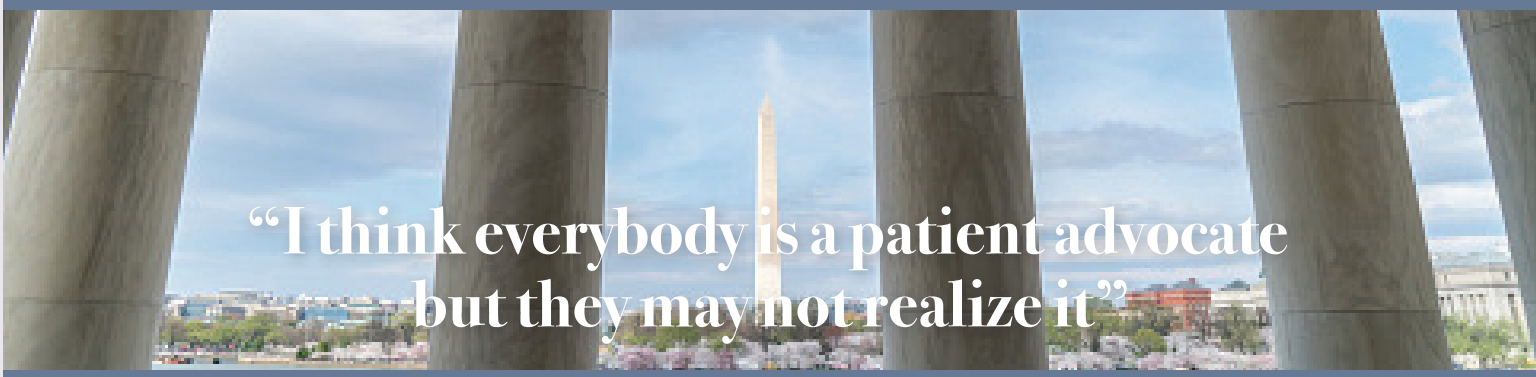
A 2016 request, or "ask," of Congress was part of the "Safe Treatments and Opportunities to Prevent (STOP) Pain Act." The "ask" changes every year, but it typically focuses on the lack of research into migraine and cluster headache, as well as the stigma associated with chronic headaches.

Last year, HOH participants asked members of the Congressional delegations to increase funds to support research on pain, especially those focused on therapies for chronic pain, including migraine, which did not have the downsides of opioids.

Robert Shapiro, MD, PhD, Professor of Neurological Sciences at the University of Vermont College of Medicine and Founding President of the AHDA, said provisions of the STOP Pain Act emerged from HOH's meeting with Senator Brian Schatz of Hawaii. These provisions were included in the Comprehensive Addiction and Recovery Act that was signed by President Barack Obama in July.

"The STOP Pain Act focuses NIH (National Institute of Health) on pain research and effectively urges them to fund it commensurate to its burden," Shapiro said. "That should significantly impact their programs toward migraine and headache disorders."

The success of 2016 was due to an important concern that needed to be addressed and persistence of the advocates. "You have to keep coming back." Shapiro said. "You have to not be ruffled when you hear 'no.' You have to return and ask in a different way. You also need to insure that you have brought allies."



"I think everybody is a patient advocate but they may not realize it"

In this advocacy effort, it is essential that the many patients who participate play a major role. Initially, when the event began in 2007, all of the participants were physicians. Now, according to Shapiro, about one-half of the participants are physicians and allied health practitioners and the remaining half are patients.

"This would not be a successful program, if it was just the physician's talking." Katie MacDonald, a patient of Dr. Shapiro, said. MacDonald, who began participating in HOH in 2015, said that by describing her experiences — the amount of treatments she has tried and the amount of work she has missed — makes a difference in the eyes of the members of Congress with whom she meets.

"The most important thing people bring is their own story," said William Young, MD, President of the AHDA.

Young said patients volunteering their time and paying for transportation to Washington, D.C. impacts the discussion with members of Congress whom they meet. He acknowledges that AHDA asks a lot of patients when it comes to HOH, especially for those patients who are ill with headache or migraine. However, many participants believe it to be an important experience.

"Most people find it to be a very gratifying experience," Shapiro said. "They are grateful they have an opportunity to speak out on an issue that's very personal to them and extremely important. They are very grateful the way our government works. They are in access to people who have power to change things."

Young said it is a great honor to participate in the right to petition your representative for appropriate laws. Since its inception, about 350 individuals have participated in HOH and many have returned year after year. "It changes people," Young said. "It's an extraordinary experience."

The two-day event begins with a half-day seminar at which participants learn about the process and the "ask." The second day is filled with meetings with Congressional representatives. Shapiro said this can be an exhausting experience for someone with disabling migraine.

