

Headaches in Adults

[Disclaimer](#)

For children, see [Headaches in Children](#).

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Red Flags

- Sudden onset severe or thunderclap headache, unless consistent with previous migraine headaches
- Severe headache with systemic illness (fever, meningism, altered consciousness, neurological deficit)
- Severe headache that is disabling or associated with recent head trauma
- Headache suggestive of temporal arteritis

Background – About Headaches in Adults

Most headaches in adults are benign primary headaches, either tension-type headaches, or migraines. Only rarely are they due to a serious secondary cause.

The most common types of benign primary headaches are:

- tension-type headache.
- migraine.
- medication overuse headache.
- cluster headache.

Assessment

Practice Point

Avoid unnecessary imaging

A detailed history and basic neurological examination is usually enough to differentiate between benign and serious causes. Low-risk headaches generally do not require imaging to exclude a serious cause.

1. Take a detailed history. Look for:

Worrying features

Include:

- *recent onset over weeks (i.e., first, worst, different).*
- *severe enough to wake patient, or present on waking.*
- *progressive non-episodic headache without remission.*
- *vomiting, but no other indication of migraine.*
- *previous malignancy (lung, breast, melanoma)*
- *non-episodic headache with fixed focal neurological signs or symptoms.*
- *personality or cognitive change.*

Also consider indications of a serious secondary cause:

Features	Consider
Sudden onset: <ul style="list-style-type: none"> thunderclap headache like a blow to the head peak pain intensity within minutes often occipital 	Subarachnoid haemorrhage
Made worse by coughing, sneezing, bending, exertion	Mass lesion e.g., tumour or abscess
Previous malignancy	Cancer – especially lung , breast , melanoma
Head injury in the last month	Subdural haemorrhage
Aged > 50 years, especially if no headaches in the past	Giant cell arteritis (GCA)
Fever, drowsy, neck stiffness, rash, recent infections	Meningitis or encephalitis
Speech, limb or facial weakness	Stroke or tumour
Eye symptoms e.g., monocular pain, red eye, visual disturbance, nausea	Acute angle-closure glaucoma

- Reassuring features:
 - Recurrent episodic headache with long history at presentation
 - No neurological deficit
 - Transient neurological symptoms, and occasionally signs, are common features of migraines.

2. Assess for features of primary headaches:

- Tension-type headache features**
 - Presents as either:
 - episodic – occurs < 15 days per month, or
 - chronic – occurs ≥ 15 days per month.
 - Typically bilateral, frontal or frontal-occipital.
 - May radiate to the neck, with subjective neck stiffness.
 - Sensation of pressure inside the head, or of a band around the head.
 - May worsen as the day goes on.
 - May be exacerbated by stress or "busyness" (often denied).
 - Patient remains active.
 - Episodic pattern may progress to "all day, every day" pattern.
 - Potential to progress to medication overuse headache.
 - Neurological examination is normal.
 - Is the most common chronic recurring headache.

- **Migraine features**

- Onset is commonly in the teens, but can be any age. Often family history.
- May wake the patient at night and bending and coughing may exacerbate pain.
- Triggers may include menstrual cycle, physical exercise, certain foods, medications including combined oral contraceptive pill.
- Recurrent headache that lasts from several hours up to 3 days.
- Often unilateral and severe with throbbing quality to pain.
- Associated nausea or vomiting, limitation of activity, and sensitivity to light or noise.
- Patient preference to lie in the dark.
- May have aura:
 - Usually precedes headache, but may be concurrent or, at times, occur with no headache.
 - Visual aura (shimmering, zig-zags, scotoma) is most common.
 - Sensory aura (unilateral paraesthesia of arm or face) is also common
 - duration – 5 to 60 minutes, but usually about 20 to 30 minutes.
 - onset – should be gradual, developing over ≥ 5 minutes
 - speech or language disturbance – difficulty finding words is common.
- Unilateral weakness – can occur with hemiplegic migraine, but is not common or typical and warrants further investigation.

Without aura, ask about:

- recurrent headache that lasts from several hours up to 3 days.
- if usually unilateral and severe.
- throbbing quality to pain.
- nausea and vomiting.
- photophobia and phonophobia.
- exacerbation by movement and exercise.
- patient preference to lie in the dark.
- family history.

