



HELPING CLIENTS MANAGE MIGRAINES

These headaches can be debilitating.



Learn how massage therapy can help clients who suffer from migraines find some relief. **BY HELEN TOSCH**

Definition of Migraine

Migraines. We've all heard of them, and most of us probably know at least one person who suffers from them. But what is a migraine exactly? And how can you, as a massage therapist, help people who experience migraine headaches?

Though migraine has become synonymous with a severe headache, there is more to it than just debilitating pain. The International Headache Society states that migraines should not be diagnosed by pain alone, but by severity of pain, number and length of attacks and additional symptoms that accompany the headache. According to their standards for migraine diagnosis, for a headache to be considered a migraine, the sufferer must have had at least five episodes that lasted between four and 72 hours without treatment. The headache must also be accompanied by additional symptoms, such as nausea and/or vomiting and sensitivity to light and/or sound.¹

There are four phases of migraine attacks. Some people may experience all of them, while some experience only one or a few. The phases are: prodrome, aura, attack and postdrome.

PRODROME PHASE. The prodrome phase most often occurs one to two days before a migraine attack. The signs and symptoms are often subtle and may be mistaken for other things, like pre-menstrual syndrome (PMS). The prodrome symptoms may include digestive irregularities, like constipation or diarrhea, depression, drowsiness, food cravings, jitteriness, hyperactivity or irritability. However, some people may not notice any symptoms during the prodrome phase or may not experience this phase at all.

AURA. Aura is a more distinct warn-

ing sign of migraine than the prodrome phase.

Between 20 and 30 percent of migraine sufferers experience a migraine aura before the onset of the migraine pain. An aura is a type of neurologic disturbance that can affect vision, sensation, or motor or verbal ability. According to the Mayo Clinic, visual auras are the most common type of aura. People experience auras differently, but the visual disturbances often include flashing lights, blind spots in the vision, zigzag or wavy lines, or even temporary loss of vision.

Less often, auras can be experienced by other parts of the body. For example, some people will have tingling or numbness in one arm or on one side of the face. This is called a sensory aura. Others may have difficulty speaking, which is considered a dysphasic aura.² Studies about migraine-related auras show that they are due to changes in the activity of specific nerve cells.³

Migraine auras usually occur prior to migraine pain, but they can occur during the migraine attack as well. Auras have also been known to occur without an associated headache. Most auras last between 10 and 30 minutes.

MIGRAINE ATTACK. Migraines are not just another headache. Experts used to believe migraines were precipitated by changes in the dilation of blood vessels.³ But it's now believed that there is more to it—that the migraine pain occurs when the trigeminal nerve is stimulated and releases chemicals that can irritate the blood vessels on the brain's surface and cause the vessels to swell. This swelling sends pain signals to the brainstem, and the migraine pain begins. Migraine pain can be felt anywhere in the head and is most often experienced on one side,

but the pain can also be felt in the face, jaw or neck. An acute migraine attack may make sufferers sensitive to anything touching their head, so massage therapy involving the head may be contraindicated in some clients during the acute attack.

There is currently no test to confirm the diagnosis of migraine, so physicians must rely on their patients' self-reports about the characteristics of their pain and the related symptoms in order to make the diagnosis of migraine.

People experience migraine pain in many ways, but most commonly, the pain is:

- On one side of the head more than the other
- Throbbing or pulsating
- Moderate to intense (bad enough to make daily activities difficult)

In addition to pain, migraine sufferers often experience other symptoms, such as:

- Nausea or vomiting
- Sensitivity to light or sound
- Sensitivity to smells
- Neurologic disturbances (visual, sensory, dysphasic) called an aura
- Worsening pain with exertion

POSTDROME. The postdrome phase, also known as the "headache hangover," is characterized by a feeling of exhaustion or being wiped out. In a study called "Key Concepts of Migraine Postdrome: A Qualitative Study to Develop a Post-Migraine Questionnaire," study participants reported postdrome symptoms that included:

- Tiredness
- Difficulty concentrating
- Weakness
- Dizziness

- Lightheadedness
- Decreased energy or fatigue

Participants also reported a decreased activity level as a result of their postdrome symptoms.

According to participants, their postdrome symptoms affected their:

- Ability to work
- Family interactions
- Social life

They also reported that the symptoms were severe enough to cause cognitive impairment.⁴

Types of Migraines

According to the National Headache Foundation, there are at least 13 identifiable types of migraines, some of which are more common than others.⁵ Below are 13 types of migraine, as well as some information about each type and any direct indications or contraindications for massage therapy.

ABDOMINAL MIGRAINE. Abdominal migraine most often affects children. The typical complaints are nausea and an upset stomach. Children with abdominal migraines usually have a family history of migraine and go on to develop typical migraine later in their life.

The attacks are characterized by recurring bouts of moderate to severe abdominal pain across the midline that usually lasts between one and 72 hours. They may also experience other symptoms, like nausea and/or vomiting, and their skin may appear flushed or pale. Diagnosis of abdominal migraine is most often made after tests to rule out gastrointestinal causes of the symptoms come back normal.

COEXISTING MIGRAINE AND TENSION-TYPE HEADACHES. Also called chronic migraine, transformed migraine and chronic daily headache, and previously known as mixed headache syndrome, coexisting migraine and tension-type headache are characterized by a daily, chronic tension-type headache along with a recurrent migraine-like headache. Because of the chronic, often debilitating nature of this type of migraine, sufferers are at increased risk for another headache called medication overuse headache that is caused by overuse of pain relieving medications, including over-the-counter analgesics, opiates, ergots and triptans.

Most people who experience this type of migraine have a history of periodic migraine without tension-type headaches. The daily tension-type headaches tend to start after years of migraines.

People who suffer from this combination headache syndrome often take pain-reducing medication on a daily or near-daily basis. Some also consume large amounts of caffeine in beverages and/or analgesics. The catch 22, so to speak, is that using any analgesics more than 10 to 15 days per month predisposes people to this syndrome.

So what can massage therapy do? Although there are special considerations when working with people who are overusing pain relievers (especially those with narcotic properties), massage can be beneficial. Because the tension-type headaches often begin after years of migraine-type headaches alone, there is also some evidence that people who experience coexisting migraine and tension-type headaches developed the tension component due to physical and emotional stress from the continuous migraine pain.

Research has shown that massage

“Chronic migraine, transformed migraine, and chronic daily headache are characterized by a daily, chronic tension-type headache along with a recurrent migraine-like headache.”

for tension-type headaches can reduce depression and/or anxiety; decrease perceived pain; decrease tension; reduce frequency, intensity, and duration of headache pain; and decrease medication usage.^{6 7 8 9 10 11}

One of the difficulties with coexisting migraine and tension-type headaches is that the muscle tension and stress that leads to the tension-type headache can also be a trigger for the migraine.

Because depression, anxiety, tension, and even medication overuse can be triggers for migraine pain, it's reasonable to conclude that massage may be an effective option for coexisting migraine and tension-type headaches, as it may reduce the incidence of tension-type headaches, along with reducing or eliminating some potential migraine triggers. Also, massage therapy could reduce the need for pain relieving medications, which may help sufferers avoid analgesic overuse.

