THE MIGRAINE IMPOSTER

Revealing the True Identity and a Simple Cure

Kevin R. Smith, M.D.
The Migraine Imposter
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by Kevin R. Smith M.D., F.A.C.S.
Dedication

I would like to thank my entire ancestral lineage, especially Allison, Kara, and Alana. Each of you inspires me in your own way, everyday. Also, to my parents, Joe and Opal Smith, who molded me with love and understanding to make me the man I am today.
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Foreword

There are too many people who needlessly suffer for years and decades because of misdiagnosed migraine headaches. This book will change that. My goal in writing this book is to provide information about a cause of severe headaches that is too often ignored.

My name is Dr. Kevin Smith. I am owner of the Smith Headache Treatment and Cosmetic Surgery Centers. My offices are centrally located in the world’s largest medical center, the Texas Medical Center, in Houston, Texas. I will talk more about my background in a minute, but first I would like to make the point that there are way too many people coming to my practice for help, who have wasted years living a low quality of life because they have been convinced they have migraines. With this diagnosis, they are left to find their own equilibrium, somewhere between experiencing the severe pain of never-ending headaches, and the impact of drug side-effects that keep them from giving their best effort to work, school, or relationships.

Over the years I have dealt with hundreds of patients, who after a routine CT scan of their sinuses, I discovered the root of their problem was an imposter hiding in their nose. As it turned out, their problem was a septal deviation or bone spur rather than the neurological condition of migraine they had been convinced they had. After a 20-minute septoplasty procedure to straighten the septum and remove bony spurs, most patients returned, exuberant
with news that they no longer suffered from migraine-like headaches. Their lives were forever changed.

Some still deal with an occasional headache, but these patients report that after surgery their headaches are different—not as frequent or severe as what they have dealt with in the past. One patient even told me, “I finally experienced the kind of headache that normal people must feel. A couple of ibuprofen later it was completely gone. I could never get relief that easily before.”

I find this outcome occurs nearly 90% of the time in my practice, a fact that motivates me to find new ways to get this information out to a broader audience. My hope is that by educating the general public about complexities of the nasal processes, I can help people to understand how common nasal abnormalities are and how this translates into headache pain that is routinely misdiagnosed as migraine. I want more people to understand they don’t have to live a long, protracted life of misery. Instead, they may in fact have a problem that can be easily fixed.

As for my medical background, I am trained in the fields of otolaryngology (ear, nose and throat) and facial plastic surgery. I have trained for years, fourteen to be exact, since high school to become the surgeon I am today. The training is rigorous, but the rewards are great. My education and training continues to this day as I constantly observe, question, and implement new ideas into my practice.

I am fortunate that with two specialties I can treat a wide range of conditions, including allergies, sleep apnea, and sinusitis under my otolaryngology practice, and facelifts, rhinoplasties, and eyelid surgeries under my plastic surgery practice.

Where My Passion Began

Ironically, it was during my facial plastic fellowship training that I first became aware of the connection between the nose and
headaches. My preceptor is one of the premiere facial plastic surgeons in the United States, performing over 600 surgical cases per year. Of the procedures he performs annually, hundreds are rhinoplasty. Some rhinoplasty patients require a septoplasty to straighten nasal deformities and create more space between narrowed nasal bones to improve breathing.

During my fellowship year, he remarked on at least three separate occasions that some of his patients receiving septoplasty later reported to him that they no longer got headaches. The first time he made that statement I brushed it off, but by the third time, I realized there was no denying the correlation. Storing my newfound insight securely in my memory bank, over time I developed my own style of treating patients; I started asking patients with a deviated septum if they suffered from headaches. Many were impressed that I picked up on that fact just by looking in their nose.
This demonstrates both the art and science of any medical practice. As I performed surgery on patients, I observed for myself the same results as my preceptor. After surgery, many patients claimed to no longer have headaches.

After completing my fellowship in January, 1993, I moved back to Houston, Texas. While a student at the University of Texas Medical School at Houston, I would gaze out the window during study breaks and dream of one day having an office in this renowned epicenter of cutting edge medical research—the Texas Medical Center. I was fortunate that my dream was realized, and my practice in the Texas Medical Center continues to thrive to this day.

Along the way I made another critical observation. Most of my patients with a deviated septum had also been previously diagnosed with migraines. Some had suffered for as long as sixty years! The more I operated and relieved their pain and suffering, the more it reinforced my thinking that there was not only a connection between a deviated septum and headaches, but there was also a subset of patients misdiagnosed as having migraines. Simply put, if I was curing them with nasal surgery, it was never a migraine to begin with.

The science of medicine evolves over time from the careful observation, questioning, and implementation of findings by individual doctors that have a passion for helping to improve the quality of life for their patients. Sometimes the medical community doesn't immediately accept their theories and practices, but by staying true to what they believe, eventually the benefits of their efforts shine through. This was certainly the case with a pioneering cardiovascular surgeon, Dr. Michael DeBakey.

In 1953 DeBakey went to his local department store and purchased a yard of a new material called Dacron. Using his wife's sewing machine he created fabric tubes the size of blood vessels and implanted them in animals. The results were phenomenal. The body did not reject the Dacron like it did other materials,
and DeBakey discovered how tissue was attracted to the material and would adhere strongly to it. After two years of making grafts and testing them on animals, he sewed his first artificial artery into a human patient, and in the process advanced heart surgery into a new era.

Many doubted his odds for success. The use of ordinary materials, constructed at home, and sewn into a human artery would have at the time seemed ridiculous. Yet this revolutionary medical advancement was ultimately responsible for saving many lives, including his own. In 2006, Dr. DeBakey, then 98 years old, became the oldest patient to survive a surgery to repair a torn aorta—a procedure he developed.

DeBakey’s story continues to inspire me in my practice. I do not just accept the way things have always been done, but look for opportunities to make a difference in the quality of people’s lives. I question the way headache cases are traditionally viewed, and try to find a better way to help.

Smith Headache Treatment Center

The more people I helped, the more patients would be referred to me for treatment. Eventually, I was featured on television news segments and produced commercials to inform the public of my findings. These efforts led to a substantial increase in the volume of patients that came to my office, desperate to find help. Again, this reinforced for me that there are a significant number of people who needlessly suffer from headaches.

Migraine patients tend to attract and have relationships with a network of other sufferers. Because of the devastating effects of headaches on family, friends, and co-workers, these people are intimately aware of the changes in a patient’s demeanor as a result of pain relief. After surgery, many of my patients expressed their
gratitude for being able to return to a normal life with healthy
relationships, free of the turmoil that comes with life spent dealing
with constant headaches.

Important studies have been done to characterize the
economic impacts of migraine to businesses in the form of rising
insurance costs and lost productivity, and to the financial hardships
born by those who struggle with chronic headaches. My goal in
writing this book is to raise awareness of a largely unknown source
of severe headaches, and to empower sufferers everywhere to take
back control of their headache diagnosis and treatment plan.

I want to change the way the medical community evaluates
and treats severe recurrent headaches by incorporating a CT scan of
the sinuses as a standard diagnostic tool, much like how MRI and
CT scans of the brain are done currently. Patients need to have the
confidence to demand this type of a CT scan when other causes
cannot be found, before submitting to a prescription drug regimen
that will only serve to mask symptoms, and do nothing to fix their
problem.

Those of us in the ear, nose, and throat (ENT) specialty
need to do more in educating our medical colleagues to consider
nasal causes in any headache diagnosis. Only by working from
both sides of this issue can we effectively change how headache
diagnosis and treatment is managed in our healthcare systems,
worldwide.

My work in helping to improve the quality of life for my
patients is, for me, more than a job, it's my passion. The most
rewarding aspect is that I can do something to positively impact the
quality of life for patients, by releasing them from the paralyzing
grip of severe, recurrent headaches with a simple 20-minute
procedure. Getting beyond just treating symptoms and giving people
back the lives they were meant to live is what being a doctor is all
about. I feel this is my purpose in life, and I find knowing that to be
very liberating.
Now, let's go reveal the true identity of The Migraine Imposter and bring him to justice!
The Migraine Imposter
Global Headache Victims

Lori was sixteen and miserable. She had suffered with daily headaches since she was thirteen, had taken every migraine medication under the sun, and nothing worked. Her pain was so severe that she was forced to miss a lot of school, and was even home schooled at one point in a desperate attempt to help her keep up with her studies.

She tried to be like any normal kid, but living with constant pain proved to be an incredible challenge for her and her family. Even a simple thing like hanging out at the high school football game with friends was difficult. Most of the time the pain forced her to leave early, arriving back home in tears. There were days she never got out of bed. The pain was so great she just couldn't function.

Lori’s mother, Kim saw a real change in her daughter’s personality as the headaches continued. Between living in almost constant pain and dealing with the side effects of various medications, Lori never seemed to be herself. She was frustrated and depressed much of the time. Kim decided she needed to do whatever it took to find an answer. Standing back and watching her daughter suffer wasn’t an option.

They decided Lori’s pediatrician was no longer helping and took her to see a headache specialist. This doctor obtained a CT scan of her brain, and found nothing abnormal. He placed her on a typical migraine drug regimen, with increasing strength of
medications, including Imitrex®, Midrin®, Relpax®, amitryptiline, Topamax®, Zomig®, and even an injectable pain medication.

Instead of getting better, her headaches were still getting worse. The headache specialist had her hospitalized on two different occasions, each with a stay of four or five days. She was put on intravenous pain medications in an attempt to break the pain cycle. Out of what Kim could only assume was frustration, the hospital staff members would routinely stop by her room and coax her to claim that she felt better. She didn’t. Since that wasn’t what the medical staff wanted to hear, they told Kim that Lori’s pain was “all in her head,” and released her.

The Headache Burden

Most people get an occasional headache, and know how it feels. It’s usually felt as a dull ache in the forehead, back of the head, temples, behind the eyes, or even across their entire scalp. Typically headaches are caused by stress or tension, cold or flu, or consuming too much alcohol. Most of the time these episodes are mild and taking a non-prescription analgesic, such as aspirin, acetaminophen, ibuprofen, or naproxen does the trick.

But for millions of people, dealing with chronic headaches is a much greater burden. It’s a condition that permeates every aspect of their lives. Like waves crashing on a beach, the cycle of agonizing pain seems to have no end. Pain episodes disrupt normal activities and as a result impact relationships, jobs, and even self-esteem. The situation seems all too often, hopeless. Specialists are consulted and treatments are tried, all without success.

The passage of time for chronic headache sufferers becomes marked, not by normal life events, but in terms of measured gaps between anticipated headache episodes. For many, struggling to cope with the dread of a next attack is like trying to live through an endless hurricane season on America’s Gulf Coast, knowing that as
soon as the pain hits they will be hunkered down, forced into a dark room, and cut off from the rest of the world.

Like those living in coastal towns across the Gulf Coast, someone who suffers from chronic headaches always has to put thought into being prepared for the next “big one.” But instead of collecting batteries, water, and filling the car’s tank with gas, a headache sufferer gathers preventative remedies and pain medications, and creates contingency plans to manage commitments to family and friends when the pain inevitably invades their life.

When first exposed to a loved one’s chronic headaches, most people are supportive. They treat the person with compassion, in the same way they might treat someone suffering from a cold or the flu. They show sympathy, and offer to help in any way possible to make their loved one more comfortable.

Over time, the level of sympathy given starts to grow thin, and then may evaporate completely. The sufferer gets labeled as “sickly,” and loved ones can start showing direct or indirect hostility for their lack of participation in school, work, chores, sports, or outings. It doesn’t seem possible that a mere headache could be that debilitating, and this lack of understanding leaves the sufferer feeling frustrated, guilty, and isolated.

Well-meaning friends or family members might suggest other explanations for their headaches, like depression, diet, or lifestyle choices. They honestly believe that if their loved one makes changes, they will be able to “get over it.” What they don’t realize is that those who suffer chronic pain are just as desperate for an explanation, and become susceptible to trying anything, and believing anything.
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Who Gets Headaches?

<table>
<thead>
<tr>
<th>Country</th>
<th>Total (millions)</th>
<th>Migraine (millions)</th>
<th>% Population Migraine</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>304</td>
<td>40</td>
<td>13%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>61</td>
<td>6</td>
<td>10%</td>
</tr>
<tr>
<td>Argentina</td>
<td>40</td>
<td>7</td>
<td>17%</td>
</tr>
<tr>
<td>Japan</td>
<td>127</td>
<td>11</td>
<td>8%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>532</strong></td>
<td><strong>64</strong></td>
<td><strong>12%</strong></td>
</tr>
</tbody>
</table>

The first population-based migraine study was done in 1989, providing the first statistical evidence of migraine prevalence in the United States. The American Migraine Study used criteria published by the International Headache Society to quantify people with migraine. The results showed that roughly 18% of women and 6% of men suffered with migraine, representing 12% of the total population in the U.S.

The study was repeated 10 years later, in 1999. The results remained incredibly stable, with the same ratios of women to men. Of the total population, 13% of the U.S. population was estimated to suffer with migraine. The number of total migraine sufferers grew over the decade from 23.6 million in 1989 to 27.9 million, as a direct result of the overall population growth over those years.

In 2009, we have yet to see published results of a new population-based migraine study, but hypothesizing a continued stability in the prevalence of migraine in about 13% of the population, I would estimate the number of Americans who suffer with migraine has now grown to about 40 million people.

In addition to U.S. data extrapolated from the American Migraine Study done in 1999, the table above shows similar statistics provided by countries in diverse regions of the world. Of interest is the fact that the prevalence of migraine is not an isolated issue.
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in the U.S., but the numbers demonstrate the common impact of migraine and migraine-like headaches on the quality of people’s lives around the globe. This sheer magnitude of the issue makes the need for new diagnosis and treatment options a global concern.

We have seen that no country, gender, age group, social status or economic class is exempt from severe, recurrent headache pain. Severe headaches disrupt lives around the world among the rich and famous to the same degree as average people. Famous people who have been known to suffer with migraine include:

- **Public figures**—Princess Margaret, Annie Glenn (Wife of John Glenn), Napoleon, Julius Caesar, Sigmund Freud
- **Presidents**—Thomas Jefferson, Ulysses S. Grant
- **Model**—Elle Macpherson
- **Actresses**—Elizabeth Taylor, Whoopi Goldberg, Lisa Kudrow, and Marcia Cross
- **Singers**—Carly Simon, Loretta Lynn, Elvis Presley
- **Painters**—Vincent van Gogh and Claude Monet
- **Basketball players**—Steve Francis, Kareem Abdul Jabbar, Scotty Pippen, and Jason Williams
- **Football players**—Marquez Pope, Zach Taylor, and Terrell Davis
- **Football coach**—Joe Gibbs
- **Baseball players**—David Bell, Dwight Gooden, Eric Milton, Jose Canseco
- **Tennis player**—Serena Williams
- **Golfer**—Fred Couples

In 2004, the World Health Organization (WHO) published a brief review of selected neurological topics. Headache was one of the topics covered. For this review, a survey of neurologists was taken, where it was reported that as many as one-third of all their patients came for consultations because of headaches. This surpassed any
other single reason. In a 2004 Factsheet published by WHO, barriers to effective care of headache patients was discussed. Among the obstacles a headache sufferer might be subjected to include:

- Lack of knowledge among healthcare providers
- Poor awareness amongst the general population that leads to social barriers
- Political and economic barriers imposed in an attempt to control healthcare costs, when in reality the direct costs for treating headache are small, relative to the huge indirect-cost savings that might be gained through appropriate headache treatments.

The World Headache Alliance reports that regardless of age, migraine is within the top 20 causes of disability for adults. The World Headache Alliance was established in 1997 to focus on helping people worldwide to better cope with chronic headaches by sharing information, raising awareness, and increasing the understanding of headache as a public health concern. The organization is a global alliance of almost 40 member headache organizations, representing nearly 30 countries. Together this coalition of advocates speaks on behalf of people whose lives are affected by headache disorders, and works to highlight the significant social and economic issues they face.


**Types of Headaches**

The International Headache Society (IHS) recognizes two categories of headaches, categorized as Primary and Secondary
Headaches. A primary headache is one with no underlying illness, while a secondary headache is actually a symptom of another medical condition. I will describe primary headaches in more detail.

Primary headache categories include:

- Tension type
- Migraine
- Cluster
- Sinus
- Barometric
- TMJ
- Rebound
- Post traumatic
- Other benign

**Tension Type Headaches (TTH)**

Known as muscle contraction headaches, ordinary headache, and headaches caused by obscure or unknown causes (idiopathic). Some may include psychogenic headaches in this category, which are headaches that originate in the mind from a mental or emotional conflict. Pain is usually bilateral, and described as having pressing or tightening characteristics. These headaches don't generally get worse with physical activity, and therefore may not be considered debilitating.

The International Headache Society characterizes TTH as being of mild or moderate intensity, and lasting minutes to days. Nausea isn't typically a symptom, but sensitivity to either light (photophobia) or sound (phonophobia) may exist.

TTH impacts 30% to 78% of the general population, making it the most common type of headache. When these headaches occur frequently or even daily, they are considered to be a chronic debilitating condition, negatively impacting a person's quality of life.
Migraine, With or Without Aura

Unfortunately, migraine has become a much over-used term. It is used as generically to describe a severe headache as Kleenex® is to describe facial tissues. With no definitive tests that can be run to positively support a migraine diagnosis, people are routinely told by default that they suffer migraine, when no other underlying cause is identified.

However, a true migraine is a neurological disease with a variety of symptoms. It takes significantly more effort to isolate a pain's origin to that of a true migraine, and frankly, today's healthcare system creates obstacles that impede a physician's efforts to effectively diagnose this condition.

Migraines are severe, recurrent headaches, typically with unilateral, pulsating pain. Less common than TTH, migraines can have bilateral pain as well. Symptoms include severe pain, nausea, and sensitivity to light and sound. Some migraine sufferers experience auras, which are neurologic symptoms that occur before, during, or after a headache episode. Headache symptoms can be aggravated by routine physical activity, which makes this a very debilitating disease for some people.

In spite of how often people are misdiagnosed with migraine, it is still thought to represent just the tip of the iceberg in terms of the total population who suffer migraines in the United States. On the other hand, many more migraine sufferers go undiagnosed, specifically because they lack adequate health insurance and access to quality care. Either way, without proper diagnosis, effective treatment becomes elusive.

The International Headache Society (IHS) criteria used to classify migraine headaches includes having at least five attacks, lasting 4 to 72 hours, and meeting two of the following:
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- Unilateral location
- Pulsating quality
- Moderate or severe pain
- Aggravated by physical activity

Cluster Headaches

According to the American Headache Society, cluster headaches occur in about 1% of the population, and are characterized by severe, unilateral pain around one eye, or along the side of the head. In addition to experiencing severe pain, a person with a cluster headache can have symptoms of nasal congestion, runny nose, facial or forehead sweating, and dropping or sweating eyelids. The person may also become agitated because of the intense pain, unable to lie down or relax.

Most cluster headache sufferers are men, between the ages of 20-40. These headaches got their name from the way pain episodes occur in groups, in terms of the number of headaches per day or the number of days per episode.

Cluster headaches can last from 15 to 180 minutes, with attacks ranging from once every other day, to as many as eight times per day. Remission from these headaches is known to occur, giving sufferers weeks, months, or years of relief from attacks.
Note: I have a strong suspicion that cluster headaches may actually have a rhinogenic cause. I believe the problem may stem from a deviated septum. While no studies have been done to confirm this thought, here is the evidence I believe could link cluster headaches with a rhinogenic cause:

- Cluster headaches are suffered mostly by men who by their nature are more prone to facial trauma.
- Symptoms of nasal congestion, runny nose, and facial sweating could represent turbinate swelling.
- Unilateral pain around one eye or along the side of the head could represent contact between a turbinate and a deviated septum. (See Chapter Four.)

PET (positron emission tomography) scans done at the time of a cluster headache have revealed an active hypothalamus, and pain that originates from the trigeminal nerve. This makes sense, as the trigeminal nerve is responsible for sensation to most of the head and around the eye. The trigeminal nerve is also the sensory highway that transports pain from the nose and sinuses to other parts of the face and head.

The signs are too prevalent to ignore, and I would suggest anyone who suffers from cluster headaches to visit an ENT specialist and insist on a CT scan of their nasal sinus cavities to evaluate potential rhinogenic causes of their headaches.