With aura (diagnosis requires 2 episodes), ask about:

- aura:
 - Usually precedes headache, but may be concurrent or, at times, occur with no headache.
 - Visual aura (shimmering, zig-zags, scotoma) is most common.
 - Sensory aura (unilateral paraesthesia of arm or face) is also common.
- duration – 5 to 60 minutes, but usually about 20 to 30 minutes.
- onset – should be gradual, developing over ≥ 5 minutes
- speech or language disturbance – difficulty finding words is common.

- **Cluster headache features**

- Mostly affects men aged 20 to 40 years (six males to every female).
- May be missed, as uncommon in general practice.
- Typically occurs in bouts of 6 to 12 weeks, every one to two years.
- Often occurs at the same time of day and year, separated by periods of freedom from headache.
- Most patients will develop longer remission intervals with increasing age.

Pain characteristics (seen in at least 5 attacks)

- Severe or very severe unilateral orbital, supraorbital or temporal pain lasting 15 minutes to 3 hours if untreated
- Occurs 1 to 8 times daily

- Accompanying features:
 - *Ipsilateral:*
 - conjunctival injection and/or lacrimation
 - nasal congestion and/or rhinorrhoea
 - localised forehead and facial sweating
 - constricted pupil and/or ptosis, eyelid oedema
 - Restlessness or agitation
- **Medication overuse headache features**
 - Common and under-diagnosed.
 - Can be caused by all medications used for immediate headache relief, including triptans.
 - Opioids are associated with a particularly high risk of developing medication overuse headache.
 - Consider as a cause in all patients with chronic headaches.
 - Develops in patients with a pre-existing primary headache disorder, usually migraine or tension-type headache.

Features

- Characterised by increased headaches in the context of frequent and excessive intake of medications used for acute headache treatment and usually resolves after the overused medication is ceased.
- Headache present ≥ 15 days per month.
- Regular headache medication use for ≥ 3 months, at least 10 to 15 days per month.
- Other features may include:
 - worse on waking.
 - aggravated by physical exercise.
 - nausea and other gastrointestinal symptoms.
 - restlessness, anxiety, irritability, and poor concentration.

3. Screen for *iatrogenic causes or contributors* and ask about over the counter medication use.

Iatrogenic causes or contributors

- SSRI and SNRI use and abrupt cessation
- Long-acting nitrates
- Dihydropyridine calcium channel-blockers
- Vasodilators (hydralazine, minoxidil)
- Indomethacin
- Trimethoprim-sulfamethoxazole
- Combined oral contraceptive pill
- Steroids
- Phosphodiesterase type 5 inhibitors e.g., sildenafil

4 Suggest using a *headache diary* to identify *triggers*, assess self-medication, and aid diagnosis.

Printable headache diaries

- [Headache Diary: 1 week](#) – useful for recording headache details.
- [Headache Log: 1 month](#) – useful for recording headache patterns.

Triggers

- Dietary triggers e.g., chocolate, cheese, alcohol, caffeine
- Change in habit e.g., missed meal, late night, travel
- Strenuous physical activity (including sexual)
- Changes in the weather

- Bright or flickering light
- Strong odours
- Noise
- Stress, or relaxation after stress
- Interrupted sleep pattern
- Menstruation
- Combined oral contraceptive pill

Most episodes lack an obvious trigger.

5. Perform a **brief neurological examination**, take blood pressure, and check visual acuity.

Brief neurological examination

- Designed by neurologists to exclude sinister causes of headache including brain tumour and haemorrhage.
- Suitable for patients whose history suggests migraine or tension-type headaches. Full neurological exam is recommended for all other patients.

	Examination	Notes
1	Romberg's test	Test is positive if the patient sways or falls with eyes closed and indicates proprioceptive dysfunction. Patients with cerebellar lesions will fall or sway with eyes open or closed.
2	Tandem gait test	Heel-to-toe walking. Tests balance but is non-specific. Difficulty with this task can be due to weakness, poor position sense, vertigo, leg tremors, or a cerebellar lesion. Elderly patients typically have difficulty with tandem gait.
3	Walking on heels	Tests pyramidal tract.
4	Drift of outstretched arms	Tests pyramidal tract.
5	Finger-nose test	Tests coordination.
6	Visual acuity and visual fields to confrontation	
7	Face movements and symmetry	
8	Blood pressure and temperature	
9	Language assessment	An assessment of language observed during history taking (problems with comprehension and word finding difficulty and slurred speech).

