



A PHARMACY CONTINUING EDUCATION PROGRAM

W-F Professional Associates, Inc. 400 Lake Cook Rd., Suite 207 Deerfield, IL 60015 847-945-8050

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## August 2011 "Review & Update: Migraine"

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**"Review & Update:**  
**Migraine"**

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As many as 30 million adults in the U.S may suffer from migraine. That's one of the reasons that we review & update resources regarding this topic. Our goal is to concentrate on therapeutic options. This lesson provides 1.25 hours (0.125 CEUs) of credit, and is intended for pharmacists in all practice settings. **The program ID # for this lesson is 707-000-11-008-H01-P. Pharmacists completing this lesson by August 31, 2014 may receive full credit.**

**To obtain continuing education credit for this lesson**, you must answer the questions on the quiz (70% correct required), and return the quiz. Should you score less than 70%, you will be asked to repeat the quiz. Computerized records are maintained for each participant.

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**The objectives of this lesson are such that upon completion the participant will be able to:**

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1. List types & symptoms of migraine
  2. Discuss factors that may trigger migraine attacks
  3. Describe relevance of diet to migraine attacks
  4. State the role of OTCs in treating migraine
  5. Describe impact of lifestyle on migraine
  6. List & discuss prescription drugs used for migraine
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## INTRODUCTION

Every individual, no matter how healthy he or she is, has experienced a headache. Some may be treated by resting and relaxing in a quiet place, applying ice packs on the forehead, avoiding skipping meals and reducing noise. However, many headaches are the consequence of underlying causes such as migraine, upper respiratory infections, sinusitis, stress and tension that do not respond to simple measures, but may require pharmacological therapy. In the scope of this lesson emphasis will be placed on migraine headaches.

Migraine, derived from the Greek word *hemicranias*, meaning pain in one side of the head, is one of the most common types of headaches. It has been estimated that there are about 45 million Americans who suffer from headaches, and 30 million of these are related to migraine. Approximately 75% of these patients are women.

Migraine headaches are chronic, complex disorders, and are characterized by a sudden increase or recurrence of severe pulsing or throbbing pain that is in rhythm with the heart beat and normally takes place in one side of the head. Some migraines develop slowly, and cause pain that may last from a couple of hours to 72 hours. The discomfort is mostly located in the temple, behind one ear, in the back of the neck or to one entire side of the head. It may be accompanied by depression, nausea, vomiting, and numbness in the extremities, blurred vision, chills, irritability, sweating and fatigue. Other migraine headaches possess similar characteristics except that they are preceded by an aura, a phenomenon characterized by visual, sensory or motor disturbances. It may precede pain by a few minutes to hours and may last for 10 to 25 minutes. An aura appears as a flashing or flickering light, zigzag lines, blind spots or temporary loss of vision, sensitivity to sound and light, tingling in the hands, arms or legs, nausea, and vomiting. About 40% to 60% of all migraine headache attacks are preceded by warning symptoms lasting from hours to 3 days.

Certain factors may make a person vulnerable to migraine headaches. A family history is a consideration. The probability of developing migraine is greater before age 40 than after age 40. About 50% of patients began to complain before they were 20. The incidents of migraine are highest in people who are between 30 and 39 years of age. As indicated earlier women are more prone to migraine than men. It has been reported that migraine is more common among boys than girls during childhood, but this is reversed after puberty. In some cases migraine attack may endure for more than three days. Such a prolonged attack is known as *status migrainosus*. Migraine that occurs on more than 15 days a month for an average of three months of a year is referred to as chronic migraine.