Sinus Headaches

Our sinuses are bony, air-filled cavities, with a lining that produces mucus that drains through small passages connecting the sinuses to the nose. When the sinuses become congested because of
GLOBAL HEADACHE VICTIMS

a cold or allergies, excess mucus production or swelling can block the passages and prevent drainage. The sinuses can become infected as a result.

Sinuses that have become congested or infected create a dull pain that can be felt around the forehead, temples, eyes, ears, nose, jaws, and teeth. Pain often seems mild in the mornings, but worsens as the day progresses, or when bending over, leaning forward, or blowing the nose.

The tightness of passages linking the sinuses to the nose in some people, make this a very problematic area, and results in frequent sinus problems. A new procedure, Sinuplasty, is now available and uses an innovative balloon technology to help keep passageways open. If you believe you're a candidate for this procedure, contact your ENT specialist.

Barometric Headaches

Often with weather changes, patients complain of pressure headaches in the forehead, top of the head, or cheeks. These barometric headaches are caused when air is trapped in the sinuses due to narrowed channels, and this air is at a different pressure level than the outside air—the result of barometric changes in the atmosphere. Other pressure changes happen because of changes in altitude when flying, diving, or driving in the mountains. The narrowed channels prevent the pressure in the sinuses from becoming equalized with the atmospheric pressure outside. The result is a pressure headache.

Sinuplasty is also effective in these cases. There is no tissue removal with this procedure, so recovery time is minimal. Patients can return to normal activities immediately.

Temporomandibular Joint Disorder (TMJ)

The condition of TMJ is according to The TMJ Association, “a collection of poorly understood conditions characterized by pain
in the jaw and surrounding tissues, and limitations of jaw movement.” Most TMJ problems are dealt with by dentists or oral surgeons, but many sufferers will seek consultations with a wide range of healthcare providers in search of answers, including primary care physicians, ENT specialists, neurologists, pain specialists, chiropractors, etc.

While not all of the causes of TMJ are well understood, contributing factors include jaw injuries, arthritis, dental procedures, genetics, hormones, low-level infections, auto-immune diseases, and clenching or grinding of teeth. TMJ can reduce jaw movement and create pain that is felt in the cheek, ear, temples, neck, or shoulders.

**Rebound Headaches**

Those who suffer frequent headaches can find themselves over-medicating, and as a result, add to their own headache condition. Patients who use pain medication more than two or three days a week may suffer from rebound headaches. These headaches are caused by the body’s adaptation to pain medication as a result of taking higher, or more frequent dosages than a doctor prescribes. The body starts to acclimate to a certain level of medication, and then reacts when that level drops.

**Post Traumatic Headaches**

Post traumatic headaches occur as a direct result of a head or neck injury. Symptoms may include dizziness, insomnia, difficulty concentrating, and mood or personality changes. It is quite possible that these headaches are related to a deviated septum since most are caused by trauma. When associated with other more serious injuries, the septum is often overlooked and the patients and doctors assume the pain is a direct result of the accident, and that the patient will likely have to endure it, indefinitely.
Other Benign Headaches

Other headaches are generally correlated to illness, or physical activity that brings on headache pain. Examples include headaches caused by consuming very cold foods or beverages, eye strain, dental problems, and caffeine withdrawal.

The Unexamined Nose

Distinguishing headache types is not always black or white, but rather shades of gray. Often, there is more than one causal factor contributing to a medical condition. The practice of medicine should, in theory, work towards properly identifying all of the various causes and using this information to create a comprehensive treatment plan.

Unfortunately the nose is typically overlooked as a factor in diagnosis. Dr. John Steer, MB ChB, FRCS, a practicing ENT Surgeon in Cape Town, South Africa, describes the nose as the “Forgotten Man.” In 2003, Steer wrote an overview of the nose, “… in the hope that all involved in respiratory medicine will better understand the vital role played by the nose and accept that with few exceptions outside the ENT specialist group, nasal examination and functional understanding has been shamefully ignored and misunderstood.”

In fact, the headache diagnosis resource used by many medical practitioners, The International Classification of Headache Disorders, Second Edition, describes conditions of deviated septum, hypertrophy of the turbinates, atrophy of sinus membranes, and mucosal contact as currently lacking established evidence to be officially linked as causes of headache. Mucosal contact is further noted as a new entry to the headache classification, requiring additional validation to qualify claims as a legitimate headache source.
To the contrary, in my practice, I have found about 90% of the time patients with identifiable septal abnormalities achieve significant relief as a result of septoplasty surgery. After surgery, patients expressed relief in terms of both the severity and frequency of severe headaches. If you consider that about 7% of the general population is walking around with severe septal deformities, fractures, or spur formations, and in the U.S. alone there are 40 million people who experience migraine, then it stands to reason that at a minimum, 2.5 million Americans could achieve significant relief of their headache symptoms with surgery.

Since we know the U.S. isn’t alone in having citizens that suffer from migraine, it is important to look at this issue from a broader perspective to determine the true scope of the problem. In 2008 the world’s population was estimated to be about 6.7 billion people. We found in our regional analysis that on average, 12% of the population had migraines. If we extrapolate our findings, we would assume the same 12% applies to the world’s population, 7% of those migraine sufferers had a severe septal deformity, and 90% of this total could find significant relief of pain with surgery. This would mean that over 50 million people around the world may suffer a rhinogenic cause for their headaches, and if fixed have the opportunity to gain a higher quality of life!

While surprising, these figures are actually conservative. It is estimated that 37% of adults have either a mild or moderate deviated septum. While not everyone with deviated septum experiences chronic headaches, a great potential exists for a significant portion of the world’s population to have headaches with a nasal source. What a monumental medical breakthrough that would be!

The time has come to give Dr. Steer’s “Forgotten Man” its due, and make CT scans of nasal and sinus cavities a standard part of any headache diagnosis.
Diane needed an answer. She had not had a solid night sleep in over four years. Every night she would awake at some point, driven by pain to take Advil®. She slept with a heating pad on her face and neck, and some days even wearing eyeglasses was more than she could bear.

She described her pain as starting along the edge of her eye socket on the right side of her face and nose, and moving to her temples and the top of her head, as well as to her neck, just below her right ear lobe. She found my office through an Internet search and was desperate to find the source of her facial pain before the high dosages of Advil® ruined her liver.

I have had many patients over the years talk about what they had been through to find headache relief. None has been as thorough as Diane in documenting a 10-year journey taken, and is reprinted here with her permission.
<table>
<thead>
<tr>
<th>Date</th>
<th>Symptom</th>
<th>Physician</th>
<th>Diagnosis</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>Shooting pain 2-3 times a day on right side of face, with pain immediately subsiding.</td>
<td>ENT</td>
<td>Doesn't see anything wrong with Sinus.</td>
<td>None.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GP</td>
<td>Doesn't see anything wrong with Sinus.</td>
<td>Use saline solution when showering.</td>
</tr>
<tr>
<td>2002-2005</td>
<td>Pain gradually escalating, and lasting longer. Start taking more Advil®.</td>
<td>Allergist</td>
<td>Allergic to dust mites and cat saliva.</td>
<td>Allergy shots for 1.5 years.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dentist</td>
<td>Possibly TMJ or night grinding of teeth.</td>
<td>Made 2 different night guards in the course of 4 years.</td>
</tr>
<tr>
<td>2005-2006</td>
<td>Pain is all the time, taking 16 Advil® a day.</td>
<td>GP instructs me to go to Neurologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>Pain is all the time, taking 16 Advil® a day.</td>
<td>Neurologist</td>
<td>Trigeminal Neuralgia (TN) that has become Atypical Facial Pain because it is all the time.</td>
<td>MRI on head shows nothing. Spinal Tap shows nothing. Vision tests show nothing. MS is ruled out. Various epileptic drugs prescribed, such as Tegretol®, Carbatrol®, Anti-depressant: Cymbalta®, gabapentin.</td>
</tr>
<tr>
<td>2007</td>
<td>Pain is all the time, taking 16 Advil® a day.</td>
<td>Acupuncturist</td>
<td>Told her of diagnosis of TN to Atypical Facial Pain.</td>
<td>After acupuncture treatment, the facial pain was excruciating for a week. It was almost unbearable. The acupuncturist said I had been misdiagnosed.</td>
</tr>
<tr>
<td></td>
<td>Facial pain still all the time with pain in neck beginning all the time. Still taking 16+ Advil® a day.</td>
<td>Neurologist</td>
<td>Orders MRI on neck.</td>
<td>MRI shows bone spurs. One month of physical therapy, traction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No alleviation of pain.</td>
</tr>
<tr>
<td>Date</td>
<td>Symptom</td>
<td>Physician</td>
<td>Diagnosis</td>
<td>Treatment</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2008 (May)</td>
<td>Admitted to ER for unrelated issue (diverticular hemorrhage).</td>
<td>Admitting Intern shocked at amount of daily Advil® usage. I tell him that is the only way I can feel normal.</td>
<td>Admitted to hospital and received two blood transfusions and colonoscopy.</td>
<td>Colonoscopy clear. Prescribes Lortab® with severe caution about taking Advil®, Directed to see GP.</td>
</tr>
<tr>
<td>2008 (June–Dec)</td>
<td>Pain in face/neck all the time.</td>
<td>Pain Management doctor.</td>
<td>He has records from Neurologist.</td>
<td>Steroid injections in spine. This takes some of neck pain away except for pain below right earlobe. Prescribes Lyrica®, Celebrex®, Cymbalta®, tramadol, gabapentine. Gabapentin up to 1,800 mg a day. At last appointment chastises me for still taking 14–16 Advil® a day.</td>
</tr>
<tr>
<td>2009 (Jan)</td>
<td>Gave up on Pain Management doctor. Pain in face/neck still all the time.</td>
<td>Nurse Practitioner/ GP. They both see radiology report and treatment history.</td>
<td>GP does not know what to think of facial pain.</td>
<td>Kenalog® injections in neck (under earlobe) and right temple. Pain subsides for approx. 5 days, requiring only 2 Advil® every 8 hours.</td>
</tr>
<tr>
<td>2009 (Feb)</td>
<td>Pain in face/neck. Take 16–20 Advil® per day.</td>
<td>Nurse Practitioner/ GP. They both see radiology report and treatment history.</td>
<td>GP does not know what to think of facial pain.</td>
<td>Kenalog® injections in neck (under earlobe) and right temple. Pain subsides for approx. 5 days, requiring only 2 Advil® every 8 hours.</td>
</tr>
<tr>
<td>2009 (Apr)</td>
<td>Pain in face/neck. Take 20–24 Advil® per day.</td>
<td>Nurse Practitioner/ GP. They both see radiology report and treatment history.</td>
<td>GP does not know what to think of facial pain.</td>
<td>Kenalog® injections in neck (under earlobe) and right temple. Pain subsides for approx. 5 days, requiring only 2 Advil® every 8 hours.</td>
</tr>
</tbody>
</table>
Typical Headache Diagnosis

Diane’s journal is a good example of what millions of Americans go through in trying to find a reason for their chronic headaches. The difference is that after ten years of searching for a solution, Diane came to my office and I immediately found she had a deviated septum. A CT scan of her nasal sinuses confirmed that hers was a severe deviation that could be corrected with surgery. At the time of this book printing, I had just performed Diane’s surgery, and I remain very optimistic about a positive outcome in eliminating or significantly reducing her headaches.

Too many people start down the same path as Diane, spending years of their life in pursuit of relief. Their journey typically begins with self-treatment. As soon as they feel a severe headache coming on they reach for over-the-counter medications, such as ibuprofen or Tylenol®. If after a few days there is no relief, they will call their primary care physician, pediatrician, or internist to find out what’s really going on.

The Primary Care Experience

The initial office visit will involve taking a thorough medical history, followed by a physical examination. The doctor will likely order tests to rule out medical conditions where headache is a symptom. Tests can include:

- Urinalysis—A urinalysis can uncover issues related to your kidney function or other abnormalities. Sugar levels can be an indication of diabetes, the presence of white blood cells can indicate a urinary tract infection, and protein or red blood cells can indicate kidney damage caused by high blood pressure.
• **Blood panel**— Blood is analyzed to rule out conditions such as low potassium, high blood sugar, or high liver enzymes. Low potassium can indicate a tumor of the adrenal gland. High blood sugar is associated with diabetes, and high liver enzymes are usually seen with hepatitis. Each of these conditions can be associated with recurrent headaches.

• **Thyroid tests**— Some of the blood drawn will be used to look at the thyroid’s function. The thyroid regulates most of the body’s functions, such as heart rate and menstrual cycles. Either an overactive thyroid (hyperthyroidism) or underactive (hypothyroidism) thyroid gland can cause chronic headaches.

Once these tests have been completed and found to be normal, the doctor will focus on helping the patient to be more comfortable with pain medications. Depending on whether or not the patient has already tried over-the-counter remedies, and the effectiveness of the drugs tried, the nurse practitioner or physician will initiate a drug treatment plan intended to break the pain cycle and help the patient feel more comfortable.

Common non-prescription medications that can be tried include non-steroidal anti-inflammatory drugs, such as Motrin®, Tylenol®, or aspirin. Not without complications, these seemingly tame drugs have the potential with chronic use to create gastritis, and possibly ulcers of the gastrointestinal tract.

If non-prescription medications have already failed, stronger medications such as Tylenol® with Codeine, Vicodin®, Fioricet®, or even morphine and methadone can be prescribed. When patients are placed on prescription painkillers they will visit their primary care physician on a regular basis, over a period of weeks or months,
to have their medication's effectiveness assessed, the doses adjusted, and the side effects evaluated.

These medications can be addictive and lead to abuse. Some signs of abuse might include:

- Persistent calls for prescription refills
- Shorter intervals between prescription requests
- Creative excuses for prescription requests
- Doctor shopping behavior to obtain desired medications

If the right combination of pain medications is not found, the patient is likely to be referred to a neurologist—a doctor that specializes in disorders of the central nervous system.

**A Trip to the Neurologist**

A neurologist will be looking to identify an organic disease with headaches as a symptom, allowing the patient's head pain to fall into a category known as secondary headaches. Of particular concern will be to find a life-threatening brain aneurysm or tumor, which can be verified with a CT scan or MRI of the brain.

If results are positive for either of these conditions, the patient will be referred to a neurosurgeon for definitive treatment. However, results for these tests are commonly negative, as severe conditions like aneurysm or tumor are usually accompanied by other visible symptoms, like seizures or other neurological impairments.

Many of the 45 million patients that seek medical advice for chronic headaches end up with a CT scan of the brain, which leads the American Neurological Association to caution that CT scans of the brain should not be used in headache cases unless other
supporting neurologic symptoms are present. The concern is that radiation exposure isn't warranted in these cases, given the low probability of finding a severe brain condition with headaches as the only symptom reported.

While as a doctor I agree that in the case where chronic headaches are the only reported symptom that a CT scan of the brain may not be warranted, I strongly believe that a CT scan of the nasal sinuses should be considered standard protocol. This is especially true in the situation where a patient finally presents to their doctor's office, complaining that they have suffered from headaches for several years and now want to find a solution.

Return to Primary Care

With a negative outcome of a brain scan for a brain aneurysm or tumor, a physician is most likely to presume the patient is dealing with a primary headache and will dump their condition into a broad category of migraine-like headaches. The patient at this point will be referred back to their primary care physician, relegated to a regimen of more or different medications in an attempt to control the pain. Commonly prescribed at this point are Imitrex® and ergotamines.

Patients on pain medications are required by their primary care doctors to return every couple of weeks for drug efficacy evaluations and minor alterations made along the way to achieve the best possible pain control. For many patients, this shotgun approach is insufficient and they become frustrated. They may lose confidence in their doctor's ability to find an answer, and begin to take matters into their own hands. They may seek out other health care providers, or try non-traditional treatment options. Some just continue to suffer, believing that nothing can be done to help them.
The Specialist Shuffle

Without clear etiologies to diagnose the source of headaches, patients with chronic headaches who continue to pursue answers may frustrate their primary care practitioners. Headache patients are eagerly referred to a variety of specialists by these physicians, hoping that someone else will be able to better serve their patient’s needs.

Because of the vast number of possible causes for head pain, the list of specialty doctors a migraine sufferer might explore can be quite extensive, and expensive:

- **Neurosurgeons.** To treat disorders such as herniated disks or bone spurs of the neck that can impinge nerves and cause headaches.
- **ENT specialists.** To treat allergies, nasal congestion, or recurrent sinus infections. An ENT can order a CT scan of the nasal sinuses to determine if structural abnormalities exist that may be causing headaches.
- **Dentists or oral surgeons.** To rule out dental causes, namely temporal mandibular joint disease (TMJ).
- **Ophthalmologists.** To rule out visual disturbances that can result in head pain.
- **Anesthesiologists or pain specialists.** To employ a variety of therapeutic modalities including but not limited to, injections of pain medicines into neck joints, Botox injections into scalp and neck muscles, and prescribing pain medicines.

The process patients go through to find relief can be exhausting and time-consuming. The journey also leads to disappointment if the end result is persistent pain. Patients become desperate for a cure, or even partial relief. Patients struggling to
find an answer may start to self-medicate with a variety prescription, herbal remedies, and over-the-counter drugs.

Dealing over a long period of time with a chronic condition like severe, refractory headaches can lead to an insidious pattern of abuse that can in turn result in addiction, accidental overdose, or taking lethal combinations of legitimately prescribed medications. While celebrities aren't the only ones caught in this struggle, they certainly are the most visible.

The quest for relief can lead to "doctor shopping," an activity that closely resembles a prescription scavenger hunt. The object is to collect as many legitimate prescriptions for drugs, in the types and quantities the patient wants. If a doctor is hesitant or even refuses to comply with their requests for drugs, the patient moves on to the next doctor on their list. Multiple pharmacies get involved in filling these prescriptions, as the patient tries to avoid detection of their high-risk behavior.

In the cases of Michael Jackson, Heath Ledger, and Anna Nicole Smith, we became all too acquainted with the disastrous results of self-medication leading to accidental death. Many chronic headache sufferers risk this same outcome, everyday. Doctors who treat headache patients need to more effectively collaborate across specialties and improve coordination of treatment plans, especially when multiple medications or narcotics are prescribed.

**Alternative Treatments**

At the end of the more traditional treatments lie non-traditional options, such as meditation, yoga, acupuncture, biofeedback, and herbal supplements. Nearly seventy percent of migraine sufferers have tried alternative treatments. Many of these options aren't covered by medical insurance, increasing the financial burden on the headache sufferer and their family. While these options
may be sound and sometimes provide relief, when they are unsuccessful, patients are left with few options.

Alternative treatments might include:

- Acupuncture and acupressure
- Biofeedback
- Herbal remedies
- Hypnosis
- Massage and aromatherapy
- Osteopathy and chiropractic
- Physical therapy
- Psychotherapy
- Stress management
- Yoga

People resort to finding ways to live with the pain, and come up with strategies to deal with their pain episodes. But, they can also become susceptible to the ravages of hopelessness and depression. During this phase it is critical for patients to have a strong support system. Society can be quick to judge and label them as sickly, crazy, or even drug seekers. They need the support of family and friends who know what they're going through, now more than ever.

It is not unusual with prolonged headaches that have no relief in sight, for thoughts of suicide to creep into the psyche of these unfortunate pain victims. These people need the help of a psychiatrist or psychologist to stop the downward spiral of depression, which usually involves taking anti-depressants, with their own inherent side-effects.

A Skeptical Medical Profession

The medical community has been slow to recognize nasal abnormalities as a legitimate cause of headaches. Flo is a good
example. She came into my office one day and was very upfront with her disbelief about nasal causes. She has been a nurse practitioner for the past fourteen years, and was dealing with her own inconclusive headache diagnosis.

She had been suffering from migraines for ten years. For a year-and-a-half before she came to see me, she suffered headaches on a daily basis. She was under siege with headache pain from the time she woke up until the time she went to bed. Physicians she worked with would comment, “You look like you’re in a lot of pain. Maybe we can give you something that would help.”

Often their suggestions were for her to take narcotics, an option she flatly rejected. She knew from treating her own patients how addicting narcotics can be for someone in chronic pain. Narcotics often just made their migraines worse. Patients experienced rebound headaches as a result of a vicious cycle of taking narcotics to deal with pain, which resulted in more pain and the need for higher doses of narcotics.

