ADULT HEADACHE SAFE HARBOR

Definition: A safe harbor is a special type of clinical practice guideline which, under existing federal law, may serve as the legal standard of care, not just evidence of the standard of care.

Adult Headache Safe Harbor: If a patient with uncomplicated atraumatic headache satisfies all safe harbor inclusion criteria and does not meet any exclusion criteria, no imaging is required, and the patient may be discharged with specific instructions. If a patient is excluded from the safe harbor, then imaging decisions are per customary practice.

The following safe harbor criteria are based upon published adult headache prediction tools and guidelines[1-14], including the *American College of Radiology*,[13] *The American Headache Society*,[6] the *American College of Emergency Physicians*,[5] and UpToDate,[14] as well as the Choosing Wisely initiative of the *American Board of Internal Medicine Foundation*.[6,15]

A. Inclusion Criteria

If a patient satisfies each of the following criteria, then that patient is included within the Adult Headache Safe Harbor. If any criterion is not satisfied, the patient is excluded from the Adult Headache Safe Harbor.

1. The patient presents to the emergency department with acute atraumatic headache.

2. The patient is at least 18 and under 40 years old, and the patient is able to provide a reliable history.

3. In the judgment of the treating provider, the patient is capable of follow-up within 72 hours if symptoms worsen or warning signs develop as detailed in the patient discharge instructions.

B. Exclusion Criteria

If the patient satisfies any of the following criteria, then that patient is *excluded* from the Adult Headache Safe Harbor. Meeting a single criterion from either the history criteria or the examination criteria is sufficient to exclude the patient from the safe harbor.

1. *History*: The patient is excluded from the safe harbor if the patient's history includes any of the following:
    a. Persistence of headache for more than 14 days
    b. Complaint of neck pain or stiffness

c. Loss of consciousness
d. Seizure prior to presentation
e. Onset during exertion
f. Thunderclap (one second or less after the onset of the headache) or worst headache of life
g. Previous diagnosis of subarachnoid hemorrhage, intracranial tumor, aneurysm, or hydrocephalus
h. Known or suspected cancer
i. Changes in vision
j. New type of headache (no similar occurrences in the past)
k. Suspected sinonasal disease
l. Pregnancy or within 6 weeks postpartum
m. Immunosuppressed or immunocompromised state
n. Suspected trigeminal autonomic origin
o. Use of anticoagulant medications
p. Use of illicit drugs
q. Suspected carbon monoxide exposure

2. *Examination*: The patient is excluded from the Adult Headache Safe Harbor if the care provider's examination reveals any of the following:
    a. Limited neck flexion or other meningeal signs
    b. Glasgow Coma Score less than 15
    c. New neurological deficit
    d. Decreased level of consciousness or altered mental status
    e. Fever.
        i. A fever is defined as a measured oral temperature of 100.4^{o} F (38° C) or greater.
    f. Recent rash
    g. Presence of papilledema, retinal hemorrhage, or subhyaloid hemorrhage
    h. Diminished pulse, swelling, or tenderness of the temporal artery

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Discharge Instructions for those patients satisfying Adult Headache Safe Harbor criteria

If a patient satisfies all of the Adult Headache Safe Harbor inclusion criteria and does not meet any of the Adult Headache Safe Harbor exclusion criteria, the care provider should discuss discharge instructions with the patient and give the patient a discharge instruction sheet to take home and share with family members and/or caregivers. Sample text for discharge:

> You have been evaluated for a headache. Most headaches are not serious and are usually relieved by acetaminophen (paracetamol, Tylenol) or anti-inflammatories

(ibuprofen). Common causes include migraines, stress, eye strain, and infections (sinus or dental). Sometimes, resting in a quiet, dark environment helps. Avoid vigorous exercise, loud noise, caffeine, stimulants, and alcohol. Rarely, headaches can indicate a serious disease, such as infection, high blood pressure, or bleeding in the brain. Headaches are usually diagnosed by the patient's history and examination. Sometimes the initial history and examination are normal, even when there is a more serious problem, so it is important to follow up with your doctor for further evaluation if symptoms worsen or warning signs develop.

Home Care:
1. Take the pain medicine recommended by your doctor.
2. There might be some benefit from relaxation, massage, and rest.
3. An icepack to the head and neck might be helpful.

The patient acknowledges being instructed on the need for follow-up and agrees to follow up if, within 72 hours, symptoms worsen or warning signs develop. Call your doctor or return to the emergency department if your symptoms worsen or you experience any of the following warning signs:

1. Your headache is worse.
2. You develop fever. A fever is defined as a measured oral temperature of 100.4^{o} F (38° C) or greater.
3. Stiff or painful neck.
4. Blurred vision, double vision, or eye pain occurs.
5. Trouble walking or maintaining balance occurs.
6. Dizziness, weakness, or passing out occurs.
7. Confusion occurs.
8. Vomiting occurs.
9. No improvement occurs in 2 days.

Patient's acknowledgment of receipt of discharge instructions, including the patient's acknowledgment of being instructed on the need for follow-up and agreement to follow up, should be secured. Choosing Wisely patient information on imaging tests for headache can be obtained at:

https://www.choosingwisely.org/wp-content/uploads/2018/02/Imaging-Tests-For-Headaches-ACR.pdf[2]

Other example patient discharge instructions:

https://myhealth.alberta.ca/Health/aftercareinformation/pages/conditions.aspx?hwid=ut1815[16]

https://www.drugs.com/cg/general-headache-aftercare-instructions.html[17]

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