## CAUSES

Migraines usually develop in childhood, adolescence or early adulthood. The exact cause is unknown. However, there are genetic and environmental factors that appear to play a role in development. These may trigger the trigeminal nerve, a pain pathway, to liberate neuropeptides causing pain once they reach the meninges. It has been hypothesized that changes in serotonin level may cause vasoconstriction or vasodilation of the cranial blood vessels. Currently, the most accepted theory is that migraine is due to neurogenic factors that result from inherited abnormalities in genes that influence specific cells in the brain. There are a number of factors that may trigger a migraine headache. These include:

1. **Sensory stimuli:** Flickering or bright lights, loud noise, certain smells such as perfume, fresh paint, volatile oils, pollutants, second hand smoke, and pungent odors can activate a migraine headache.
2. **Strenuous exercises and physical exertion** of the head and neck. Tight muscles can constrict the arteries which dilate upon sudden relaxation causing the blood vessel walls to dilate. This dilation increases as blood is pumped with each heart beat causing a pulsing throbbing pain.
3. **Inadequate posture** or stress in the neck and shoulder.
4. **Hormonal fluctuation** in women such as changes in estrogen levels during menstrual cycle and later in menopause. Some women reported an increase in the intensity and frequency of migraine headaches during pregnancy, menopause, intake of oral contraceptives or hormone replacement therapy. Others reported beneficial effect from taking such medications.

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August 2011

5. **Foods, drinks and additives.** Certain foods and drinks may trigger or exacerbate migraine.
6. **Stress** related to work or daily life activities.
7. **Skipping or missing meals**, as well as fasting may cause variations in glucose blood level. Such changes can cause constriction of the arteries around the brain. The ups and downs in blood sugar and the resultant artery constriction may result in reduction of the amounts of sugar, nutrient and oxygen transported to the brain cells, resulting in headache. It has been reported that blood sugar levels are low during migraine attacks. The lower the levels, the more intense the attack. Fluctuation of blood sugar results in both an increase and a decrease in insulin levels, depending on the amount of sugar in the blood. This may interfere with regulation of other hormones such as epinephrine and norepinephrine, and causing the blood vessels in the brain to dilate and constrict depending on the amount of insulin in the blood. The sequence of constriction and dilation leads to moderate or severe headaches. Consumption of large amounts of coffee may also affect blood sugar levels.
8. **Dehydration** that results from loss of body fluids and electrolytes or from inadequate intake of fluids is one of the most frequent causes of headache. Symptoms of dehydration include headache, dry mouth, arrhythmia, weakness, fatigue, muscular pain and tightness in the chest and dizziness. Consumption of large amounts of caffeine and alcohol may aggravate dehydration as the body is induced to fluid loss.
9. **Menstrual related migraine** may occur two days prior, during and up to three days after cessation of menstruation. Other attacks may take place in mid-cycle around ovulation.
10. **Insufficient amount of sleep** and change in sleep patterns.

#### RELEVANCE OF DIET TO MIGRAINE

As indicated earlier, foods may play a role in precipitating migraine headaches. While dietary restrictions cannot treat migraines, the intake of certain foods and drinks may trigger attacks and make them more intense and frequent. The effect of food varies from one person to the other. Thus a patient should be able to identify the foods that activate his or her migraine and should avoid them. Certain chemicals such as **tyramine, phenylethylamine, and histamine are often the culprits.**

**Phenylethylamine** is a naturally occurring monoamine alkaloid which possesses a stimulating effect. It has been postulated that such chemicals act as a neurotransmitter in the CNS. It is also found in certain foods. Like amphetamine, it acts by triggering the release of norepinephrine and dopamine.

**Tyramine** is also a naturally occurring monoamine compound and causes the release of dopamine, norepinephrine, and epinephrine. It is incapable of crossing the blood-brain-barrier. Thus, it acts as a peripheral sympathomimetic. It is found abundantly in plants and animals and is metabolized by the enzyme monoamine oxidase.

**Histamine** is a potent vasodilator. It is found in the body and is contained in many foods. It is produced by basophils and mast cells. The role of histamine in migraine patients may be helpful. Accumulation of histamine in the body may occur if an excess of this chemical is not metabolized. This build up can cause migraine by dilation of blood vessels including those in the brain. A malfunction or deficit of diamine oxidase, an enzyme found in the small intestine and degrades histamine, may result in excess histamine.