Instead she took triptans for her migraines, which didn’t help. Some days all she could do was go home and literally pack her head in ice.

One day she saw me on TV, proclaiming that I could reduce headaches in about 90% of patients, when a nasal source was discovered. She was very skeptical of that claim, but out of sheer desperation made an appointment.

As she sat down in my examination room, she gave me her frank opinion that she believed I was likely a quack, but she was so desperate for an answer that she was ready to listen to what I had to say. I asked her if she had ever had a CT scan of her sinuses. She told me she had one some years ago, and the films were negative for any sinus issues. I asked her to get another CT scan done anyway, and then bring the films to me for review. She agreed.

When she returned for her next appointment, she handed me the films and said, “Here they are like you requested. Just like I told you before, the films are negative.”
I placed the films in the view box and asked her join me in taking a look. I pointed to a very small, thin white line on her septum, explaining to her, “That’s a sliver of bone, and it is putting pressure on the turbinates and irritating the nerve, over and over, and over again.”

I then asked her if she had ever broken her nose. She told me twice, while playing softball when she was younger. I told her if she would let me remove that sliver of septal bone, I could almost guarantee that she would see a decrease in her headaches.

Flo asked me why the two different radiologists that reviewed her films both missed seeing the bone sliver. I explained that radiologists aren’t always trained to see that sort of specific abnormality. When a general radiologist looks at nasal cavity films, with a headache condition indicated, they look for something more general that could be applying pressure and causing headaches. They look for some type of sinus plug, or a chronic or acute infection. They aren’t looking for subtle nasal abnormalities. That’s part of the issue I’m faced with—educating radiologists to look at the size, shape, and relationship of the septum, turbinates, and sinuses to develop a more complete report.

Flo said, “Sign me up. Let’s get this done.” I removed that bone sliver and her headaches went away. She called me several months later to tell me that after having dealt with migraine-like headaches for ten years, and constant, daily headaches for the past year-and-a-half, it had suddenly occurred to her that she hadn’t had a single headache in the three months immediately following her surgery!

Doctor Smith gave me back my life. I can’t put it any simpler than that. I will continue to send people to Dr. Smith for the rest of my practice.

—Flo Tomasic, NP
It has now been several years since the surgery. When she gets a headache she can take an ibuprofen and be okay. That is such a different situation than what she dealt with before. Her headaches had been so debilitating and crippling that she understood how that kind of chronic pain could drive people to contemplate suicide. She had learned to keep going, pushing through the pain to get through her everyday life. Others aren't as fortunate.

**Reasons for Migraine Misdiagnosis**

Why are migraine-like headaches so commonly misdiagnosed? One factor is that our head and neck regions are very complex. This relatively small space houses our senses of smell, taste, hearing, and sight. There are a myriad of muscles, vessels, bones, and nerves, which combined with the brain form a very dynamic region of the body. Understanding what's really happening with these interactions is critical when it comes to determining the origins of head pain.

During our time together, I had a chance to get Flo's perspective as a nurse practitioner on the frequent misdiagnoses of headaches. She pointed out that in today's day and age a provider has just ten minutes to see a patient. It's much easier to just write a prescription than deal with ordering a CT scan, checking if the patient's insurance will pay for it, and getting approval for the referral. It's easier to say, “Here's your narcotic, now go.”

I had the opportunity to speak at length with an internal medicine doctor at a recent medical conference. She echoed Flo's comments about changes in how we diagnose and treat headache patients in today's managed care environment.

She recalled a time before the advent of managed care when CT scans of the sinuses were routinely ordered, early in the work-up of headache patients. As a resident, it was common when they rounded on patients for her attending physician to barrage the group
with questions about the various tests that could be done to thoroughly investigate the possible causes of severe recurrent headaches.

She noticed after beginning her practice with a large medical clinic, during the height of the managed care movement, a gradual shift in the climate to elevate the priority of managing the cost of finding a cure over performing a more thorough investigation to arrive at a more definitive diagnosis. There is no denying that managed care has had a profound impact on the behaviors and thought patterns of physicians in training.

For chronic headache conditions, this climate shift has resulted in a case of “pay me now or pay me a lot more, later.” By not ordering CT scans of sinuses earlier in the diagnosis phase, more patients become saddled with a misdiagnosis of migraine, and ironically this approach contributes more to rising costs of healthcare, and acts counter to the objective of reducing overall costs in the way managed healthcare intended.

In our conversation, Flo offered another insightful opinion that migraine headaches have always come under the specialty of neurologists. Not ENT doctors like me. She feels that if I were a neurologist, everyone would be listening to me and following my guidelines. But because I’m in an ear, nose, and throat specialist, the general opinion is that migraine is outside my scope of practice.

But Flo knows different. She not only experienced the impact of headaches from a nasal source as a patient, but can also use her experience as a provider to tell patients, “Been there. Done that.” This has forever changed the way she practices when it comes to a headache patient.

After her surgery, when she started seeing patients, she was better attuned to people who had seen all kinds of specialists, like neurologists and ENT doctors, and then been told, “It’s just migraines. You’ve got to take medications.”

Because of having lived with chronic pain herself and finally seeing relief, she changed her approach with patients to dig deeper and question more. Have they ever been in an automobile
accident? Have they ever been hit in the face? She knew to press for answers, even if they related to things that had happened in childhood. She was surprised when many would tell her something like, “Yes, I was in an automobile accident when I was twelve.”

She has been overwhelmed by the responses she gets when telling her own story to patients. They are both amazed and eager to learn more. She is upfront with them about the fact that nasal or sinus surgery might not be able to help everyone, but for as many years as some of her patients have suffered, she knows it’s worth travelling 250 miles from Fort Worth to Houston for them to find out.

Since her own surgery, Flo has referred several patients to me, and I have been able to help most of them. One patient in particular had been going to Flo’s office, sometimes twice a week over a two-year period because of severe headaches. Flo convinced her to come see me, I performed surgery, and now Flo hasn’t seen this patient in over four months.

Another reality that impacts effective diagnosis of headaches is the fact that headache cases are not viewed as serious. Primary headaches aren’t fatal, have causes that are difficult to isolate, and generally have periods of remission, even with no medical intervention.

Physicians receive ongoing training on a variety of medical issues, but his or her training does not typically include the latest information on headaches or migraine. That leaves a gap where information about medical advancements and new treatment options for headaches are not widely recognized.

I have been met with opposition from a few of my own colleagues in the medical community. In one situation I approached a nationally recognized headache specialist in the Houston area where I practice. I was hopeful that we might work together, and I had suggested that he send me some of his most difficult refractory headache patients. I was very curious, and wanted the chance to evaluate these patients myself to see what the incidence of a deviated septum in his patient population would be.
My hopes were dashed when the specialist responded sharply, outraged that I was suggesting that migraine headaches could be cured by surgery. My response was that if I could cure a headache with surgery, then it never was migraine to begin with. It would be a misdiagnosis.

My good intentions were not well received. While other physicians have been open to working with me to explore nasal sources for headaches, his mind was closed to alternatives beyond his practice.

The irony is that I have actually seen and helped some of his previous patients. They had come to me on their own after becoming frustrated with continued pain, and the fact that this doctor couldn't (or wouldn't) try any other approaches.

I bring up this example to emphasize that people need to feel in control of their own headache investigation. At any point, if they begin to feel like their physician isn't offering anything new, they need to find another physician.

Flo's perspective on this is that many physicians aren't aware of the results I have seen in eliminating patient's headaches. For them it takes time to evaluate alternatives, time they don't have with their busy schedules. It's easier to just say it doesn't work and continue with the standard treatment plans they are most familiar with, even when those options are not as effective for the patient.
Another factor at play is how drug company sales representatives bombard physicians on a regular basis with information on how their patients will benefit from taking specific medications. The representatives are so friendly that physicians can forget that these meetings are really sales calls, sponsored by drug companies to generate more revenue from prescriptions filled with their pain medications.

A demonstration of this occurred a few years back when I attended a meeting in the Houston area, sponsored by a pharmaceutical company. The meeting featured a headache specialist who had teamed up with a professor from a very prestigious medical school. The focus of the meeting was to give primary care doctors information about the latest headache treatments available.

In this meeting one of the experts told the audience that there was no such thing as a sinus headache. As an ENT specialist, I was astounded to hear such a claim! This statement defies basic anatomy to declare the entire human body has sensory nerve inputs, except in the sinuses. Why would the sinuses be the exception? And why do most people understand from personal experience that anytime they have a sinus infection or the flu they get an accompanying headache?

It should come as no surprise that the pharmaceutical company sponsoring this meeting manufactured a common migraine medication.

Since there are no definitive tests for migraine at this time, and symptoms, triggers, and responses to treatment vary widely from person to person, it leaves the door open for patients to be subjected to trial-and-error approaches, with a variety of motivations driving their treatment plan. That’s why above all else, my desire is for patients to be their own advocates and to never fear discussing the latest diagnostic options with their doctor. Patients deserve to understand more fully the treatment strategy they have been dealt.

According to the migraine awareness group, MAGNUM, it is believed that about sixty percent of women and seventy percent
of men with migraine have never actually been diagnosed with migraine. This means they are exposed to potentially unnecessary procedures and avoidable consequences. Even top neurologists in the country admit that migraine is not well understood, and often misdiagnosed.

**My Own, Frank Observation**

My residency training as an ENT and facial plastic surgeon included a rotation in the emergency room. This is one of the most demanding rotations for a resident because it requires the ability to bounce from patient to patient, getting information and performing exams at a rapid pace to develop a diagnosis and treatment plan. My experience gave me first-hand insight into how migraine patients are treated in an emergency room environment.

Headache patients present some of the more perplexing cases. On the one hand, patients suspected to have migraine could generally dictate their own care by stating precisely what medications were effective in relieving their pain. On the other hand, there were some people that regardless of treatments they received, got little or no comfort.

The typical patient that presented to our emergency room with a complaint of severe headache was evaluated by a physician. The usual work-up included checking for high blood pressure, drawing labs to rule out infection or electrolyte imbalance, and taking a CT scan or MRI of the brain to check for tumor or inflammatory processes. When these tests were negative, we gave patients intravenous medications to help break the pain cycle, and prescribed pain or migraine medications to be taken at home. A referral to a neurologist was generally recommended as the next step. If the severe pain was described as recurrent, patients were routinely given the diagnosis of migraine.

What patients never saw behind the curtain in the emergency room was the attitude of cynicism in the staff for their suffering. Doctors and nurses alike realized that there was rarely a positive
finding that explained head pain. So they judged these patients as drug seeking, lazy, or looking for an excuse to miss work.

I felt this way myself in the beginning, and was just as guilty of labeling patients this way. I now realize that it was my own lack of knowledge and an inability to find a definitive cause that resulted in blame being placed on the patient, and not me.

There is so much we still don't know about migraine. As a doctor who has been in the trenches, I have to confess that a common fall-back explanation amongst many medical professionals for migraine is stress, depression, or just “in your head.” My concern is knowing from my experience as an ENT surgeon that nasal sources can effectively masquerade as migraine, leading to an assortment of unnecessary suffering and consequences for patients, their families, co-workers, and their communities.
CHAPTER THREE

Consequences of Assumed Migraine

A wide range of consequences come from a migraine misdiagnosis, causing huge ramifications to a person’s quality of life. People not only suffer from the unrelenting pain, but also from impacts to their personal and professional relationships, financial burdens of heavy medical expenses, loss of confidence, and feelings of guilt. The list goes on and on.

Patients have shared with me over the years the depths of their suffering in all of these areas, and their frustration at having been labeled so quickly with migraine, only to learn much later that the problem was actually in their nose. They were victims of the dreaded Migraine Imposter.

Living with Chronic Pain

Harvey came to see me a few years ago. He was 71 years old and had suffered from severe headaches his whole life. He recalled going to school as a small child and being so overcome by the pain of a headache that his little body would go limp, and he would be unable to walk. His father would come to the school and gingerly carry him home.

As an adult, Harvey was a Midwest farmer. He had days where he couldn’t go out and work on things that needed to get
done because of intense headaches. Instead of working he sought a
dark, quiet bedroom to hide, vomiting when the migraines hit. His
migraines would often last three or four days at a time.

He found himself in the emergency room many times
over the years. All that was offered was a shot of Demerol® that
put him to sleep. When he woke up, the pain was still there. He
told me that he has been on Tylenol®, Darvocet®, prednisone,
lithium, Imitrex®, Relpax®, Axert®, and Percocet®. Nothing
helped.

The cost of the drugs he had to take was staggering. Relpax®
cost him $520 for 30 doses and Axert® was $560 for 30 doses. The
other drugs weren’t cheap either.

A “Winter Texan,” Harvey travelled from his home in the
Midwest to Texas each year with his wife Bonny to escape the harsh
winters. Over the years they came to know people who flocked to
the same RV Park each winter. One man from Canada was part of
Shriner International, an organization dedicated to improving the
lives of children. While staying in South Texas for the winter, he
provided transportation for area children to see doctors in Houston.

While sitting in a clinic waiting room in 2005, the man
picked up an issue of Texas Medical News, lying on a table. He
read an article by Dr. Kevin Smith talking about nasal sources of
severe headaches, and how surgical intervention was helping people
regain their lives. He brought the paper back to the RV park for
Harvey to read.

When Harvey came to my office, he explained that he had
a few scans done in the past, but they all were reported as normal.
At my request, he had a scan by the radiology department in my
building. I took a look at his films and realized there was a lot going
on in his nose! I performed surgery to correct a deviated septum,
turbinate hypertrophy, and sinusitis. Afterwards, Harvey was able
to finally experience relief.

Returning home, Harvey contacted a neurologist in Kansas
City he had seen over an extended time for his headaches. He told
him the good news of his successful nasal surgery. The neurologist was happy for him, but emphasized that he didn't believe there was any proven data for nasal sources of headaches.

Harvey's story reminds me of the uphill battle I'm waging to open the minds of the medical community to nasal sources of severe, migraine-like headaches. People don't have to spend their whole lives suffering, as Harvey did.

When a patient suffers from long-term, chronic headaches it sets in motion a number of other side-effects that compound their struggle to cope with daily life. Like Harvey, a headache sufferer is forced to deal with far-reaching impacts, ranging from social and economic hardships, to emotional and physical changes. Their loved ones suffer right along with them, and even their community at large is not immune to consequences. Those with chronic headache conditions are frequent after-hours visitors to already overburdened emergency rooms and urgent care clinics, increasing the wait times all must endure.

As headache episodes increase in frequency there is little time to maintain or develop lasting, meaningful relationships with friends, co-workers, or family members. Plans cannot be made for special occasions such as anniversaries, birthdays, vacations, or attending school events. An inability to connect on this very basic level is not only hurtful, it can have lasting consequences.

This leads the headache sufferer to feel isolated. They become the subjects of unfair criticisms about their performance, participation, and level of contribution. Unable to insulate themselves from this criticism, they can begin to buy into misperceptions, which can cause depression and lead to unhappy family lives, poor job performance, and an overall reduction in quality of life.

Another one of my patients, Julie, struggled for years with misdiagnosed migraines. Her situation became so severe that it almost cost her everything—Her life.
Isolation from Family and Friends

Julie impressed me as the kind of person that has so much internal drive and motivation that you can easily imagine her conquering just about anything she put her mind to. But what almost took her down were her severe, chronic headaches.

A bright child, Julie began suffering headaches on a regular basis around the age of twelve, about the same time as she began having menstrual cycles. While she had almost daily headaches, the severity of pain was always greatest when she started her monthly period.

The pain often sent her to bed and caused her to miss extracurricular activities. But, Julie was determined to not let the headaches deter her from getting a good education. Her dedication paid off and despite being in almost constant pain, she graduated from college with honors, attended law school, passed the CPA exam, and the State Bar exam.

Like most headache sufferers she was referred along the way to a neurologist, who ran a CT scan of her brain and eliminated a brain tumor or aneurysm as the cause. She was diagnosed as having a migraine condition and was placed on a succession of narcotic drugs to help her deal with the pain. Over-the-counter medications provided no more help for Julie's pain than sugar pills.

The drugs she took to control her pain had significant side-effects that isolated her from work colleagues, family, and friends. Common medications given to migraine patients cause mood changes, difficulty concentrating, nausea, and vomiting. For any situation she had to decide which was better—Deal with a certain amount of pain, or feel nauseous, irritable, and have fuzzy thinking. On one of Julie's darkest days, she spent six hours on her bathroom floor with pain so intense she couldn't stop vomiting or even move off the floor.

Out of desperation Julie began her own Internet research to find an answer. When she searched for "migraine surgery" she found information linking migraines and nasal sources, and a website for
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Julie no longer gets the kind of headaches she suffered with for years. Now she occasionally has what she considers “normal” headaches, due to allergies or a cold, and finds that a nasal spray and Advil® do the trick. She wishes the first ENT had taken care of her septal spur at her initial visit, and saved her years of agony. All together, she had suffered for more than fifteen years with a misdiagnosis and had spent thousands of dollars on medications she did not need.

Added Marital Stress

For married couples, the affected spouse becomes by default the center of attention. Everything planned for the family is predicated on the timing of dreaded headaches. The unaffected spouse is often burdened with not only their own responsibilities at
work and home, but also with added responsibilities normally covered by their spouse.

Emotionally, the healthy spouse is expected to empathize with and comfort their loved one, no matter how they feel or what else is going on. They develop coping skills, including telling white lies to explain their spouse's frequent absence from business outings, dinners, parties, and other plans with friends or members of their extended family.

Trips to the doctor's office and emergency rooms become frequent and time consuming. The increased need for pain medications eventually evolves into strategically placed stashes in the bathroom, bedroom nightstand, kitchen cabinet, car, and office desk.

The headache sufferer may feel guilty for hiding drugs, fearful that others will learn the extent of their problem and judge them harshly. If there are kids in the house, there's the added fear that the stashed drugs may be discovered and taken, creating an unintentional medical emergency.

A healthy spouse will eventually succumb to the strain of presenting outwardly, two completely different pictures of their family life— the happy home they want everyone to think they have, and the reality of a family plagued by the constant accommodation needed for a chronic headache sufferer. The tension that develops in these relationships can sometimes be insurmountable.

**Missed Chance for a Normal Childhood**

Adults aren't the only ones to deal with the debilitating effects of severe headache pain. Children suffer too.

At ten-years-old, Bryce looked forward to playing football with his friends. But, headaches and difficulty breathing had him sitting on the bench half of the time. Missing practice or unable to practice at full-strength meant less playing time come game day. He just couldn't keep up with the other boys who were healthier and
consistently improving their skills. His coach told his mom to go find him help for his headaches.

He also missed a lot of school because of the headaches and frequent sinus infections. He was forced by pain to stay home, take medication, and lay down in a dark room until the headache subsided. On good days, he struggled to catch-up on missed class work, instead of playing with friends. His grades suffered despite his efforts.

Bryce came to my office, three years ago when he was eleven. I realized from his CT scan that he had a deviated septum. I performed a septrplastysis that allowed him to breathe better and get rid of his headaches. He's no longer missing class and his grades have improved. Now at fourteen, he's a normal teenager.

Another patient, Savannah, suffered very debilitating headaches, starting at age thirteen when she was in Junior High. Her headaches came on daily, from the time she woke up until late afternoon. She tried everything to lessen the pain, including a variety of prescription drugs, like Imitrex®. She was referred to a neurologist who found nothing abnormal. No cause of her severe headaches was found, and no treatment worked.

In 2000, she had a CT scan and an MRI of her brain. Nothing abnormal was found. In 2004 a subsequent scan showed that one of her sinus cavities was blocked by a mass. She was treated for this condition with Claritin-D®, a common allergy medication. Her mom took her to another doctor, who prescribed Imitrex®. The Imitrex® made her sleepy and nauseous, and not worth the insignificant amount of relief it afforded her.

All through her teen years the headaches caused her to miss a lot of school, and her grades suffered as a result. She estimates she missed about half of her senior year of high school from headaches. She felt the headaches were ruining her life. She started taking antidepressants to cope.

Her pain was relentless and any sound or exposure to light would intensify the pain. She didn't want to go outside, and instead
spent long periods in bed, suffering. She found it difficult to makeup schoolwork during periods where pain briefly receded, because she needed this time to recover and rest. As a result, it was a constant battle.