BASILAR MIGRAINE. Basilar migraine is a rare type of migraine with aura that is most common in

young adults. The aura is different in that it originates from the brainstem on both sides of the brain. Some believe that the basilar artery in the back of the brain may be involved in the migraine, but there is no conclusive evidence to prove this theory.

The aura symptoms of a basilar migraine typically last less than 60 minutes and can be similar to stroke or ruptured brain aneurysm symptoms. These symptoms may include dizziness, double vision, loss of balance, slurred speech, confusion, hearing changes, and a numb or tingling sensation felt on both sides of the body (stroke numbness is most often felt on one side of the body). The aura typically lasts less than one hour. The headaches that follow these auras are usually typical migraine headaches.⁵

CHRONIC MIGRAINE. When migraine sufferers experience migraine attacks more than 50 percent of the time, their migraines are considered chronic migraines (CMs). Chronic migraines used to be re-

ferred to as transformed migraines. There are three criteria sufferers must meet for their migraines to be considered CMs. The International Headache Society lists the following criteria as an important part of a CM diagnosis:

1. Headache, of either tension-type and/or migraine quality, occurs on at least 15 days per month for at least three months.
2. On at least eight days per month, the sufferer experiences the pain and associated symptoms of migraine without aura and/or treats and experiences relief before the expected development of symptoms.
3. There is no indication of medication overuse.¹²

Note: If medication overuse is present (according to the medication overuse headache criteria), the headache may be classified as a probable chronic migraine. Medication overuse headache criteria are: ergotamines or triptans for at least 10 days per month on a regular

“Research has shown that massage for tension-type headaches can reduce depression and/or anxiety; decrease perceived pain; decrease tension; reduce frequency, intensity, and duration of headache pain; and decrease medication usage.”

basis for at least three months; or opioids or combination analgesics for at least 10 days per month on a regular basis for more than three months, or simple analgesics for at least 15 days per month for more than three months.

Treatment for CM should focus on controlling one or more triggers that can lead to headache occurrence. These triggers may include changes in diet, sleep, exercise and psychological well-being, along with many additional factors that can have a potential influence on migraine onset.⁵

Massage therapy may help chronic migraine sufferers by reducing one or more of the factors that can lead to headache recurrence, including reducing stress. Stress reduction can improve overall function, help normalize the sleep/wake cycle and increase psychological well-being.

COMPLICATED MIGRAINE. The term “complicated migraine” is outdated and no longer used to describe a single type of migraine, but you may have clients who still refer to migraines in this way, so it’s useful to have a working knowledge of what comprises complicated migraine.

Formerly, the term was used to refer to prolonged migraine aura that lasted much longer than the usual 20 to 60 minutes—sometimes lasting hours or even days. The term complicated migraine was also used to describe ophthalmoplegic, which involves development of partial or complete paralysis of the nerves necessary for normal eye movement.

There is no direct evidence regarding how massage can help reduce this type of migraine. Since the cause of these types of migraines is not well understood, if your client has a diagnosis of com-

plicated migraine, ophthalmoplegic migraine or a migraine with prolonged aura, getting a referral from the client’s physician might be best before beginning massage therapy.

CYCLIC MIGRAINE SYNDROME. Although the International Headache Society does not recognize the term cyclic migraine syndrome, there are some people who still refer to a certain type of migraine as a cyclic migraine.

This type of migraine is characterized by a pattern of heavy migraine attacks followed by a period of time that is migraine free. The length of the cycle of migraine attacks can be anywhere from one to six weeks. During the migraine attack cycle, headaches may occur a few times a week or even every day, but there will be periods of no pain or reduced pain. The attack cycle will be followed by a period of time—sometimes weeks or months—when the sufferer experiences no migraine pain at all.⁵

Some health practitioners refer to cyclic migraine syndrome as an unspecified migraine because it doesn’t fit into one of the well-known descriptions of more common types of migraine.

People who suffer from this type of migraine cycle may benefit from massage therapy to help them reduce stress and relax during the pain-free cycle, and to help manage the migraine attack cycle.

MENSTRUAL MIGRAINE. Levels of the female hormones estrogen and progesterone fluctuate every month during a woman’s menstrual cycle, and these fluctuations can leave women more vulnerable to headaches, including migraines.

Serotonin is an important hormone produced by the body. Changes in serotonin levels or the way se-



Looking for more great
online education?

Visit
amtamassage.org/learn.

“Massage therapy may help chronic migraine sufferers by reducing one or more of the factors that can lead to headache recurrence, including reducing stress.”

rotonin is metabolized by the body may contribute to migraine attacks. There is also a theory that the way serotonin interacts with female hormones estrogen and progesterone can also be a contributing factor in the development of migraines. So as the levels of these female hormones change rapidly around the time of a woman's period and/or during ovulation, the serotonin/estrogen/progesterone interactions change. Experts believe that this can lead to migraine attacks, called menstrual migraines because of the relationship to a woman's menstrual cycle.⁵

Migraines affect adult women three times more than they affect adult men, and of the women affected, 60 percent have menstrual migraines. Primarily caused by estrogen, menstrual migraines occur before, during, or immediately after a woman's period and/or during ovulation.

Massage may help women who suffer menstrual migraines, but whether massage will help women in the midst of an attack is unclear. Though studies have shown the benefits of massage for migraine sufferers, there are some people who have complained of exacerbation of migraine symptoms if they receive massage—especially around the head and neck—during a migraine attack.

Massage therapy is widely believed to increase serotonin levels in recipients. And though experts suspect there is a link between estrogen/progesterone levels and serotonin, it's unclear whether increased serotonin will help or hinder pain relief during a migraine attack.

When in doubt, talk to your client. Make sure you communicate with her during the massage session, and let her know that if the

massage increases her pain, it's OK for her to ask you to stop.

MIGRAINE WITH AURA. Migraine with aura is a migraine headache preceded by a group of symptoms classified as an aura. Although auras most often end before the migraine pain begins, it is possible for aura to last throughout the acute attack as well. Aura is a neurologic disturbance that manifests in different ways. There are a few types of aura. The most common type of aura involves visual disturbances that typically last between 20 and 30 minutes.

During the migraine attack phase, a migraine with aura is similar to a migraine without aura, as both are characterized by head pain and associated symptoms, such as nausea and/or vomiting, sensitivity to light and sound (and possibly smell), and worsening pain with exertion.⁵

Massage may help those who suffer from migraine with aura by reducing stress—a known migraine trigger—and in turn reducing the frequency of migraines. However, massage during the aura phase may be contraindicated because of the nature of the symptoms during that phase. In all cases, it's best to consult with your client and get permission from your client's physician before proceeding with massage therapy.

NOCTURNAL MIGRAINE. A nocturnal migraine is exactly what it sounds like: a migraine that occurs in the middle of the night and sometimes in the early morning hours. Migraine sufferers often wake from sleep to the pain of a migraine attack.⁵

Because massage can help improve sleep and reduce stress, it may be beneficial for those who suffer nocturnal migraines.

OPHTHALMIC MIGRAINE / OCULAR MIGRAINE. Ophthalmic migraines are also known as ocular, retinal or monocular (one eye) migraines. They are rare migraines, affecting only about 1 in 200 migraine sufferers.