Surveys indicate that cheese, chocolate, alcohol, bananas and citrus foods are the most common food that may activate migraine. One survey indicated that 16.5% of respondents who suffer from migraine stated that cheese and chocolate triggered attacks, while 28.4% indicated that they react adversely to all alcoholic beverages, 11.8% to red but not white wine, and 28% to beer. Another survey reported that 18% of patients were sensitive to chocolate and cheese, 11% to citrus, and 29% to alcoholic drinks.

Food additives such as monosodium glutamate (MSG) can be a problem. Commercial soups, soy sauce, salad dressing, frozen dinners, croutons, and some chips are example of foods that often utilize MSG. Other compounds related to MSG and used for the same purpose include sodium caseinate and hydrolyzed protein. Nitrate preservatives in bacon, ham, hot dogs, salami and some sausages can act as migraine triggers especially with the combined action of tyramine that these foods often contain. Sulfites such as potassium bisulfite or potassium metabisulfite, sodium bisulfite, sodium metabisulfite or sodium sulfite are found normally in wine in small quantities and are a potential migraine initiator. Wine produced in the US after 1987 and which contains more than 10 parts per million of sulfites must state the contents on its label. Additionally, sulfites are used in foods as preservatives. Sulfites on raw fresh fruit or vegetables is banned in the U.S. Aspartame and other artificial sweeteners may act as migraine triggers. A headache related to cold foods and drinks is "ice-

cream headache". Even though this type of headache is known as ice-cream headache, it is triggered by the intake of any cold drink or food. It is also referred to as cold-stimulus headache. Ice-cream headache is short and transient. It occurs in about 10 seconds after the intake of the similar cold substance and lasts for approximately 20 seconds. The pain is a result of the swift cooling and rewarming of blood vessels in the sinuses. Those actions result in rapid constriction and rebound dilation of the blood vessels. In some individuals this vascular mechanism may cause aura and throbbing headache. Slow swallowing of cold substances may prevent this phenomenon.

It must be remembered that diet is not a treatment of migraine. However, avoiding trigger foods is recommended. Due to the large number of foods that contain potential migraine triggers, one may find it difficult to exclude such foods from the diet.

**Foods, Drinks and Additives That Contain Tyramine, Histamine, and Phenylethylamine**

<b>Tyramine</b>	<b>Histamine</b>	<b>Phenylethylamine</b>
<ul style="list-style-type: none"> <li>• Most cheeses except ricotta, cottage and Neufchatel cheeses.</li> <li>• Smoked fish and meat</li> <li>• Cured meat such as ham, hot dog, salami</li> <li>• Chicken liver</li> <li>• Soured, yeasted or fermented food and drinks such as yogurt, wine, beer and certain type of champagnes</li> <li>• Teriyaki sauce</li> <li>• Tofu</li> <li>• Miso soup</li> <li>• Sauerkraut</li> <li>• Broad (favor) beans</li> </ul>	<ul style="list-style-type: none"> <li>• Citrus fruits</li> <li>• Pineapple</li> <li>• Strawberry</li> <li>• Spinach</li> <li>• Eggplant</li> <li>• Chocolate</li> <li>• Beef and pork</li> <li>• Chicken liver</li> <li>• Cheese especially yellow types</li> <li>• Fish and shellfish</li> <li>• Sauerkraut</li> <li>• Yeasted foods</li> <li>• Tomato, tomato sauce, tomato juice and tomato paste</li> <li>• Red and white wine</li> <li>• Beer</li> <li>• Processed meat such as salami and hot dogs</li> <li>• Miso</li> <li>• Tofu</li> </ul>	<ul style="list-style-type: none"> <li>• Chocolate</li> <li>• Citrus fruits</li> <li>• Cocoa</li> <li>• Canned berries</li> <li>• Red wine</li> <li>• Yellow cheese</li> </ul>

**LIFESTYLE CHANGES TO COMBAT MIGRAINE**

There are ways to prevent or reduce the frequency and intensity of migraine headaches. The following are changes in lifestyle that could favorably impact migraine headaches.