Savannah suffered for eight years with severe headaches before coming to my office in late 2007. That large mass seen three years earlier was actually a cyst in her maxillary sinus. She required a septoplasty, turbinectomy, and sinus surgery to correct her nasal problems. Her headaches today are almost non-existent, and she’s happy that she can finally live a normal life.

**Childhood Self-Esteem Challenges**

A child’s development of socialization skills at school is a very important activity, allowing him or her to better navigate through society. Socialization is key to building self-esteem. Children’s social skills are retarded when their daily lives revolve around headache pain, limiting their interactions with other kids.

Living in constant pain impacts a child’s ability to concentrate in school. Performance in the classroom is impaired, and if this cycle continues, teachers and other students may label the child as sickly, weird, drug dependent, or even Attention Deficit Hyperactivity Disorder (ADHD). They are often teased, lose friends, and remain loners. Parents often try to compensate for their child’s suffering with special treatment, or they may react negatively, believing the problem is all in their child’s head.

Parents find themselves focusing their attention on the smallest things that could bring their child relief. They may take drastic measures, for example, if allergies have been diagnosed as a possible cause. Foods thought to be triggers are removed from the child’s diet, including milk, chocolate, caffeine, and eggs. They might use electrostatic air filters to remove dust and other airborne irritants to optimize the living environment, perhaps utilizing special air
purification systems, removing carpet, and frequently changing bed linens and pillows.

As the pain and frustration increases, so does isolation and despair. In extreme cases, the child and parents resort to homeschooling to accommodate the unpredictable nature of the pain. The homebound child is now further isolated from friends, teachers, and the entire school environment. The stigma of being different is a theme that is reinforced and if left unresolved, can have devastating effects.

**Barrier to Career Success**

Most of us have jobs that rely on others to get work done. For the migraine sufferer, jobs can be placed in jeopardy because of missed days, or days when they are less focused or less productive. This not only impacts a business financially, but also takes an otherwise solid performer away from contributing at their full potential.

Strained relationships develop with co-workers when they are called upon frequently to cover for someone who suffers with migraines. The sufferer’s absences get in the way of showing management their dedication and talents, and as a result, they may be passed over for promotions. The afflicted employee is often seen as a bad team player, lazy, or slow. Supervisors may even identify them as the weak link in the team, and if there’s a need to reduce headcount the migraine sufferer is likely the first to go.

My patient Julie was working one day as an attorney in a law firm, having a particularly bad headache in her office. She had closed her door, turned off the lights, and laid her head down on the desk. Her boss walked in. He told her that while he sympathized with what she was going through, he needed for her to leave and find an answer to her headaches, or she couldn’t continue to work there.

New to the workforce after spending $24,000 per year to attend a private law school, Julie was frightened that she would lose
her job, drown in debt, and be unable to recover while dealing with her chronic, severe headaches.

The situation Julie faced is very common. In a survey taken in Canada of women who suffered migraine in 2005, 75% of women reported that their headaches caused them to feel misunderstood, and to face cynicism from people they interact with. They said that the fear of being negatively judged by a boss or co-worker caused them to feel guilty when they were forced to miss work.

Feeling Misunderstood

As if life wasn't hard enough for someone dealing with chronic pain, they are also subject to unfair judgments placed on them because they have needs that fall outside of what people consider “normal.” Our lack of understanding about headaches and migraine lead us to a common perception that people should have some control over these ailments. We believe that a person who suffers can somehow manage their symptoms by reducing stress or changing other lifestyle factors, such as diet or sleep patterns. When someone we know has a problem with chronic headaches we may be sympathetic for awhile, but over time when their condition doesn't improve, we may be quick to conclude they must be weak, hypochondriacs, lazy, or that they actually enjoy the attention they receive as a result of being sick.

People seeking the help of healthcare professionals over time can encounter the same lack of sensitivity. When they become frequent visitors to emergency rooms and other facilities, looking for relief in after-hour situations, healthcare professionals may conclude they are showing drug-seeking behaviors, and deny them treatment.

This is not an abstract concept, but a reality that was highlighted in an episode of the popular TV program, ER. In one episode a person faked migraine to get access to unneeded drugs.
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Patients can also be met with skepticism when they discuss nasal surgery as a cure for their headaches. When Julie returned to the neurologist in Louisiana she had seen over a long time, she told him about her surgery to remove a bone spur and no longer having headaches. He knew something was different because he hadn’t seen her in awhile, and knew she hadn’t made any calls to his office for narcotic samples. Yet, he was still unconvinced that removing a bone spur was what cured her headaches.

My patient Lori, discussed in a previous chapter, was the subject of a similar reaction from her doctor. After a successful surgery, her mother Kim happened to run into the headache specialist who had spent so much time treating Lori. Kim told him how excited their family was that Lori’s headaches had disappeared after the sinus surgery. It was the one thing that had finally resolved her headaches and the whole family was grateful. The doctor gave Kim a look of complete disbelief and walked away, without a word.

Depression

Other victims of chronic headaches can become depressed with the constant pain, feeling misunderstood by friends, family, and colleagues, and feeling guilty about the large financial burden their condition places on the family’s resources. Not to mention the depression that comes from trying to live a normal life, while at the same time managing a myriad of side-effects caused by drug therapies. Depression leads to being prescribed antidepressants, but at the same time adds to the feeling of being in a downward spiral and having one more pill to take each day to feel normal.

If not monitored, depression can lead to a sense of hopelessness, and even suicide. That’s why it is so important for people dealing with the chronic pain of headaches to have a strong support system around them.
Financial Difficulties for Families

Julie discovered how costly misdiagnosed headaches can be, even for a person who has insurance. In her situation, she routinely hit the maximum yearly prescription benefit allowed on her insurance policy, and was left to pay out-of-pocket for the additional medications prescribed by her doctor. A sympathetic neurologist would sometimes give her medication samples when she was out of money, and out of her mind with pain. Sometimes she just suffered through the pain without medication.

This is where the rubber meets the road. Doctors who treat symptoms without coming to a definitive diagnosis can cause huge financial hardships on patients when insurance benefits are maxed out and the patient continues to suffer. The patient, unfortunately, is too often trapped in the middle without recourse between their doctor’s prescribed treatment and their inability to financially cover all of the costs associated with that treatment plan. This is the point where many stop seeking medical attention, because they simply can’t afford it.

In addition to yearly maximum on prescription benefits, people like Julie may discover another financial impact of migraine—having this condition excluded altogether from their medical coverage. Migraine is treated as a preexisting condition by many insurance companies, and this fact results in denied coverage for any claims linked to it. This exclusion can be attached to an insurance policy for years, causing huge and lasting consequences as medical costs skyrocket.

Those who are lucky enough to be on a group insurance policy through a larger employer are often exempt from these kinds of exclusions. This leads some people to stay at jobs they aren’t well suited for out of fear that they won’t find another job with the level of medical benefit they need.

In Julie’s case, she left a larger firm to open a private law practice. She attempted to secure an independent insurance policy and was denied coverage related to migraines after they received
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medical records showing her pattern of treatment. Her price for migraine misdiagnosis was steep—denied health insurance coverage for a preexisting condition she didn’t have.

Fortunately for Julie, besides the pain relief she got from surgery to remove the bone spur, she was able to have the preexisting condition of migraine removed from her records. I was able to write a letter to her insurance provider, advising them of Julie’s surgical outcome and the true cause of her previous headache condition. She never had migraines and needed to stop being penalized for a misdiagnosis. At that point, she finally got the full medical coverage she was entitled to.

I have seen many studies that have shown a large economic impact to our country caused by a continued lack of conclusive diagnostic tests for migraine. Without recognition by the medical community of other conditions causing headaches, there is a lack of acceptance for new treatment options. As patients struggle to find their own source of relief, they ultimately impose a large financial impact on themselves, the companies for which they work, and the healthcare system in general.

In a 2004 study, Stang and colleagues reported that families with at least one person suffering from migraines had total annual medical costs that were seventy percent higher than families without migraine. In those families with an adult sufferer, this amounted to about $4,700 per year. Interestingly, a significant proportion of these costs were not for direct treatment of headache symptoms, but was related to simultaneous conditions, and for treatment given to spouses and other family members. For example, the spouse of a migraine sufferer had total healthcare costs that were 24% higher than a counterpart in a non-migraine family, and a child had costs that were eleven percent higher. These findings provide a true indication of how a migraine sufferer’s unresolved headache condition impacts the health and well-being of their entire family.

Migraine sufferers also find themselves tied to large quantities of multiple medications needed to control pain. For many, the
amount of medications they need to take on a regular basis exceeds the maximums allowed on their insurance plan, leaving them to either try getting by without proper medication or paying expensive costs out of pocket.

**Medication Side-effects and Risks**

Huey Lewis and The News had a hit song released in 1983 that was about the need for a new drug that wouldn't cause so many problems. Lewis sang about looking for, “One that won't keep me up all night or make me sleep all day. One that won't make me sick. One that won't spill, cost too much, or come in a pill.” This for many headache sufferers sums up their own frustrations to find a medication that can control their severe headache pain, without all of the damaging side effects.

All pain medications come with their share of side effects. Even chronic use of aspirin can lead to gastritis and even ulcers of the gastrointestinal tract. Prior to surgery to repair her severe deviated septum, my patient Diane had been consistently chastised by medical professionals for taking 16-24 Advil® tablets every day, over a period of several years. She had always felt these large amounts were necessary to dull the pain enough to get through the day. But doctors, including me, fear these high levels could eventually cause irreversible liver and kidney damage.

The specific concern for ibuprofen and other over-the-counter NSAIDs (nonsteroidal anti-inflammatory drugs) is that patients tend to use these at will, wrongly assuming they are without risk. It doesn't matter if someone is taking ibuprofen, aspirin, or acetaminophen. The concern is the same. None of these medications should be taken in frequencies or quantities that exceed package or their doctor's directions.

Since Diane's pain reliever of choice was ibuprofen, sold under the name of Advil®, I will discuss the risks relative to that drug. But, again—warnings for aspirin and acetaminophen are similar.
Advil® states on product bottles that the maximum daily dosage without doctor oversight is six 200mg tablets in a 24 hour period. That’s a total of 1200mg. Under a doctor’s directions, patients are sometimes advised to take larger quantities for a short period of time, but no more than 3200mg, or 16 tablets of 200mg each in a 24-hour period.

The drug manufacturer needs to establish very conservative standards for labeling that will protect most people, most of the time. A doctor knows more about a person’s specific needs and other risk factors that can alter their instructions. But, the apparent discrepancy between the drug maker’s and the doctor’s advice may lead some people to incorrectly assume that even the doctor’s directed doses are conservative. They may then underestimate the irreversible damage or death that can occur by not heeding these established limits.

According to Drug.com, ibuprofen use increases your risk of life-threatening heart or circulation problems, including heart attack and stroke. This risk increases the longer you take ibuprofen. In fact Advil® directs patients to not take their medication for longer than 10 days without consulting their doctor.

Diane’s journal indicates that she began taking Advil® in 2002, and by 2005 was taking the maximum doctor-directed dosage of 16, 200mg tablets per day. Four years later, out of desperation, she exceeded her doctor’s advice by increasing her daily consumption to as many as 24, 200mg tablets. That’s 4800mg per day, which is 1.5 times the medically recognized safe dosage limit. No wonder her doctors were concerned!

In addition, combining drugs can influence ibuprofen’s overall impact on the body. Many over-the-counter cold medications

If I hadn’t found you (Dr. Smith) when I did, I would likely be dead by now. I truly believe you saved my life.

—Julie B.
contain ibuprofen, aspirin, or acetaminophen, and those need to be accounted for in daily dosage totals. Blood thinners and antidepressants can compound the risk of bruising or bleeding.

Diane was taking the antidepressant drug Cymbalta®, which is also used with conditions of chronic pain like fibromyalgia. Taken with ibuprofen, antidepressants like Cymbalta® increase the risk for people to bruise or bleed more easily. Drugs.com warns against consuming alcohol with both ibuprofen and Cymbalta usage because they are both hard on the liver, and can cause irreversible damage.

My patient, Julie began taking Zonegran® on a daily basis to prevent headaches, and tried various triptans to deal with pain when prevention efforts failed. Triptans are a family of drugs that are commonly used to interrupt episodes of severe headaches. Zonegran® is an anti-seizure medication and causes a number of side effects, including mood changes, slowed thinking, memory loss, difficulty concentrating, nausea, and vomiting.

Later she was prescribed Imitrex®. When that no longer helped, her neurologist prescribed Actiq®, a Schedule II controlled substance that is only recommended for use with cancer patients who have shown tolerance to other opioid therapies. Opioids are strong painkillers with morphine-like effects. Actiq® is considered of high risk for abuse or misuse, and has an increased potential for fatal overdose due to respiratory depression. That’s why the drug’s manufacturer recommends this drug only be administered by oncologists or pain specialists familiar with the use of Schedule II drugs like morphine, oxycodone, methadone, and similar opioids to treat cancer pain.

Julie told me that she was always fearful that the pain she endured would cause her to make a mistake with dosages. She admitted that she had started playing “pharmacist” on her own, trying different combinations of prescribed drugs, and consulting regularly with a town pharmacist on maximum dosages. She knew the risks she was taking, but the pain had become unbearable. She needed to find enough relief to do what she needed to finish college and pursue her law career.
Keeping track of multiple medications and dosing schedules can be a nightmare for patients like Julie who have a migraine diagnosis. For someone preoccupied with constant pain, keeping a detailed accounting of which medication is taken, when, and how much can be overwhelming. I've had several patients tell me about close calls with medication overdoses, both intentional and unintentional, and about drug interactions caused from taking wrong combinations of medications.

Out of desperation, patients will also get creative in how they take their medications. They may take more than the recommended dose or at shorter intervals, or even mix drugs in a way that can cause serious interactions. The American Association of Poison Control Centers (AAPCC) tracks calls coming in from their 61 poison control centers, serving all 50 states, American Samoa, the District of Columbia, Federated States of Micronesia, Guam, Puerto Rico, and the U.S. Virgin Islands. Calls are characterized as exposures when there is evidence to support over-dose or incorrect use of specific substances.

For 2007, the AAPCC reported they had received over 309,000 calls concerning exposure to painkillers, both non-narcotic and narcotic, and 98,899 calls for exposure to antidepressants. Data related to reported deaths in 2007 included 331 fatalities from the use of narcotic painkillers, 220 fatalities from antidepressants, 208 fatalities from acetaminophen in combination with other substances and another 140 from acetaminophen alone, and 63 fatalities from aspirin alone.

Celebrities provide the most visible cases of accidental drug overdoses or death caused by unanticipated interactions of various medications. While autopsy results of Michael Jackson's death have not at this time been released, many anticipate his use of intravenous administered Diprivan® outside of a hospital setting to have been a major contributor. There has been speculation that other drugs in combination may have also played a role.

Other famous people have succumbed to the same fate. Anna Nicole Smith died with much media attention in 2007, due to an
accidental overdose of the sedative chloral hydrate in combination with other prescription drugs, including Klonopin®, Ativan®, Serax®, and Valium®. It has also been noted that she had Benadryl® and Topamax® in her system when she died, which added to the sedative effect of the other drugs.

Reported by the New York Times, Heath Ledger was found dead in his New York apartment in early 2008. At just 28 years old, Ledger was the victim of an accidental overdose of prescription drugs, including painkillers Oxycontin® and Vicodin®, along with anti-anxiety medications and a prescription sleep aid.

After hearing the coroner’s report of his son’s death, Heath Ledger’s father warned through a public statement, “While no medications were taken in excess, we learned today the combination of doctor-prescribed drugs proved lethal for our boy. Heath’s accidental death serves as a caution to the hidden dangers of combining prescription medications, even at low dosage.”

The AAPCC reported in 2007 that 83.2% of exposures overall were unintentional, with inadvertent double dosing being a leading cause. For chronic headache sufferers, the potential for making a mistake with pain medications can lead to the real possibility of significant medical issues, or even death. This is why the risks associated with long-term drug regimens without a definitive diagnosis for chronic headaches is too high a price to pay.

Lost Worker Productivity for Businesses

The daily grind of everyday life can sometimes be more than we bargained for. Pressure to perform tasks, make deadlines, and attend meetings can take its toll. For a healthy lifestyle it is therefore important to balance our work with an equal amount of play and relaxation.

This delicate balance is nearly impossible to achieve for someone who suffers from debilitating, daily migraine headaches. Imagine attempting to get things done with an ice pick piercing
your skull. For many headache sufferers, that is exactly what they experience, everyday. It’s no wonder these people are often less productive at work.

In data collected for the American Migraine Study II, 43% of migraine sufferers reported five or more days of headache pain in the previous three months. More than half reported that their pain forced them to go to bed for days at a time, and the same percentage reported a reduction of 50% or more in work or school productivity. Nearly 25% had sought care in an emergency room or urgent care clinic.

In a Canadian migraine study done in July 2005, 3.1 million women reported that they suffered migraine, and missed on average 20.8 days of work or school per year. The survey results showed around 38% of migraine sufferers had never consulted with a healthcare professional about their headaches. Of the 62% of respondents who did seek medical advice, between 41% and 63% were not completely satisfied with the treatments they received.

A survey taken in the United Kingdom showed that migraine costs that country £1 billion every year. Of those who responded, 60% never sought medical attention because they were convinced that nothing could be done to help them, and 34% indicated they had faced difficulties or discrimination at work because of their migraine condition.

It shouldn’t be a surprise that one of the “hidden” costs to the workforce is the loss of productivity for employees who come to work but cannot perform at optimum levels. Researchers from the University of Michigan conducted a study with Chicago-based Bank One to determine the costs in lost productivity of workers who suffered from migraine.

Health risk appraisal questionnaires completed by 19,853 employees, showed that 20% had reported a history of migraine headaches. Responses were combined with demographic and payroll data to estimate the corporate costs from migraine-related absenteeism and reduced productivity.
While direct costs of absenteeism totaled $21.5 million, estimated costs due to lost productivity were even higher, at $24.4 million. The magnitude of these costs shows how the incidence of migraine peaks during the prime working years, impacting to a greater degree those between 25 and 55 years of age. The surprising conclusion of this study was that productivity costs related to chronic diseases such as migraine, arthritis, allergies, and back pain, are equivalent to the medical costs related to more severe conditions, such as heart disease and cancer.

Other research shows how the difficulty of severe headache diagnosis correlates to increased healthcare costs for patients, hospitals, and taxpayers. In a one-year period from February 2003 to February 2004, 689 patients with a primary diagnosis of Headache NOS (not otherwise specified) were admitted to a major teaching hospital in Houston, Texas. The average length of stay for these patients was 3.9 days, with a total billed cost for all patients of nearly $14 million for a single one-year period.

The bottom line is that undiagnosed or misdiagnosed cases of chronic headaches creates a financial hardship for families, and costs businesses millions of dollars annually in healthcare costs and lost productivity. Chronic headaches also cause significant strains on relationships and quality of life. This is why headaches are not a benign illness—The cost to society is significant.
Chapter Four: Scene of the Crime—Nose and Sinuses

Nothing is more memorable than a smell. One scent can be unexpected, momentary and fleeting, yet conjure up a childhood summer beside a lake in the mountains.

— Diane Ackerman, Author and Poet

It’s interesting that something can be as the saying goes, “As plain as the nose on our face,” when our nose is in fact, anything but ordinary. Our nose is responsible for our sense of smell and uses about 1,000 receptors to identify odors. Beyond mere scents, our sense of smell provides us with key links to our past, present, and future. Therefore, our nose and its amazing capabilities play a very large role in our lives.

Smells provide an incredibly strong association to our memories, whether it’s the scent of fresh baked bread that takes us back to our mother’s kitchen and childhood, or the smell of the Jasmine blooms on a warm summer evening, trellised below our bedroom window. Scientists believe the close proximity in the brain of the olfactory cortex and the hippocampus, which is responsible for our emotions, memory, and fear, may be the reasons why certain
odors provide such a direct link to a specific time and place, and take us there like no other stimuli can.