When they do occur, they can cause vision loss or blindness that typically lasts less than 60 minutes. Although some of the symptoms of ophthalmic migraines seem similar to a migraine aura, they are not the same, as they happen during or after an acute migraine attack.⁵

Diagnosis can be difficult because a physician must first rule out underlying issues that may cause the same symptoms, including eye disease or blood vessel disorders.

If your client is or has been experiencing symptoms that seem related to those of an ophthalmic migraine, but has not received a diagnosis, it is best to proceed with caution when beginning massage therapy in case there is an underlying disorder that might contraindicate massage. When in doubt, request that your client get physician approval before starting a new massage therapy treatment plan.

OPHTHALMOPLEGIC MIGRAINE. Ophthalmoplegic migraine is a rare condition that falls into the migraine category, although it is actually a type of neuralgia.

The pain of this type of migraine usually surrounds the eyeball and can last anywhere from a few days to a few months. Unlike most migraines, experts believe weakness of the muscles surrounding the eye is the primary cause. The most prominent symptom other than eye pain is double vision.⁵

STATUS MIGRAINE / STERILE INFLAMMATION MIGRAINE. The International Headache Society de-

defines status migraine as a migraine attack that lasts for more than 72 hours. Some also refer to it as sterile inflammation or sterile inflammation migraine, as an inflammatory response to the migraine may develop around the walls of the blood vessels and contribute to migraine pain.

Administered intravenously (through an IV), repeated doses of dihydroergotamine mesylate (DHE) may help to resolve status migraines. Corticosteroids may also help treat migraine pain by decreasing the inflammatory process. Because treatment may require access to the veins via an IV, hospitalization may be required.⁵

Massage during or soon after status migraine treatment may be contraindicated due to the drugs used for treatment.

TRANSFORMED MIGRAINE. According to the National Headache Foundation, transformed migraine (TM) is a migraine condition that began as episodic migraine attacks but gradually increased in frequency. Once episodic migraines have transformed, they will occur daily or almost daily.

Typically, however, the pain sensation changes with the frequency, going from straight migraine-type pain to a different pain that sufferers often describe as a combina-

“Transformed migraine is a migraine condition that began as episodic migraine attacks but gradually increased in frequency.”

tion of tension-type headache and typical migraine pain. This pain is similar to a coexisting migraine and tension-type headache, but unlike the pain of coexisting migraine and tension-type headaches, the pain associated with transformed migraines frequently decreases in severity until the sufferer experiences only mild to moderate pain during attacks. Along with decreased pain severity, most people with transformed migraines also experience decreased severity and frequency of accompanying symptoms, such as nausea and sensitivity to light and sound. However, other symptoms and characteristics, like unilateral pain, gastrointestinal distress, and trigger activation, remain.

The majority of people who experience transformed migraine are women, and 90 percent of them have a history of migraine without aura.

Medication overuse can increase the frequency of migraine occurrence, and some believe that can lead to transformed migraine. Daily use of pain relievers can increase risk of developing medication overuse headache (MOH), also known as rebound headache. This can be a problem with transformed migraine sufferers.

There are additional risk factors that increase the likelihood of episodic migraines transforming to chronic migraines. They include:

- Experiencing more than one headache attack per week
- Acute medication overuse (medication overuse headache)
- Length of time migraines have been occurring (the longer people suffer, the more likely they are to transform)
- Obesity
- Snoring
- Stressful life events

- Being female
- Having low socioeconomic status
- Head injury

Some of these risk factors can be controlled. Addressing weight problems, causes of snoring, and medication overuse, in addition to taking steps to combat stress, can reduce risk of transforming to chronic migraines.

People who suffer from chronic migraines frequently experience anxiety and depression, so taking steps to improve mental health and outlook on life is an important part of an overall treatment plan.

Massage can be an important part of treatment for transformed or chronic migraines. By reducing stress and possibly decreasing pain, massage therapy can help migraine sufferers combat some of the risk factors and compounding issues that can make migraines worse. As a massage therapist, you can become a valuable part of your client's treatment team, working with traditional medical professionals to treat the entire person.

However, many transformed and chronic migraine sufferers will be taking medications that may contraindicate massage. When in doubt, ask your client to get permission from a physician to receive massage therapy.⁵

Migraine Triggers

Most experts agree that changes in the nervous system are the primary cause of migraines. And though transient changes in the nervous system must occur to precipitate a migraine attack, there are many factors that can trigger migraines.

According to experts, some of the most common migraine triggers include:

HORMONAL CHANGES IN WOMEN.

Fluctuations in the hormone estrogen seem to be a migraine trigger for many female migraine sufferers. In fact, there is a specific type of migraine called the menstrual migraine that occurs before and/or during a woman's period and/or during ovulation. Experts believe that this is due to a severe drop in estrogen. There are also women who experience increased migraines during pregnancy or menopause. There is also evidence that replacement hormones can trigger or worsen migraines.

CHANGES IN THE ENVIRONMENT/WEATHER. Sudden changes in barometric pressure can trigger a migraine.

CHANGES IN WAKE-SLEEP PATTERN. Sleep patterns disturbed by missing sleep, not getting enough sleep, getting too much sleep, or not getting quality sleep, may trigger migraines in some people. Jet lag may be a trigger as well.

FOOD. Certain foods or skipping meals and fasting can trigger migraines for some sufferers. A few of the common food triggers are alcohol (with red wine and beer being the biggest culprits), aged cheese, chocolate, monosodium glutamate (MSG), the sugar substitute aspartame, caffeine (especially in large doses), processed foods (probably because of the chemical additives or MSG), and salty foods.

MEDICATIONS. Certain medications can trigger or aggravate migraines. Two of the worst offenders are oral contraceptives (probably due to the estrogen changes they cause) and vasodilators like nitroglycerin.

PHYSICAL FACTORS. Intense physical exertion may provoke migraines.

SENSORY STIMULI. Any type of sensory stimuli can be a migraine trigger. For example, bright lights; sun glare; fluorescent lights; television, movie, or computer screens; loud sounds; unusual or strong smells; and unpleasant odors can lead to migraine headaches.

STRESS. Stress is a well-known trigger for migraines. And it's not just bad stress that can be a problem. Good stress (stress brought on by a positive life change, like marriage or a promotion) can be a trigger too. And underlying depression, whether caused by situational stress, lack of sunlight, or disease, is also a potential trigger.¹³

Anything can trigger a migraine, but the above list encompasses the triggers most people with migraines complain about. It is likely that migraine triggers aren't limited to one or two things, but rather can be brought on by multiple factors. Most health practitioners who treat migraine pain recommend keeping a headache diary that includes everything that goes into the body, along with exercise, daily routines, experiences and accompanying symptoms. This can help pinpoint migraine triggers and hopefully reduce the frequency of migraine attacks.

Although some triggers are clearly unavoidable (so far, we can't change the weather), many of them can be avoided, modified, or treated in hopes of reducing the frequency, severity and duration of migraines.

