20 Questions – Headaches

1. Aside from the usual 'headaches' of daily life, how many people have a headache severe enough to see a doctor?
2. When you have a headache, does your brain hurt?
3. Headaches are often grouped into infectious, traction (on structures within the skull), extracranial, and inflammatory causes. What are some specific causes in each group?
4. What features of the headache history are important?
5. How might the vital signs help in determining a cause of headache?
6. When the whole family complains of headaches, what specific cause of headache should be checked for?
7. A young male patient complains of recurrent, severe headache behind one eye, associated with severe tearing and runny nose. The attacks are frequent and last about 30-60 minutes several times per day. He had these headaches for a month last year but never sought care. What type of headache is this and how do you cure it?
8. You are called for a rather obese young woman who has had chronic headache for the past several weeks, and now notes that her vision is dim laterally on both sides. Her medications include minocycline for acne and oral contraceptives. What is a likely cause for her headache?
9. A 9 year old boy has had headaches for 2 weeks which are getting more severe. They are worst on awakening. You are called because this morning he has begun to vomit. He does not have a fever, and looks uncomfortable. What is worrisome about this history?
10. Responding to a 'stroke', you find a patient with right sided weakness (hand worse than leg) and right facial droop. She tells you that this is 'just her migraines', but you and her co-workers are very worried. Does this happen?
11. What causes a migraine?
12. What are the key distinguishing features of a migraine?
13. What is the best non-drug cure for migraines?
14. How is a migraine headache treated and/or prevented?
15. A 26 year old patient tells you that he has a headache 'all over' feeling like a 'band around his head'. The headache has been recurrent over weeks, mainly in the evening. On palpation, the temples are tender bilaterally. What type of headache does this fit the pattern for?
16. You are called for a 36yo male who complained of the 'worst headache of his life' following intercourse (a little ironic, yes, but certainly possible). He is acutely distressed but alert, with a normal neuro exam. What is the worst case scenario? The best case scenario? A drug that could contribute to the headache often used in sexual situations?
17. What is a 'sentinal bleed' and why do we worry about missing it?
18. Why do patients get headaches after nitroglycerine?
19. A patient with a severe GI bleed appears pale, and complains of a headache. Enroute to the hospital, she feels much better on oxygen. What may have been the cause of the headache?
20. A patient evaluated for possible subarachnoid hemorrhage was sent home after a normal CT and lumbar puncture. She now complains of worsening bitemporal, pulsating headache which is worse when sitting up. What may be happening and what is the treatment? Is there any way to prevent these headaches?

20 Answers – Headaches

1. About 10-20% of people will see a doctor for a headache during their lifetime.
2. Actually, no. The brain itself doesn't have pain fibers, but the blood vessels, scalp, parts of the dura (tough lining around the brain just inside the skull), and the cranial nerves can report pain to the brain. That's plenty of pain input to give you a nasty headache.
3. Here's a few ideas in each: Infectious-meningitis, sinusitis, mastoiditis (air cells behind the ear), dental infections, intracranial abscess, encephalitis. Traction – tumor, pseudo-tumor (more on this later), intracranial bleeds put pressure or traction on structures. Extracranial – cranial neuralgia, glaucoma, optic neuritis, temporomandibular joint syndrome, cervical spin disease, herpes zoster. Inflammatory – temporal arteritis, other vasculitis. There are also toxic (e.g. cocaine) and metabolic (e.g. hypoglycemia) causes.