Although not as fully developed in humans as in animals, our sense of smell keeps us in tune with our surroundings, alerting us to the fact that dinner is ready or that a fire is burning, nearby. Our sense of smell may even incite us to take action by triggering emotions or fears. For example, the smell of burning bread in the kitchen will cause us to lunge for the toaster, almost without thinking.

Along with giving us the ability to smell, our nose is also responsible for drawing in the air we breathe and influences how we perceive taste. We expect much from our nose, and it gets it all done for us within a very small space.

But, like with anything, abnormalities can cause problems. In the case of the nose, these defects can be at the root of misdiagnosed migraine headaches. To understand how this is possible, let’s take a closer look at what’s really going on inside our nose.

**A Backstage Pass to the Nose**
The nose and its nasal passages are part of the upper respiratory tract, along with the paranasal sinuses and the throat. The nose and sinuses are both lined with a layer of mucus-producing glands, which are covered by a layer comprised of thousands of tiny hairs, called cilia. Together these layers create the respiratory epithelium, which serves to keep the nose and sinuses moist, while providing a protective barrier against infectious diseases and microorganisms.

Most people are unaware that the mucus glands secrete a pint or more of clean, clear mucus each day, which traps airborne particles that it comes in contact with. The cilia underneath move in a constant sweeping motion to move mucus with its trapped foreign particles towards openings in the sinus cavities, draining into the nasal cavity and eventually out through the back of the nose, where it is swallowed and finally enters the digestive track.

The septum, turbinates, sinuses, and nerves all have great opportunities to become sources of pain that can be referred to other parts of the head, and exhibit classic migraine symptoms. I will describe these elements in more detail to illustrate the role each can play as a disguised migraine imposter.

The Septum

![Anatomy of the Septum](image)

Cartilage (c) and bone (b) form the septum.
A main structural component, the septum forms a midline partition, or nasal wall that helps support the nose. The septum is composed of cartilage in the front and paper-thin bones in the back to form left and right nasal passages. Ideally, the septum is midline, but it is estimated that in eighty percent of cases, it’s off-center. This may go unnoticed, but may cause other problems, including:

- Blockage of one or both of the nostrils
- Runny nose
- Frequent nosebleeds
- Frequent sinus infections
- Facial pain, headaches, postnasal drip
- Noisy breathing in infants and young children during sleep

When a septum bends off-center it is called a deviated septum. While septal deviations and bone spurs can be found along any part of the septum, the majority have been observed at the weakest point, the junction where the cartilage and bones meet.

The Deviated Septum
There is likely a hereditary component of how a baby can be born with a deviated septum, much like how everyone in the same family can have a very similar looking nose. But most of the time, deviations of the septum are a result of nose trauma.

Simply put, living our lives is dangerous and accidents happen. Our nose and the septum are particularly prone to injury because of how they project outward from the face.

Nasal trauma can result in the development of a septal spur, or sharp, bony projection that can impinge on the sensitive structures in the nose, namely the turbinates. The point of contact irritates nerves, which in turn refers pain to the head and causes the kind of pain often described or misdiagnosed as migraines.

From the time we are born trauma can occur to a baby's delicate nose while traveling down the birth canal. During labor the nose is pressed against the mother's sacrum for a period of minutes to hours. Because the nasal bones are soft the nose isn't broken. However, growth centers can be altered so that as we age the external nose and the internal nasal septum can grow out of alignment. Spurs can develop as a result.

As we navigate childhood, accidents are the most common cause of nasal trauma. Rollerblades, scooters, and bicycles cause falls, while active participation in sports like baseball, football, and basketball can lead to a ball or bat hit to the face. As adults, injuries are more likely to be due to auto or motorcycle accidents, where the nose can slam against the dashboard or steering wheel.

The nose doesn't have to be broken to cause future problems. Even a jarring effect to the nose can place stress on the septum, and the paper-thin bone within the nose can splinter and develop bone spurs. Changes to the septum's alignment can go unnoticed, often for years. However, a deviation can become a bone spur and make contact with sensitive turbinate tissue located nearby. Just as bone spurs in the feet and vertebrae can cause pain, bone spurs in the nose can also cause severe pain to the head that mimics a migraine.
A Deviated Lifestyle

Cheryl suffered with headaches for 27 years. The headaches were daily, with a severity of pain that was very debilitating. She tried everything to control the pain and prevent future headaches.

She had suffered from rheumatoid arthritis since she was 10, which caused doctors to attribute her headaches to her underlying chronic ailment. Unwilling to accept this fact, Cheryl saw various specialists to investigate other medical opinions.

A consultation with a neurologist caused her to eliminate common foods from her diet, foods that were known to trigger migraines, including chocolate and wine. A wellness doctor recommended even more changes, including the elimination of all sugar and soft drinks, and performing a yeast detoxification. Nothing helped.

Defeated, she withdrew from people, activities, and life. She continued to take narcotics like Relpax® and Fioricet® for pain relief and Topamax® for prevention. She no longer felt like herself, preferring to crawl into a dark, quiet place to ease her headache pain. She was chronically fatigued from the medications, frequent sinus infections, and the stress of dealing with being in pain all of the time. She had become a prisoner of her headache condition.

When she finally came to my office, a CT scan revealed a bone spur and a narrowing of her sinuses. I was able to perform a septoplasty and a balloon procedure (sinuplasty) to open up her sinuses.

Since Cheryl’s surgery she tells me that her husband can no longer keep up with her bursts of energy. She is once again able to enjoy her favorite chocolates and wine that she was denied for so many years. Her social calendar is full and family and friends are excited to see her finally able to experience life to the fullest.
Along both sides of the nasal wall are three pairs of nasal concha. The name comes from a strong resemblance these structures have to the conch seashell. Also known as turbinates, these rounded bony projections are located laterally along the length of the nasal cavities, curling towards the middle and downward into the nasal airways.

People usually have three pairs of turbinates, which are the inferior, middle, and superior turbinates. Sometimes, an additional turbinate, the supreme turbinate is present and located just above the superior turbinate.

The turbinates as a group make up most of the mucosal tissue of the nose and are required for functional respiration. They each consist of a thick, vascular and erectile glandular tissue layer, covered by the respiratory epithelium. Like the sinuses, the turbinates are partially composed of mucus producing goblet cells, covered by cilia.
The tissue layers of the turbinates are very sensitive, and play a big role in referring pain when they come in contact with other bony structures. This became quite apparent in the case of a thirteen-year-old girl who presented in my office with severe headaches. Her exam and CT scan showed simply large turbinates. Her septum was straight. With a closer inspection I realized the turbinates were touching the floor of her nose. I surgically reduced the turbinates and her headaches improved. This sensitivity is why the turbinates play such a key role in rhinogenic headaches.

**Inferior Turbinates**

Largest of the three, these turbinates run parallel to the floor of the nose. They can be as long as an index finger and are primarily responsible for directing airflow, humidification, heating, and filtering of inhaled air. Nearby, the nasolacrimal duct drains our tears into the inferior meatus—a space between the turbinate and the palatine bone that forms the bottom of the nose. This interaction is why we can develop a stuffy nose when we cry.

Inferior turbinates can become chronically enlarged, usually as a result of chronic allergies or other environmental exposures such as smoke, pollution, and mold. Sometimes a turbinate will grow bigger to fill the larger nasal airway opposite the septal deflection. In this case, turbinate reduction surgery may be required to improve breathing and alleviate referred headache pain. This is done in a cautious, targeted way by trimming the erectile tissue or the mucosa (sometimes with the underlying bone), leaving as much of the turbinate intact as possible to preserve its critical functions. Other conservative reduction treatments include laser, coblation reduction, or out-fracturing the turbinates laterally away from the septum.
SCENE OF THE CRIME—NOSE AND SINUSES

Middle Turbinates

Located above the inferior turbinates and smaller, the middle turbinates are about the size of the little finger. This pair extends downward over the openings of the maxillary and ethmoid sinuses, creating a buffer and protecting the sinuses from coming into direct contact with pressurized nasal airflows. The majority of inhaled air travels between the inferior and middle turbinates.

A middle turbinate that has become enlarged by an air cell is called concha bullosa, and is fairly common. These air bubbles can be small, but larger ones can get in the way of nasal airflow and cause sinus blockage. Sometimes the middle turbinate can be abnormally shaped, with the same result. Since the middle meatus is a major player when it comes to sinus drainage, abnormalities of the middle turbinate can be especially troublesome by blocking normal sinus flows, and requiring surgery to correct.

Superior Turbinates

Smallest of the turbinates, the superior turbinates are located above the middle turbinates and connected by nerve endings. Their job is to protect the olfactory bulb, which contains the delicate olfactory receptors that are responsible for our sense of smell.

Turbinate Function

The turbinates main function is to work together to filter, heat, and humidify the air we breathe. Unlike air flowing through our mouth, air inhaled through our nose passes over the turbinates, where it is heated to body temperature and humidified to 98%
water saturation, and filtered. Filtration allows for airborne particles to be trapped, providing the first line of defense against disease.

The turbinates increase the surface area inside of the nose, and serve to deflect airflow across the maximum mucosal surface, and push inhaled air through the respiratory system. This action, along with humidification and filtration done by the turbinates, also helps carry scent molecules toward delicate olfaction nerve receptors, located higher and beyond narrow airway passages.

As tissue with erectile capabilities, turbinates can become engorged and swell in response to allergies, flu, and sinus problems. They are also very susceptible to changes in estrogen levels in women, such as at the onset of menses, during menstrual cycles, pregnancy, and menopause. Synthetic estrogen found in hormone replacement therapies can also lead to nasal swelling, causing congestion.

As any of the three pairs of turbinates swell, they can come in contact with bony abnormalities in the nose and transmit pain and temperature stimuli through the fifth cranial nerve, known as the trigeminal nerve. Nasal sources of severe headaches happen when the trigeminal nerve, made up of sensory fibers, transmits pain signals originating in the nose to other locations along its length, such as to the face, temples, or sinuses. These headaches are very often mistaken as migraine, as they can show classic symptoms of migraine, like pain that occurs on only one side of the head.

### Trigeminal Nerve Branches

This cross section of the nose and palate shows the trigeminal nerve coursing through the sphenopalantine ganglion and distributing nerves to the turbinates, the anterior nose, and the palate.
Sinuses represent a complex physiology of the nose. Although much research has been done to identify their functions, there remain gaps. Most ENTs agree that the sinuses are responsible for:

- Warming and humidifying the air we breathe
- Assisting in regulating the intranasal pressure
- Increasing mucosal surface area
- Contributing to our immune defenses
- Making the skull lighter
- Giving resonance to the voice
Sinuses are also very susceptible to problems, which cause them to be at the root of some chronic headache conditions. This is why it is important to understand them in more detail.

The body has four pairs of sinuses, located around the nose and eyes. Referred to as the paranasal sinuses, they are named for the bones in which they reside—frontal, maxillary, ethmoid, and sphenoid.

Like turbinates, sinuses are lined with an epithelium layer that produces mucus, and uses hair-like cilia to push along sinus mucus. The movement of mucus within the sinuses is an active process that occurs in a specific pattern, and is not a random occurrence.

**Frontal Sinuses**

Located above the eyes in the brow area, these sinuses are situated in the frontal bone. The frontal sinuses are very small at birth and are mostly developed by age twelve, before becoming fully developed by the age of twenty. It is estimated that one in ten people are missing one of their frontal sinuses, or one of the pair is significantly smaller in size.

The frontal sinuses drain into the middle meatus, which are small channels positioned just below the middle turbinate, on either side of the nose. These are the only sinuses where mucus travels in a circular pattern, and like a car in a traffic circle, mucus can make several rotations around the sides, roof, and floor of the frontal sinus cavity before exiting with collected debris into the middle meatus.

**Maxillary Sinuses**

Located inside each cheekbone, these cavities are positioned between the eyes and upper teeth. These are the largest sinus cavities. Very small at birth, the maxillary sinuses grow rapidly until age three, and then again between the ages of seven and twelve. They become fully developed by adulthood.
Cilia within the maxillary sinuses move mucus in a star-like pattern around the interior of the cavity and towards the ostia, or drain hole. Defying the laws of gravity, the ostia are located at the top of the sinus cavity. Mucus is pushed out of the maxillary sinuses and travels into the middle meatus, and joins mucus that has drained from the frontal, ethmoid, and sphenoid sinuses, and moves into the nasal cavity.

**Ethmoid Sinuses**

The ethmoid sinuses are located above the maxillary sinuses, between the eyes and below the brain, separated from these important structures by thin bone. Because they are so close, surgery on the ethmoids pose an added risk for eye injury and cerebral spinal fluid leaks that can cause meningitis.

These sinuses are actually a series of tiny air pockets, divided into anterior and posterior cavities. There are typically fewer posterior chambers, but they are usually larger than anterior chambers. Ethmoids are present at birth and become fully developed by the age of twelve. In adults, these sinuses form a pyramid shape.

**Sphenoid Sinuses**

The posterior most sinuses, located in the upper regions of the nose, the sphenoid sinuses are not present at birth, but appear around age three and become mostly developed by the age of seven.

The sphenoids are the third-largest sinuses, and reside deep inside the skull. This has traditionally made them very difficult to examine or treat. However, with modern CT scans doctors can more easily detect problems and suggest treatments. The sphenoid sinuses drain much the same way as the maxillary sinuses, through an ostium opening that sits above the floor of the sinus cavity.
**Impacts of Sinusitis**

Sinusitis is estimated to impact 39 million people each year, which makes it a very common health problem. Narrow openings to the cavities can become blocked by swelling, causing mucus to become trapped and infected. Even when non-infectious, these conditions can lead to unpleasant side effects, including:

- Facial pain and pressure
- Headache
- Nasal breathing difficulties
- Teeth pain
- Sense of smell or taste loss
- Fatigue

A sinus CT scan can show the condition of all four pairs of sinuses. Sometimes sinusitis and the headaches or other symptoms it produces can be dealt with effectively using medications or over-the-counter nasal sprays. When surgical intervention is necessary, the goal will be to restore normal sinus drainage, while preserving as much tissue as possible.

**Sensory Functions of the Trigeminal Nerve**

![Internal View of Trigeminal Nerve Branches](image-url)
Important to the overall anatomy of the nose is an understanding of the various nerves that innervate, or provide a pathway for transmitted signals to travel from the nose to the brain. The main nerve is the trigeminal nerve, or fifth cranial nerve, represented in Roman Numerals as cranial nerve (V). The trigeminal is the main accessory to the crime of referring pain originating from nasal sources to other areas of the head, and throwing doctors (our medical detectives) off the trail to find the true pain culprit.

Largest of the cranial nerves, it is comprised of three major branches—The ophthalmic branch (V₁), the maxillary branch (V₂), and the mandibular branch (V₃). The three nerve branches come together into what's known as the trigeminal ganglion, which collects all of the cell bodies of incoming sensory nerve fibers. The trigeminal ganglion then transfers signals to a single large sensory root that enters the brainstem. The functions of the three major branches are:

- **Ophthalmic branch (V₁)**— Carries sensory information from the scalp, forehead, eyes, nose, nasal mucosa, and frontal sinuses.
• **Maxillary branch** \((V_2)\)—Carries sensory information from the lower eyelid, cheek, lip, upper teeth and gums, nasal mucosa, palate and roof of the pharynx, and the maxillary, ethmoid, and sphenoid sinuses.

• **Mandibular branch** \((V_3)\)—Carries sensory information from the lower lip, lower teeth and gums, chin and jaw, and parts of the external ear.

The trigeminal nerve is primarily a sensory nerve. It manages sensations of touch, position, pain, and temperature. Fast-conducting fibers control sensations of touch and position, allowing these to come to the body’s attention immediately. Sensations of pain and temperature are carried by slow-conducting fibers, which cause a delayed perception that differs from person to person. That’s why people can claim they have a higher pain threshold than others.

**Trigeminal and Cervical Nerves**

The line bisecting the head demonstrates that the anterior part of the head is innervated by the trigeminal nerve, while the posterior is supplied by cervical sensory nerves, and is responsible for sensations felt from the line, back.

**The Invisible Nose**

It is somewhat ironic that the part of our face that projects the farthest is typically the least considered when it comes to
identifying causes of health issues like headaches. It stares down doctors evaluating patients, as they investigate everything but the nose for a potential role in headaches.

Those of us in the field of otolaryngology, ENT doctors, need to make it our mission to help educate our healthcare colleagues about what's really going on inside the nose, and the problems with its design that can lead to a wide variety of health concerns. We need to get ourselves on the radar of primary care doctors and specialists in order to play a vital role in diagnosing patients with unresolved conditions, like headaches.

**Signs for Headaches with a Nasal Source**

Sometimes the body provides clues that we can watch for to understand underlying causes of headaches. The main conditions we see that could indicate a nasal source for headaches include:

- Nasal airway obstruction
- Known nasal trauma
- Excessive mouth breathing
- Chronic nose bleeds
- Chronic sinusitis associated with a deviated septum
- Facial pain
- Obstructive sleep apnea (OSA)

In other cases, signs are not as apparent. My patient Lori, whose case was discussed earlier, showed no outward signs that she had sinus or other nasal problems. Her nose appeared normal from the outside with no bumps or bends. She rarely sneezed or sounded like she was congested.

Her body's signal was the pain she felt in her face in addition to her head that came from her sinuses. Facial pain is a critical sign that is frequently overlooked by doctors, as was the case for Lori,
her doctors, and even her family. Sometimes signs can seem unimportant, but that is exactly why an ENT specialist should be called in to perform a nasal exam to evaluate if an unresolved headache condition has a nasal source.
Accidents happen and when this involves taking a blow to the face, it may result in a deviated septum, even if your nose isn’t broken. If the deviation is severe enough it may create a persistent contact point with sensitive turbinates along the nasal wall and can refer severe, chronic headache pain. Such was the case of Zach Thomas, defensive linebacker for a professional football team.

Career-ending Headaches (Almost)

According to his team bio, Zach Thomas is a seven-time Pro Bowl selection, and is still considered one of the most productive and accomplished linebackers of his era in the NFL. His livelihood relies on his ability to play football, a sport where injuries are just part of the game.

In a documented newspaper account, Thomas suffered a concussion while playing with the Miami Dolphins, in a game against Dallas in September 2007. He was involved in a car accident a month later. Severe headaches were diagnosed as migraines and he was given migraine medications and told to sit out the season.

Thomas described his headaches as pressure felt between his eyes. Later it was discovered that he had a deviated septum.
After surgery in early 2008 to repair his septum, Thomas was picked up by the Dallas Cowboys for the 2008 season.

Zach Thomas’ case is one where severe facial trauma led to almost constant headaches, and a misdiagnosis of migraine came close to shutting down his career. Fortunately the real source of his severe headaches was found, and a repaired septum allowed him to continue his aggressive play as a linebacker.

A more common occurrence is when very minor septal deviations or other nasal abnormalities cause headache episodes that have a distinct beginning and ending. During periods that might range from hours, to weeks, or even months, a person may lead a normal, pain-free life. Then in an instant a new round of headache pain hits them with the intensity of an ice pick piercing their skull.

Have you ever broken your nose or experienced a form of facial trauma and now suffer from chronic headaches? You may have a nasal source of your headaches that can be easily fixed! I have seen many patients who have been injured playing sports, in automobile accidents, or involved in other traumatic situations that have led to a deviated septum, causing chronic headaches. If this sounds like you, talk to an ENT specialist about a potential nasal source for your headaches.
The Migraine Imposter

Sarah works as a perfusionist near my office in the Texas Medical Center. She’s a highly trained healthcare professional who operates a heart-lung bypass machine during cardiac or other surgeries that require cardiopulmonary bypass. Her job requires her to be in an operating room 95% of the time. The other five percent of her time is working with patients in an intensive care unit (ICU). It’s a high adrenaline job that requires intense focus.

For five years, she was also dealing with chronic sinus infections and severe, migraine-like headaches that were progressively getting worse.

Sarah would be the first to admit that we as healthcare professionals, often make the worst patients. We prefer to deal with our own health issues instead of seeking out other medical professionals. This is why Sarah never talked to anyone about her headaches, but learned to live with them.

During the day, she gave everything to her job, despite being in constant pain. She felt lousy most of the time, but working on sheer adrenaline allowed her to do what she needed to do for the sake of her patients.

It was when she got home at night that she would collapse, wiped out from the effects of her usual sinus infection and from dealing with a headache all day. This wasn’t easy on her husband and small son, who saw her struggling to get through her everyday life, more irritable and with less energy.

