Headaches

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We've all had them.
Headaches can be debilitating, and they occur when any of the pain-sensitive structures in the head and neck are stimulated. These include the meninges, blood vessels, nerves, and muscles.

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SESSION OBJECTIVES

- Develop skills in taking a structured history in a patient presenting with a headache
- Define primary and secondary headaches.
- Recognise red flags and able to safety net or refer appropriately.
- Use a case study approach to explore current treatment options and differential diagnosis

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Primary Headaches vs Secondary Headaches

No structural or metabolic abnormality — Structural or metabolic abnormality

Tension Headache

Chronic Daily Headaches

Migraine
With or without aura.

Cough headaches

Cluster headaches
Including hemicrania

Extracranial
Sinus, otitis media, glaucoma, TMJ, muscular

Intracranial
Subarachnoid Haemorrhage, Vasculitis, Meningitis, Tumour

Metabolic Disorders
Carbon dioxide retention or poisoning,

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Primary Care Headache Epidemiology

- Tension Type Headaches range between 50-80% of the population
- Migrain in 6 percent of childen and adult males and rising to 18% in women in puberty. Most common onset in puberty until 4th decade.
- Cluster Headaches more common in men and symptom onset usually between 20-40 yrs of age.
- Chronic Daily Headache _ 10% of consultations and describes a frequent headache on more than 15days a month for 3mnths or more.

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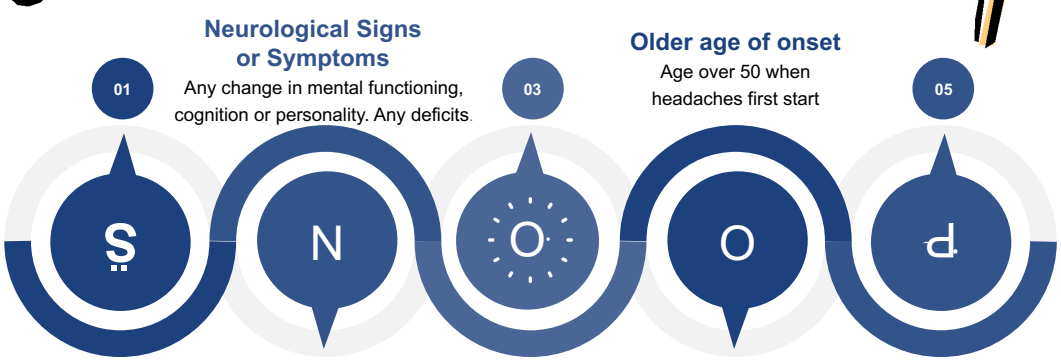
Secondary Headaches

- CVS. : GCA, Aneurysm, TIA, Stroke, Tumour
Respiratory : Due to hypoxia of carbon monoxide poisoning,
- HEENT. : Sinus headaches — due to inflammation and congestion in the sinus cavities
- EYES : Glaucoma, Eye strain, Eye infections
- ABDOMINAL : Dehydration
- SKIN : Shingles
- CNS : Spinal headaches — caused by low volume of pressure of cerebrospinal fluid, possibly due to a leak, a spinal tap, or spinal anesthesia
- MUSCULOSKELETAL : A cervicogenic headache — this is related to an underlying condition of the neck, such as degenerative disc disease. A post-traumatic headache — due to a traumatic event, such as being involved in an accident

RED FLAGS: SNOOP?



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Systematic symptoms: Fever, weight loss, a history of cancer, abnormal blood test results should be observed. This may mean a headache is due to meningitis, cancer or other illness.

Neurological exam: If the neurological exam is normal, then secondary headaches can be ruled out. If you have abnormal speech, abnormal walking, dizziness, or confusion, it may be a secondary reason.

Onset: A sudden onset can indicate a secondary headache due to an aneurysm or a bleed. Onset less than two weeks ago can indicate meningitis. The onset of a headache over 6 months ago can probably be considered a primary headache disorder.

Onset of age: If it comes on before the age of 5 or after the age of 50, secondary headaches can be ruled out. If you are over 50, an MRI may be suggested. People over 50 do not usually develop migraines for the first time.

Progressive: Headaches of this sort worsen over time. Migraine patients can develop secondary headaches due to a tumour or an aneurysm, so it is important to mention this to your doctor if it is the case. This may require that they take a deeper look into your pain.