However, even those unable to make the trip to D.C. can find a way to participate and be their own advocate.

"I think everybody is a patient advocate but they may not realize it," MacDonald said. "We all have a voice and we use it in a different way."

She said the first step in being your own advocate is admitting that you have migraine. MacDonald, who has experienced migraines for 28 years, said she did not openly talk about it until the last 5 years.

"If we keep not talking about it, we're never going to get anywhere," she said.

MacDonald suggested talking to friends, getting involved in group events such as Miles for Migraine, and blogging can be great ways to be your own advocate.

Conclusion

We at the National Headache Foundation consider Headache on the Hill and other advocacy events as a "Call to Action." Patients are encouraged to seek ways to advocate for themselves, whether at work, school, or in their families. It is through active engagement that patients will increase their access to quality care.

In an upcoming issue, we will report on the activities of the 2017 Headache on the Hill and results from this process. HW

Your Contributions to the National Headache Foundation Help Fund Projects

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.

Please select one of the following giving categories:

❒ $250 ❒ $125 ❒ $100 ❒ $75 ❒ Other _____

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In addition, I'd like to make a tax-deductible contribution in support of **NHF's educational programs** in the amount of: ☐ $10 ☐ $25 ☐ $50 ☐ Other: $_____

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☐ Payment enclosed (check payable to National Headache Foundation)

Charge to my credit card: ☐ Amex ☐ Discover ☐ Mastercard ☐ Visa

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Please mail this form with your payment to: National Headache Foundation, 820 N. Orleans, Ste. 411, Chicago, IL 60610 or renew online by visting www.headaches.org

IF YOUR *migraine* IS HERE,

WHY ONLY SEND *treatment* HERE?

Please see Important Safety Information on next page.

ONZETRA™ Xsail™
(sumatriptan nasal powder)
11 mg per nosepiece

Shown in actual size

ONZETRA™ Xsail™ provides FAST pain relief

Almost half of migraine sufferers experienced pain relief in 30 minutes (42% vs 27% on placebo) and 68% experienced pain relief in 2 hours vs 45% on placebo.

Breath Powered® delivery

ONZETRA is taken with a small, innovative device called Xsail. It uses your own breath to deliver migraine medicine directly to the back of your nose, an area with the potential for fast absorption.

Important Safety Information

What is ONZETRA™ Xsail™ (sumatriptan nasal powder) used for?
ONZETRA Xsail is a prescription medication approved for the acute treatment of migraine, with or without aura in adults. ONZETRA Xsail is used for people who have been told by a healthcare provider that they have migraine headaches. ONZETRA Xsail is not for the prevention of migraines or for other types of headaches, including cluster headache.

What important information should I know about ONZETRA Xsail?
ONZETRA Xsail may cause serious side effects, including:
- **Heart attack and other heart problems**, which may lead to death. Stop using ONZETRA Xsail and get emergency medical help right away if you have any symptoms of a heart attack like shortness of breath or tightness, pain, pressure, or heaviness in your chest, throat, neck, or jaw that is severe or does not go away
- **Changes in color or sensation in your fingers and toes** (Raynaud's syndrome)
- **Stomach and intestinal problems** (gastrointestinal and colonic ischemic events)
- **Problems with blood circulation to your legs and feet** (peripheral vascular ischemia)
- **Serious allergic reactions** (symptoms include hives; tongue, mouth, lip, or throat swelling; problems breathing)
- **Medication overuse headaches.** Some people who use ONZETRA Xsail too many times may have worse headaches. If your headaches get worse your doctor may decide to stop your treatment with ONZETRA Xsail
- **Serotonin syndrome**, a rare but serious problem that can happen in people using ONZETRA Xsail, especially if ONZETRA Xsail is used with antidepressant medicines called SSRIs, SNRIs, or TCAs. Call your doctor right away if you have any of the following symptoms of serotonin syndrome: mental changes such as seeing things that are not there (hallucinations), agitation, or coma; fast heartbeat; changes in blood pressure; high body temperature; tight muscles; trouble walking; or nausea, vomiting, or diarrhea
- **Seizures.** Seizures have happened in people taking sumatriptan who have never had seizures before

The most common side effects of ONZETRA Xsail are abnormal taste, discomfort of your nose or throat, runny nose, and stuffy nose. This is not a complete list of side effects. Tell your doctor about any side effect that bothers you or does not go away.

$0 co-pay on your first prescription*

OnTrack Support is a helpful program of support and information for ONZETRA.

ON TRACK Support

Ask your doctor IF ONZETRA IS RIGHT FOR YOU

Visit onzetra.com

*Restrictions apply. Must have private insurance. Those eligible for Medicare, Medicaid, or any other government healthcare program are not eligible for this program. Card must be activated to receive $0 co-pay. Maximum benefit of $100 per prescription regardless of the co-pay amount.