Sarah’s chronic sinus infections meant that she was constantly on antibiotics, or so frustrated by being on antibiotics all the time that she would switch to over-the-counter allergy medications and pain relievers.

It was during a visit to her OBGYN that Sarah mentioned her chronic sinus infections and constant headaches. Her OBGYN was herself a patient of mine, and called me while Sarah was still in
her office. I saw Sarah that same day and discovered she had a very severe deviated septum.

When she came into my office, I immediately recognized that the tip of her nose was visually off-center. I asked her about it. Sarah couldn’t recall a specific injury, but she had played basketball growing up, and all through high school. She remembered taking some pretty good hits to the face, which is the most likely cause of her deviated septum and bent nose.

I performed a septoplasty and sinus surgery, and a rhinoplasty to restore the shape of her nose. I spoke with her recently and learned that she hasn’t had any headaches of the types she had before. The sinus headaches have been completely eliminated and she hasn’t had a single sinus infection in over a year.

She mentioned that her husband has noticed a real change in her. She now has more energy, and no longer pushes on the bridge of her nose with her thumb and index finger to reduce the pain. She hadn’t realized she did that, but he brought it to her attention after her surgery. He said it was something he saw her do all the time, and it was a signal to him that she was in pain, even when she didn’t say anything. He is thrilled with the results of her surgery and feels like he has his wife back.

How Referred Pain Allows the Nose and Sinuses to Remain Incognito

Chronic headache related to nasal obstruction was an article published by U. Schonsted-Madsen, et. al., in The Journal of Laryngology and Otology in February 1986. In this article, research done by McAuliffe et. al. was discussed, which characterized the sensitivity of nasal cavities and paranasal sinuses. These researchers had used touch, the pressure of a probe, and stimulation of these areas with faradic current, and registered the results.
McAuliffe et al. had found that the nasal turbinates, as well as the ostia opening to the sinuses were much more sensitive than the mucosal lining of the septum, the floor of the nasal cavities, or the paranasal sinuses. Subjects involved in the study reported referred pain in different areas around the face, head, and teeth as a result of various stimulation methods. The areas resulting in pain correlated to areas of the head that had sensation transmitted along the second branch of the trigeminal nerve, the maxillary nerve ($V_2$).

The researchers were surprised by the intensity of headaches produced from these stimulations, and how long the pain lasted. This was particularly the case in patients that suffered from turbinate or ostia swelling.

How does referred pain work? Pain that originates in our nose is transmitted by sensory fibers through the maxillary and ophthalmic nerves, coming together in the trigeminal ganglion and entering the brain, where the pain signal is registered. Because of the intricate nature of sensory nerve fibers serving areas of the nose and sinuses, pain gets attributed as coming from areas of the head and face, similar to a migraine headache.

Experiments done by McAuliffe (1943) and Holmes (1950) showed the specific mapping of referred pain between locations along the septum, turbinates, and the sinus ostia when stimulated, and where the study participants reported pain.

![Referred Pain from Septum Stimulation](image)

Referred Pain from Septum Stimulation

Shows how points stimulated along the septum (a) and the lateral wall of the maxillary sinus (b) resulted in pain felt along the side of the jaw, eyes, and temple.
Referred Pain from Turbinate Stimulation

Shows how points stimulated along the (a) Superior Turbinate, (b) Middle Turbinate, and (c) Inferior Turbinate resulted in pain felt on the front part of the cheeks, ear, and forehead.

Referred Pain from Maxillary Sinus Ostium Stimulation

Shows how stimulation of the ostium of the maxillary sinus (a) led to pain felt in the area of the cheek and temples. Of interest is the fact, that study participants indicated pain in those areas that long outlasted the actual stimulation of the ostium.

Referred Pain from NasoFrontal Duct Stimulation

Shows how points stimulated along the nasofrontal duct caused pain felt along the cheek, eye, and temple.
This research on referred pain mapping shows how scientific evidence has existed for more than fifty years, explaining how nasal and sinus abnormalities that apply pressure to surrounding tissues can result in referred headache pain that resembles migraine. This is how the nose and sinuses can act as migraine imposters, causing patients to live in agony for years with unresolved headache conditions.

It can’t be made any simpler than this—The nose and sinuses have the ability to refer pain, and that pain is frequently mistaken as migraine. Healthcare professionals and the general public need
access to this information so that the best treatment options can be discussed and followed.

No one I know of, outside of my ENT specialty, has issues of medical journals like Otolaryngology Head and Neck Surgery lying around their family room coffee tables, where they might read about the latest research and study outcomes related to their headache condition. That is why I feel compelled to bring out into the light, relevant details about important research that has been done on nasal sources of headaches. I want this information to reach a broader audience, stated in plain language, and not in complex medical terminology. Only then can people begin to have the knowledge they need to form their own opinions about available treatment options, and begin to ask doctors the right questions to shorten their path to find relief.
Rhinitis is what people experience when they have a runny nose. It is caused by chronic or acute inflammation of nasal mucus membranes in response to viruses, bacteria, or other irritants. The inflammation causes an excess of mucus to be produced, which is what causes the main symptom of nasal drip. However, rhinitis is also responsible for turbinate swelling that can cause contact with septal spurs or other nasal structures.

Rhinitis is categorized as allergic and non-allergic. Allergic rhinitis stems from the body's sensitivity to things like grass, pollens, or to certain foods or beverages.

There are also several categories of non-allergic rhinitis that cause symptoms similar to what people with allergies experience. Types of non-allergic rhinitis include:

- **Infectious rhinitis**— Better known as the common cold, symptoms of a stuffy or running nose may last a week, or in some situations, continue longer. This condition can occasionally lead to an acute or chronic bacterial sinus infection, which includes symptoms of nasal congestion and increased discharges of thick, yellow-green colored mucus.
• **Rhinitis Medicamentosa**—Caused by long-term use of nasal decongestant sprays or recreational cocaine use. Decongestant sprays were only meant to treat short-term nasal issues, but with prolonged use cause people to develop rebound symptoms of nasal congestion or postnasal drip.

• **Vasomotor rhinitis**—Symptoms of stuffy nose and postnasal drip when exposed to extreme temperature, humidity, or barometric pressure changes. This could also include encounters with smoke, odors, or emotional upsets.

• **Hormonal rhinitis**—Symptoms of nasal congestion and postnasal drip correlate with changing hormonal levels, such as what occurs with puberty, menstruation, or pregnancy.

A contact or trigger point in the nose or sinuses is created when turbinate swelling creates a narrowing of spaces inside the nose, and allows swollen turbinates to come in contact with the septum or other structures in the nose, such as the bony floor or lateral nasal wall.

The result is felt as severe pain that is referred from the point of contact to various regions of the head. Pressure against the septum, for example, can cause headaches to be felt around the forehead, temples, top of the head, or can be located around the eyes, nose, and cheek regions.
Forms of Rhinitis

Vasomotor Rhinitis

A non-allergic rhinitis, vasomotor rhinitis is caused by exposure to:

- Fumes
- Odors
- Temperature changes
- Atmospheric changes
- Smoke
- Other irritants

When a person who is sensitive comes in contact with these types of conditions, congestion is a common response by their nose to rid the nasal cavities of the source of irritation. As the nasal tissues swell they can come in contact with bony spurs and refer headache pain. This can explain why some people are more susceptible to getting headaches with weather changes as the barometric pressure drops suddenly. Or, why walking past the perfume counter in a retail store can give some people a headache.

Patients have described smells to me that will trigger their headaches—Cologne and perfume, or pungent smells like detergents are common responses. Some patients go so far as to say they cannot walk down the detergent aisle at the grocery store without triggering a headache.

Barometric Headaches

Some patients report their headaches are tied to weather patterns. This happens when air becomes trapped in the sinuses and changes in barometric pressure result in pain to the forehead,
top of the head, cheeks, and around the eyes. This can be particularly bothersome for people in certain professions—Pilots, flight attendants, and divers to name a few.

The problem usually stems from narrowed sinus passageways that don’t allow for proper drainage or airflow. A new procedure called sinuplasty was introduced in 2006, and is now used to successfully expand narrowed frontal, maxillary, and sphenoid sinuses. Sinuplasty involves threading small balloons into the narrowed sinus drainage channels and inflating them to increase clearances, improving drainage and airflow. This revolutionary procedure has helped many people, while eliminating the need for more drastic surgery. See Chapter Nine for more information about sinuplasty.

**Hormonal Rhinitis**

Well-documented research shows women are three times more likely to suffer migraine-like headaches than men. The most widely accepted reason for this is hormones.

There is a preponderance of evidence supporting the link between female sex hormones, estrogen and progesterone, with health issues like migraine and rhinitis. When we consider the frequency of migraine misdiagnosis alongside our understanding of hormonal influences on rhinitis, we begin to see how a perceived migraine could actually originate from a nasal source.

Let’s take a closer look at what we know about rhinitis and estrogen fluctuations during menstrual cycles, sex, pregnancy, and menopause to see how these conditions provide the potential to cause severe headaches.

**Menstrual Migraine**

The International Headache Society has yet to officially classify menstrual migraine as a documented headache cause. But, many women have experienced their own correlation of migraine-like
headaches that occur around the time of ovulation. This would tend to coincide with spikes in estrogen levels, which are known to have an effect on nasal mucosa.

A study conducted by C.M. Philpott, M. El-Alami, and G.E. Murty, concluded that nasal congestion at peri-ovulatory stage of the menstrual cycle was evident in the subjects they evaluated. Their study involved taking measurements of nasal airways in female subjects at the beginning of their menstrual cycles, and again when they ovulated.

Evaluating the results of the two measurements taken showed a clear indication of nasal congestion at mid-cycle. This indicates that as estrogen levels reach their peak level, swelling occurs within the nasal mucosa, causing congestion.

Studies such as this one are important, as they can explain why some women with a deviated septum report more severe migraine-like headaches, linked to changing estrogen levels that occur in a normal menstrual cycle. These women could actually be experiencing the result of a corresponding change to nasal passageway clearances.

A relatively minor septal deviation under normal conditions might not be a problem, because no contact points exist. But, at mid-cycle when the rise in estrogen levels causes erectile tissues in the turbinates to swell, buffer space between the septum and sensitive turbinate tissues goes away and a contact point is created. Pain is referred along the trigeminal nerve from this contact point, and the patient suffers until estrogen levels drop enough for swelling to subside and reinstate the clearance between turbinates and septum.

Unfortunately, when a link is made between headache timing and menstrual cycles, some doctors will diagnose menstrual migraine and recommend a woman undergo a hysterectomy to rid herself of severe headache pain. Many desperate women take this course of action, only to experience frustration when headaches resume after surgery. This means the origin of the pain is still present.
Before a drastic measure like hysterectomy is contemplated, in cases where women believe or have been told they are subject to menstrual migraines, I would recommend they first explore the potential of a nasal source for their headaches.

**Sex**

The link between sexual arousal and the nose has been well established. While the exact reason why some people experience rhinitis during sexual activity is not exactly known, it appears that excitement or anxiety may play a role in “honeymoon rhinitis.” Early on during the excitement phase of sex, even before intercourse, the parasympathetic stimulation is active and may cause congestion. It is during this phase that congestion in the nose can lead to a migraine-like headache. Later, with progression towards orgasm, sympathetic reflexes take over and promote decongestion. Over time, these effects may cause the affected partner to avoid sex because of its negative associations with piercing headaches and embarrassing nasal drip.

Doctors Ashok Shah MD and Mrinal Sircar MD of India performed a small study in 1991 on four patients, with postcoital asthma and rhinitis symptoms. Since sexual activity is equivalent to the exertion required to climb two flights of stairs, an experiment was setup to see if the asthma and rhinitis symptoms could be explained by exercise.

The patients measured their peak expiratory flow rates (PEFR) before and after climbing the stairs on three separate occasions. Patients and their spouses were also asked to record their PEFR before and after coitus. None of the patients experienced wheezing dyspnea, rhinitis, or a drop in PEFR after climbing the two flights of stairs. It was therefore concluded that “honeymoon rhinitis” was the result of sexual activity and not exercise.

Shah and Sircar warned that postcoital asthma and rhinitis can be easily overlooked by busy and unaware physicians, dealing
with patients who are embarrassed and hesitant to discuss this situation in an office visit. Especially troublesome is the fact that by not discussing this issue openly, it can lead to depression and anxiety in patients and their partners.

For patients with a bone spur from a deviated septum, or other nasal abnormalities, “honeymoon rhinitis” is just another headache trigger that could be cured with proper identification of the nasal source referring pain.

**Pregnancy**

Rhinitis in pregnancy has long been accepted as a common condition, occurring as a result of sustained high levels of estrogen and its impact on nasal mucosa. Pregnancy rhinitis develops in about twenty percent of pregnant women, usually by the second month and lasting until the time of delivery, or even a few weeks beyond.

While the mechanism for why this happens isn't specifically known, several factors are thought to play a role. In addition to increases in estrogen and progesterone, there is a rise in glandular secretions from the goblet cells on the nasal mucosa, as well as an overall increase in blood volumes. This increased vascular engorgement can block the mobility of mucus, causing it to pool and potentially lead to infection.

**Peri-menopause and Menopause**

A woman's ovaries begin a slow decline of estrogen production, beginning during peri-menopause, and lasting until menopause. During peri-menopause, estrogen levels are much more erratic than during menopause, when estrogen is at its lowest level.

A decrease in estrogen levels can occur naturally, or from surgical removal of the ovaries. This is a time when women, along with their physicians should have frank conversations about the
benefits and risks of hormone replacement therapy, or HRT. This is especially true for women who suffer from headaches, as studies have shown that headache symptoms can worsen with the use of HRTs. While headache symptoms may improve for a woman who has reached menopause, her headaches could return with the reintroduction of hormones, particularly estrogen. This is where overall health factors need to be evaluated before determining whether or not to begin HRT.
By now you should be asking yourself, given all of the scientific evidence linking nasal causes of headaches and the large role rhinitis plays in creating contact points, why are ENTs not commonly referred headache patients unless an allergy or sinus condition exists? Is it because most doctors don’t view headache as a typical etiology relevant to the ENT practice as my patient Flo, a nurse practitioner suggests?
THE MIGRAINE IMPOSTER

Many patients I see in my practice have a nasal source for their headaches, and yet never exhibited a single nasal symptom. My patient Lori, whose experience with severe headaches was described earlier is a good example. According to her mother, Lori never showed any outward signs of sinus problems or anything else wrong with her nose. She rarely sneezed and never sounded congested. Her nose from the outside looked normal and straight. No bends or bumps. But, an x-ray of her nose on the inside told a much different story.

Kim recalls that Lori often complained to her that the headaches made her face hurt, in addition to her head. Kim thought that was strange, but rationalized it as an effect of having such strong pain that it radiated down her face. A friend suggested Lori might have allergies.

With nothing to lose, Lori saw an ENT specialist. As part of the exam, the doctor sent her to get a sinus x-ray. Lori and Kim returned home with the x-ray films to take back in a few weeks to a scheduled appointment with the ENT. At home, Kim held the films up to the light and even with her untrained eye was able to see that something was wrong. One side of her nasal cavity was light grey, but the other side was completely dark. Kim decided right then that she wasn't willing to wait for the ENT appointment. She came to my office and as soon as I looked at Lori's films, I realized she had an obstruction in her ethmoid sinus, and a narrowing in her frontal sinus. I performed surgery on both her left and right ethmoid sinuses, and performed a balloon procedure (sinuplasty) on her right frontal sinus.

The result of these procedures was miraculous. Now 20, Lori no longer suffers with headaches and is able to live a normal life. Kim tells everyone she knows about the huge change that was made to Lori's quality of life.

So, if the nose is the real culprit behind chronic migraine-like headaches, how do we catch it in the act?

An ENT specialist should be called in as the lead detective. On television we frequently see how evidence as small as a human hair can provide the DNA to link a suspect with a crime. The same
is true with headache diagnosis. An ENT specialist has the training to evaluate specific details to determine if something in the nose is acting as a migraine imposter.

I have found in my practice that very small septal spurs, small enough to be easily missed by the standard 3-millimeter cuts of a standard sinus CT scan. But these spurs can still pack a big punch and cause very severe headaches.

Earlier when I discussed the standard way headache conditions are diagnosed, I showed how my patient, Flo, had two separate nasal cavity CT scans, and each had been considered “normal.” However when I looked at her films, I noticed a very distinct bone sliver of the septum leaning against her turbinate, irritating a nerve. By removing the bone sliver, Flo’s headaches went away. Without that surgery, she would still be struggling to get through her everyday life, living on painkillers and praying for relief.

**How Far Would You Travel to Find Relief?**

Karold was watching local Fox News in his hometown of Fairbanks, Alaska, when a news story came on that changed his life. The topic was about headaches misdiagnosed as migraine, when the culprit was actually a deviated septum.

The story Karold had seen was my guest appearance on that TV program. Fox Local News in Houston, Texas originally aired the show. When the segment was posted on the Fox website, it got very high ratings and a lot of attention. Affiliate stations in several major markets across the country picked up the story, including Alaska, and aired it for their local audiences. It generated some 300 phone calls to my office, reinforcing how massive this problem is for people.

Karold was 35, and had suffered from severe headaches since he was a teenager. Most often they were manageable. But at age 25 he broke his nose in an accident and found that the headaches got
worse. A lot worse. It seemed there was no longer anything he could do to relieve his daily headache pain.

Around that same time he was referred to a neurologist, who took a CT scan of his brain, but not of his nasal cavities. Nothing in the CT scan of his brain was abnormal, so he went home, discouraged. He tried alternative treatments, like acupuncture and visited a chiropractor, but those treatments did nothing to alleviate his pain.

As the owner of a successful welding business near Fairbanks for many years, Karold's frequent headaches made it difficult to stay on top of his work. He was fortunate to have an ability to push off jobs when the headaches were too severe to work. He figures he lost about two days each month to headaches.

The story on Fox News gave Karold hope that he could find an answer for his headaches, and he began researching online to find the Smith Headache Treatment Center in Houston. He traveled over 5,000 miles from Fairbanks to Houston in late 2007. I examined him and then scheduled septoplasty and turbinectomy procedures for the following day.

A year later, Karold says that 80% of his headaches are gone. He still has occasional migraines, but the pain is much less severe. Karold said about his nasal surgeries, “Things turned out so well for me, and I’m totally satisfied with the results.”

Although he is satisfied, I would prefer that he had no more pain, ever. But, I have come to believe that some of my patients can have a nasal source in addition to other sources, including migraine. The possibility also exists that Karold has a residual contact point or points in the nose. A repeat CT scan of the sinuses would be helpful in assessing this possibility.
The Nasal Exam

When a patient visits an ENT specialist, a careful medical history will be taken as the first order of business. Next, a nasal exam is performed. A primary care doctor or a neurologist rarely performs this test, which is why this causal factor is often overlooked.

An ENT specialist is trained to correctly examine the nose to get a clear view of the entire nasal airway, which requires the application of a topical anesthetic-decongestant spray. Once the nasal passages have been anesthetized a thin tube called an endoscope is inserted. The endoscope gives the ENT specialist a good view of the entire nasal cavity. This is how many septal spurs are diagnosed.

Even when a septal abnormality is identified through a nasal exam, a CT scan of the sinuses is useful to identify any other potential contact points within the nasal cavity, or disease within the sinuses. Scans of the nasal sinus cavities can reveal deformities of the septum, bone spurs, and narrowing of airways that can cause problems with breathing, recurrent sinus infections, or severe headaches.

A thorough nasal exam in combination with a CT scan of sinuses is the best way to ensure all potential rhinogenic causes of severe headaches have been identified, and a surgical plan to address each one is created. This will provide the patient with the best resolution to their headache condition.

Radiologist's Role

The radiologist reading of CT scans plays an important role in discovering and documenting any abnormalities of the nasal cavity that can contribute to headaches. Unfortunately, a general radiologist is not always trained on what to look for in these cases.

In fact, many of the radiology reports I receive for patients don't mention anything about the alignment, size, or condition of the
septum or other nasal elements. The results of nasal cavity and sinus CT scans are almost always reported as negative, giving a false impression that the patient’s nose is not involved with their headache condition.