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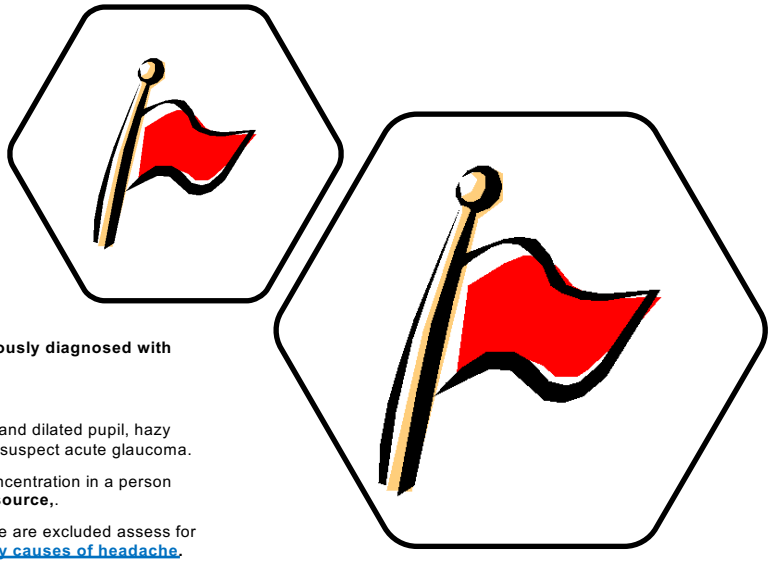
RED FLAGS



- An unexplained headache in anyone **previously diagnosed with cancer**.
- A new-onset of **epileptic seizures**.
- **severe unilateral eye pain,** red eye, fixed and dilated pupil, hazy cornea, or diminished vision. If this occurs, suspect acute glaucoma.
- Is associated with nausea and impaired concentration in a person exposed to a potential **carbon monoxide source,**.
- If symptoms of a serious cause of headache are excluded assess for **medication-overuse and other secondary causes of headache**.

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Assessment of Headaches

- History, history, history (Diary)
- **S**ite
- **O**nset
- **C**haracter
- **R**adiation
- **A**ssociated symptoms
- **T**ime sequence
- **E**xacerbating and relieving
- **S**everity
- **S**tate of health between attacks

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Structured History

- PMH : Medical - JAM THREADS CA
- Surgery - Any recent surgery or hospitalisations
- Gynae - Gravida or Parity. LMP. Gynae problems
- Medication: Over the counter, Prescribed, Street drugs, opiates
- Allergies: Medication, Equipment, Animals, Food
- Hypersensitivities : Is there a pattern of hyper responsive immune system
- Immunisations : Always record vaccination history especially if travels a lot
- Social History. : Occupation, Diet, Exercise, Travel, Family dynamics, home
- Family History : Genogram
- Systems Overview

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Headache History

- **Age of onset** of initial headache symptoms and clinical course of symptoms over time (e.g. headache beginning in adolescence or teenage years such as migraine; new onset headache at over 50 years of age, especially if progressive, may indicate the need to exclude secondary causes such as temporal arteritis, intracranial tumours and, less commonly, cerebrospinal fluid pressure or chronic meningitis).
- **Periodicity** Intermittent,e.g.migraine,TTH;daily,e.g.CH and migraine +/- MOH.
- **Duration** *of headache attacks* Short-lived (seconds/minutes to less than four hours) or prolonged (four hours to days).
- **Diurnal variation** Day and night, e.g. migraine and CH, or purely nocturnal, e.g. hypnic headache; worse on waking, e.g. raised intracranial pressure; headache-free on waking but worsening through the day, e.g. low intracranial pressure.

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Headache History

- **Frequency of the headache** More than or less than 15 days per month.
- **Duration of headache symptoms** Individuals presenting with new onset headache symptoms potentially need closer assessment (NDPH).
- **Headache onset** Sudden vs insidious, tempo and time course, e.g. progressive worsening vs bouts lasting
- days to weeks/months.
- **Additional symptoms** Preceding (premonitory or aura symptoms) or associated non-headache symptomatology, e.g. cranial autonomic symptoms typically in CH,TAC, and, less commonly, migraine (i.e. ptosis, miosis, eye lacrimation, conjunctival injection, nasal blockage, rhinorrhea, and facial oedema).
- **Triggering factors** Valsalva activities (e.g. cough, sneeze, lifting) suggest possible headache related to change in intracranial pressure or structural intracranial posterior fossa pathology.