Who should not take ONZETRA Xsail?
Do not take ONZETRA Xsail or stop using ONZETRA Xsail if you:

- Have heart problems or a history of heart problems
- Have had a stroke, transient ischemic attacks (TIAs), or problems with your blood circulation
- Have uncontrolled high blood pressure
- Have hemiplegic migraines or basilar migraines. If you are not sure if you have these, ask your doctor
- Have peripheral vascular disease (narrowing of blood vessels to the legs, arms, stomach, intestines, or kidneys)
- Have taken other migraine medications in the last 24 hours, including other triptans, ergots, or ergot-type medications. Ask your doctor for a list of these medicines if you are not sure
- Are taking a medicine called a monoamine oxidase inhibitor (MAOI). MAOIs cannot be taken within 14 days before or after taking ONZETRA Xsail
- Have severe liver problems
- Have an allergy to sumatriptan, the medicine in ONZETRA Xsail, or any of the components in ONZETRA Xsail

What should I tell my healthcare provider before taking ONZETRA Xsail?
Before you take ONZETRA Xsail, tell your doctor about all your medical conditions and all the medicines you take, including prescription medicines, especially antidepressants, and all over-the-counter medicines, vitamins, and herbal supplements.

What should I avoid while taking ONZETRA Xsail?
ONZETRA Xsail can cause dizziness, weakness, or drowsiness. If you have these symptoms, do not drive a car, use machinery, or do anything where you need to be alert.

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

For additional Important Safety Information about ONZETRA Xsail, please see the full Prescribing Information, including Patient Information and Instructions for Use, on onzetra.com.

Please see Important Facts on next page.

IMPORTANT FACTS

(Pronounced: On ze' trah Eks'-seil)

ONZETRA™ Xsail™
(sumatriptan nasal powder)
11 mg per nosepiece

ABOUT ONZETRA™ XSAIL™

ONZETRA Xsail is a prescription medicine for the acute treatment of migraine, with or without aura in adults.

- ONZETRA Xsail is used for people who have been told by a healthcare provider that they have migraine headaches
- ONZETRA Xsail is not for the prevention of migraines or for other types of headaches, including cluster headache

DO NOT TAKE ONZETRA XSAIL OR STOP USING ONZETRA XSAIL IF YOU

- Have heart problems or a history of heart problems
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- Have hemiplegic migraines or basilar migraines. If you are not sure if you have these, ask your doctor
- Have peripheral vascular disease (narrowing of blood vessels to the legs, arms, stomach, intestines, or kidneys)
- Have uncontrolled high blood pressure
- Have taken other migraine medications in the last 24 hours, including other triptans, ergots, or ergot-type medications. Ask your doctor for a list of these medicines if you are not sure
- Are taking a medicine called a monoamine oxidase inhibitor (MAOI). MAOIs cannot be taken within 14 days before or after taking ONZETRA Xsail
- Have an allergy to sumatriptan, the medicine in ONZETRA Xsail, or any of the components in ONZETRA Xsail
- Have severe liver problems

ONZETRA XSAIL MAY CAUSE SERIOUS SIDE EFFECTS

- Stop using ONZETRA Xsail and get emergency medical help right away if you have any symptoms of a heart attack like shortness of breath or tightness, pain, pressure, or heaviness in your chest, throat, neck, or jaw that is severe or does not go away
- Changes in color or sensation in your fingers and toes (Raynaud's syndrome)
- Stomach and intestinal problems (gastrointestinal and colonic ischemic events)
- Problems with blood circulation to your legs and feet (peripheral vascular ischemia)
- Some people who use ONZETRA Xsail too many times may have worse headaches
- Serotonin syndrome, a rare but serious problem that can happen in people using ONZETRA Xsail, especially if ONZETRA Xsail is used with antidepressant medicines. Call your doctor right away if you experience mental changes such as seeing things that are not there (hallucinations), agitation, or coma; fast heartbeat; changes in blood pressure; fever; trouble walking; or nausea, vomiting, or diarrhea
- Serious allergic reactions (symptoms include hives; tongue, mouth, lip, or throat swelling; problems breathing)
- Seizures have happened in people taking sumatriptan who have never had seizures before

MOST COMMON SIDE EFFECTS OF ONZETRA XSAIL

The most common side effects in patients taking ONZETRA Xsail were abnormal taste, discomfort of the nose or throat, runny nose, and stuffy nose.