Dr. Leo Hochhauser is a colleague of mine, who works in The University of Texas Medical School Radiology Department. He’s a neuroradiologist—A radiology specialty focused on the detailed anatomy of the brain, head, neck, and spine. His specialized training was achieved through a fellowship program he completed after his radiology residency, which included additional class work in his specialty. He now works in support of neurosurgeons, ENT surgeons, and orthopedic surgeons.

I first came to know about Dr. Hochhauser’s work when a patient brought in a CT scan report he had created, along with her films. I was intrigued by the precise nature of the information he provided about her deviated septum and mucosal contact points, and their potential contribution to her headache condition. When I called to talk with him about his report, he explained how his additional training allows him to recognize the clinical implications of bone spurs, deviated septum, and other nasal abnormalities that can contribute to headaches. He also reads a lot of current literature to keep up with what’s going on in the world of neurology and ENT. A nasal source creating chronic headaches was a reality he was well aware of.

So, why don’t neuroradiologists read all CT scans? No surprise, it’s a matter of economics. Because of the specialized nature of these professionals, it costs a lot more to have a neuroradiologist read scans than a general radiologist. Therefore these specialists aren’t usually called in to review what are considered routine scans.

This is important information for the public to know. Investigating headaches to determine a root cause is a very complicated matter. That’s why I ask all of my headache patients to bring me their films to interpret. An ENT specialist, because of our narrowed scope of practice, has the training and background to know what to look for in nasal and sinus anatomy that contributes to headaches.
Notice the bend in the septum and the resulting bone spur. This scan came from a patient suffering severe headaches.

Because radiologist's reports vary widely in the amount of detail they document, it’s important for a patient to bring their films to an ENT specialist to review together. Reports often omit important details that can be critical to a proper diagnosis of rhinogenic causes of headaches. For example, the state of the septum is sometimes not included in the report.

I feel it is also important for an ENT specialist to go over films with patients to help them understand more about their condition, and to answer any questions or concerns. I appreciate the opportunity to teach my patients more about what’s going on, and explain findings that support the surgical plan.

If surgery is indicated, the ENT doctor can make arrangements. In Chapter Nine I review how the Smith Headache Treatment Center approaches various nasal surgeries. This is to help those reading this book to understand what they can expect when it
comes to different surgical procedures, and to be prepared to ask the right questions of their ENT specialist.

A Future Model for Headache Diagnosis

There's a popular saying, "When you are a hammer, everything you see looks like a nail." Unfortunately sometimes that's the reality when it comes to some medical specialists and the lenses they use to view the world. Each may continue to treat headaches within the etiologies common to their practice, even when there is no improvement. To offer better support for those who suffer from chronic, recurrent headaches, we as medical professionals need to think beyond our own scope of practice for the patient's benefit.

Headache diagnosis requires a multidisciplinary approach. The focal point should be the patient's primary care doctor, pediatrician, or internist. The standard protocol of ordering urinalysis and blood panels to rule out diseases that cause secondary headaches is an important step. It is also important to provide prescription pain relief to patients while the root cause is being investigated.

For patients presenting with headaches as a new symptom, a brain MRI or CT scan is critical to make sure a tumor or aneurysm isn't missed. But for the patient who presents with severe, refractory headaches endured over many years, a referral to an ENT specialist and a CT scan of the sinuses should be the next consideration.

The ENT specialist should perform a nasal exam, preferably using an endoscope when available, and order a CT scan of the nasal sinuses. Most doctors will openly state their hesitance in ordering tests unless, in their opinion, there's a high probability of yielding an actionable result. Yet these same doctors routinely order brain MRIs when a patient arrives in their office or emergency room, even if several negative scans have been taken in the past. An aneurysm or tumor while critical to catch, is actually a long-shot with-
out other presenting symptoms, and is particularly rare in cases where
the patient has suffered headaches with unchanging intensity over
many years.

To emphasize my strong belief that the current model for
patient evaluation needs reforming, and to explain why obtaining a
CT scan of the sinuses in cases of refractory migraine headaches is
so important, I offer the following story. This is one that is all too
common in my practice.

I recently saw a patient
in my office who claimed to have
had 10-12 normal MRIs done of
her brain in the past 15 years be-
cause of recurrent severe head-
aches. In the first ten minutes of
her visit I performed a simple
nasal exam and confirmed she
has a deviated septum. We will
wait for the results of surgery to
claim absolute victory, but her
prognosis for getting rid of these
headaches by removing a nasal
bone spur is favorable. After all
of the past negative findings and
failed treatments, she should fi-
nally get the relief she has been
seeking.

When you consider the cost of at least nine unnecessary
MRI scans she’s had over the years, money spent on pain medica-
tions and their inevitable side effects, emergency room visits, her
time, excess doses of radiation she was subjected to, and her frustra-
tion at not getting better, the MRI scans turned out to be a huge
waste of healthcare resources and a bad value on many levels. I
strongly submit that a CT scan of her sinuses after the first negative
brain MRI would have yielded much better results with a signifi-

—Dr. Kevin R. Smith
cantly lower cost to her, healthcare professionals, and insurance providers, resulting in a win for everyone.

The fact is, minor to moderate septal deviations occur in 27% of newborns and 37% of adults, making a nasal sinus CT scan in the case of severe, refractory headaches a prudent approach. It's even more logical when you think about the commonality of rhinitis among the general population today, and the fact that I have personally seen in my practice, cases where rhinitis has caused even minor nasal abnormalities to create severe, pain-producing contact points. That's why headache patients need to make sure they see an ENT specialist sooner, rather than later.

If a nasal source is not determined to be the cause, the ENT specialist should instruct the patient to return to their primary care practitioner to take the next steps in a treatment plan. Other etiologies can be explored—Neurologists, neurosurgeons, ophthalmologists, dentists, and other specialists can play an important role in identifying the root cause of recurring headaches.

But if a nasal source is found, relief through surgery could be just minutes away.
Some members of the medical community haven't yet accepted that nasal sources can, and do in fact cause severe migraine-like pain. But, the recognition of a connection between nasal abnormalities and severe, migraine-like headache pain isn't new. There are plenty of talented researchers who have studied this subject and published papers on it. The problem is that these important studies remain trapped in academia, and are not out in the public consciousness where they can help people make more informed decisions about their headache condition.

In the 1930's and 1940's research was done that demonstrated how contact point headaches can be misdiagnosed as migraines. During these two decades, the following studies took place:

- GF Rowbotham in 1942 took three patients that suffered migraine, and transected their trigeminal nerve. All reported relief of their headache symptoms.

- W. Harris injected alcohol into the Gasserian ganglion of 29 patients, and the result was complete relief for nineteen patients, five were much improved, and five experienced temporary relief.
• W. Penfield injected Novocain in the Gasserian ganglion of two patients and achieved temporary relief.

These studies show how patients originally diagnosed with migraine found relief once the nerve that carries referred pain was caused to stop functioning. The patients involved likely never had migraine to begin with, but instead suffered from contact point headaches that were relieved by manual intervention.

Results of studies conducted over the years by rhinologists Cottle (1960), Pellandra (1966), Masing (1977), and Ryan and Ryan (1979) have been reported. Each of these studies furthered the strong belief that septal deviations making contact with sensitive structures inside the nasal cavities cause referred pain and chronic headache. They found this to be especially true if the septal deviation occurred as the result of facial trauma. Additionally, these rhinologists found that contact can sometimes be intermittent, resulting from the circadian movements of the turbinates, or by inflammation that closes gaps and creates contact points.

Studies have been done by researchers over a long period of time, originating from countries all over the world, and each reaching positive conclusions about the correlation between nasal abnormalities and their ability to produce chronic, migraine-like pain.

Why haven't we heard more about this? The reality is that headache research isn't considered glamorous, comparatively

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The problem as I see it is that these enlightening works are trapped in academia, published in medical journals not readily available to the average headache sufferer looking for answers.

—Dr. Kevin Smith
A HISTORY OF NASAL CSI

Drug companies are not lining up to fund this research, because if headache conditions could be fixed by surgery, revenue from the millions of dollars that are generated every year from pain medications could plummet. My goal is to increase the visibility of important studies so that the general public can see alternatives that have not been previously discussed.

Smith Headache Treatment Center Study

In October 2003, the Smith Headache Treatment Center initiated a research study to determine if septoplasty surgery significantly improves symptoms of suspected migraine headache in patients diagnosed with a deviated septum or septal spur. The study is called:

Relief of Suspected Migraine Headaches in Smith Headache Center Patients Treated with Septoplasty Surgery

At the time we began our study, we had 199 sequential septoplasty patients whose files were reviewed for potential inclusion in our research study. Of these patients, we initially focused on 153 patients who had presented to our center with suspected migraine headache, in addition to a deviated septum or septal spurs. Of these 153 patients, ultimately only 45 completed both pre-surgical and post-surgical headache questionnaires, and became the patient sample for our study.

We considered patients to have a previous migraine diagnosis if they had been given this diagnosis by an internist, primary care doctor, neurologist, or ENT specialist prior to coming to our center. We also considered those who described their headache symptoms in a manner that was consistent with a migraine or probable migraine
diagnosis according to the International Headache Society classification of migraine headaches.

Each participant was asked to fill out a pre-treatment headache questionnaire. The questionnaire collected the following information:

- Length of time the patient had suffered from headaches. Weeks, months, or years.
- Frequency of headaches indicated as a number per week or month, and then standardized to a monthly figure for analysis.
- Location of pain felt.
- Severity of pain on a scale of one to ten, with relative indications for least painful, most painful, and average headache pain.
- Quality of pain, such as constant, pounding, pressure, etc.
- Time of day headaches most likely occur.
- Triggers known by the patient to cause their headaches.
- Occurrence of sinus infections.
- Occurrence of hypertension.
- Family history of headaches.
- History of nasal or facial trauma.
- Previous treatment history for headaches.

Patients were initially examined using a topical decongestant spray, which is the standard method to get a complete view of the entire nasal cavity and airways. All patients received a CT scan of their sinuses to determine the degree of septal deviation, and to investigate other potential sinus or nasal abnormalities.

I performed septoplasty surgery on these patients, removing septal spurs to eliminate contact points. All turbinates (superior, middle, and inferior) were either out-fractured to eliminate other contact points with the septum, or if congestion was a major presenting problem, I partially excised the turbinates to improve
breathing. Sinus surgery was performed in those patients with a positive history of recurring sinus infections.

After surgery an information packet was sent to all headache patients who had received septoplasty surgery, and who had filled out an initial questionnaire. The follow-up questions were designed to mirror the questions in the original study, so that each patient could serve as a self-control.

Out of the 45 patients that returned both pre-surgery and post-surgery questionnaires, here were our key findings:

- More than 90% of these patients had a previous migraine diagnosis
- Patients experienced severe headaches for an average of eight years prior to surgery.
- Nearly half had a history of trauma occurring to the face or nose.
- 84% had a history of nasal obstruction.
- 78% had a history of recurring sinus infections.
- Other common triggers were weather changes, menstrual cycles, stress, and specific smells.

We analyzed the pre- and post-surgery responses of patients to identify changes to headache frequency, severity, and impact, as a result of surgery. Almost 90% of patients responded that their headaches had been cured, or had decreased in overall impact. Two patients experienced no change in their headaches, while three reported a slight increase.

Keep in mind that my practice includes patients that come to me after all other avenues of treatment have been exhausted. So, I tend to see those patients that are more likely to have a deviated septum or other sinus condition as an explanation for their pain.
Table 1 shows the average reduction in perceived headache severity, after surgery. Study participants reported a 46% reduction in the average severity of their headaches.

Table 2 shows a similar reduction in the frequency patients experienced headaches. Study participants reported an average reduction in their headaches from 12.3 days to 5.17 days per month after surgery.
To understand the overall impact of headaches for people, we took the average frequency of headaches and multiplied that by the average severity to arrive at the average headache impact score. This methodology is similar to what has been reported in other research studies.

Table 3 shows the results of our study, which provides some very encouraging news. Our patients reported an almost 70% drop in how they saw headaches impacting their daily lives, after surgery.

### Related Research

Other studies have been conducted over the years that are similar to mine, both in methodology used and results found. The following chart summarizes the results of my study alongside those of other researchers. This shows that while we may have approached our studies from different perspectives, when patients were treated surgically for rhinologic sources of their headaches, the vast majority were either cured or had significant improvement.
Study Notes

Here is a summary of similar studies to mine and the results they reported:

- S. Hoover studied 29 patients with chronic headaches or migraine that were treated with surgery. His results were published in 1987. All patients (100%) showed complete elimination of their headaches. This included 11 patients who received allergy treatments in addition to surgery to achieve their results.

- U. Schonsted-Madsen et al. analyzed 157 patients presenting with both nasal obstruction and chronic headaches from 1978-1981. 122 patients (77%) were either cured or had improvements in their headaches.
• Fereidoon Behin MD, et al. performed a retrospective chart review of patients that underwent endoscopic surgery and septoplasty from October 1998 to August 2003. The study population included 21 patients. Of these, 19 patients (90%) were either cured or had improvements in their headaches.

• Fereidoon Behin MD, et al. conducted new research in 2004 on patients presenting with contact points involving the superior turbinates. The study shows the results of 12 patients, where 11 patients (92%) were either cured or had improvements in their headaches.

In the article Behin published in Headache magazine in 2005, he highlighted the story of one woman who was part of the study group. At age seventy, she had previously gone through surgery to relieve her contact point headaches. After a middle turbinectomy, she still complained of daily headaches with an intensity of nine, out of a scale of one to ten. Her pain could only be controlled with oxycodone. Her headaches were pulsating, and caused nausea and vomiting, but not photophobia or phonophobia.

After Behin's team reviewed her sinus CT scan they found she still had a contact point between the medial wall of the ethmoid and her septum. After surgery she had no more complaints about headaches. This result is important to point out, as the superior aspect of the nasal cavity needs careful review to avoid missing potential contact points.

• James M. Chow MD studied 18 patients showing a rhinologic source for their headaches or facial pain that had been seen from January 1991 to June 1992. Of these, 15 patients (82%) were either cured or had improvements in their headaches.
• Kevin R. Smith M D studied the results of 40 patients who underwent surgery, finding 35 patients (88%) who were either cured or had improvements in their headaches. The results of an additional five patients were not included, as specific comparative details were omitted from either pre- or post-surgery questionnaires.

The fact that the results of these related scientific research studies exist, shows how the wheels of scientific progress can often grind slowly. The International Classification of Headache Disorders, Second Edition, published in May, 2005 has now added an Appendix of “diagnostic entities” the authors believe are real, but need more research before acceptance into the main body of headache classifications. Rhinogenic headaches caused by nasal mucosal contact fit into this category.

I agree that the International Headache Society needs to take a conservative approach in classifying headache sources to help the healthcare community effectively diagnose these conditions. At the same time, I feel strongly that as medical professionals, we need to do a better job of getting information out to a broader population about ongoing research and promising study results that could help chronic headache sufferers gain access to new treatment options, faster.

We need to learn from the journeys of other researchers who promoted medical developments and struggled to gain credibility amongst their colleagues in the medical community. Patients are best served by our openness to new ideas and treatment options.

**The Challenge of Medical Advancements**

I am reminded of the fact that before 1980, stomach ulcers were thought to be caused by excessive amounts of stomach acid.
Barry Marshall and Robin Warren began a series of experiments that led to the conclusion that it was Helicobacter pylori (H. pylori), a bacterial form that thrives in acid-rich environments like the stomach that actually caused ulcers. It took extensive efforts, including grass roots support for their theories that finally turned the medical community around to their way of thinking. In 2005, Barry Marshall and Robin Warren were awarded the Nobel Prize in Physiology and Medicine for their discovery.

I believe I face the same challenge, convincing the medical community of a preponderance of medical evidence linking nasal sources to severe, migraine-like pain. Since surgical options can improve people's lives and this correlation can no longer be ignored. My goal is to make a significant change, a paradigm shift in the way we treat severe, refractory, migraine-like headaches.
Intranasal surgery has shown great success in the elimination of headaches where a nasal cause has been identified. The surgical procedure is called a septoplasty. With this procedure, a small incision is made inside the nostril, and the mucous membrane is elevated off of the septum. The septal spur is removed to relieve the pressure point. The turbinates can be pushed aside to eliminate any other contact points with the septum. If congestion is a major problem, the turbinates can be trimmed to allow for improved breathing.

Once the septum is straightened, the mucosal flaps are re-approximated with a dissolvable suture. There is no need for intranasal packing unless there is excessive bleeding during the operative procedure.

In the past, patients who underwent septoplasty had their noses packed tightly with gauze after the procedure. When the gauze was removed, these patients described enduring excruciating pain.

Surgical techniques have progressed over the years, and now if packing is required, it usually consists of a soft sponge that applies more gentle pressure to the nose in order to minimize bleeding. In my practice, the goal is to not pack the nose, if at all possible. This makes the post-operative recovery period much more pleasant.

The surgery can be performed under intravenous sedation with local anesthesia or general anesthesia. Post-operatively, there is
minimal pain. Patients take their pain medication one to two days after surgery, and experience very little swelling. Cold compresses applied to the nose minimize both pain and swelling, and reduce the need for narcotic medication. A patient can be back on their feet and working within two to three days, if just the septum is addressed. If the turbinates are trimmed, recovery can take five to seven days.

**Surgical Options**

**Simple Septoplasty**

A simple septoplasty is performed when there is a history of severe rhinogenic headaches combined with a deviated septum. The procedure can be performed whether or not breathing problems exist. A septoplasty is a surgical procedure that requires an incision to be made in the septal mucosa. This mucosa is elevated off the cartilage and bone of the septum. The bone spur or deviated portion of the cartilage is removed, making sure to leave behind enough cartilage to maintain the support of the external nose.

The mucosa is re-approximated with a dissolvable suture. This eliminates the need for packing as done in the past. The result is the elimination of the contact point between the septum and sensitive nasal tissues. This relieves or eliminates the referred headache pain while improving the patency of the nasal airway and breathing.

**Turbinectomy**

When patients report difficulty breathing, the issue may be persistent enlargement of the turbinates. During a normal respiratory cycle, the turbinates alternate swelling and shrinking every four hours. When they become chronically engorged and cause persistent breathing difficulties, they can be removed to restore normal
breathing. Because bleeding is a potential risk following this surgery, packing is sometimes required.

There are other more conservative turbinate reduction procedures that can be performed when there is a threat of bleeding or minimal breathing difficulty. One option is to simply out-fracture the turbinates away from the septum. The use of heat using a laser, cautery, or coblation can be applied to reduce the size of the turbinates.

Sinus Surgery

With a history of chronic or recurrent sinusitis, endoscopic sinus surgery can be performed. This surgery typically involves using a small telescope attached to a camera, which projects the images onto a monitor. The telescope is placed through the nose and into the sinuses, while small surgical instruments are used to remove pieces of sinus bone and swollen mucosa.

This action removes the small individual cavities to make a large cavity that lessens the likelihood of mucus getting trapped and becoming infected. Recovery from this surgery takes about seven to ten days.

The most common risk with this procedure is infection, which can cause scarring within the sinuses that may require revision surgery, later. This risk is minimized with prescription antibiotics, along with a low dose steroid to reduce inflammation.

Sinuplasty

In 2006, a revolutionary sinus surgery procedure called sinuplasty was introduced to sinus surgeons. As with most new procedures in medicine, it was initially met with some controversy, but in my mind has proven to be a safe and effective treatment option, allowing for preservation of the sinus tissues while expanding narrowed sinus passages.
This procedure originated with cardiologists who use a similar procedure called angioplasty, which involves inserting small balloons into the heart to open narrowed vessels. With sinuplasty, small balloons are threaded into the narrowed drainage channels of the sinuses and expanded. This procedure can be successfully used to expand frontal, maxillary, and sphenoid sinuses to help improve drainage.

Often with weather changes, patients complain of pressure headaches in the forehead, top of the head, or cheeks. These are barometric headaches, caused when air trapped in the sinuses is at a different pressure level than the outside air. The narrowed channels prevent the air in sinuses to equalize, causing a pressure headache. The narrowed sinuses can also become chronically infected.

Irrigation catheters can be used to flush the infected sinuses with antibiotic fluid. Sinuplasty allows surgeons to be very selective in treating only those sinuses responsible for the symptoms. Since there is no tissue removal, the recovery is minimal. Patients can return to normal activities immediately.