Who Suffers from Migraine

Knowing who typically suffers from migraine attacks can help you when you're trying to build your client base to treat migraine suffer-



“Although some triggers are clearly unavoidable, many of them can be avoided, modified, or treated in hopes of reducing the frequency, severity and duration of migraines.”

ers through massage. If you're looking to start working with migraine sufferers, there are some facts you may want to know.

The National Headache Foundation estimates that nearly 30 million Americans suffer from migraine attacks. Migraines can affect anyone—males and females, from childhood through the senior years. However, migraines usually begin after the age of 15 and decrease in frequency and severity after the age of 50. Boys experience more migraines than girls do during childhood, but by adulthood, female migraine sufferers outnumber male sufferers. In fact, migraines are three times more common in adult women than in adult men.¹⁴

The National Headache Foundation reports that approximately 60 percent of female migraine sufferers experience menstrual migraines, which are migraines associated with the menstrual cycle, so the percentage of sufferers in the greater population significantly declines in people over the age of 50 due to women entering menopause.

Migraines tend to run in families, so many people who have them have at least one relative who also has or had them. Studies have shown that 70 to 80 percent of migraine sufferers have a family history of migraine attacks.

Migraine affects more than 10 percent of people worldwide. And in the United States, some studies show that approximately 20 percent of the population experiences migraine attacks.

Conventional Medicines to Treat Migraine

There are two groups of therapies for migraines: preventive and abortive. Preventive therapy focuses on preventing migraines by either reducing or eliminating migraine triggers or treating the physical cause of migraines. Abortive therapy focuses on ending or reducing the severity of the migraine once it has started.

The most commonly used therapies for both preventive and abortive approaches are pharmaceutical, though alternative, non-drug therapies—including massage—are

becoming more and more popular.

There are a number of medications that migraine sufferers can take regularly or as needed. The medication categories are similar to the types of therapy. The two categories of medication to treat migraines are pain relievers and preventive medications.

PAIN RELIEVERS. Pain relievers are most frequently used to relieve or reduce pain during the attack phase of a migraine. However, some migraine treatments involve regular use of pain relieving medications in an attempt to prevent migraine attacks.

When migraine sufferers take pain relievers to treat an acute attack, it's an abortive treatment used to stop symptoms that have already begun. Pain relieving medications are most effective when they are taken as soon as migraine symptoms begin. Some health professionals recommend that sufferers begin taking pain-relieving medications during the prodrome or aura phases (if they occur). The sooner the medications are taken, the more effective they will be at reducing the pain.

Types of pain-relieving medications often used for migraines

Although it's not important for you to understand exactly how and why migraine medications work and don't work, it is important for you to have general knowledge about the types of medications that might be prescribed for migraine sufferers.

Following is a list of some of the types of pain-relieving medications that are often used or prescribed for migraine pain, including both the generic name and some of the brand names. If you come across a medication on a patient's intake form

“Migraines tend to run in families, so many people who have them have at least one relative who also has or had them. Studies have shown that 70 to 80 percent of migraine sufferers have a family history of migraine attacks.”

or medical history that you're not familiar with, ask the client what condition they're taking the medication for so you can verify when and if massage therapy may be contraindicated.

COMMON OVER-THE-COUNTER PAIN RELIEVERS. Over-the-counter pain relievers like ibuprofen (name brands include Motrin and Advil) and acetaminophen (Tylenol) may help relieve mild to moderate pain during a migraine attack, but they are not likely to have a strong effect on severe migraine pain.

There are also over-the-counter drugs that are marketed specifically to migraine sufferers that may ease mild to moderate pain as well, but might not be effective with severe pain.

Although these over-the-counter medications are generally considered safe, there are potential side effects—even in small doses. For example, ibuprofen and other non-steroidal anti-inflammatory drugs (NSAIDs) can lead to ulcers and gastrointestinal bleeding. Also, any pain relievers taken too often can lead to rebound headache pain.

INDOMETHACIN. Indomethacin is a prescription pain reliever that has shown some effectiveness against migraine pain. It is also available in a suppository form, so it doesn't have to pass through the stomach to get into the blood stream, which may be helpful for those who experience nausea during migraine attacks.¹⁴

TRIPTANS. Triptans are pain relieving medications frequently prescribed for migraines due to their effectiveness in relieving migraine pain along with accompanying nausea and sensitivity to light and sound. This group of medications (in alphabetical order by generic

name) includes almotriptan (brand name Axert), eletriptan (brand name Relpax), frovatriptan (brand name Frova), naratriptan (Amerge), rizatriptan (Maxalt), sumatriptan (Imitrex), and zolmitriptan (Zomig).

As with most drugs, triptans are not without side effects. Reported effects of triptans include nausea, dizziness and muscle weakness, among others. They are not recommended for people with cardiovascular disease or anyone at risk of heart attack or stroke.

Some health practitioners also prescribe a single-tablet combination of naproxen sodium and sumatriptan (brand name Treximet) that has proven to be more effective at relieving migraine pain and associated symptoms than either medication taken individually.¹⁴

ERGOT. Though reportedly not as effective as triptans, drugs with a combination of ergotamine and caffeine (some brand names are Migrergot and Cafergot) are much less expensive than triptans.

These drugs seem to be most effective for people who experience migraine attacks that tend to last longer than 48 hours. Dihydroergotamine (brand names D.H.E. 45 and Migranal) is an ergot derivative that is more effective than ergot alone and tends to have fewer side effects than ergotamine. One additional benefit of this drug is that it's available as a nasal spray or an injection in addition to a pill.¹⁴

ANTI-NAUSEA MEDICATIONS. Although not technically pain relievers, these medications are often taken along with other migraine medications during an acute attack.

Because migraines are often accompanied by nausea and/or vomiting, medication to combat nausea is appropriate and often indicated for migraine sufferers, and is usu-

ally prescribed in combination with other medications.

Some frequently prescribed anti-nausea medications (listed in alphabetical order by generic name) are chlorpromazine (Thorazine), metoclopramide hydrochloride (Reglan), prochlorperazine (Comprom and Compazine), promethazine hydrochloride (Phenergan), and trimetho-benzamide hydrochloride (Tigan). Some of these drugs are available in suppositories and injections, in addition to pills and/or syrups. Suppositories and injections can be helpful when nausea and/or vomiting is severe.^{14, 15}

OPIATES. Opiates, also known as narcotics, are powerful pain relieving drugs derived from the poppy plant. Natural opiates include codeine and morphine, and synthetic opiates (in alphabetical order by brand name) include the brand names Demerol, Dilaudid, Fentanyl, Oxycodone and Vicodin, among others.