4. The onset, duration, and character of the headache are critical. Any headache with abrubt, severe onset is very worrisome for intracranial bleed – often referred to as a 'thunderclap' headache. Duration may be helpful, if it's been there for two months it probably doesn't need to go to the stab room unless something's changed recently (they may still have a brain tumor, infection, etc. but as long as the symptoms haven't changed abruptly, there's time to sort it out). Progressively worsening headaches are bad – perhaps a tumor or bleed. Ask specifically about drug use or precipitating factors (exercise, etc.). Have they had a fever? Any neurologic signs besides the headache? (especially sensation, strength, vision, coordination). Have they had these before? If they suffer headaches, is this different? A 'first or worst' headache should prompt concern, especially if associated with progression, fever, or neuro symptoms or signs.
5. The presence of fever would be concerning for meningitis (in kids, fever can cause headache, less so in adults – in either case meningitis must be at least considered). Hypertension can cause headaches directly, or BP can go up because of the pain of the headache. High BP rarely causes headaches by itself unless the pressure is in the 200 systolic range or higher. You might want to ask about hypertension history and compliance with meds. Hypoxia causes headache due to vasodilation, so this may be a helpful sign.
6. Carbon monoxide should be considered when several people in the same residence are affected by headache (there are lots of reasons why families give each other headaches, but this one should be thought of too).
7. This is a classic cluster headache. Cluster headaches feel like an icepick in the eye, come and go frequently, and have long periods between 'clusters'. 90% will respond to oxygen within 15 minutes.
8. Benign intracranial hypertension (prior called pseudotumor cerebri) is a poorly understood condition in which the intracranial pressure rises, causing headache and later neurologic symptoms. Certain drugs are contributors, and the victims are usually young obese females. Treatment is with diamox (acetazolamide) pills and sometimes scheduled spinal taps to relieve the pressure! This story is also worrisome for a brain tumor, so CT will be needed to sort the two out (they don't call it pseudotumor for nothing).
9. Constant headaches which are worse in the morning, especially if progressive and associated with other neuro signs or signs of increased intracranial pressure (e.g. vomiting) are very worrisome for a growing tumor…
10. Yes. Complex migraines may have focal findings that mimic stroke. The key is that this is a predictable and recurrent problem that is exactly the same as her usual attacks. If this isn't the history, a stroke must be assumed. Either way, she should be evaluated at the hospital and her records reviewed.
11. Good question! If you find out, let us in on it… It's been thought for a long time that migraines were caused by vasoconstriction followed by vasodilation. Though vascular tone seems to have something to do with migraines, it's not the whole story. Prostaglandins, the serotonin system, and other brain chemicals likely play a role.
12. Migraines may have an aura, or prodrome. About 15% of migraine sufferers have these. The aura is usually visible (flashing lights, arcs of lights), but more rarely can be paresthesias, weakness, speech difficulties, etc. These develop before or at the onset of the headache and should last no more than 60 minutes. Key features that suggest migraine are by the POUND mnemonic – Pounding, hOurs (4-72) in duration, Unilateral, Nausea, and Disabling (can't do usual activities). Presence of all of the factors is extremely likely to be a migraine, the less factors, the less likely. Patients may refer to any headache as a migraine, but the diagnosis requires at least 5 similar headaches.
13. Sleep. For whatever reason, sleep seems to terminate migraines. Some of the medications given for migraines can make you sleepy and are designed to get the patient comfortable enough to sleep.
14. Primary treatment is to try a non-steroidal (ibuprofen, etc.) or use meds like sumatriptan (imitrex) particularly right after the onset of the headache. If these fail, or it's severe enough to come to the hospital, we often use olanzapine. If this doesn't work, Compazine and other medications can be used. Narcotics are not appropriate treatment for headaches. If attacks are frequent, prophylactic meds like beta-blockers, Depakote, or antidepressants can be used to reduce the attack frequency.

15. This patient has a typical tension-type headache. It is not pulsating, is bilateral, and gradually increases as the day goes on. Photo/phonophobia may occur (as with most headaches), but nausea and vomiting are NOT present, and physical activity does not usually increase the pain.
16. Exertion-related headaches are worrisome, and this patient should be evaluated for subarachnoid hemorrhage. The best case scenario is benign post-coital headache which is a severe headache often triggered by orgasm. It is unfortunately often recurrent. Nitrates applied to the penis or other vasodilators (Viagra, Cialis, etc.) may cause headache as well.
17. A 'sentinal bleed' occurs when an aneurysm along the base to the brain (present in about 1% of the population), leaks blood into the spinal fluid, causing a severe headache. This leak indicates that the aneurysm is unstable. If it is detected, it can be treated (usually intravascular coiling – placing wire coils in the aneurysm to make it clot off) before it ruptures. If it is not found, the leak seals, the headache goes away, and the next headache is usually because of complete rupture of the aneurysm, leading to larger volumes of bleeding into and around the brain. These ruptures are often fatal.
18. Nitroglycerine causes vasodilation. Cerebral vasodilation can induce headache in anybody, though certain people seem more affected than others. Oxygen may help, but luckily the headache is usually short-lived.
19. Anemia may cause headache. This is probably due to vasodilation as the body attempts to get the brain as much blood volume as possible, since the amount of hemoglobin to deliver the oxygen is reduced. Oxygen usually helps by maximizing delivery and reducing need for vasodilation.
20. Unfortunately, one of the complications of lumbar puncture is a 'post-tap headache'. The only factor shown to be associated with occurrence is the size of the needle used – lying down, fluids, etc. after an LP don't seem to help. These occur in about 5-15% of persons having an LP. If severe, this is treated by injecting the patient's own blood into the area so that it will clot and put pressure on the site of the dural (spinal column lining) puncture (called an autologus epidural blood patch) helping to equalize the pressure and reduce the headache.

Happy New Year!