6. Arrange investigations:

- FBE
- ESR and CRP especially if aged > 50 years without past headaches (consider [consider giant cell arteritis](#))
- MRI brain (preferred – MBS rebate for unexplained headache with suspected serious pathology) or CT head. Imaging is not usually required unless there are [Worrying features](#) suggesting mass lesion or metastatic disease.

Management

1. If patient identifies as Aboriginal or Torres Strait Islander, understand their **specific cultural and spiritual needs when** discussing and delivering treatment options, including eligibility for [Integrated Team Care \(ITC\) services](#).

Cultural and spiritual considerations for Aboriginal and Torres Strait Islander People

- Offer referral to culturally appropriate social and emotional wellbeing [services](#).
- Consider including an [expert](#) in the multidisciplinary team, to provide culturally appropriate care to Aboriginal and Torres Strait Islander people.
- Provide culturally appropriate information or resources about the signs and symptoms of recurrent disease, secondary prevention, and healthy living.

2. If any **red flags**, refer to [Emergency Department](#) immediately via ambulance because of the likelihood of an underlying **serious secondary cause**.

Red flags

- Sudden onset severe or thunderclap headache, unless consistent with previous migraine headaches
- Severe headache with systemic illness (fever, meningism, altered consciousness, neurological deficit)
- Severe headache that is disabling or associated with recent head trauma
- Headache suggestive of temporal arteritis

Serious secondary cause

Indications of a serious secondary cause of headaches:

Features	Consider
Sudden onset: <ul style="list-style-type: none"> • thunderclap headache • like a blow to the head • peak pain intensity within minutes • often occipital 	Subarachnoid haemorrhage
Made worse by coughing, sneezing, bending, exertion	Mass lesion e.g., tumour or abscess
Previous malignancy	Cancer – especially lung, breast, melanoma
Head injury in the last month	Subdural haemorrhage
Aged > 50 years, especially if no headaches in the past	Giant cell arteritis (GCA)
Fever, drowsy, neck stiffness, rash, recent infections	Meningitis or encephalitis
Speech, limb or facial weakness	Stroke or tumour
Eye symptoms e.g., monocular pain, red eye, visual disturbance, nausea	Acute angle-closure glaucoma

3. For all primary headaches, avoid treatment with opioids, including codeine, due to the risk of medication overuse headaches.
4. Address any patient anxiety about serious pathology. Provide reassurance and education.
5. If chronic headaches, monitor for depression.
6. Establish triggers for avoidance.
7. Screen for and optimise other possible contributing factors e.g., obstructive sleep apnoea, alcohol consumption, bruxism, adequate daily hydration, or optometrist review for refractive error.
8. Manage patients with primary headaches in general practice:

Tension-type headache management

If headaches are **episodic**:

1. Explain and discuss diagnosis, and reassure the patient.
2. Manage any stress, anxiety, or depression.
3. Provide advice on exercise, posture, cognitive behavioural therapy (CBT) and **physiotherapy**.

Tension-type headache physiotherapy

- *Manual therapy*
 - *Treating posture*
 - *Stress treatment (relaxation, breathing)*
4. Consider medication e.g., paracetamol, NSAIDs, or aspirin, but limit to ≤ 2 to 3 days per week due to the risk of medication overuse headache.

If headaches are **chronic**:

1. Explain, reassure, and manage any stress, anxiety, or depression.
2. Consider medication:
 - Tricyclics:
 - Amitriptyline is first choice. Start with a low dose (10 to 25 mg at night) and titrate slowly based on side-effects and response, usually into the range 50 to 75 mg nightly or in divided doses.
 - Nortriptyline 10 to 25 mg, increasing to 50 to 75 mg per day.
 - Mirtazapine 15 mg to 30 mg per day.
 - Venlafaxine 75 mg to 150 mg daily.
 - Selective serotonin reuptake inhibitors (SSRIs) are no more effective than placebo.
3. Monitor for medication overuse headache – common in those using analgesics regularly.
4. Consider heat packs, neck stretches, craniocervical exercises, acupuncture, cognitive behavioural therapy, relaxation therapy.