Opiates are very successful at treating severe pain, but they are highly addictive, so they are typically used as a last resort and are reserved for people who cannot take other drugs like ergot or triptans.¹⁴

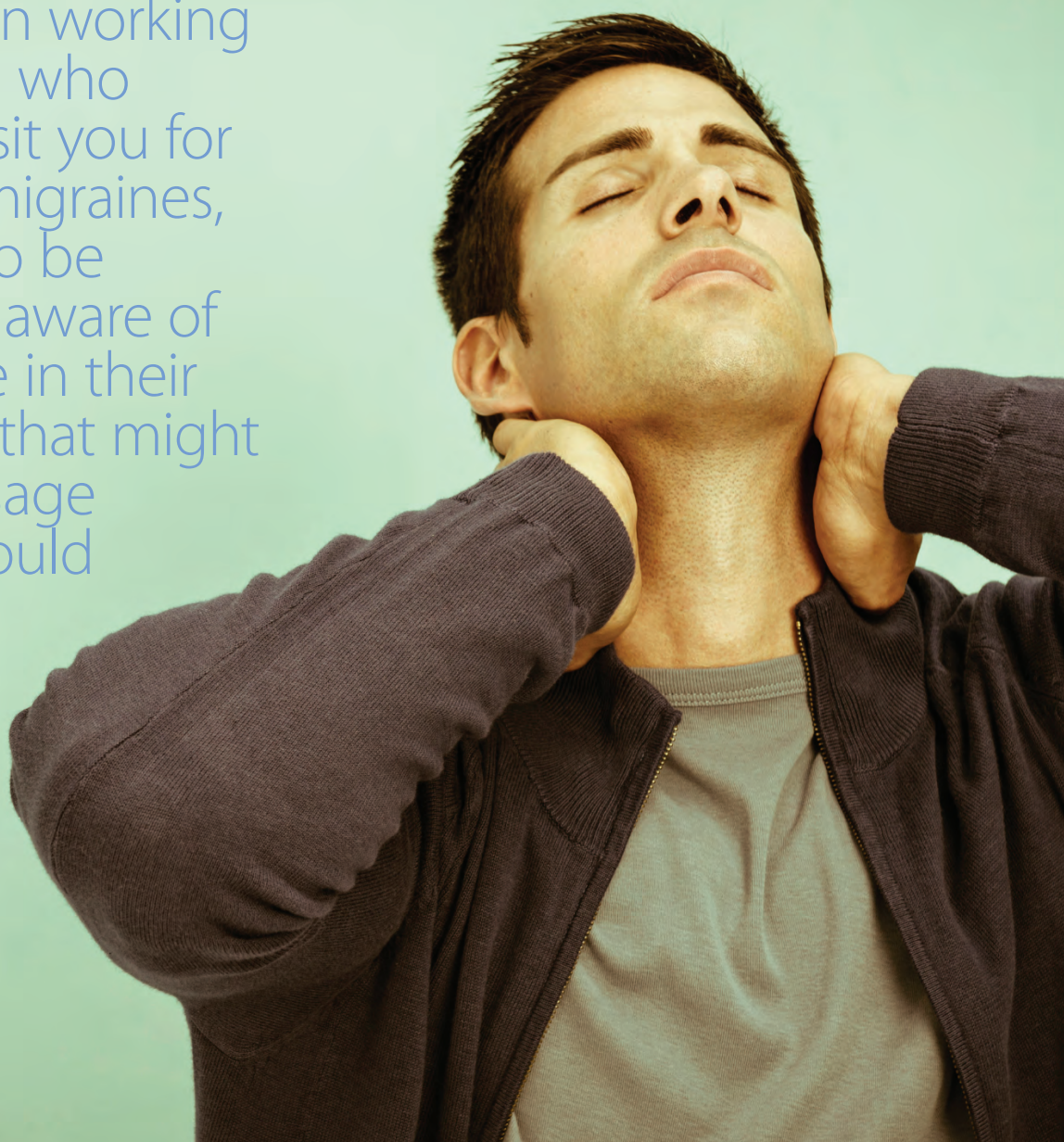
DEXAMETHASONE. Dexamethasone is a corticosteroid that may be prescribed along with other medication to boost pain relief. However, steroids are not widely used for migraines due to the risks of steroid toxicity.¹⁴

What You Need to Consider

There are contraindications for massage therapy within the general population, and these also apply for people who suffer with migraines. Particularly for clients who you know have a history of migraines, you need to be aware of when massage therapy may be contraindicated.

“Even when working with clients who regularly visit you for help with migraines, you need to be continually aware of any change in their symptoms that might mean massage therapy should not be performed.”

”



If a client comes to see you and is complaining of a severe headache (and they've not previously indicated they suffer from migraines), you may want to ask them to get a physician's approval before the massage session so you are certain the problem isn't indicative of a more critical health condition.

Even when working with clients who regularly visit you for help with migraines, you need to be continually aware of any change in their symptoms that might mean massage therapy should not be performed.

For example, if your client has a history of migraines with aura, they might typically experience numbness, weakness, or vision loss during the aura phase, and that symptom by itself may not be cause for serious concern. But if this is the first time your client has experienced another symptom, such as nausea or sensitivity to light, having your client visit their physician prior to scheduling a massage session is a good idea.

SIGNS AND SYMPTOMS

Many people seek massage therapy because they have chronic pain or muscle tension, and many are seeking relief from that tension and pain, including headache pain. In most cases, massage therapy is entirely safe for headache sufferers, but as with any other medical condition, there are going to be times a massage session would be contraindicated.

Even when working with clients you know have a history of mi-

graine, there are signs and symptoms that signal a massage session in progress should immediately end and immediate medical attention should be sought. These include, but are not limited to:

- Sudden numbness or weakness, especially on one side of the body
- Facial drooping, including drooping eyelid
- Slurred speech or difficulty speaking
- Fainting or severe dizziness
- Loss of motor control, especially on one side
- A sudden or new severe headache unlike any previous headaches
- Sudden difficulty walking or balancing
- Confusion or difficulty understanding simple statements
- Sudden blurred or double vision
- Seizure
- Loss of consciousness

If your client exhibits or complains of any of the following signs or symptoms and there is not a diagnosis of migraine or a history of similar symptoms attributed to migraine, you may want to refer him or her to a physician for medical approval of massage therapy before beginning treatment.

- Nausea and/or vomiting
- Stiff neck
- Vision abnormalities or disturbances
- Sensitivity to light
- Numbness, tingling or weakness

As with any other possible medical condition, you must always be careful not to diagnose your client, offer medical advice or suggest what might be causing the symptoms.

MEDICATION AND MASSAGE. Medications can be effective and even life-saving, but many also carry the risk of side effects. Some side effects are minor, while others can be severe.

These side effects can impact several aspects of massage therapy treatment planning, including the scheduling, areas of focus, duration of therapy, as well as recommended modalities used during treatment. Additionally, because fatigue is a fairly common side effect of medication, you may have to adapt or shorten the massage session.

Certain medications can also alter blood-clotting mechanisms, neurosensory feedback, tissue integrity and pain perception, to name a few. The effects of these medications should be taken into account when you and your client are planning the massage session.

Many of your clients who suffer from migraines may also be taking pain medications, and you should be aware of how these specific drugs might affect a massage session.

Analgesics work in one of two ways: by altering pain perception in the central nervous system (CNS) or by inhibiting the inflammatory processes. If your client is taking any sort of pain relieving medication—especially prescription strength pain relievers—you should plan a

If you're looking for more in-depth information about massage therapy and medications, consider AMTA's continuing education course: "Massage and Medications—When is Therapy Dangerous?" Available online at amtamassage.com/learn.

massage therapy session with the consideration that your client's pain response may be altered.

Patients taking pain-relieving medication (like non-steroidal anti-inflammatory drugs (NSAIDs), narcotics, or CNS depressants), for example, may not be able to provide accurate feedback regarding the comfort of techniques and modalities used during massage therapy.