- **This is not a complete list of side effects**
- **Tell your doctor if you have any side effect that bothers you or does not go away**

ADDITIONAL IMPORTANT INFORMATION

- **Tell your doctor about all your medical conditions and all the medicines you take, including prescription medicines, especially antidepressants, and all over-the-counter medicines, vitamins, and herbal supplements before starting ONZETRA Xsail**
- ONZETRA Xsail can cause dizziness, weakness, or drowsiness. If you have these symptoms, do not drive a car, use machinery, or do anything where you need to be alert
- ONZETRA Xsail has not been studied in patients less than age 18 or in pregnant women. Tell your doctor if you may be pregnant
- Avoid breastfeeding for 12 hours after treatment with ONZETRA Xsail. Tell your doctor if you are breastfeeding or plan to breastfeed
- Take ONZETRA Xsail exactly as your doctor prescribes it
- Read the Patient Information and Instructions for Use before using ONZETRA Xsail. If you have any questions about how to use ONZETRA Xsail, ask your doctor or call the Nurse Hotline at 1-844-ONZETRA (1-844-669-3872). For additional Important Safety Information about ONZETRA Xsail, please see the full Prescribing Information, including Patient Information and Instructions for Use, at onzetra.com

NEED MORE INFORMATION?

This information about ONZETRA Xsail is important but is not complete. To learn more:

- Talk to your healthcare provider or pharmacist
- Visit onzetra.com for FDA-approved Prescribing Information, including Instructions for Use, or call 1-844-ONZETRA (1-844-669-3872)

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- Call 1-844-ONZETRA (1-844-669-3872) to speak with a member of our support team or sign up for the free OnTrack Support program for financial assistance, insurance information, and a co-pay savings card

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Light and Headache Disorders:

Understanding Light Triggers and Photophobia

Hart Shafer
Phoenix, AZ

"Wearing sunglasses indoors is increasing your sensitivity to light." My wife and I were floored when her headache specialist made this statement. Chronic migraine had made her so sensitive to light that she had to wear sunglasses indoors. During an attack, photophobia increased her misery. Sunlight, light from computer monitors and TVs, and fluorescent lights triggered even more attacks.

When my wife protested that sunglasses were her only way to quell the pain, her physician's response excited us both. Research had found that a special tint for glasses resulted in 74% fewer migraine attacks per month! When we did more reading at home, we found that the study the specialist mentioned, was part of more than 20 years of research on light sensitivity. The problem was finding glasses that blocked enough light for the tint to be effective.

I had watched my wife suffer for many years, and while I could relate because of my own episodic migraine, I often felt helpless in her struggle. This time I saw a way to help. My background is in new product development, so I put those skills to work and made exactly the glasses we envisioned for her. My wife got so much relief that we made a few more pairs to help other people we know who experience migraine. Eventually, we established a company that manufactured specialized eyewear.

Although we started the company because of our personal migraine experience, we quickly learned that photophobia is a symptom of more than 40 health conditions. And, it is not the only headache disorder in which light sensitivity is a problem—tension-type headache, cluster headache, new daily persistent headache (NDPH),

Light and Headache Disorders:

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concussion or traumatic brain injury (TBI), and trigeminal autonomic cephalalgias (including hemicrania continua and SUNCT) can also cause photophobia.

What is Photophobia?

Do lights seem too bright to you? Does light make your head pain even worse when you have a headache or are in a migraine attack? Do your eyes ever hurt or feel uncomfortable due to light? Do you have an aversion to light whether you have pain or not? If you answered "yes" to any of those questions, you most likely have photophobia.

The word, photophobia is derived from two Greek words: photo- "light" and phobia "fear or dread of"—hence, "fear of light." However, in medical terms, it is not a morbid fear or phobia, but rather a symptom, common in migraine, as well as ophthalmic and other neurological disorders. The patient with photophobia experiences discomfort or pain in the eyes due to exposure to light (sunlight, fluorescent lights, TV or computer screens, or the glare from snow).

Does the Kind of Light Matter?

The brighter the light, the more discomfort, pain, or aversion you probably feel. The wavelength or color of light also plays a role. Blue-green light causes more photophobia than other colors. Between computer and device screens, fluorescent and LED light bulbs, and even sunlight, our lives are awash with this light.

What Causes Photophobia?

Photophobia is a neurological issue that involves communication between receptors in the eye and the brain. The part of the eye that transmits photophobia to the brain is different than the part that transmits vision. In fact, a person can be completely blind and still be sensitive to light.

What's the Science of Photophobia?

Photophobia has been recorded in medical writings since the 1930s, but has not been well understood scientifically until recent breakthrough discoveries. A team lead by researchers at Harvard Medical School published a study in 2010 that found a pathway from the eye to areas of the brain that are active during a migraine attack. Light can worsen pain during an attack by activating nerve cells in these areas of the brain.