Migraine management

1. Identify any [triggers](#) although most patients have no obvious triggers.
2. Acute treatment is most effective if taken at the onset of the headache. Consider:
 - **Analgesic with or without antiemetic.** Avoid opiates due to risk of dependency. Opioids are no more effective and carry a risk of medication overuse headache.
 - Analgesic and anti-emetic**
 - Analgesic:*
 - *Ibuprofen 400 mg to 600 mg orally immediately, plus paracetamol 1000 mg orally, or*
 - *Aspirin 900 mg to 1000 mg orally immediately, plus paracetamol 1000 mg orally.*
 - Antiemetic:*
 - *Metoclopramide 10 mg orally immediately. or*
 - *Domperidone 10 mg to 20 mg orally immediately.*
 - "Hit hard" at the onset to avoid prolonged or chronic use of analgesics and risk of medication overuse headache.
 - **Specific anti-migraine medications** if the above does not adequately treat the attacks.
 - Specific anti-migraine treatments**
 - *Triptans:*
 - *Ineffective during aura and most effective when pain is mild or at onset of hypersensitivity.*
 - *20 to 50% of patients who initially respond will have a rebound headache within 48 hours.*
 - *Can be combined with metoclopramide and NSAIDs.*
 - *Repeat after 2 hours if headache recurs, but not if initial dose was ineffective.*
 - *If used > twice a week, there is increasing risk of medication overuse headache.*
 - *Sumatriptan, 50 mg to 100 mg orally at onset, up to maximum 300 mg per 24 hours.*
 - *Rizatriptan 10 mg (tablet or wafer) at onset, up to maximum 30 mg per 24 hours.*
 - *Eletriptan 40 to 80 mg orally, up to maximum 160 mg per 24 hours.*
 - *Naratriptan 2.5 mg orally up to maximum 5 mg per 24 hours.*
 - *Zolmitriptan 2.5 mg tablet at onset, up to a maximum of 5 mg per 24 hours.*
 - *Ergotamine is generally avoided due to side-effects and rebound headaches.*
 - *If nausea or vomiting is present, consider sumatriptan nasal spray.*
3. If significant vomiting and dehydration refer to the [Emergency Department](#) for intravenous fluids and antiemetics.
4. If headache recurs within the same episode, despite initial response, consider **relapse treatment options.**
 - Relapse treatment options**
 - *Repeat previously used analgesics or triptans if these were initially effective.*
 - *Limit use of acute migraine therapy to 2 days per week, due to the risk of medication overuse headache.*

5. Consider **migraine prophylaxis**:

- Consider for recurrent migraine – two or more disabling episodes a month.
- Titrate slowly and trial each medication for 6 to 8 weeks.
- Choice of prophylaxis is individually determined.
- After 6 to 12 months of effective prophylaxis consider gradual withdrawal.
- Ensure medication is available for acute attacks.

Drug	Avoid in	Prefer in
<p>Beta blockers <i>Propranolol – start on low dose e.g., 10 to 40 mg twice a day and slowly increase.</i> <i>Metoprolol may be better tolerated. Start 50 mg at night.</i></p>	<ul style="list-style-type: none"> • Asthma • Diabetes • Bradycardia • Peripheral vascular disease • Co-use rizatriptan 	<ul style="list-style-type: none"> • Co-morbid anxiety
<p>Pizotifen <i>Initially start 0.5 mg daily and increase to 1.5 mg.</i></p>	<p>Side-effects have reduced its use:</p> <ul style="list-style-type: none"> • Drowsiness • Weight gain 	
<p>Tricyclics <i>Amitriptyline up to 50 to 75 mg at night or in divided doses.</i></p>	<ul style="list-style-type: none"> • Angle closure glaucoma • Prostatism 	<ul style="list-style-type: none"> • Co-morbid depression • Co-morbid tension-type headache • Sleep disturbance
<p>Topiramate <i>50 to 100 mg/day</i> <i>Increase by 25 mg every 2 weeks until at target 50 to 100 mg.</i> <i>Check PBS restrictions.</i></p>	<ul style="list-style-type: none"> • Renal stones • Angle closure glaucoma • Pregnancy • Depression • Decreased peripheral vision • Cognitive slowing • Co-use OCP (reduces OCP efficacy at high doses) 	
<p>Sodium Valproate <i>400 to 1000 mg per day</i> <i>Start 200 mg twice a day.</i></p>	<ul style="list-style-type: none"> • Obesity • Liver disease • Women with PCOS • Pregnancy (risk of neural tube defects) – need to warn all women of child-bearing age 	