1. **Dietary changes** have been discussed earlier. Besides avoiding migraine food triggers, one should eat a healthy diet that is low in fat and has a balance of carbohydrates and protein. Migraine sufferers should avoid fast foods or vending machine snacks. Regular meals, especially breakfast, are recommended in order to prevent low blood sugar. It is worth reemphasizing the importance of drinking water. Caffeine containing fluids may cause dehydration. One should not have more than one caffeinated drink per day.
2. **Stress** may be reduced by biofeedback therapy, relaxation techniques, and cognitive-behavioral therapy. These behavioral methods may prove to be useful in certain patients especially when used in combination with medications. Relaxation therapy techniques such as deep breathing, yoga, meditation, visualization and muscle relaxation exercises are useful especially if used in combination with application of cold compresses to the forehead. Cognitive-behavioral therapy trains the patient on how to identify and manage stressful situations in their daily life.
3. **Acupuncture** is utilized in China and now in many centers in the US. It is a technique that employs thin needles

inserted in the skin to stimulate specific points aligned with energy pathways in the body. Results of acupuncture in relieving or preventing migraine are questionable.

4. **Good sleep** habits are important for everyone. The amount of sleep needed varies from one individual to the other. However, the human body and the brain function best when a natural sleep cycle of 7-8 hours per night is attained. Sleeping less than that will result in waking up tired and tense and the likelihood of developing a headache is high. Attempts should be made to go to bed and wake up at regular times.
5. **Exercising** three times a week is helpful for relieving stress and for maintaining good general health. Walking, swimming, cycling, using a tread mill at a low to moderate speed and aerobic exercises are recommended. Vigorous and strenuous exercises should be avoided as they may precipitate or aggravate a migraine headache. Studies have shown that aerobic exercises may prevent migraines.
6. **Cigarette smoking** may activate or exacerbate migraine. Nicotine binds to nerve cells in the brain to initiate a migraine, and intensify it.
7. Even though **obesity** is not involved directly with migraine, keeping body weight within the range of the ideal as it relates to height is recommended. Excess weight may cause an increase in blood pressure which potentially could result in migraine.
8. **Keeping a diary** to identify the migraine triggers such as foods and stress can be helpful.
9. **Resting in the dark and in quiet places** can reduce severity of attacks.

### TREATMENT

The medications used in the management of migraine headache depend on the severity, frequency and type of attack. There is no cure for migraine, but there are medications that are capable of management. Certain drugs are used to relieve migraine pain that already started. They are only used at the onset of pain in order to stop its progression once it begins and usually are taken as needed. This group of medications is known as **abortive**. The other group of medications is termed **preventive** and aims at preventing headaches from occurring. They are taken daily in the absence of an attack in order to reduce the occurrence, frequency and severity of the pain and make the headache more responsive to abortive therapy.

Pharmacological treatments include the use of OTC drugs and prescription medications.

### NON-PRESCRIPTION OPTION

OTC pain drugs are employed to treat symptoms of migraine that has already begun. They are beneficial in patients with mild and infrequent attacks that do not interfere with their usual daily work or activities. They do not provide significant relief to sufferers whose migraine episodes are strong enough to require bed rest, cause vomiting or inability to perform usual work, or household activities. The uses of OTC drugs are the most common therapy. It has been estimated that 6 out of 10 migraine sufferers use OTC medications.

The analgesics most commonly used in OTCs belong to two classes:

1. Non-steroid anti-inflammatory drugs (NSAIDs) and,
2. Acetaminophen.

Both categories are considered abortive.

OTC medications are used for mild to moderate migraine episodes. Selection of the product depends on the patient as practically all OTC migraine products have identical therapeutic effect. Patients are advised to treat the pain by using a certain product for a minimum of three attacks. They may switch to another product if the results were not satisfactory. In case the second choice did not provide the expected relief, then a physician should be consulted. Drugs should be taken at the onset of the attack in the dosage stated on the label. Patients who take medication that exceeds the recommended dosage or too often may develop rebound headache and ultimately become at risk of developing chronic headaches. The major cause for the development of such headaches is over-use of both OTC and prescription medications.