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If the cause of the headache can not be diagnosed

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consider a diagnosis of tension-type headache or migraine

(common primary causes of headache).

If symptoms of a secondary cause of headache have been excluded

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Case Study

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Tension Type Headache

- Featureless, non-throbbing, generalized headache
- 'Featureless" due to absence of symptoms such as photophonobia, GI symptoms
- Headaches last hours, not often days and improve with simple analgesia.
- Usually not disabling
- General theory that TTH often undiagnosed migraine

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Tension-type headache

- **Diagnose tension-type headache** when there are recurrent episodes of headache, lasting between 30 minutes and 7 days;has at least two of the following characteristics:
- Bilateral.
- Pressing or tightening in character.
- Mild-to-moderate in intensity.
- Not aggravated by routine physical activity.
- Not associated with nausea or vomiting.
- Sometimes associated with photophobia or phonophobia, but not both
- Headache that is not caused by other conditions, such as a pyrexial illness or medication overuse.

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What causes it?

The cause of tension-type headache (TTH) is not fully understood. It has been shown to be associated with the presence of myofascial trigger points, and abnormal central processing of pain (causing increased pain sensitivity)

By definition, TTH is not caused by other conditions such as a pyrexial illness or medication overuse.

TTH may be triggered by stress or other factors, such as sleep disruption

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Management

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Management

- Listen to and address the **person's concerns**
- **Treat headache** with either paracetamol or a non-steroidal anti-inflammatory drug (NSAID).
- Do not treat headache with codeine(opioids). Why?
- NICE guidelines 2020 – 10 session acupuncture over 5-8weeks.
- In women who are **pregnant or breastfeeding:** Paracetamol is the drug of choice.
- Ibuprofen can be used in the first or second trimester, and during breastfeeding, but not to be used during the third trimester.

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episodic severe headaches (commonly but not always unilateral, and often described as throbbing or pulsating), with associated symptoms such as photophobia (sensitivity to light), phonophobia (sensitivity to sound), and nausea and vomiting, **have a normal neurological examinatio**n.

- six main migraine categories (together with a further 17 subcategories):
- The most frequently diagnosed are migraine without aura (previously called common migraine) and migraine with aura (previously called classic migraine, which has a further six subcategories).
- Others are childhood periodic syndromes that are commonly a precursor to migraine (three subcategories), retinal migraine, complications of migraine (five subcategories), and probable migraine (three subcategories

Migraine

MIGRAINE

70% of patient's will experience prodromal symptoms such as fatigue, impaired concentration and neck stiffness 24hrs before the headache.

May reflect activation of dopamine, brainstem-hypothalamic and trigeminocervical neuronal pathways.

MIGRAINE

Foods that potentially aggravate/trigger a migraine

Grapes

Cheeses and Wine

Contain tyramine

Processed meats

Contain nitrates

COFFEE

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Migraine without Aura

- **Diagnose migraine without aura** when there are recurrent episodes of headache, lasting between 4 hours and 3 days, that are characteristically:
- Unilateral.
- Pulsating in character.
- Moderate-to-severe in intensity.
- Aggravated by routine physical activity.
- Associated with either nausea or vomiting, or photophobia and phonophobia, or both.

Migraine with Aura

- **Occurs in 30% of migraine sufferers,**
- **Gradual onset focal neurological signs. Aura tends to last 20-60minutes**
- **Visual most common but may also have transient dysphasia, vertigo and confusion.**
- **Diagnose migraine with aura** migraine is preceded by the onset of an aura consisting of **visual** or **sensory** symptoms or **dysphasia**. Symptoms develop gradually and are fully reversed within 1 hour.
- Visual symptoms include flickering lights, spots, lines, loss of vision, shimmering or zigzags. Tends to be binocular.
- Loss of vision - scotomota.
- Sensory symptoms include pins and needles, or numbness.
- Risk factor for a stroke.

- *** Aura without headache not uncommon in 40s and 50s. Distinguish from TIAS which are shorter than auras and tend to have more negative symptoms.