Preparing for Surgery

I supply my patients with the following information to ensure the most positive outcome of procedures done at the Smith Surgery Center. Other doctors may take different approaches. That’s why it’s important to discuss these procedures with your doctor, to make sure you feel comfortable in how they will approach your surgery.

The first step towards septoplasty is to schedule a pre-surgery consultation with the ENT specialist who will perform the surgery. During this appointment, specific requirements can be discussed, tailored to meet your health considerations and expected outcomes.
During this visit, your doctor will want to know about any and all medications you’re taking, whether they are prescription medications, over-the-counter medications, or herbal supplements. There are many medications and herbal products that behave as blood thinners, interfering with the body’s ability to clot during surgery. That’s why doctors will want to know about anything you take on a regular basis, including:

- Vitamin E
- Fish oil
- Garlic
- Ginseng
- Green tea
- Ibuprofen
- Aspirin
- Energy Drinks

Septoplasty and sinus surgery are generally covered by your health insurance. However it is customary to obtain authorization from your health insurance company prior to scheduling the procedure.

A medical clearance is usually required for patients with severe medical conditions, such as:

- Sleep apnea
- Uncontrolled hypertension or diabetes
- A history of heart disease
- Previous heart surgery
- Blood transfusion with prior surgery

After these particulars are completed, the date for surgery is selected and pre-operative instructions are reviewed. Make sure during your appointment to ask questions and express any concerns, so that you can feel comfortable with the procedure you have elected to have.
Surgical Risks

Septoplasty is considered a low risk procedure, with complications that can include bleeding, infection, and a perforation or hole in the septum. The surgery does not involve major blood vessels or vital organs, and infection is unlikely if proper sterile surgical protocol is observed.

With respect to sinus surgery, certain complications can occur. These include cerebrospinal fluid leaks, meningitis, blurred vision, and blindness. This is because of the close proximity of the sinuses to the brain and eyes. ENT surgeons take surgical risks seriously, and follow the strictest protocols to provide safe nasal and sinus procedures to patients.

Remember, as the patient, you should always feel in control of surgical procedures, electing to work with medical professionals you trust most. If you're working with a doctor who comes across as insensitive or uncaring, see someone else.
CHAPTER TEN

**The Verdict**

When a patient came into my office, claiming to have suffered with severe recurrent headaches for the past 15 years, and undergone 10-12 MRIs of her brain with negative results over this time, I was astounded. In the first 10 minutes of her visit I discovered the truth behind her headaches—she has a deviated septum! If only she had been able to get a CT scan of her sinuses earlier, so much agony and expense could have been avoided.

—Dr. Kevin R. Smith

Patients who have experienced chronic headache pain over years or decades can sometimes feel like they are crossing a desert in search of answers. Many have come into my office, unsure of whether or not I can help them, but their thirst for new treatment options brings them through my door.

The Migraine Imposter, which is a nasal source that causes migraine-like pain, is often overlooked as a potential reason for chronic headaches. A septal deviation, enlarged turbinates, or narrowed sinus channels can masquerade undetected for years or decades, leaving sufferers to wrestle with the myriad of consequences associated with unresolved chronic head pain. They become isolated.
from their family and friends, labeled as sickly or lazy, and reduced to surviving life rather than experiencing the joy of a pain-free existence.

The reason why nasal sources aren't more aggressively pursued is not because of a lack of scientific evidence. There have been numerous studies done that have documented the relationship between nasal sources and referred head pain. The issue is that this information isn't widely known within the general public, or among many medical practitioners. Headaches are most often viewed by doctors as a non-life-threatening symptom of an underlying illness, the result of lifestyle choices, or a more serious condition involving the brain that is best left to a neurologist to monitor.

While any of these conditions can certainly cause headaches and need to be evaluated, other causes need to be explored before handing out a default migraine diagnosis and the drug regimen that goes with it.

Students coming out of medical schools today are sensitized to the ever-growing cost of healthcare, and to make sound judgments to control those costs. This may lead them to order fewer tests, especially if they believe tests may have a low probability of exposing new, actionable details. Yet many will immediately order a brain MRI, even when a patient presents with a headache condition that has not changed to any degree over the course of several years, with no other symptoms. With this scenario, even the American Neurological Association indicates that a brain MRI may not be warranted.

While I agree that patients should not be put through unnecessary testing, when you consider that 37% of adults have a mild to moderate septal deviation, in the case of headaches with no other symptoms it seems reasonable to assume a CT scan of nasal sinuses would have a higher probability of presenting new evidence than a brain MRI.

Living a normal life exposes people unknowingly to septal deviations. Car accidents, contact sports, or abusive relationships
have their consequences. Environmental conditions that produce allergies, irritants, and pressure changes can exacerbate rhinitis and impact even minor nasal abnormalities.

Rhinogenic sources of severe headaches may well impact over 50 million people, worldwide. It's a significant concern that can no longer be ignored. By shining a spotlight on The Migraine Imposter, I hope to have given the power of knowledge to a broader audience to take control over their own headache investigations. I also hope that I have provided my colleagues in the medical community with evidence they can use to give patients under their care a larger scope of treatment options for chronic, severe headaches.
THE MIGRAINE IMPOSTER
Dr. Kevin R. Smith M.D., F.A.C.S.

Dr. Kevin R. Smith is a leading facial plastic surgeon and medical director of the Smith Headache Treatment Center and Smith Cosmetic Surgery Center in Houston, Texas. Dr. Smith is a Fellow of the American College of Surgeons. He is certified by the American Board of Otolaryngology–Head and Neck Surgery, and the American Board of Facial Plastic and Reconstructive Surgery.

He completed his pre-med requirements at the University of Michigan while on a football scholarship. His medical degree and residency training in otolaryngology were achieved at The University of Texas Medical School at Houston, where he currently holds an assistant clinical faculty appointment in the Department of Otolaryngology. He performed his post-residency fellowship training in facial plastic surgery at the prestigious McCollough Plastic Surgery Clinic in Birmingham, Alabama.

Dr. Smith is involved in many community projects, donating his services as mentor for college and medical students, and is active
in various organizations, including the United Negro College Fund, The Houston Medical Forum, The Harris County Medical Society, and UT-Houston Health Science Center Development Board. He was appointed by the Governor to serve on the District One Review Committee of the Texas Board of Medical Examiners.

His true passion is helping patients to find a cure for debilitating, severe headache pain. He has helped hundreds of patients with migraine-like headaches recover their lives. His hope is that by educating more people about the frequency of nasal causes of severe headache pain, more people can seek out treatment to achieve a higher quality of life.

Services offered at The Smith Headache Center, include:

- Septoplasty
- Turbinectomy
- Sinus Surgery
- Sinuplasty

Dr. Smith is sought out internationally to lecture on a variety of medical topics, including nasal causes for migraine-like pain. He appears frequently on local Houston radio and television shows, and has appeared on National television shows, including Inside Edition and The Today Show.

Smith Headache Treatment Center
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Houston, Texas 77030
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Toll-free: (877) 764-8428
Office email: scsc@smithctr.com
http://www.KevinSmithMD.com
Headache Questionnaire

Patients coming to the Smith Headache Treatment Center are asked to fill out a Headache Questionnaire on their first visit. I use this information to understand the complete history and characteristics of their headaches, and I find this information invaluable to diagnose their headache condition. I therefore make the Headache Questionnaire available for download from my website to give patients more time to accurately recall important details.

I would like to encourage anyone reading this book to access my website and download your own Headache Questionnaire. Fill it out completely and take it to your next doctor’s appointment. The download is free, and your answers to these questions will be very helpful in arriving at an accurate diagnosis for your headaches. You can find the Headache Questionnaire at: http://smithctr.com/headache_questionnaire.html

I wish you well in finding relief for your chronic headache condition. I also encourage you to tell other sufferers about The Migraine Imposter so that they too can have a chance to live their best life.
More information about headache and migraine is available online through these organizations:

American Headache Society.

MAGNUM — Migraine Awareness Group.

Smith Headache Center.

The International Headache Association.
http://www.i-h-s.org.

World Headache Alliance.

World Health Organization.
End Notes

Foreward


Chapter One


Population statistics estimated as of 7/08, website accessed 2/09:
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Chapter Two


Chapter Three


Chapter Four


Chapter Five

Chapter Six

Chapter Seven

Chapter Eight
Smith, Kevin R. M D, FACS; Jones, Kenyatta; Mirza, Nadeem Q. M D, M PH; Cherry, Lorraine M. PhD. Relief of Suspected Migraine Headaches in Patients Treated with Septoplasty Surgery (Unpublished work). 2003.

Chapter Nine

Smith, Kevin R. M D. Smith Headache and Facial Cosmetic Surgery Center.

Chapter Ten

A Special Message

from

Dr. Kevin Smith

Is Your Nose Causing Your Migraines?

Dr. Kevin Smith Will Confirm If You Have A Deviated Septum, Bone Spur or Turbinate Hypertrophy... And If It’s Related To Your Chronic, Severe and Debilitating Headache Pain

From the Desk of Dr. Kevin Smith, M.D., F.A.C.S.

Smith Headache Treatment Ctr.

6410 Fannin, Ste. 810

Houston, TX 77030
Dear Migraine Sufferer,

If you’ve tried nearly everything else to treat your migraines, including countless specialist and multiple addictive drugs... and after reviewing this website, you believe your pain may be due to a nasal problem... then let’s get together and confirm if it’s true.

Here’s what I’ll do:

For a small fee, I will carefully review the CT scan of your sinuses using my 19+ years of experience helping over 1,500 patients with their headache pain.

It’s easy to get a CT scan. You can ask your primary care doctor or neurologist. Ask them to focus specifically on your sinuses.

A CT scan is covered by your health insurance if you have a history of headaches or sinus problems. Once you’ve had your CT scan, send it to me either on film or CD. I prefer film.

I will then send you to a short questionnaire. It’s on a private website, and it’s easy to fill out. I will ask you to tell me more about your headaches. It won’t take more than ten minutes.

With your completed questionnaire, I will get a complete understanding of your headache profile — the frequency, severity and location of your pain.

I will then review the CT scan to see if you have what I’m looking for. In less than 48 hours, I will follow up with an e-mail report of my findings and recommendations. You can take my report to your doctor to see if they will follow or at least consider the treatment plan.

Better yet, you can come to my Houston office and see me in person. We’ll discuss your diagnosis and options. Afterward, my staff will
help you with scheduling and follow-up care for the recommended procedures.

“Why Should I Have You Review It And Not My Own Doctor or ENT?”

Actually, you’re more than welcome to send your CT scan to your personal physician or ENT. Here’s why I prefer you send it to me instead...

- I am one of few board certified otolaryngologists (ENT) in the world who focuses on nasal (or rhinogenic) causes of headaches.

- I have dedicated the majority of my professional career (over 19 years), helping over 1,500 patients recover from sinus issues, including those that cause severe, debilitating headaches.

- In an unpublished clinical study of my practice, I have removed or significantly reduced painful migraines for 88% of test subjects. To this day, they no longer suffer the severe headache pain they once did. When they have a headache, it is a minor “normal” one where a simple Advil or Tylenol will do.

- Because what I’ve shared with you is groundbreaking and not fully accepted by the medical community yet, you may be told that your nasal problem is not the reason for your headaches despite your having tried everything else. Even some ENT doctors may reject the idea. I don’t want you to miss out on your chance for a cure.

In short, I am one of the few most qualified, experienced and skilled professionals to be dealing with “migraine imposters”, such as a deviated septum or bone spur. My opinion will be based on proven case studies of over 1,500 patients who now live life without migraines-like headache pain.
“What Happens Next?”

I will send my report to you for review. You will then have two options.

1. You may take my findings to your doctor for a second opinion and ask them to act on it (for example: remove the bone spur). Or...

2. You can come see me instead. I have over 19 years experience specializing in the sinus area and I have helped over 1,500 patients with their sinus problems to date. I am also one of the very few doctors in the world to recognize how problems in your nose can cause severe, debilitating headaches.

It’s easy to get to the Smith Headache Treatment Center in Houston. It’s located in the heart of the largest medical center in the world, the Texas Medical Center.

Houston, Texas is an airline hub for Continental/United Airlines and Southwest Airlines. It is a very accessible and simple flight into Houston. You can fly into George Bush Intercontinental Airport and be a short 25 miles away from our clinic. Better yet, you can fly to Hobby Airport which is only 12 miles away from us.

What’s more, we have special rates at nearby hotels. We are currently in talks with a major hotel to provide this service exclusively for our patients.

Once you have decided to come to Houston, my staff will help you with your travel plans and hotel stay.

You do not have to stay long either. Typically, the recovery time for your procedure will take about 3 to 7 days. I have had patients go back to work after only two days recovery. That is not the usual case, but it has happened.
Also — We will make it very convenient for you. We can schedule your consultation for one day and the surgery for the following day. We strive for the least interruption to your daily life because we realize that you have wasted enough of your life suffering from headaches.

“How Do I Get Started?”

Simply call my office at (713) 795-0600 or toll free at 877-764-8428 during regular Central time office hours of 8AM -5PM and my staff will answer promptly and kindly. They will tell you how to send your CT scan to me and how to submit your deposit.

My “Find Something Or It’s Free” Guarantee

I’m going to offer you a bold guarantee. It’s something you may never hear from a doctor. Here it is: If you send me a CT scan of your sinuses, and I can definitely, without-a-shadow-of-a-doubt say that there is nothing sinus-related that may be causing your headache and migraine pain... I will refund your “analysis fee”. It’s that simple. If I do not see a deviated septum, a bone spur, turbinate hypertrophy or sinus disease... I will tell you, and you will have received a free analysis. Either I find something or it’s free.

Call today to book your CT scan analysis. I’m at (713) 795-0600 or toll free at 877-764-8428. I’m here to help.

Look forward to hearing from you,

Kevin R. Smith, M.D., F.A.C.S.

P.S. Isn’t it time you finally figured out exactly what is causing all your painful, severe and debilitating
headaches? The reason you get headaches that put a stop to your normal everyday life? Wouldn't it be worth it to try my risk-free offer and at least see if your nose or sinus problems are the source of your migraines or not?

I’m here to help. Call today to book your CT scan analysis. I’m at (713) 795-0600 or toll free at 877-764-8428.

**P.P.S.** Each of the letter excerpts you see starting on the following page are from patients I have helped recently. They are now all living life again without the pain of chronic, severe and debilitating headaches.

Don’t you owe it to yourself to at least find out if I am able to help you?

I’m here to help. Call today to book your CT scan analysis. I’m at (713) 795-0600 or toll free at 877-764-8428.
“You Saved My Life”

“It has been approximately six years since you did surgery for my MIGRAINES, and I am happy to report I feel 100% better.

Before I saw you my headaches were daily for about one and half years, but I suffered for a total of fifteen years.

I think back and wonder how I worked everyday with constant pain, but I had no other choice. I still get headaches but they are far and few between, and much less severe.

There is no doubt in my mind you saved my life. I couldn’t believe the immediate relief I felt.”

Flo T.

—

“Severe Headaches Gone!”

“I have been suffering from mild headaches most of my life.

However, after moving to Houston from Singapore in 1996 I started developing a severe sinus allergy and migraine headaches. The headaches came and went and got worse with changes of season and during my period cycles.

By 2000, my headaches were becoming unbearable and I thought I might have a tumor in my brain.

Since my operation with you in 2002 to correct my deviated septum, headaches no longer dominate my life. My severe headaches are gone.”

Roya K.

—
“Free Of This Chronic Pain”

“I have suffered from debilitating migraine-type headaches for approximately fifteen years. During this time I saw a number of neurologists who performed various tests of my brain, including CT scans and MRIs.

The tests never produced any signs of brain tumor or aneurysm, but the cause of the severe pain I kept encountering could not be explained.

I was told by every neurologist, ‘you just have migraines.’

I refused to be defeated by these debilitating headaches. I was not going to lose my career and total quality of life.

After doing research on the Internet, I came across Dr. Kevin Smith’s website. He performed surgery on me on March 29, 2005.

The feelings I have are indescribable. I am so fortunate to have found out about Dr. Smith and then to become one of his patients.

In fifteen years, Dr. Smith is the first physician that has truly tried to help me live free of this chronic pain. I cannot thank him enough for saving my quality of life and my career.”

Julie B.
“98% Free From Migraines”

“In recent years I started to experience severe migraine headaches. My job was very stressful and I had to answer hundreds of calls a day. The blazing pain made it difficult for me to be productive, concentrate and talk on the phone.

I was also experiencing stiff neck and back muscles.

In March 2003 Dr. Smith performed surgery on me. Two years later I am 98% free from migraines and I have a new lease on life.”

Kennan W.

“Gave Me My Life Back”

“I am seventy-one years old and have had headaches as far back as I can remember. I suffered from migraine and cluster headaches. I was a farmer until I retired a few years ago.

There were days I couldn't work because my head hurt so badly. I would lie in a quiet, dark bedroom and vomit when the migraines came.

With the cluster headaches I was in such pain, suicide crossed my mind more than once. Nothing I did or took relieved them. I would consider anything to end the horrible pain.

Recently, I read an article in the Texas Medical News about Dr. Kevin Smith in Houston, Texas. I made an appointment with Dr. Smith and he performed surgery to correct a deviate septum, turbinate hypertrophy and sinusitis.
My life is so much more worth living already.

The terrible pain I experienced has not reoccurred since the surgery on the 21st of February. How can I thank Dr. Smith for giving my life back to me?

I am hoping by writing this letter I can help someone else that is having the same horrible pain that I endured over the years.

Harvey C.

“Did Not Believe Sinuses Were The Problem”

“For over forty years, I have suffered from unbearable migraine headaches. So many times I found myself in a dark room begging for everyone to keep their voices to a whisper.

My life would stop and the pain would take over.

Two years ago, I was sent to a Neurologist for a second opinion concerning my headaches. After questioning me about the different circumstances that triggered my headaches, he referred me to Dr. Smith.

Dr. Smith diagnosed me with a deviated septum and nasal spurs. After my surgery, my migraines have been reduced by 75%.

I did not realize how my sinus problems, which I thought were basic allergies, were causing such massive headaches.”

Janice H.
“No Proper Words For Thanks”

“Over a 20-year period I took more medication for “allergic” symptoms than any one should ingest.

One specialist gave me allergy injections over a three-year period. The relief was minimal at best.

The year prior to my appointment with Dr. Smith I had 4-6 bouts of severe sinus infections. The difficulty I had with breathing through the left side of my nostril, the painful headaches and vertigo left me in persistent poor health, and with a terrible demeanor.

I have no doubt my state of ill heath contributed to poor job performance, and negatively affected my personal relationships for many years.

Since my surgery with Dr. Smith, I have not experienced any debilitating headaches, sinus infections or vertigo. I can hardly remember the discomforts that I endured for so long.

I can honestly say that physically and mentally I feel better than I have in years. I contribute 100% of my state of wellness to the treatment I received from Dr. Smith.

I do not have the proper words to express my gratitude for what his treatment has done for me, and the quality of my life.”

Patricia V.
“Like A New Person”

“My son is thirteen years old. He has been having headaches almost six years.

His headaches were so severe that he would cry himself to sleep, I would see tears running down his face and there was nothing I could do.

I felt so helpless that I would often cry with him.

I have been taking him to his pediatrician for these headaches. She assured us that the headaches were caused by stress at school and his allergies, and recommended over the counter medication.

We tried Tylenol, Excedrin Migraine, Bayer, etc. but nothing was working. They would relieve his headache for a while, but it would always come back.

After my son's surgery with Dr. Smith, he was like a new person. I feel so happy because we finally found a solution.

He is practicing tennis more often. He hangs around his friends and he is really enjoying his life.

I want to thank Dr. Smith for what he has done. It's amazing how a simple surgery can change someone's life.

Alex C.
“Back To Work On Monday”

“During the entire months of December 2007, January 2008 up until my surgery on February 15, 2008 I suffered from headaches on a daily basis.

Some days my headaches were so bad I was taking Tylenol or Advil migraine tablets every 4 hours.

Dr. Smith performed surgery using a balloon to open my nasal passage and he also removed both of the bone spurs.

I had surgery on a Friday and stayed in bed all weekend and was back to work on Monday.”

Lila D.