1. **NSAIDs** include aspirin and non-aspirin entities such as ibuprofen and naproxen which provide relief from pain by acting on inflammation that precipitates headache.
  1. **Aspirin** (acetylsalicylic acid) is an analgesic-antipyretic-anti-inflammatory-antiplatelet medication and is one of the most commonly used drugs in the world with an estimate of 40,000 tons taken daily. It can be



used alone to relieve pain, but its effectiveness is enhanced when used in combination with acetaminophen. In fact a combination of aspirin, acetaminophen and caffeine has been approved by the FDA in the management of migraine. When used alone the dose is 325 mg three to four times daily. The main adverse effect of aspirin is gastric irritation and increased risk of gastric bleeding. It is this adverse effect that prevents many patients from taking aspirin. Large doses may cause tinnitus and decreased clotting time. Patients who are allergic to ibuprofen and naproxen should not take aspirin.

2. **Ibuprofen** is an analgesic-anti-inflammatory-antipyretic agent widely used for the treatment of headache, fever, rheumatoid arthritis and dysmenorrhea. The maximum daily OTC dose for use is 1200 mg. The side effects include nausea, dyspepsia, GI ulceration, increased risk of gastric bleeding, and like all other NSAIDs, it may cause photosensitivity. The FDA cautions patients who take a low dose of aspirin for its antiplatelet activity not to take it concurrently with ibuprofen as it may render the antiplatelet activity of aspirin useless. It is recommended that sufficient time, at least 30 minutes, be allowed for ibuprofen taken after immediate release low dose aspirin. A 200 mg ibuprofen in a gel formation has been approved by the FDA for OTC treatment of migraine.
3. **Naproxen** is an anti-inflammatory drug which like other NSAIDs acts by inhibiting the production of prostaglandins. This drug was originally prescription only. It obtained OTC status in 1994 for general use in reducing pain and fever but not specifically for migraine even though it may be used for this purpose. Naproxen may be used in the treatment of primary dysmenorrhea. In addition to adverse effects associated with NSAIDs, naproxen increases the risk of cardiovascular events. The recommended adult dose is one caplet (220 mg) every 8 to 12 hours.
2. **Acetaminophen** is a widely utilized OTC drug used either alone or in combination with other drugs. It is employed for its analgesic and antipyretic actions. Its anti-inflammatory effect is weak and is not used as such. An OTC drug that contains 250 mg of acetaminophen, 250 mg of aspirin, and 65 mg of caffeine has been approved by the FDA for the management of migraine headache. This medication is better tolerated than aspirin or NSAIDs in patients who experience gastric disturbances. However, the prolonged use, especially in high doses, may cause hepatotoxicity. Acetaminophen acts as an analgesic by inhibiting cyclooxygenase (COX-2) which is similar to the actions of aspirin and NSAIDs. Due to its selectivity for COX2, it has no or very little effect on the inhibition of the clotting enzyme thromboxanes. The recommended daily dose is from 500-1000 mg.

### PRESCRIPTION DRUGS

As indicated above, prescription drugs for the treatment of migraine may also be abortive or preventive.

### ABORTIVE

The primary abortive anti-migraine prescription medications belong to a group of chemicals known as **triptans**. These were first approved by the FDA in 1992 and act by binding to serotonin receptors in cranial blood vessels causing their constriction. Moreover, by acting as selective serotonin receptor agonists, they also inhibit the release of the inflammatory neuropeptides. There are a number of triptans on the market. They all possess the same mechanism of action but differ in the number of serotonin receptors affected.

Like OTC abortive migraine drugs, triptans tend to impact the migraine attack at its earliest sign. As such, they should be taken at the onset of the attack.

Unlike OTC abortive migraine drugs, they do not relieve any kind of pain other than that caused by migraine. Thus, triptans should not be used for other types of headaches such as tension headache or any headache whose symptoms are different than migraine. They will not prevent migraine or reduce frequency. Before taking triptans it is important that the presence of migraine headache has been confirmed by a physician.