BRAINSTEM WITH AURA
Diagnostic Criteria

A

At least 2 attacks fulfilling criteria B-D

B

Aura

Consisting of visual, sensory and//or speech/language symptoms, each fully reversible, but no motor or retinal symptoms

C

Brainstem Criteria

Dysarthria
Vertigo
Tinnitus
Hypacusis
Diplopia
Ataxia
Decreases **LOC**

D

2 of the 4

1. 1 aura symptoms over 5min and or >2 symptoms in succession.
2. Each aura 5-60min
3. Unilateral aura symptom
4. headache follows 60minutes after aura

E. Not accounted for by another ICHD – 3 diagnosis, and TIA has been excluded

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Assessment

- The quality of attacks — the intensity and site of pain, whether the pain spreads, and associated symptoms.
- The timing and frequency of attacks — when the attacks started and the reason for the consultation now, how often attacks occur and whether there is any temporal pattern, and how long attacks last.
- The possible causes of attacks — suspected triggers, predisposing factors, and familial history.
- Relieving factors — the person's activity during attacks, use of over-the-counter medication.
- Other factors — what is the person's general health like between attacks, what level of anxiety and concern do attacks cause, is there more than one type of headache present?

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MIGRAINE IN WOMEN

Migraines 2-3 times more common in men than women

14% during first 3 days of menstrual cycle

10 times increase in risk in women on OCP

Improvement in migraine during pregnancy

Decreases in 2/3rd of women after menopause

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SEVERITY LEVELS

MILD – Patient is aware of a headache but can continue daily routine with minimal alteration

MODERATE – headache inhibits daily activities but is not incapacitating

SEVERE – Headache is incapacitating

STATUS – Severe headache that has lasted more than 72hrs

Treatment

Simple analgesia is recommended for the first three attacks of migraine

- Advise the person to lie down in a quiet darkened room (if this is possible and it helps), and take oral analgesia as soon as pain (or a sensation of impending pain) develops:
- Paracetamol or aspirin, both available in soluble forms, are suitable first-line analgesics, and are available over-the-counter (OTC).
- Ibuprofen is a suitable nonsteroidal anti-inflammatory drug (NSAID), and is available OTC. Tolfenamic acid, naproxen, and diclofenac can be prescribed.
- An oral anti-emetic, such as prochlorperazine, domperidone, or metoclopramide.
- Codeine, either alone or in combination products (e.g. co-codamol, Migraleve®, Nurofen Plus®), or other opioids (such as dihydrocodeine, morphine, and pethidine), should be avoided.

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Second-line treatment

- Consider prescribing a triptan if first-line treatment has proved ineffective (e.g. on three independent attacks of migraine, taking over-the-counter treatment into account). There is little to guide choice in the triptan-naive person:
- Oral sumatriptan (50 mg or 100 mg) is suitable for most people. Zolmitriptan, naratriptan, rizatriptan, eletriptan, almotriptan, and frovatriptan are alternatives. Contraindicated in pregnancy, Cerebrovascular disease
- If vomiting restricts oral treatment, consider a non-oral formulation (e.g. zolmitriptan nasal spray or subcutaneous sumatriptan).
- Oral ergotamine is not recommended.

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PROPHYLAXIS

Anti epileptics such as topiramate, gabapentin and valproic acid

Beta blockers such as propranolol

Tricyclic anti depressants such as amitryptilline

Oestrogen containing contraceptives are an absolute contraindication in women with aura as it increases risk of stroke

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Treatment in pregnancy or breastfeeding

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When should I refer a person with migraine?

Case Study

Cluster headache

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Cluster Headache

One of the most severe headaches, also known as a suicide headache.

Usually in men

Occur in clusters, every day for 8-10 weeks /year then not the rest of the year

Occur in ‘cluster bouts’ lasting weeks to months before remission (4-12 weeks).

Excrutiating stabbing like pain behind the eye

Shorter attack duration than migraine.

Agitation in Cluster Headache compared to migraine preference to avoid movement.

Ipsilateral cranial autonomic symptoms.

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Diagnostic Criteria for Cluster Headache

Severe unilateral, periorbital, supraorbital and/or temporal pain lasting 15–180 minutes if untreated.

