BACKGROUND
The purpose of the Headache Guideline is to assist the primary care physician in managing patients with headaches. The Guideline is appropriate for all adults who present with acute or chronic headaches. Section I distinguishes between primary and secondary headaches, Section II covers diagnosis of primary headaches and Section III covers therapy for primary headaches.

RECOMMENDATION

Primary vs Secondary Headaches
The primary care physician should be able to distinguish between primary and secondary headaches, treat the primary headache effectively, and make an appropriate referral of a secondary headache. See Figure 1. Overview of Headache Management.

Primary headaches
These include migraines, cluster, tension, and analgesic/caffeine rebound headaches. The diagnosis is made by assuring there are no alarms by history or examination. A description of primary headache types and
their therapies are given below. Headaches that meet the criteria for a primary headache disorder may be referred to Neurology if they fail to respond to 3-6 months of treatment.

**Secondary headaches**

Headaches secondary to inflammation, infection, subarachnoid hemorrhage, mass, hypertension, and cerebrovascular ischemia must be considered and excluded by a thorough history and neurological examination. This should include an assessment of vital signs, mental alertness, orientation, meningismus, visual field confrontation testing, fundoscopy, sensorimotor examination, and reflex testing. Patients with positive findings should be referred to a specialist after the initial evaluation. The alarms on the history and examination that would prompt a workup or referral to a specialist are detailed in Figure 2. Alarms by History and Figure 3. Alarms by Examination. Referral should be made to Neurology unless the work-up has documented another cause such as CNS infection (refer to Infectious Disease), vasculitis (refer to Rheumatology), subarachnoid hemorrhage or mass (refer to Neurosurgery).
Diagnosis of Primary Headaches

Migraine Headache
The typical description includes a moderate to severe, throbbing, bilateral or unilateral headache involving the frontotemporal region or periorbitally. It occurs in women more often than men, usually with a family history of migraine, beginning between the ages of 10 and 25. These headaches are often associated with nausea, vomiting, anorexia, phonophobia, and photophobia. They typically occur one to four times per month and last most of the day, usually improving with sleep. Classic migraines involve an aura of visual or sensory disturbance that spreads in a typical fashion followed by a unilateral throbbing headache. Migraines occur in stereotypic circumstances or are provoked by:
- hormonal factors such as menses, ovulation, oral contraceptives, pregnancy, postpartum
- relaxation after stress, such as weekends or vacations
- bright lights such as headlights on the freeway or fluorescent lights
- weather changes such as Santa Ana conditions
- caffeine withdrawal
- alteration in sleep patterns, such as sleeping late or lack of sleep
- alcohol, especially red wine, champagne, and beer
- foods such as chocolate, aged cheeses, hot dogs, deli meats, citrus, yogurt, frozen foods, Chinese food containing MSG, colored foods and beverages such as Kool Aid, yeast, and canned soups
Symptom Diagnosis of migraine requires:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Diagnosis of migraine requires:</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>Activity worsens pain 2 of 4 symptoms (A, U, T, I)</td>
</tr>
<tr>
<td>U</td>
<td>Unilateral 2 of 4 symptoms (A, U, T, I)</td>
</tr>
<tr>
<td>S</td>
<td>Sensitive to light and sound 1 of 2 symptoms (S, N)</td>
</tr>
<tr>
<td>T</td>
<td>Throbbing 2 of 4 symptoms (A, U, T, I)</td>
</tr>
<tr>
<td>I</td>
<td>Intense, severe 2 of 4 symptoms (A, U, T, I)</td>
</tr>
<tr>
<td>N</td>
<td>Nausea 1 of 2 symptoms (S, N)</td>
</tr>
</tbody>
</table>

Usual Migraine lasts 4 to 72 hours and is episodic

Cluster Headache
These occur in a series of closely spaced attacks, especially at night, for days or weeks, followed by remission for months or years. They are very rare in women. They can be associated with conjunctival congestion, lacrimation, and ptosis. The pain is excruciating and often peri-orbital in location.

Tension Headache
These are divided into episodic headaches (less than 15 per month) and chronic headaches (15 or more per month). The typical episodic headache is the result of localized contraction of head and neck muscles, associated with stress and fatigue. The chronic headaches are a symptom complex due in part to psychological problems, especially depression.

The tension headache is a steady, non-pulsatile, persistent ache, often described as a constricting pain (eg, "band-like", "vise-like", "weight", "pressure", "tightness"). It may be unilateral or bilateral, involve the temporal, occipital, parietal, or frontal regions, or a combination of these. It can be accompanied by tightness of the neck, upper back, and shoulders with localized areas that are tender to palpation. Blurred vision and sleep disturbance may occur. Vomiting, photophobia, and phonophobia are usually absent.