Other medications:

- Verapamil – some evidence for the effectiveness. Start at 120 mg at night.
- Candesartan
- SNRIs including venlafaxine and duloxetine also have evidence for efficacy and may be considered in patient with co-morbid depression.
- SSRIs – evidence is inconclusive.
- Magnesium, co-enzyme Q10 300 mg, riboflavin 400 mg. There is some evidence for effectiveness.
- Acupuncture is often used for migraine and trials have shown reduction in the severity and frequency of episodes.
- Botox is approved for use by neurologists in some patients with migraine.

6. Specific treatment for particular migraine types:

- **Menstrual migraine**

First try the acute and prophylactic treatments above, then consider:

- Naproxen 500 mg twice daily, given 6 days before until 7 days after menstruation, or
- Peri-menstrual oestrogen for prophylaxis in migraine without aura only:
 - For women who have migraine without aura and who have other indications for using a combined oral contraceptive (COC), give continuous administration of an oestrogen-progesterone oral contraceptive.
 - Recommend that patients take the placebo pills every 3 to 4 months and have a withdrawal bleed. To reduce the risk of triggering a migraine while on the placebo pills, give either 10 to 20 micrograms oral ethinylloestradiol daily, or oral oestradiol (2 mg once daily), or transdermal oestradiol.
 - For women with a natural cycle, who do not need or wish to use a COC, either:
 - Apply a 100 microgram oestrogen patch about 3 days before the anticipated onset of bleeding, and leave in place for 7 days, or
 - Give 2 mg oestradiol valerate daily for 7 days, again starting 3 days before the period.

If these methods of prophylaxis are ineffective, consider [urgent or routine gynaecology referral](#).

- **Combined oral contraceptive pill (COCP) migraine**
 - Migraine can be triggered with COCP.
 - COCP is contraindicated in migraine with aura due to increased risk of stroke.
 - Provide further information from [The Migraine Trust](#).
- **Migraine in pregnancy and breastfeeding**
 - Many women will have improvement in migraine during 2nd and 3rd trimesters.
 - Focus on lifestyle modifications and behavioural treatments during pregnancy and lactation.
 - Ergotamines, sodium valproate, topiramate, and candesartan are contraindicated in pregnancy.
 - Paracetamol can be used throughout pregnancy and breastfeeding.
 - NSAIDs:
 - Avoid after 30 weeks to avoid fetal renal damage and patent ductus.
 - Short-acting e.g., ibuprofen can be used from 13 to 30 weeks, but it is not first-line.
 - There is limited evidence that NSAIDs cause first trimester miscarriage.
 - Metoclopramide can be used in pregnancy and breastfeeding.
 - Large triptan registry studies have not demonstrated statistically significant adverse outcomes on pregnancy or foetal development, but are best avoided in first trimester. Sumatriptan has the largest number of studied exposures.
 - Sumatriptan can be used in breastfeeding.
 - Cyproheptadine is pregnancy category A in TGA database and can be used for acute and preventive treatment.
 - Beta-blockers (except atenolol) and amitriptyline are considered relatively safe options in pregnancy, especially if used in low doses and after first trimester. Beta-blockers need to be tapered off before labour.
 - Liaise with obstetrician prior to starting preventive medications.

Cluster headache management

Acute episode

- Sumatriptan, 20 mg intranasally or 6 mg subcutaneously.
- Intranasal lignocaine on the affected side can provide relief.
- Oxygen 100% for ten to twenty minutes helps some people.
- Analgesics are not effective.
- Oral triptans and ergotamine are not effective.
- Avoid alcohol completely during cluster episodes.