Attack frequency up to eight per day.

With at least **one** of the following ipsilateral autonomic symptoms:

• conjunctival injection +/or lacrimation; • nasal congestion +/or rhinorrhoea;

• eyelid oedema;

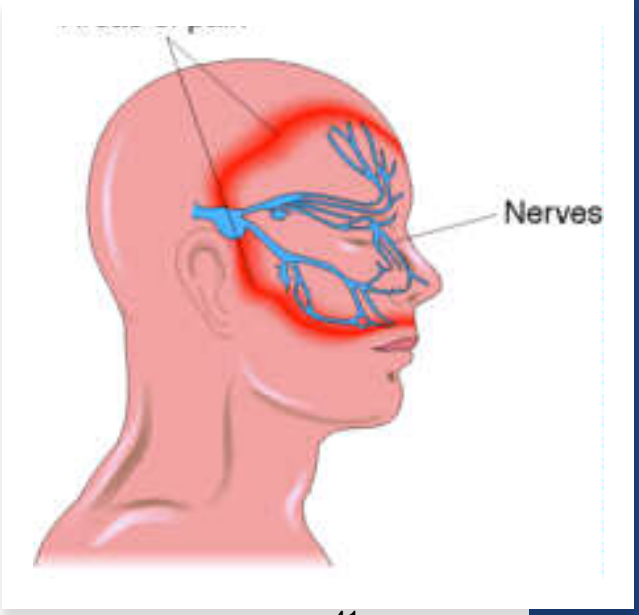
• forehead and facial sweating;

• miosis +/or ptosis;

• a sense of restlessness or agitation during headache

Cluster Headache- Cause

- The cause -not known.
- ?vasodilatation of blood vessels compresses surrounding tissues or obstructs venous outflow of the cavernous sinus.
- **During a cluster period, an attack can be triggered very quickly** by drinking alcohol, breathing in fumes from volatile substances, or being in a warm environment
- **Rarely, cluster headache develops secondary to pituitary adenomas** and other space-occupying lesions



Managing suspected cluster headache

- **100% oxygen therapy 10-12l with non rebreather mask**
- **CCB Verapamil**
  https://pn.bmj.com/content/practneurol/19/6/521.full.pdf
- **triptan to be taken when required for treatment of acute attacks** (Subcutaneous sumatriptan 6 mg/ Sumatriptan 20 mg nasal spray or zolmitriptan 5 mg nasal spray)
- **Advise the person to avoid drinking alcohol or inhaling volatile fumes from substances such as solvents or oil based products,** as these may trigger an attack during an active period of cluster headaches.
- Other treatments include topiramate, lithium or corticosteroids.
- **Patient information and support Urgently referred by GP (GP could consider a trial of indometacin to exclude paroxysmal hemicrania**

https://pn.bmj.com/content/19/6/521

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Case Study

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Hemicrania

- Rare condition
- Responds completely to indomethacin
- Affects women more than men, often in middle life
- Continuous unilateral daily headache with ipsilateral autonomic symptoms.

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Hemicrania continua

moderate-intensity headache with severe exacerbations
Associated with at least one ipsilateral autonomic feature, other than facial sweating or eyelid oedema.
Unremitting, and has lasted for more than 3 months.
Completely responsive to therapeutic doses of indomethacin
***No pain free periods

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Paroxysmal hemicrania

- **Paroxysmal Hemicrania**

- Vascular type headache characterised by short bouts of severe unilateral pain in the orbit and temple.
- Affects females in their 30s.
- Triggering of attacks with rotational head movements on 10% of cases
- Autonomic symptoms

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Diagnostic criteria

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SUNCT SYNDROME

Exceptionally rare condition

Has lacrimation and conjunctival injection

Pain is maximal in ophthalmic branch compared to mandibular or maxillary divisions of trigeminal nerve.

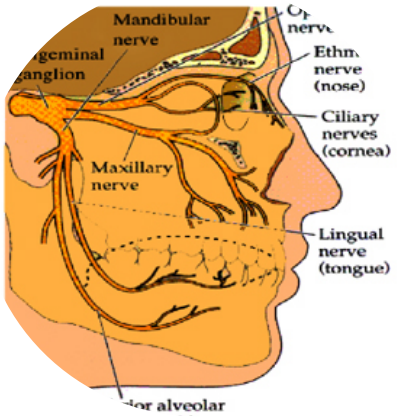
Similar to TN can be triggered by chewing, the cold, cleaning teeth.