Analgesic/Caffeine Rebound headache
The daily use of simple and combination analgesics, barbiturates, sedatives, ergotamines, and caffeine in medicines or beverages contributes to the development of chronic and intractable headaches and, paradoxically, perpetuates and intensifies the headaches. The term "rebound" refers to worsening of the headache as the analgesic effect wears off, with an escalation of the pain secondary to withdrawal. Such headaches are often present on waking.

Patients will develop these headaches only if they are using these medications on a regular basis. Frequency of use is more significant than quantity of use. Patients gradually develop an overuse cycle, often medicating three to four times a day. Patients who are withdrawn from these medications experience significant improvement and can become responsive once again to prophylactic medications. This improvement may occur two to three months after analgesic/caffeine withdrawal.

Therapy for Primary Headaches
Severe Acute Migraine Headaches
Among the many methods for treating severe acute migraines the following is recommended in acute care settings:

1. SC Imitrex 6 mg
2. Metoclopramide 5-10 mg is given by I.V. push or rapid infusion. Doses > 10 mg should be diluted with normal saline 1 mL for 1 mL I.V. push or in 50 mL of normal saline as an I.V. piggyback, prior to administration.
3. If no improvement is noted within 60 minutes repeat DHE 1 mg by slow I.V. push. Cortisone succinate 100 mg or dexamethasone 4 mg I.V. can be given after DHE infusion.
4. If no improvement within another 60 minutes, administer prochlorperazine 5-10 mg by slow I.V. push over 2-3 minutes. Diphenhydramine 25-50 mg I.V. can be given at this time to prevent a dystonic reaction secondary to the initial metoclopramide and subsequent prochlorperazine.

5. If no improvement after an additional 30-60 minutes, administer meperidine HCl 75-100 mg I.M. and hydroxyzine 50 mg I.V. to induce sleep.

6. If still no improvement, consult Neurology for consideration of admission for implementation of continuous I.V. DHE-oral metoclopramide protocol. Steroids may be included in this protocol.

**Mild to Moderate Primary Headaches**

**Migraine headaches**
NSAIDs (eg, naproxen) and Midrin may be tried as abortive therapy for mild migraines. For moderate to severe migraines, Triptans are always first line abortive agents unless a contraindication exists. Triptans should be used in mild migraines if the NSAIDS or Midrin does not work. Injectable DHE is an alternative, but is not preferred first line secondary to side effects.

**Cluster headaches**
Steroids and Verapamil are first line drugs. To abort the attacks, both Triptans and oxygen may work.

**Tension headaches**
Ergotamine preparations and sumatriptan should not be used for tension headaches; however, for refractory headaches DHE-45 or meperidine with hydroxyzine can be tried.

**“Transformed” Migraine**
Treatment is gradual tapering of caffeine and daily analgesics, and substituting Tricyclic and abortive drugs as necessary (i.e. Triptans, IV DHE). Management of these patients involves discontinuation of the medications responsible.

In some cases, weaning off analgesics will not be possible, and these patients should be followed by a single provider, preferably the primary care physician, with a contract between patient and physician with regard to the number and type of these medications that can be used in a given month, in order to avoid multiple prescriptions from different physicians.

**Chronic Primary Headaches**

**Basic principles**
1. Ensure that the diagnosis of a primary headache disorder is correct. Atypical cases should be fully investigated. See Figure 2. Alarms by History and Figure 3. Alarms by Examination.
2. The problems of rebound headache and analgesic abuse need to be addressed before prophylactic treatment is initiated.
3. Fasting and food triggers, including caffeine, should be identified and avoided.
4. Nonpharmacological treatment is always recommended, whether or not drug therapy is necessary. This includes: biofeedback, relaxation training, behavior modification, and, most importantly, a sympathetic physician.

Pharmacological therapy should be used if there are more than two to three incapacitating headaches per month, not easily managed with abortive therapy, or more than ten nonincapacitating headaches per month.

1. **Migraine headaches with or without aura**
   - Start with a beta-blocker for 4-6 weeks, and then if no improvement, add a tricyclic antidepressant (TCA), or use a TCA alone. Adding an antiepileptic such as neurontin or Valproate is sometimes needed.
2. **Cluster headaches**
   - Start with short-acting verapamil in high doses (320 mg/day in 3 divided doses), with early addition of lithium, ergotamine, prednisone, or valproic acid. These patients should be referred to Neurology.
3. **Tension headaches**  
Start with low-dose TCAs: Amitriptyline (10-25 mg qhs), nortriptyline (10-20 mg qhs), or doxepin (25 mg qhs) for at least 4-6 weeks. Acceptance of the TCAs is limited by side effects, particularly sleepiness, and the dose should be increased slowly to avoid this. If these fail, consider changing the prescription to propranolol or alternatively to an NSAID (eg, naproxen).

4. **Analgesic/caffeine rebound headaches**  
Management of these patients involves discontinuation of the medications responsible. Most cases can be managed as an outpatient with the help of a chemical dependency program, use of NSAIDs (eg, naproxen) and antidepressants (eg, nortriptyline).