You also need to consider the potential side effects of these drugs may include dizziness, drowsiness, and postural hypotension (low blood pressure in certain positions), so clients may need help when getting on and off the massage table.

Other Considerations for Your Treatment Planning

MASSAGE AROUND THE HEAD, NECK AND SHOULDERS. Some types of headaches get worse with any kind of massage around the head/neck/shoulder area. This is quite common for migraines in the acute stage, probably due to infection and/or over-stimulation of the central nervous system.

If your client has had massages previously during an acute migraine attack, they may be able to tell you whether massaging the head, neck and shoulders will be beneficial. If your client has not had massage therapy during an acute attack previously, encourage them to let you know if anything you do causes discomfort or pain.

SENSITIVITY TO LIGHT. If your client is experiencing a migraine attack, there is a good chance he or she will be extra sensitive to light. So, consider turning down the lights in your lobby and therapy room to accommodate your clients. Also, let your clients know that their comfort



For Your First-time Clients

If you know you have a client who suffers from migraines coming in for the first time, you may want to consider a few of the following points.

- 1** If they currently have a migraine—or are recovering—make sure you give them extra time to fill out the intake form. (Or, if needed, offer to help them). Be sure, too, that the information on the intake form is detailed and accurate.
- 2** Be aware of any environmental stimuli that might either aggravate or trigger a migraine, making adjustments (such as to lighting, music and scents) as needed. Here, make sure you ask your first-time clients of any migraine triggers they have that might need to be accounted for in the massage room.
- 3** Ask detailed questions before you begin the massage so you have an idea of what's going on, and then do periodic check-ins with the client during the massage to ensure what you're doing is comfortable. You might find you need to check in with these clients on a more regular basis during massage sessions, and the initial intake might be longer due to the amount of information you're going to need to make good decisions.

is a priority, so if they would like to wear glasses during treatment or take other steps to minimize issues with light, that's OK.

Bright lights and florescent lights can also be migraine triggers, so if you have a client coming who you know suffers from migraines, you may want to consider asking about lighting in hopes that you can avoid triggering an attack.

SENSITIVITY TO SOUND. Sensitivity to sound is a common migraine symptom. And loud sounds have also been known to trigger migraines. Though some of your clients may find quiet music or white noise machines soothing, others may find they make migraine pain worse or trigger a migraine attack. To avoid triggering or worsening a migraine for your clients who suffer, ask them what their preferences are regarding music or other sounds, and be willing to take reasonable steps to accommodate their wishes.

As you would do with any client, let your clients who suffer from migraines know that their comfort is an important part of massage therapy, and let them know they can tell you if something you do or some-

thing in the environment is bothering them.

SENSITIVITY TO SMELL. Sensitivity to smell isn't the most common migraine symptom, but it does happen, and certain smells (even pleasant scents) can trigger migraines. If you like to use scented candles, air fresheners, or lotions or oils, you may want to consider altering that practice for your clients who suffer from migraines. Some scented candles will fill the room with aroma even when they're not burning, so be aware that you might have to remove them from the treatment room when you're providing therapy to a client who suffers from migraines. Perfumes, soaps, shampoos and body sprays can be difficult for some clients to handle—especially during a migraine attack—so take care not to overdo it.

Another consideration related to scents is that clients with migraines often feel nauseated during migraine attacks (and sometimes before and after as well). Scents, even subtle ones, can make nausea worse for some people, so be aware of these possibilities when clients come in.

NAUSEA OR VOMITING. Nausea and vomiting are common symptoms that accompany migraines, and they are also side effects of some migraine medications—both for acute attacks and for migraine prevention. So there is a good possibility that your clients who suffer from migraines may also be prone to nausea and/or vomiting.

Make sure clients know they can tell you if they need to sit up or take a break due to nausea. You may also want to let them know, before treatment begins, where the bathroom facilities are in case they need to use them in a hurry. Also, encourage your clients to feel comfortable canceling or rescheduling appointments if nausea or vomiting is severe—either before or during treatment. If your client is feeling too sick, the massage may not have the benefits it otherwise would.

On the other hand, there is evidence that certain types of massage can reduce nausea in cancer patients undergoing chemotherapy.¹⁶ Although this study hasn't been performed with migraine sufferers, it's possible that the same principles may apply to nausea that is triggered by the migraines themselves or by the migraine medications.

“As you would do with any client, let your clients who suffer from migraines know that their comfort is an important part of massage therapy, and let them know they can tell you if something you do or something in the environment is bothering them.”

INDUCING MUSCLE FATIGUE. Sometimes massage therapy may induce muscle fatigue, which can make migraines worse or may lead to other types of headaches or muscle aches and pains. Listen to your clients and pay attention to anything that might signal a need to alter or discontinue a massage session.

The Benefits of Massage for Migraines

HELPING WITH STRESS. One trigger that massage is likely to help combat is stress. Massage helps reduce stress and, in turn, may help reduce migraine frequency, severity and duration.

While eliminating anxiety and related stress altogether isn't realistic, massage can help your clients reduce and manage stress. Reduced stress levels can:

- Decrease anxiety
- Enhance sleep quality
- Increase energy levels
- Improve concentration
- Increase circulation
- Reduce fatigue¹³

Anxiety, sleep problems and stress are all known triggers of migraine that massage therapy can help relieve.

IT'S A NON-PHARMACOLOGIC INTERVENTION. Medications can be life-saving, and they definitely have their place in treatment of migraines for many people, but most experts agree that a successful migraine treatment plan will include non-pharmacologic treatment as well as medications.

Massage is a naturally effective tool in helping relieve symptoms, and there is evidence it can be effective in preventing migraines and helping relieve the pain associated with acute attacks.¹⁷ And because it's non-pharmacologic, it won't lead

to medication overuse headaches (rebound headaches) that can be problematic for migraine sufferers and have even been linked to a chronic migraine syndrome called probable chronic migraine.

IT CAN HELP REDUCE PAIN AND MAKE US FEEL GOOD. According to The Franklin Institute (studying the human brain and stress), massage therapy releases chemicals called endorphins that can calm the peripheral nervous system.¹⁸ And the Mayo Clinic website identifies massage as a valid method for reducing stress and pain.¹⁹

Endorphins are chemicals our body produces to reduce the experi-

ence or feeling of pain in the body. They can also induce a euphoric feeling that can lead to happiness and contentment. Endorphins are considered the body's natural pain killers because they have a similar effect on people as opiates like opium and morphine.

IT CAN REDUCE THE LEVELS OF STRESS HORMONES IN OUR BODIES. A study titled "Massage in patients undergoing intensive chemotherapy reduces serum cortisol and prolactin," published in the journal *Psychooncology* in October 2008, concluded that "a significant reduction in cortisol could be safely achieved through massage with associated improvement in psychological well-being."