Recurrent triggering compared to trigeminal neuralgias.

Trigeminal neuralgia

- Episodic unilateral facial pain (in areas supplied by one or more divisions of the trigeminal nerve), lasting a few sec to 2 min
- Tic Douloureux

- it is sharp, stabbing, intense in character, and triggered by a trivial stimulus, such as light touch.
- It usually affects the cheek and chin.
- If Bilateral consider multiple sclerosis or a brainstem tumour



Trigeminal Neuralgia – Diagnostic criteria

A	**Paroxysmal attacks of facial or frontal pain which lasts a few seconds to < 2 minutes**
B	**Pain has at least 4 of the following characteristics:**
	• **Distribution along one or more divisions of the trigeminal nerve**
	• **Sudden intense, sharp, superficial, stabbing or burning pain in quality**
	• **Pain intensity severe**
	• **Precipitation from trigger areas, or by certain daily activities such as eating, talking, washing or shaving the face or cleaning the teeth.**
	• **Between paroxysms the patient is entirely symptomatic**
C	**No neurological deficits**
D	**Attacks are stereotyped in the individual patient**
E	**Exclusion of other causes of facial pain by history, physical examination and special investigations**

Trigeminal Neuralgia - Treatment

- Carbemazepine increased slowly to reach a blood level that will control the pain without inducing giddiness and ataxia.
- Relief with Tegretol diagnostic
- Blood tests required 3-6 monthly as causes leukopenia (decreased white cells).hyponataemia
- Baclofen and lamotrigine for those not responding to carbemazepine.
- Gabapentin if patient also has MS
- If continues , alcohol or glycerol injections may be used
- Surgical microvascular decompression of nerve is the last option

HYPNIC HEADACHE

Rare condition called alarm clock headaches.

Occurs during sleep and wakes the individual.

More common in women over age 50.

Lasts 15min – 2hrs. Multiple attacks can occur at night.

Nausea

No daytime attacks.

May requires imaging. Consider verapamil 60mg or caffeine 60mg at night or Lithium

Case Study

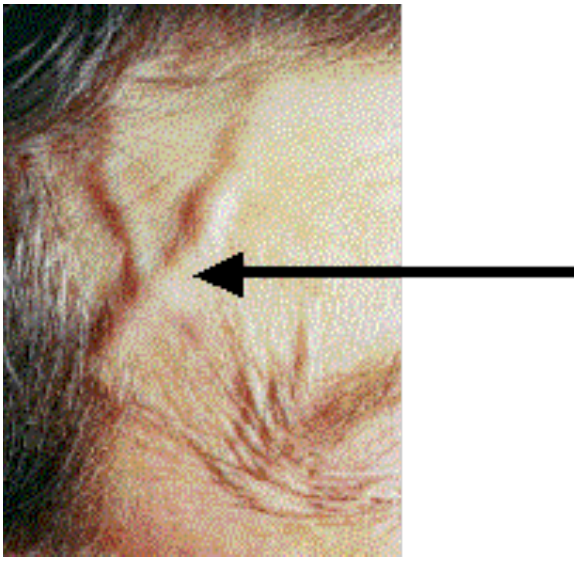
Think SNOOP

- What are your differentials?
- Which tests would you order?
- What are your next steps?
- Any red flags?

Giant Cell (or temporal) Arteritis

- Rare as it is a preventable cause of blindness as ophthalmic artery affected.

- age over 55 years
- F:M ratio is 2:1
- Pain mostly temporal
- polymyalgia,
- fatigue,
- weight loss,
- depressed mood,
- temporal artery thickening causing diminished or absent pulse on palpation



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IDIOPATHIC INTRACRANIAL HYPERTENSION

Headache

Tend to eb young obese women

Tetracycline AND VITAMIN A TOXICITIY

orL CONTRACEPTIVE SUE

LP Iis diagnostic Treatment with azetozolamide

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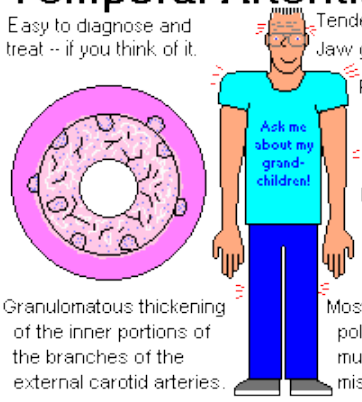
Temporal Arteritis

Easy to diagnose and treat -- if you think of it.