Researchers also found a special kind of cell in the eye –intrinsically-photosensitive retinal ganglion cells. These cells are distinct from the rods and cones in the eye that enable us to see. The cells are more sensitive to some wavelengths of light than others, with particular sensitivity to blue-green light.

Which Headache Disorders Are Associated with Photophobia?

Migraine

Photophobia is so common in migraine that it is one of the symptoms that health care practitioners rely on when making a diagnosis. Between 80 percent and 90 percent of migraineurs will experience photophobia during migraine attacks and even can find low levels of light to be glaring or painful. Between attacks, many people with migraine are more sensitive to light than those without migraine.

Light and other visual stimuli also can trigger migraine attacks; for example, flickering or pulsing lights, repetitive patterns, glare, bright lights, computer screens, TV, and movies. Fluorescent light contains invisible pulsing, which is likely why so many report it as a migraine trigger.

Tension-Type Headache

Tension-type headache can also cause photophobia during and between headaches. However, individuals with tension-type headache are generally less sensitive to light than those with migraine.

Cluster Headache

During a series, cluster headache can cause light sensitivity both during and between attacks. Between cluster series, those with cluster headache have the same levels of photophobia as those without a headache disorder.

New Daily Persistent Headache (NDPH)

Estimates of photophobia in NDPH range from 46 percent to 66 percent, depending on the study that you are reading. A 2002 study found 48 percent of people with NDPH found pain relief by going into a dark room.

Traumatic Brain Injuries (Concussions)

Photophobia is the most common visual problem reported by people with traumatic brain injuries (TBI). About 60 percent of military veterans with TBI report severe light sensitivity.

TBI can also cause a person to feel ill when exposed to fluorescent lighting, according to the International Brain Injury Association. Fluorescent light-induced symptoms can include headache, fatigue, dizziness, nausea, eye strain, eye fatigue, and increased sensitivity to visual input.

Hemicrania Continua, SUNCT, and Other Trigeminal Autonomic Cephalalgias

Although photophobia in hemicrania continua, SUNCT, and other trigeminal autonomic cephalalgias has not been studied extensively, photophobia is a known symptom of the headache disorders in this group.

What Types of Light are Most Problematic?

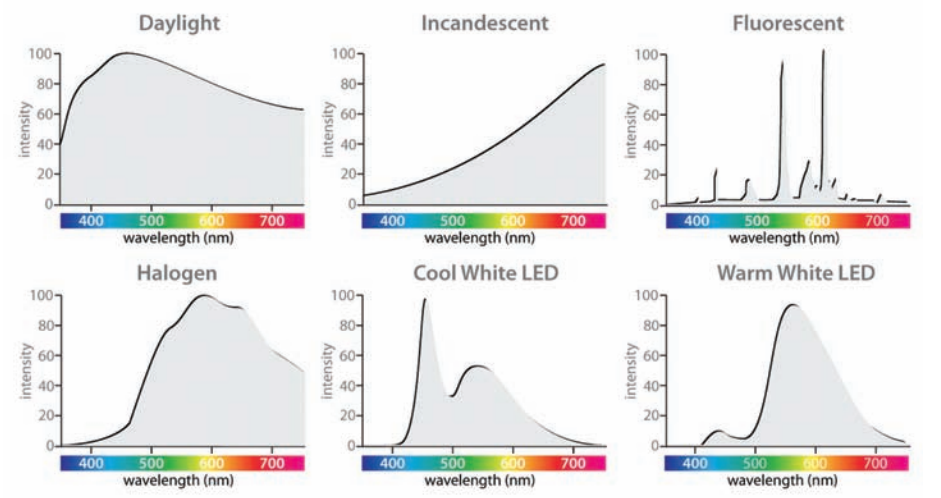
Any source of light can cause photophobia. Researchers have found that blue-green light can be particularly problematic because of the innate sensitivity of the pain-sensing cells in the eye. Blue green-light is everywhere, from artificial lighting like compact fluorescents, device and computer screens, and even sunshine, in studies comparing tints.

The tint that migraine glasses, such as TheraSpecs, use, called F-41, filters those wavelengths thus reducing migraine attacks and providing the most relief for photophobia.

Light and Headache Disorders:

Understanding Light Triggers and Photophobia

Image 1



These charts show the spectrum emitted by different kinds of light. The wavelengths of light that have been implicated as both a migraine trigger and most aggravating for photophobia are centered around 480nm, which is blue-green in color.

What's the Treatment for Photophobia and How Does It Work?

No medications target photophobia specifically, but finding an effective treatment for your headache disorder could also reduce your sensitivity to light. Research has found eyewear with precision-tinted FL-41 lenses are the most reliable—and the only side effect-free—way to treat photophobia.

What Does the Research Say about FL-41?