Although that study didn't focus on migraine sufferers, it did show conclusive evidence that massage therapy has the ability to reduce the levels of the stress hormone cortisol in our bodies. And reducing the levels of stress hormones may lead to reduced migraine attacks.¹⁶

IT CAN SOOTHE HEADACHES. A study published by the *International Journal of Neuroscience* showed that body massage can decrease the occurrence of headaches, sleep disturbances, and symptoms of distress and increase serotonin levels in adults with migraines.²⁰

How and why does this happen? The theories are that there are two mechanisms potentially responsible for the improvements and increased hormone levels. First, increased serotonin may help relieve headache pain. Serotonin is a component of many pain-relieving medications. Second, increased sleep hours and improved quality of sleep may lower levels of substance P. Substance P is a neurotransmitter that is believed to be an impor-

tant element in pain perception.

So put together an increase in serotonin, which can help relieve pain, and substance P, which can alter pain perception, and you may have an excellent, naturally-occurring cocktail of pain relief, which is a great benefit for those who suffer from migraine pain.

IT JUST FEELS GOOD. Although we've spent the good portion of this article highlighting the benefits and potential risks of massage in migraine sufferers, we've glossed over a less scientific assumption—massage therapy feels good.

When people feel relaxed, their outlook on life tends to improve, which can lead to the improved perceptions of happiness and contentment and decreased levels of stress.

What Massage Therapists Need to Know

Now that you are armed with facts about migraine headaches, who tends to have them and what you should watch out for when treating migraine sufferers, you may be wondering what else you need to know to begin helping these clients.

OUTSTANDING COMMUNICATION SKILLS. A good intake is always important. When working specifically with anyone who has a diagnosed health condition or disease, however, gathering a detailed health history to understand your client's symptoms, concerns and goals for therapy before beginning a massage session is imperative.

Some clients will be very forthcoming with information and will provide you with more facts about their health history than you will ever need to know. But others will either not know enough about their condition and history or will not be comfortable talking about it.

So, in addition to being a skilled massage therapist, you will also need to be able to help your clients accurately express the sensations and symptoms they are experiencing. And you can also work together to create massage therapy goals that will truly benefit them and, in turn, reduce their migraines.

A KNACK FOR INTERVIEWING. Building a good rapport and a trusting relationship with your clients is important, and so is gathering an accurate medical history. If your client isn't thorough when filling out the health history or intake form, you'll have to get good at tactfully pulling that information out of them. For example, if they don't know whether they have a family history of migraine, you may want to ask questions that will help both of you arrive at an answer. Some questions might be: "Do you ever remember anyone in your family complaining about frequent, severe headaches or having to exclude themselves from activities because of headache pain?"

A VARIETY OF MASSAGE SKILLS. Because not every type of massage will work for all migraine sufferers, you may benefit from training in multiple massage modalities. Consider taking continuing education in a variety of modalities so you can broaden and deepen your knowledge of massage therapy while also adding several techniques to your massage toolbox. Or, if you're a veteran massage therapist with years of experience, consider continuing education as the opportunity to refresh your skills and stay up-to-date with the latest trends.

Having a broad repertoire can also help you with your non-migraine suffering clients.

A GOOD MARKETING PLAN. Most therapists didn't enter the massage therapy profession to excel at sales and marketing—they want to help people. And sometimes marketing can feel a bit uncomfortable. But it shouldn't.

Think of it this way: To help more clients, you will need to reach more clients with the message that massage therapy can help them. To reach these clients, you will need to do a little marketing.

Marketing doesn't have to be difficult. Sometimes the best form of marketing is through word-of-mouth. Happy clients will tell their friends and family. Doctors and nurses who have referred their patients to you will refer even more patients if they see improvement in their patient's health and migraine pain after massage therapy. And thriving businesses will speak for themselves.

Here are a few ideas to get you started:

> Contact physicians who tend to work with migraine sufferers and ask them if they would be willing to refer their patients to you for massage. You may be able to find these physicians by doing a simple search on the Internet, or you may have to work a little harder and dig a little deeper.

Don't forget that physicians are going to be very interested in current research, so be sure you are up-to-date—even if you don't have very many studies to share that are specific to migraine. Show them studies on how massage therapy can benefit stress and help with pain management, for example, focusing their attention on the fact that you are well-versed in evidence-based research. (For more information on how to work with physicians, see



Migraine-specific Research

Although evidence-based studies about the benefits of massage for migraine sufferers are limited, they do exist. One such study, titled A Randomized, Controlled Trial of Massage as a Treatment for Migraine, conducted by S.P. Lawler and L.D. Cameron through the University of Auckland, provided one of the first evidence-based conclusions that massage can be an effective treatment for migraine sufferers—both during the acute phase of migraine attack and as a preventive treatment.

This study showed that “compared to control participants, massage participants exhibited greater improvements in migraine frequency and sleep quality during the intervention weeks and the three follow-up weeks. Trends for beneficial effects of massage therapy on perceived stress and coping efficacy were observed. During sessions, massage induced decreases in state anxiety, heart rate, and cortisol.”

The study's authors concluded that “the findings provide preliminary support for the utility of massage therapy as a nonpharmacologic treatment for individuals suffering from migraines.”¹⁷

“Before creating your website, take some time to consider what information you feel your clients are going to want to know about you, and then spend some time creating the website that best reflects your practice and mission.”



“Doctor, Doctor” in the Winter 2010 issue of *Massage Therapy Journal*).

Also, don't just target individual physician's offices. If you have an integrative care facility in your area, stop by with a business card and introduce yourself. These environments are probably already using complementary therapies like massage, so may have some familiarity with what you do and what you have to offer. (For more information on the integrative care environment, see “Come Together” in the Summer 2012 issue of *Massage Therapy Journal*).

> **Create a website and make it search-engine friendly.** It's easy and inexpensive to create a functional and attractive website. The most important function of a website is clear communication about what you know and what you have to offer. People aren't going to read lengthy articles about the benefits of massage online (though that doesn't mean you shouldn't make them available or link to research when possible), but they do want to get a good feel for how massage therapy can help them and why you are the person they should see.

If you don't have any familiarity with building a website, don't worry. AMTA members get a free website with BodyworkSites that gives you access to 54 templates and can be set up in as little as five minutes. Before creating your website, take some time to consider what information you feel your clients are going to want to know about you, and then spend some time creating the website that best reflects your practice and mission. Be sure, too, you make your contact information prominent and easy-to-use so potential clients who have questions can easily reach you.

> **Get your name out by offering your services on a volunteer basis at hospitals or clinics.** You don't always want to be in the position of giving away your services in order to get business. In this case, however, volunteering at a place where you're likely to meet people who fit your target demographic but might not be familiar with massage therapy is a great opportunity.

> **Become an expert.** If you really want people to begin thinking of you as an expert in massage therapy for migraine sufferers, you will need to become an expert. Walk the walk. Read all of the studies you can get your hands on. Talk to other

massage therapists. Take as many continuing education classes as you can—especially those that focus on pain management, for example.

> **Write a blog about it.** There are a wide variety of people who take to the Internet when looking for information, so if you have the time and interest, writing a blog about the benefits of massage therapy can be a great way to attract clients (and keep loyal clients). You can have your blog linked to your website, for example, so those looking for more in-depth information can find it. Be sure, however, that you have the time to make some fairly regular updates, as if you let content sit for

months, chances are those interested will stop checking in.