Preventive treatment

- Consider:
 - Verapamil hydrochloride, 120 mg twice daily, increasing to three times per day after two days, then titrate up to 480 mg per day according to effect. A normal ECG should be recorded prior to treatment.
 - Topiramate, gabapentin, and sodium valproate can be used as cluster headache prophylaxis.
- Continue preventive treatment until attacks have ceased for > 1 week.
- Consider bridging treatment with prednisolone (starting at approximately 62.5 mg daily and tapering down over about 2 weeks) until preventive treatment takes effect.

Medication overuse headache management

1. **Education and ongoing support** is essential for successful treatment. The greatest risk of relapse is within the first 12 months.
 - *May need to involve other family members or time off work.*
 - *Reassure that most will improve over time*
2. All analgesic medications need to be stopped for the headache to improve.
 - **Abrupt withdrawal** is the preferred treatment, however opiates and benzodiazepines need gradual withdrawal.
 - **Abrupt withdrawal**
 - *The headache will initially be worse.*
 - *Most patients will experience improvement within 14 days.*
 - See also the [Benzodiazepine Withdrawal](#).
 - *It may take up to six weeks to see an improvement.*
3. If abrupt withdrawal fails, trial prophylactic low-dose tricyclic antidepressants (TCAs) for 4 to 6 weeks, then withdraw medication again e.g:
 - Amitriptyline 10 mg at night increasing to 30 mg over 4 to 6 weeks or,
 - Nortriptyline 10 mg at night increasing to 30 mg.
 - Topiramate is an alternative to TCAs.
4. For a severe withdrawal headache, NSAIDs are the only analgesics recommended for use in the withdrawal period e.g., naproxen 500 mg twice daily for no longer than 2 to 3 weeks.
5. Good hydration may help. Avoid excessive coffee and alcohol intake.

6. Reassess the underlying primary headache after analgesic withdrawal and consider prophylactic medications. These may have been ineffective while on regular analgesics.
7. If no improvement after medication has been stopped for 6 weeks, consider [urgent or routine neurology referral](#).
8. Provide clear advice about future use of analgesics. Aim for ≤ 2 doses per week.

Referral

- If any [red flags](#), refer to [Emergency Department](#) immediately.
- Request [urgent or routine neurology referral](#) if:
 - chronic headache with concerning clinical signs.
 - concerning features on neuroimaging (excluding age appropriate deep white matter hyperintensities).
 - frequent migraine impacting on daily activities despite prophylactic treatment.
 - migraine diagnosis is in doubt.
 - chronic or atypical headache unresponsive to medical management (cluster headache, trigeminal neuralgia, medication overuse headache).
 - acute assessment is not required, but there are indications for further investigation. If [indications](#), request CT head.
- If prophylaxis for menstrual migraine is ineffective, consider [urgent or routine gynaecology referral](#).
- If Aboriginal or Torres Strait Islander patient, offer referral to **specific Aboriginal and Torres Strait Islander services**. For all referrals, to both mainstream and Indigenous services, ensure Indigenous status is clearly marked on the referral.

Referral Options for Aboriginal and Torres Strait Islander people

- For hospital referrals, consider engaging support from the [Aboriginal Hospital Liaison Officers](#).
- For community referrals, consider referral to an Aboriginal Community Controlled Health [service](#).
- For care coordination, support and advocacy throughout treatment, consider referral to [Integrated Team Care Program](#).

Information

For health professionals

Further information

- Australian Family Physician – [Management of chronic headache](#)
- Better Safer Care – [Headache: Assessment](#)
- bpacnz – [Medication Overuse Headache: When the Cure becomes the Cause](#)

For patients

Better Safer Care:

- [Migraine](#)
- [Tension Headache](#)

References

1. Steiner T, MacGregor E, Davies P. [Guidelines for All Healthcare Professionals in the Diagnosis and Management of Migraine, Tension-Type, Cluster and Medication-Overuse Headache](#). [place unknown]: British Association for the Study of Headache; 2010. p. 1-53.

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