When worn regularly, precision-tinted FL-41 lenses can reduce the frequency of migraine attacks by filtering the light most likely to be a trigger. In a clinical study of the tint, participants experienced 74 percent fewer migraine attacks per month. Because FL-41 filters the wavelengths that cause the most pain responses for individuals with photophobia, the tinted glasses can provide relief no matter the reason why a person is sensitive to light.

How Do FL-41 Lenses Work?

As mentioned, some wavelengths of light are more likely to activate the eye and brain, causing pain and eyestrain. Furthermore, fluorescent lights pulse very rapidly. Although that rate is too fast to see consciously, the brain is still receiving the pulsing signals from the eye. This pulsing can trigger headaches, eyestrain, migraine attacks, and other issues. By filtering the wavelengths that contain most of this pulsing and those that cause the most pain and eyestrain, precision-tinted FL-41 lenses protect the brain from both.

Why Not Just Wear Sunglasses?

When you wear sunglasses indoors, your eyes adapt to being in the dark, which makes light appear even brighter than it is. This phenomenon, called chronic dark adaptation, is why my wife's headache specialist advised us that her sunglasses were increasing her sensitivity to light. A similar situation would be leaving a movie theater on a sunny July day — your eyes adjust to being in the dark, so light looks even brighter than before you went into the theater. While most people's eyes readjust to sunlight soon after leaving a movie, those with chronic dark adaptation have extra-heightened light sensitivity at all times.

"It is my sincerest hope that those with photophobia and headaches find relief. Tinted eyewear is one option for relief."

What to Look for in FL-41 Eyewear

Be sure your lenses are tinted correctly

Some optical shops can order the FL-41 tint, but applying it correctly requires practice and expertise. Lenses should be regularly checked by using a spectrophotometer to verify that the lenses are filtering the correct wavelengths of light. Figure 2 demonstrates the correct transmission spectrum.

Image 2

The percentage of light at each wavelength transmitted by indoor lenses. The greatest reduction targets wavelengths around 480nm.

Find the most therapeutic frames

Most tinted glasses focus on blocking the light directly in front of you, but the light that comes in the top or sides of your glasses or a glare from behind reflecting off your lenses can cause just as many problems. For the best protection, it is vital that your glasses provide sufficient isolation. Large or wraparound lenses are easy features to locate, but any pair that fits your face well could provide the same benefit.

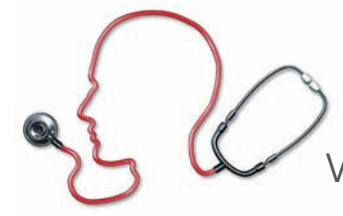
Because my wife and I live with migraine, we created our glasses to respond to the unique needs of people with headache disorders. For example, we design our frames to be more highly protective than similarly styled eyewear. Lightweight, flexible, and adjustable materials minimize extra weight or squeezing that can make pain even worse.

Conclusion

I have seen firsthand how photophobia and headache disorders can wreak havoc on a person's life. It is my sincerest hope that those with photophobia and headaches find relief. Tinted eyewear is one option for relief. **HW**

Suggested reading:

Digre KB, Brennan KC. Shedding light on photophobia. *J Neuroophthalmol* 2012; 32:68-81.



THE HEADACHE CLINICS

featuring:

The Comprehensive Headache Center
Wheaton Franciscan Healthcare (part of Ascension)
Franklin, Wisconsin

The Comprehensive Headache Center was established around 2004. Since that time the clinic has undergone changes in terms of leadership and location. It is now operated by Wheaton Franciscan Healthcare (part of Ascension) in Franklin, Wisconsin.

The following is based on an interview with Ashley Holdridge, DO, who assumed the role as Medical Director in August, 2015. Previously, Doctor Holdridge completed the Seymour Diamond, MD, Fellowship in Headache Medicine at Loyola University Chicago/Stritch School of Medicine and the Diamond Headache Clinic, Chicago in 2015.

Doctor Holdridge attended medical school at Midwestern University, Chicago College of Osteopathic Medicine, in Downers Grove, IL. She completed her neurology residency at The University of Alabama Medical Center in Birmingham, AL. Dr. Holdridge received her Board certification in Neurology in 2014, and subspecialty certification in Headache Medicine from the United Council of Neurologic Subspecialties in 2016. Also, in 2016, she received the Certificate of Added Qualification in Headache Medicine from the National Headache Foundation. Dr. Holdridge is a member of the American Academy of Neurology, the American Headache Society, and the National Headache Foundation.

The other members of the staff include Martha Aregbesola, ANP-BC, APNP; Kate Sandstrom, PA-C; Chris Duston, Medical Assistant; Annette Harlan, Medical Assistant; Jaci Radosta, Patient Service Representative; Nora Klaus, Patient Service Representative; and, Danell Kotarak, Office Manager.

