Headache type	Headache characteristics
Primary headaches	
migraine	Recurrent attacks that last 4 to 72 hours. Typically one-sided (not side-locked [NB2], can be bilateral), pulsating, moderate to severe intensity, aggravated by routine physical activity, associated with nausea and/or photophobia, phonophobia or osmophobia. Can occur with or without aura. Migraine can present primarily as neck pain or mid-facial pain rather than headache. The associated features listed above are important in making the diagnosis.
migraine with aura	Migraine that is preceded by aura (ie reversible focal neurological symptoms that usually develop over 5 to 20 minutes and last for less than 60 minutes). Aura symptoms can affect vision, senses, speech and/or language, motor function, brainstem and retina. Exclude transient ischaemic attack.
aura without headache (acephalgic migraine)	Typical aura of migraine that is not accompanied, or followed, by a headache of any sort. Most common form is scintillating scotoma. Can occur at times in a patient who usually has a headache after aura. Is the predominant form of migraine in a few patients. Differential diagnosis must exclude aura mimics, especially transient ischaemic attack.
tension-type headache	Lasts from 30 minutes to 7 days. Usually bilateral, feels like pressure or tightness in head. Mild to moderate intensity (rarely severe enough to prevent walking or climbing stairs). Not associated with nausea, may be associated with photophobia or phonophobia. Does not fit diagnostic criteria for other headache types better than criteria for tension-type headache.
trigeminal autonomic cephalgias [NB3]	Unilateral and side-locked [NB2] (usually follow distribution of first division of trigeminal nerve) with unilateral autonomic features (eg tearing, conjunctival injection/irritation, ptosis, nasal stuffiness/rhinorrhoea, fullness of the ear, tinnitus, facial flushing or sweating). Possible photophobia or phonophobia (usually unilateral). Patient often agitated and restless.
reversible cerebral vasoconstriction syndrome (RCVS)	Thunderclap, recurring over 1 to 2 weeks. May be triggered by exertion, Valsalva manoeuvre, sexual activity or strong emotion. Can also be triggered post partum or by serotonergic and sympathomimetic drugs. Can be associated with fluctuating neurological deficits and seizures. Angiography shows 'string and bead' appearance, but may be normal in first week. Changes on MRI are mainly posterior and may include oedema, infarction, subarachnoid haemorrhage or intracranial haemorrhage.
new daily persistent headache	Persistent and daily since onset (usually patient remembers starting date), present for more than 3 months. No other characteristic features (may be like a migraine or like a tension-type headache). Can resolve spontaneously over several months or become chronic. Treat as for main phenotype.
primary headache associated with sexual activity (benign sex headache)	More frequent in males than females. Usually benign, although thunderclap headache at orgasm can (rarely) be associated with subarachnoid haemorrhage or infarction. May occur before (usually milder) or at (usually more abrupt and severe) orgasm. Often resolves spontaneously over a few months. Consider reversible cerebral vasoconstriction syndrome. Exclude space-occupying lesion or aneurysm.

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Headache type	Headache characteristics
Primary headaches (cont.)	
primary exercise headache (benign exertional headache)	Only occurs after strenuous physical activity, especially in hot weather or at high altitude. Lasts less than 48 hours. Exclude space-occupying lesion, aneurysm, carotid stenosis, posterior fossa mass lesion or Chiari malformation. May be an unusual presentation of angina.
primary stabbing headache (also known as 'ice-pick headache' or 'jabs and jolts')	Transient and localised stabs of pain in the head. Occur spontaneously in the absence of organic disease in underlying structures or cranial nerves. Each stab lasts a few seconds. Stabs recur irregularly. Mainly extratrigeminal, but can change site. No associated autonomic features. Can occur with a migraine and often ease when migraine is treated. Isolated cases are so brief and infrequent that treatment is not warranted. Persistent cases may respond to indomethacin.
primary cough headache (benign cough headache)	Provoked by cough or Valsalva manoeuvre, can last seconds to 2 hours. Exclude space-occupying lesion or aneurysm, posterior fossa pathology, Chiari malformation and cerebrospinal fluid obstruction.
hypnic headache [NB4]	Typical patient is older (more than 50 years) and woken early (1 to 3 am) by bilateral headache, often with nausea. Headache usually lasts 30 to 60 minutes (up to 4 hours). Often prevented by 1 to 2 cups of coffee before bed. Lithium, melatonin and indomethacin may also be used.
Secondary headaches	
low cerebrospinal fluid (CSF) pressure headache	Generally worse in evening and improved by lying flat. May be associated with 'coat-hanger' pain across the shoulders or pulsatile tinnitus. Intracranial pressure less than 6 cmH20. May be spontaneous or follow trauma or dural puncture.
increased cerebrospinal fluid (CSF) pressure headache	Associated with raised intracranial pressure (more than 25 cmH20, measured by lumbar puncture manometry in the lateral decubitus position). Typically worse in the morning and when lying down, improved by upright posture. Aggravated by cough, straining and Valsalva manoeuvre. May be associated with transient visual obscuration, pulsatile tinnitus and papilloedema. Exclude a space-occupying lesion, venous sinus thrombosis or obstruction, and use of drugs such as tetracyclines and vitamin A analogues (eg isotretinoin, acitretin). Consider idiopathic intracranial hypertension, especially if recent weight gain. Visual field loss and permanent damage can follow initial transient visual problems.
cervicogenic headache	Usually accompanied by neck pain and is unilateral (side-locked [NB2]) with radiations from posterior to anterior. Due to disorder of cervical spine (eg bone, disc, soft tissue). Neck has reduced range of movement. Headache is provoked by neck manoeuvres or digital pressure on affected structures. High cervical or greater occipital nerve block may relieve symptoms.
drug-induced headache	Follows intake of drugs (eg alcohol, marijuana, cocaine, monosodium glutamate, nitrates, cyclosporine, phosphodiesterase inhibitors, carbon monoxide, exogenous hormones).
headache induced by metabolic/other medical condition	Patient has a medical condition associated with the headache (eg obstructive sleep apnoea, hypoxia, arterial hypertension, phaeochromocytoma, epilepsy, hypoglycaemia, hypercapnia, haemodialysis).

CSF = cerebrospinal fluid

NB1: Classification based on: Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders 3rd edition (Beta version) [website]. London: International Headache Society; 2013 <www.ichd-3.org/> . This table is not intended to cover every type of headache.

NB2: A side-locked headache always affects the same side of the head (ie does not change sides between attacks, and does not change sides during an attack).

NB3: The trigeminal autonomic cephalgias are cluster headache, paroxysmal hemicrania, short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing, and hemicrania continua. Trigeminal neuralgia is a different condition.

NB4: Hypnic headache may be confused with exploding head syndrome (a parasomnia), in which a patient wakes from sleep shortly after onset with sense of a loud bang (painless) in the head. May respond to 1 to 2 cups of coffee before bed.