Tender temporal arteries
Jaw gets tired chewing.



Physical exam and labs are otherwise nonrevealing.

Easily mistaken for "tension headaches" -- until one or both eyes suddenly go blind.

Granulomatous thickening of the inner portions of the branches of the external carotid arteries.

Most patients also have polymyalgia rheumatica, muscle aches easily mistaken for "rheumatism."

Tip: These patients have high sed rates!

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Giant Cell (or temporal) arteritis

MEDICATION OVERUSE HEADACHES

Need to stop abruptly rather than gradually.

Stop for at least one month

Advise that symptoms will worsen in short term with associated withdrawal symptoms.

Provide close follow up and support according to their needs.

Specialist referral may be needed for opiate withdrawal.

Review 4-6 weeks after withdrawal of medication

- Blood pressure
- Note the malignant HTN with altered

mental status- do not treat with antihypertensives

- Neurological defects: balance, weakness, gait, cranial nerves
- Visual acuity
- Cognitive function
- Papilloedema
- Temporal artery tenderness

EXAMINATION

- Cranial Nerve Exam
- Reflexes S1+2, L3+4, C5-8
- Power, Strength and Sensation in upper and lower limbs
- Blood Pressure and Pulse
- Temperature
- MMSE
- Cognitive Function

- *** I would recommend watching the following videos.

Investigations

- Blood Tests
- MRI
- CT Scan

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CASE STUDY

- A 28-year-old woman, gravida 4, para 3, at 35 weeks' gestation comes to the emergency department because of a "really bad headache" The headache began this morning and is diffuse. It is aggravated by physical exertion and bright light. She feels nauseous but has not vomite.
- T: 37.2°C
- P:90/min, and blood pressure
- is 128/70 mm Hg
- . Physical examination shows no abnormalities. Which of the following is the most appropriate pharmacological treatment

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CASE STUDY

A 27-year-old woman comes to the clinic with a headache

. Medical and family history is noncontributory. Her vitals are within normal limits. She exhibits phonophobia

and photophobia

and endorses nausea

. Prior to arrival she took 325 mg of a drug which is a combination of caffeine

, acetaminophen

, and aspirin

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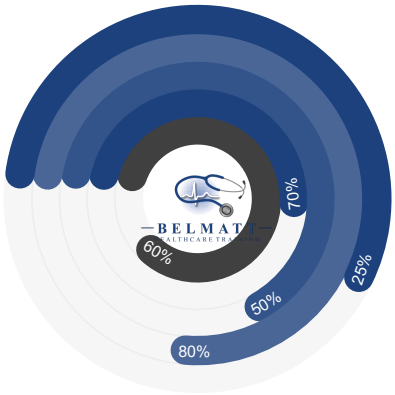
KEY POINTS

HISTORY TAKING
Primary headaches diagnosed according to duration and frequency hence accurate history taking with headache diaries important..

MIGRAINE
Most common episodic headache seen in GP consultations. Often misdiagnosed.

TENSION TYPE HEADACHE
Tends to be featureless based on absence of symptoms.



CHRONIC DAILY HEADACHE
Not a diagnosis and a cause must be found. Consider analgesia overuse.

SNOOP
Should be used to determine if invx needed to exclude serious secondary headache disorders

CRANIAL AUTONOMIC SYMPTOMS
Highlight a specific subgroup of headache disorders that require specific symptoms..

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SNOOP 10

Systemic symptoms including fever

Neoplasm history

Neurologic deficit

Onset : Sudden or abrupt onset

Older age (onset after 65 years)

- pattern change or recent onset of new headache
- positional headache
- precipitated by sneezing, coughing, or exercise;
- Papilledema
- progressive headache and atypical presentations
- pregnancy or puerperium
- painful eye with autonomic features
- posttraumatic onset of headache
- pathology of the immune system such as HIV
- painkiller overuse or new drug at onset of headache

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of information

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