Ms. Aregbesola, has been working at the clinic since 2006 and has devoted the last 11 years to treating patients with head, neck, and facial pain. She received her MS in nursing from Marquette University in Milwaukee, WI, and received board certification as a nurse practitioner from the American Nurses Credentialing Center in 2006. She is currently a member of the American Association of Nurse Practitioners, Sigma Theta Tau International (national honor society of nursing), and the National Headache Foundation.

Kate Sandstrom, PA-C has been working at the clinic since May, 2015. She completed both her undergraduate and graduate degrees at Marquette University, and since joining the Center, she has committed her work to treating those with head and facial pain. She is active with the Wisconsin Academy of Physician Assistants (WAPA), the American Academy of Physician Assistants (AAPA), and the American Academy of Neurology (AAN).

Back row: Nora Klaus (PSR), Annette Harlan (MA), Chris Duston (MA), Jaci Radosta (PSR)
Front row: Martha Aregbesola, APNP, Ashley Holdridge, DO, Kate Sandstrom, PA-C

Ashley Holdridge, DO participating in Family Night

Referrals from a health care practitioner are required to be seen at the Center. The center evaluates patients from age 15 and older. About 80% of their patient populations are women with the most typical age range being between 19 to 45years old. The most common diagnosis is migraine, followed by chronic migraine and cervicalgia. The Center specializes in the treatment of migraine, chronic migraines, tension-type headaches, occipital neuralgia, trigeminal autonomic cephalgias, cluster headaches, and atypical facial pain.

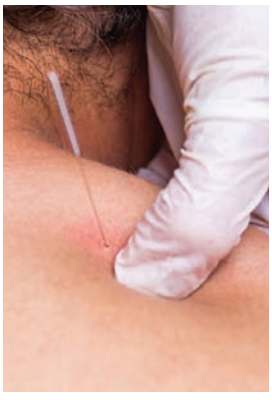
The patient/provider relationship starts prior to the patient visiting the Center. Before the initial appointment, patients will be asked to complete new patient paperwork that reviews prior medications, scans, and identifies the characteristics of their headaches. Upon arrival at the Center, the patients are greeted by the friendly patient service representatives. The medical assistants will escort patients to the exam rooms which offer light dimming capabilities in order to comfort those with light sensitivities and the carpeted hallways minimize noise exposures. All patients are offered ice packs, snacks, and water in order to ensure the patient is comfortable.

All new patients are evaluated by Dr. Holdridge and are scheduled for an hour. Dr. Holdridge believes in greeting everyone with a smile, sitting down, and making eye contact, as she knows even a simple sign of compassion can make all the difference in their headache management. This extra time allows her to investigate the causes and characteristics of a patient's headaches while giving the patient the attention and time which they deserve. A thorough neurologic exam is performed. The remainder of the visit is spent discussing a diagnosis and, together with the patient, forming a treatment plan. Dr. Holdridge strongly believes in patient education and meticulously reviews various preventative and abortive treatment options, and explains potential side effects and benefits. She also ensures that patients understand the headache cycle and when treatment is appropriate. Dr. Holdridge believes in empowering her patients by giving them the appropriate tools necessary to manage their headaches.

A typical day at the Center starts at 7am, in order to accommodate those patients who want to be seen prior to starting their work day. Late hours are also scheduled, allowing for better access for the patients. Up to 50 patients are evaluated per work day, and urgent slots are provided for those who need to be seen immediately. An IV therapy suite is available which enables patients to remain in a calm, dark environment for cycle-breaking treatments as opposed to a visit to a loud and busy Emergency Department. The Center offers a multitude of interventions such as botox injections for chronic migraine, trigger point injections, sphenopalatine blocks, and occipital nerve blocks.

At The Comprehensive Headache Center, non-pharmacologic treatment approaches are utilized. Occupational therapists provide biofeedback training. Many patients utilize the physical therapy program, and appreciate the "dry needling" procedure.

Currently, the Center does not have inpatient capabilities. However, the IV treatment rooms provide an alternative to the emergency department or urgent care centers.



Dry Needling is a technique used by certified therapists to target musculoskeletal trigger points. A very thin needle (the size of an acupuncture needle) is inserted into a targeted muscle belly stimulating underlying myofascial trigger points and muscular and connective tissues. The needle allows the therapist to target tissues that cannot be accessed by touch. No medication is injected, hence the name "dry needling".