The main adverse effects of triptans include nausea, vomiting, confusion, sweating, tightness in the jaw, neck or throat, weakness, drowsiness, chest pain and shortness of breath. Triptans should not be used in patients who have coronary heart disease, a history of heart attacks or strokes, severe high blood pressure or severe liver diseases. Triptans will interact with selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine, fluvoxamine, paroxetine, sertraline and citalopram; or propranolol. Such interaction results in serotonin syndrome which occurs due to increased serotonin activity. Serotonin syndrome is characterized by restlessness, hallucination, loss of coordination, tachycardia, fluctuation in blood

pressure, nausea, vomiting and increased body temperature. Other drugs that interact with triptans are lithium, monoamine oxidase inhibitors (MAOIs), dihydroergotamine, ergotamine, and methysergide. Triptans should not be used if the patient used MAOIs in the last 14 days and should not be used within 24 hours of treatment with another triptan or ergotamine-type medication.

Triptans that are available today include: sumatriptan (Imitrex<sup>®</sup>), eletriptan (Relpax<sup>®</sup>), rizatriptan (Maxalt<sup>®</sup>), almotriptan (Axert<sup>®</sup>), frovatriptan (Frova<sup>®</sup>), naratriptan (Amerge<sup>®</sup>), zolmitriptan (Zomig<sup>®</sup>).

**Sumatriptan** was the first triptan to be marketed in 1991. It is available as tablets, solution for injection, and nasal inhalers. In addition, a combination of sumatriptan and naproxen became available in 2008 following approval by the FDA. The combination of the two drugs gave better therapeutic effects than when each drug was used alone. Moreover, in 2009 the FDA approved a jet injector that delivers 6 mg of sumatriptan subcutaneously. The drug is available in 25 mg, 50 mg and 100 mg tablets; intranasal solution in 5-20 mg; injection solution 4 and 6 mg/ 0.5 ml. The recommended dose is 25-100 mg, with a maximum daily dose of 200 mg. Intranasal dose is 5-20 mg with maximum daily dose of 40 mg. The recommended dose for subcutaneous injections is 4-6 mg with a maximum dose of two 6 mg injections separated by 1 hour.

**Eletriptan** was approved by the FDA in 2002 and is available in 20 mg and 40 mg tablets. The following drugs should not be taken concurrently with eletriptan because they tend to block the enzyme in the liver that metabolizes and eliminates eletriptan, resulting in its accumulation in the blood: ketoconazole, itraconazole, nefazodone, clarithromycin, ritonavir and nefinavir. Eletriptan should be given 72 hours after the last dose of these drugs have been taken.

**Rezatriptan** was approved by the FDA in 1998. It is available in 5 and 10 mg conventional tablets and orally disintegrating tablets which disintegrate within seconds when placed on the tongue without liquids.

**Almotriptan** is available in tablet form as the malate salt and contains 6.25 mg or 12.5 mg of drug.

In addition to its use as an antimigraine medication **frovatriptan** is employed for short term prevention of menstrual migraine. It has a half-life of approximately 26 hours which is significantly longer than other triptans. It is available in 2.5 mg tablets.

**Naratriptan** is available in tablets containing 2.5 mg of active drug. Reports indicate that it is less effective than sumatriptan and rizatriptan.

**Zolmitriptan** has a number of dosage forms— conventional 2.5 mg tablets, an oral disintegrating tablet, and nasal spray in doses of 2.5 and 5 mg. The disintegrating tablet contains aspartame. As a result, individuals whose migraine is triggered by aspartame should refrain from taking this dosage form.

### PREVENTIVE DRUGS

Preventive migraine drugs are taken regularly, mostly on a daily basis, to prevent attacks from occurring and to reduce frequency and intensity. Such medications are taken by patients who complain of recurring and severe migraine episodes. Patients who experience two or more debilitating monthly attacks, those whose attacks are not relieved by pain-relieving drugs, and those who experience prolonged periods of aura, fatigue and numbness should use such drugs. Preventive medications not only can reduce frequency, severity and duration of the attacks, but can increase effectiveness of abortive drugs used during an attack. Once a patient becomes symptom-free after using preventive medications for six months to a year, then, at the physician's advice, the drug intake may be reduced and observe the patient to see if the attacks have not returned.