> **Use social media.** Never underestimate the power of social media in this ever-connected society. Create a Facebook page and a Twitter account, and post to it regularly. You may want to consider special offers for people who follow you on social media to build your base of followers. Post often, but not too often. No one wants their social media accounts to be overflowing with posts from someone trying to sell them something—even if that something may be very beneficial to them.



> Consider joining groups that involve migraine sufferers, and be an active part of the group. Ask questions. Suggest solutions. But don't over-market yourself to these groups. This is more about learning what migraine sufferers want and becoming an expert than about directly building your practice.

> Give information away. People who suffer from migraines are always looking for better ways to combat their migraine pain and accompanying symptoms, and so don't be shy about sharing how you think massage therapy might help.

For example, you might consider creating videos or how-to articles about self-massage techniques, or post information on your website or social me-

dia about how and why massage can be an effective treatment option for migraines.

You might also consider holding educational events at your practice so you can be face-to-face with potential clients. With these events, consider targeting specific demographics so you can really dig in to how massage works for different populations. In this instance, target people who suffer from migraines and talk to them about how massage can help with pain management, for example, or how massage helps manage stress.

> A love of and dedication to learning. Massage therapy, just as with most any other profession, is an ever-evolving field, and as a massage therapist, you should never stop learning. Keep your skills and your knowledge fresh by reading all you can and taking continuing education. Also, listen to your clients. They can be an invaluable resource.

Massage therapy can be helpful for a variety of conditions, particularly with helping people better deal with the symptoms, such as pain and increased stress. Migraine is no different. Having information that can help you better understand the needs of people who suffer with migraines is a great way to begin reaching out to this market—and helping them find relief. ■

Helen Tosch is an award-winning writer and editor with more than fourteen years of experience editing and writing for a variety of audiences and professions. She's written for a variety of online and print publications and has an extensive background in writing for varying health care organizations, including Northwestern Memorial Hospital and Assurant Health.

REFERENCES

1. Ihs-classification.org (n.d.). IHS - International Headache Society» Home. [online] Retrieved from: <http://ihs-classification.org/en/> [Accessed: 1 Mar 2013].
2. MayoClinic.com (2010). Migraine aura - MayoClinic.com. [online] Retrieved from: <http://www.mayoclinic.com/health/migraine-aura/MM00659> [Accessed: 1 Mar 2013].
3. Migraine | National Headache Foundation. Headaches.org (2010). Migraine | National Headache Foundation. [online] Retrieved from: http://www.headaches.org/education/Headache_Topic_Sheets/Migraine [Accessed: 1 Mar 2013].
4. Key concepts of migraine postdrome: a qualitative s... [Headache. 2011] - PubMed - NCBI. Ncbi.nlm.nih.gov (2011). Key concepts of migraine postdrome: a qualitative s... [Headache. 2011] - PubMed - NCBI. [online] Retrieved from: <http://www.ncbi.nlm.nih.gov/pubmed/21198571> [Accessed: 2 Mar 2013].
5. Headache Topic Sheets | National Headache Foundation. Headaches.org (2010). Headache Topic Sheets | National Headache Foundation. [online] Retrieved from: http://www.headaches.org/education/Headache_Topic_Sheets [Accessed: 2 Mar 2013].
6. Massage Can Be Effective for Tension Headaches — American Massage Therapy Association. Amtamassage.org (2011). Massage Can Be Effective for Tension Headaches — American Massage Therapy Association. [online] Retrieved from: http://www.amtamassage.org/approved_position_statements/Massage-Can-Be-Effective-for-Tension-Headaches.html [Accessed: 2 Mar 2013].
7. Werner, R. (2009). *Massage Therapist's Guide to Pathology*: Forth Edition. Philadelphia, PA: Lippincott Williams & Wilkins.
8. National Center for Health Statistics. Almost half of Americans use at least one prescription drug annual report on nation's health shows. HHS News. December 2, 2004. www.cdc.gov/nchs/pressroom/04news/hus04.htm. Accessed March 6, 2009.
9. Thomsen LA, Winterstein AG, Sondergaard B, et al. Systematic review of incidence and characteristics of preventable adverse drug events in ambulatory care. *Ann Pharmacother*.
10. Lau HS, Florax C, Porsius AJ, De Boer A. The completeness of medication histories in hospital medical records of patients admitted to general internal medicine wards. *Br J Clin Pharmacol*.
11. Pronovost P, Weast B, Schwarz M, et al. Medication reconciliation: a practical tool to reduce the risk of medication errors. *J Crit Care*. 2003;18:201-205.
12. Chronic Migraine | National Headache Foundation. Headaches.org (2010). Chronic Migraine | National Headache Foundation. [online] Retrieved from: http://www.headaches.org/education/Headache_Topic_Sheets/Chronic_Migraine [Accessed: 2 Mar 2013].
13. Learn More About Massage and the Benefits. *Massage Therapy: Everybody Deserves a Massage* (2013). Learn More About Massage and the Benefits . [online] Retrieved from: <http://www.massagetherapy.com/learnmore/benefits.php> [Accessed: 2 Mar 2013].
14. Migraine:and drugs - MayoClinic.comMayoClinic.com (2011). Migraine: Treatments and drugs - MayoClinic.com. [online] Retrieved from: <http://www.mayoclinic.com/health/migraine-headache/DS00120/DSECTION=treatments-and-drugs> [Accessed: 2 Mar 2013].
15. Nausea Medications for Migraines and Headaches. Webmd.com (2012). Nausea Medications for Migraines and Headaches. [online] Retrieved from: <http://www.webmd.com/migraines-headaches/guide/migraines-headaches-nausea-medications> [Accessed: 2 Mar 2013].
16. Onlinelibrary.wiley.com (2013). Massage in patients undergoing intensive chemotherapy reduces serum cortisol and prolactin - Stringer - 2008 - Psycho-Oncology - Wiley Online Library. [online] Retrieved from: <http://onlinelibrary.wiley.com/doi/10.1002/pon.1331/abstract> [Accessed: 2 Mar 2013].
17. A randomized, controlled trial of massage ther... [Ann Behav Med. 2006] - PubMed - NCBI. Ncbi.nlm.nih.gov (2006). A randomized, controlled trial of massage ther... [Ann Behav Med. 2006] - PubMed - NCBI. [online] Retrieved from: <http://www.ncbi.nlm.nih.gov/pubmed/16827629> [Accessed: 2 Mar 2013].
18. Fi.edu (1999). The Human Brain - Relieve Stress. [online] Retrieved from: <http://www.fi.edu/learn/brain/relieve.html> [Accessed: 2 Mar 2013].
19. MayoClinic.com (2012). Massage: Get in touch with its many benefits - MayoClinic.com. [online] Retrieved from: <http://www.mayoclinic.com/health/massage/SA00082> [Accessed: 2 Mar 2013].
20. Jneurosci.org (2006). Delayed Upregulation of ATP P2X3 Receptors of Trigeminal Sensory Neurons by Calcitonin Gene-Related Peptide. [online] Retrieved from: <http://www.jneurosci.org/content/26/23/6163.short> [Accessed: 2 Mar 2013].



This **mtj** article serves as the basis for the AMTA Online Course of the same name. To register for the course and receive continuing education hours, please visit www.amtamassage.org/mtj.