At the Center, a multi-faceted treatment approach provides patients with a variety of tools and coping skills, giving them a sense of control over their ailment that is often lost. All aspects of a patient's life is examined in order to determine what may be contributing to their headaches. A "team approach" is provided in which the patient is very involved in the decision making process. This involvement provides the patient with a sense of ownership to their disease (instead of their disease owning them). Also, there is an emphasis on understanding the headache cycle and why treatments (both pharmacologic and non-pharmacologic) are utilized. Patients often comment that no one has ever taken the time to explain why they are having headaches or the pathophysiology behind those headaches. Once patients are able to absorb this information, they are then better attuned and able to treat their headaches.

When asked about any significant growth or changes at the Center anticipated during the next few years, Dr. Holdridge indicated that the Center is expanding their office to the western suburbs of Milwaukee, and also anticipate an additional office hub in Milwaukee proper by the end of this year. They are very excited about this growth opportunity allowing more access to headache care for the citizens of Wisconsin.

When asked about why she chose headache medicine, Dr. Holdridge noted "My medical residency was in neurology which is near and dear to me. However, I became disheartened with the amount of neurodegenerative diseases that I often encountered. In the field of neurology, there are many diseases that do not improve as there are no treatments available. Headache medicine was a niche within the field of neurology that I was drawn to as I was able to see patients improve. I was able to take the strong neurology foundation and apply it to headache medicine. I was fortunate enough to be able to be mentored during my fellowship by Dr. Merle Diamond of the Diamond Headache Clinic in Chicago. I was able to observe the strong relationship and admiration that Dr. Diamond has with her patients and I hope that I was able to take a part of that with me when I interact with my patients."

When asked about what she enjoys the most about working in Headache Medicine, Dr. Holdridge replied: "I have seen how crippling and life-altering headaches can be, not only for the patient, but also the whole family. We often treat multiple generations of a family which provides a very unique opportunity to develop strong relationships. I wake up each day knowing that I get to work at my dream job in which I can make a difference in the lives of those suffering from head and facial pain. I also really enjoy the opportunities that Wheaton Franciscan has afforded me in educating the public. I often can be found participating in community events sponsored by Wheaton/Ascension, conducting local headache lectures at the community library, or working with commercial media. We want to educate the public that there is no need to continue suffering with headache pain, there are treatments available!"

Her advice to headache patients: "You do not have to suffer! We see so many patients in mid-life who are just now receiving treatment and often wish they had come in sooner!" HW

FOR MORE INFORMATION ON THE CLINIC, PLEASE VISIT:

www.mywheaton.org/services/neurology-stroke/headache-care

The Comprehensive Headache Center
Wheaton-Franciscan Healthcare
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Franklin, WI 53132
(414) 325-4710

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The winning tickets will be drawn and announced at the NHF 31st Annual Fundraising Benefit, A Night at the Museum, on Saturday, May 20, 2017. The winner need not be present to win. Winners will win $25,000 main prize, pearl stud earrings ($1,000 value) for second prize, or $500 gift card for Saks Fifth Avenue for third prize. You must indicate your full name, address and daytime telephone number. Accepted forms of payment are credit card, check or money order for $100 per ticket made payable to the National Headache Foundation. (Credit cards accepted are AmEx, Discover, MC and VISA). The NHF is not responsible for lost, late, stolen, incomplete, illegible, inaccurate, undelivered, delayed, or misdirected entries. The NHF reserves the right, in its sole discretion, to modify or terminate this raffle in the event of any act, occurrence, or reason that it believes would corrupt the integrity, administration, or fairness of the raffle. By participating in the raffle, participants agree to release, discharge, and hold harmless NHF, its respective parents, affiliates, subsidiaries, advertising and promotion agencies, and other individuals engaged in the development or execution of this raffle, from any liability, claims, losses, and damages arising out of or relating to their participation in this raffle or the acceptance, use, misuse, or possession of any prize received in this Raffle.

Eligibility: You must be 18 years or older to purchase a raffle ticket and a resident of the United States. Only one (1) individual may be identified as the purchaser of a raffle ticket. Federal, state and local laws and regulations apply. Void where prohibited. All purchases are final and non-refundable. By entering the raffle, the ticket purchaser acknowledges that he/she is aware of, and agrees, with the Raffle Official Rules.

Drawing: A maximum of 500 tickets will be sold. All entries must be RECEIVED by 5:00pm CT on Friday, May 19, 2017. In the event there are remaining tickets that have not been sold, they will be available for purchase at the NHF's Benefit, A Night at the Museum, to be held at The Drake on Saturday, May 20, 2017 until 30 minutes prior to the random drawing that will occur at or about 10:00pm CT.

Taxes: The winner is solely responsible for all state and local costs and charges. The winner is also responsible for any and all federal, state and local income or excise taxes, fees, assessments and like charges associated with the prize. The IRS has taken the position that amounts paid for chances to participate in raffles, lotteries or similar programs are not gifts and, therefore, the price of the ticket does not qualify as a deductible charitable contribution.

Payment Form

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