Preventive drugs include **ergot alkaloids such as ergotamine, and dihydroergotamine**, and are used alone or in combination with other drugs. **Dihydroergotamine** is more effective and has fewer side effects than **ergotamine**. These medications cause constriction of blood vessels of the heart and other parts of the body.

**Beta-blockers** are sometimes capable of reducing the frequency and severity of migraine attacks.

**Calcium channel blockers** have similar action especially in relieving aura. Other preventive medications include tricyclic antidepressants such as amitriptyline and nortriptyline. Some anti-seizure drugs such as divalproex and topiramate may reduce frequency of attacks.

### SUMMARY

Migraine headaches are common and may be severely debilitating. There is no cure, but there are medications that can relieve pain and others may prevent attacks from occurring. Some OTC and prescription drugs are helpful in relieving pain. Other drugs are capable of preventing attacks from taking place when used on a regular daily basis.

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#### TOPICS FOR BALANCE OF 2011

Blood Thinning Drugs

Vaccine Update

Prescription Adherence

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Fill in the information below, answer questions and return **Quiz Only** for certification of participation to:  
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### LESSON EVALUATION

Please fill out this section as a means of evaluating this lesson. The information will aid us in improving future efforts. Either circle the appropriate evaluation answer, or rate the item from 1 to 7 (1 is the lowest rating; 7 is the highest).

1. Does the program meet the learning objectives?

List types & symptoms of migraine	Yes	No
Discuss factors that may trigger migraine attacks	Yes	No
Describe relevance of diet to migraine attacks	Yes	No
State the role of OTCs in treating migraine	Yes	No
Describe impact of lifestyle on migraine	Yes	No
List & discuss prescription drugs used for migraine	Yes	No

2. Was the program independent & non-commercial

	Poor			Average		Excellent
	1	2	3	4	5	6 7

3. Relevance of topic

4. What did you like most about this lesson? \_\_\_\_\_

5. What did you like least about this lesson? \_\_\_\_\_

### Please Select the Most Correct Answer(s)

- Which of these is not a symptom of migraine aura?  
A. Temporary loss of vision  
B. Sensitivity to sound  
C. Tingling in the hands  
D. Elevation of blood pressure
- Which statement is incorrect about migraine?  
A. May be accompanied by nausea & vomiting  
B. Some are preceded by aura  
C. Occurs on both sides of the head  
D. More common in women than men
- Which of these is an abortive anti-migraine drug?  
A. Amitriptyline  
B. Sumatriptan  
C. Dihydroergotamine  
D. Beta-blockers
- Which of these is not considered a migraine headache trigger?  
A. Yellow cheese  
B. Sulfites  
C. Aged meats  
D. Cottage cheese
- Which statement is true about triptans?  
A. Should not be used in patients with coronary heart disease  
B. Should not be used within a week of treatment with another triptan  
C. Are useful for all types of pain  
D. Can prevent migraines from occurring if taken 3 times daily
- Triptans must not be given simultaneously with which of these?  
A. Naproxen  
B. MAOIs  
C. Aspirin  
D. Ibuprofen
- Which statement is correct about treating migraine?  
A. Abortive drugs should be taken daily  
B. Acetaminophen is a potent anti-inflammatory drug  
C. Acetaminophen is a preventive drug  
D. Triptans should not be used for other types of headaches
- Which of these lifestyle issues has no effect on triggering a migraine?  
A. Waking up early in the morning  
B. Exercise  
C. Avoidance of skipping meals  
D. Avoid dehydration
- Which statement is incorrect about ergotamine  
A. Less effective than dihydroergotamine  
B. Ergotamine is safer than triptans  
C. Must be used alone  
D. Capable of constricting blood vessels of the heart
- Which of these drugs is not used for migraine?  
A. Amitriptyline  
B. Beta blockers  
C. Diuretics  
D. Calcium channel blockers

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