



# My Head is Killing Me



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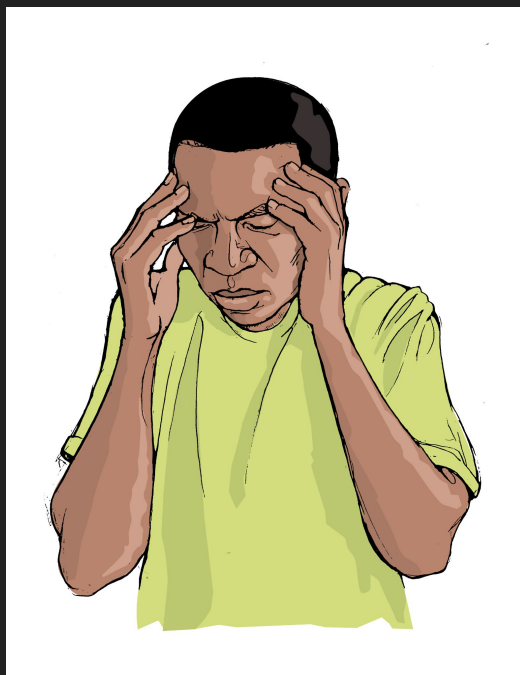
## Disclosure

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## Goals

- Understand the pathophysiology of headaches
- Recognize different types of headaches
- Recognize high risk features of headaches

What is your differential for headache?



# Primary vs Secondary Headaches

## Primary:

Tension

Cluster

Migraine

## Secondary:

Trauma

Infection

Vascular

ICP

Toxicity

## Assessment

History

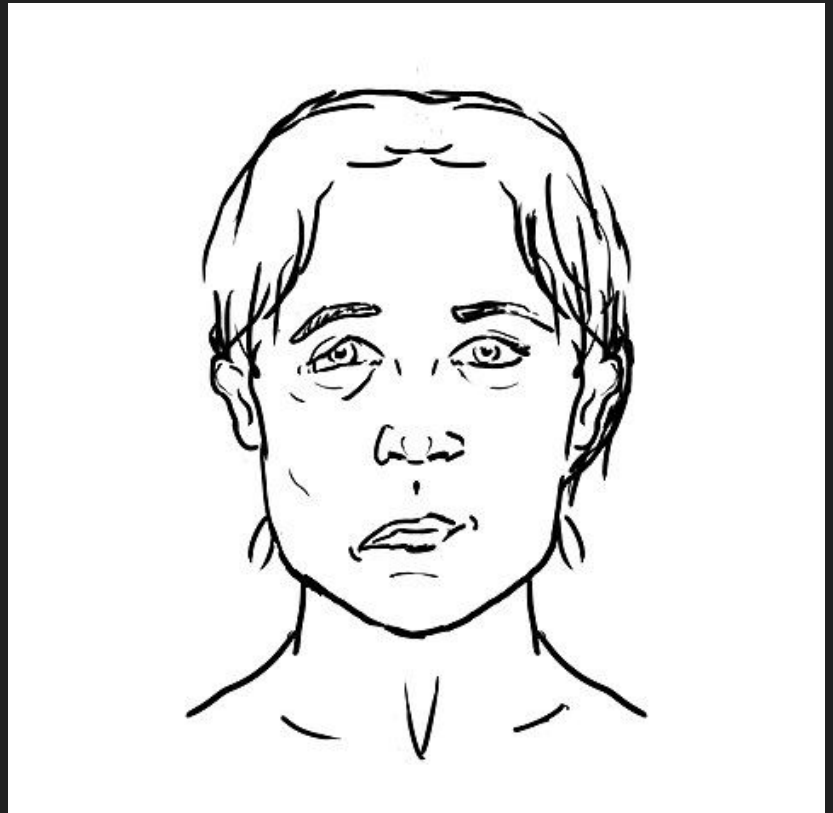
Vitals

Neuro exam

-Cincinnati/LAMS

-Walk them if possible

-Finger to nose



# Treatment

Oxygen

Fluids

Pain meds

\*Avoid Opiates\*

-Acetaminophen or low dose ketamine are ideal

Antiemetics

Fluids

# Tension Headache

Most common type of headache

“Band like pain”



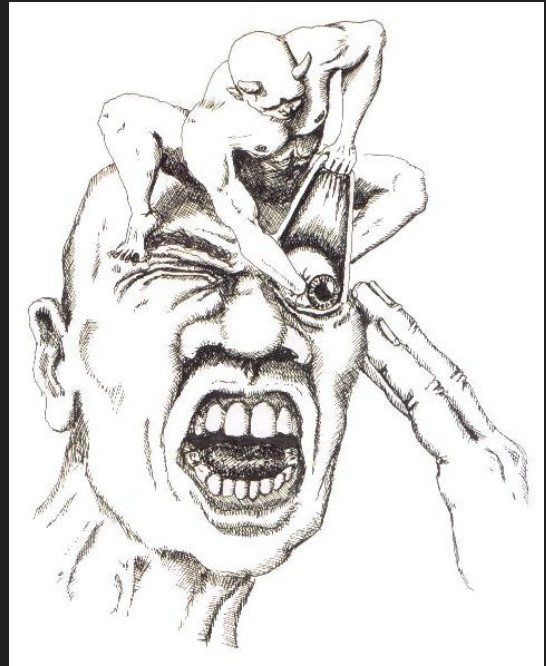
# Cluster Headache

More common in men and smokers

Attacks come in clusters

Pressure behind one eye +/- tearing

Tx is O<sub>2</sub>



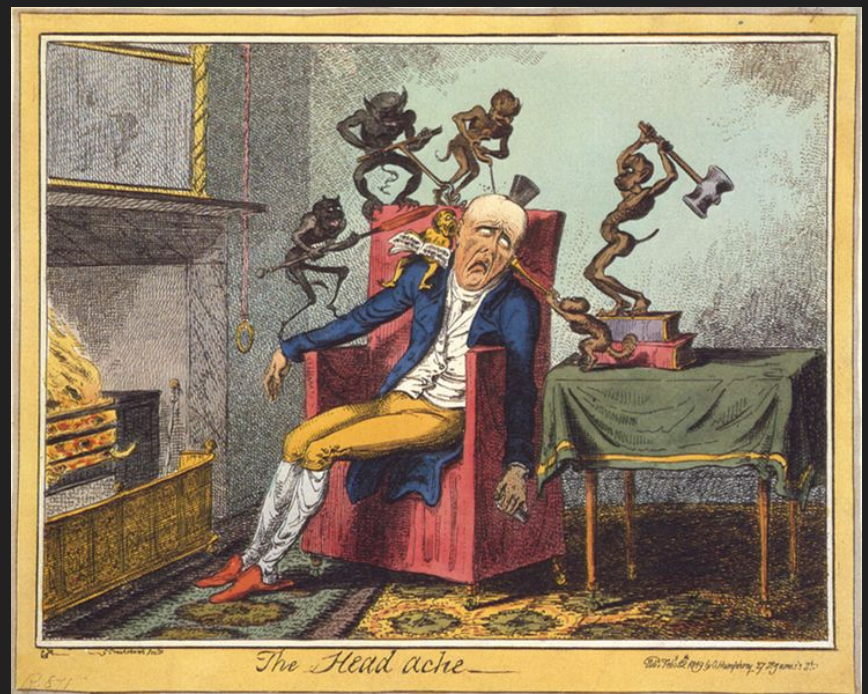
# Migraine

1 in 8 Americans

Aura

Nausea/vomiting

Photophobia



# Traumatic Causes of Headache



## Concussion

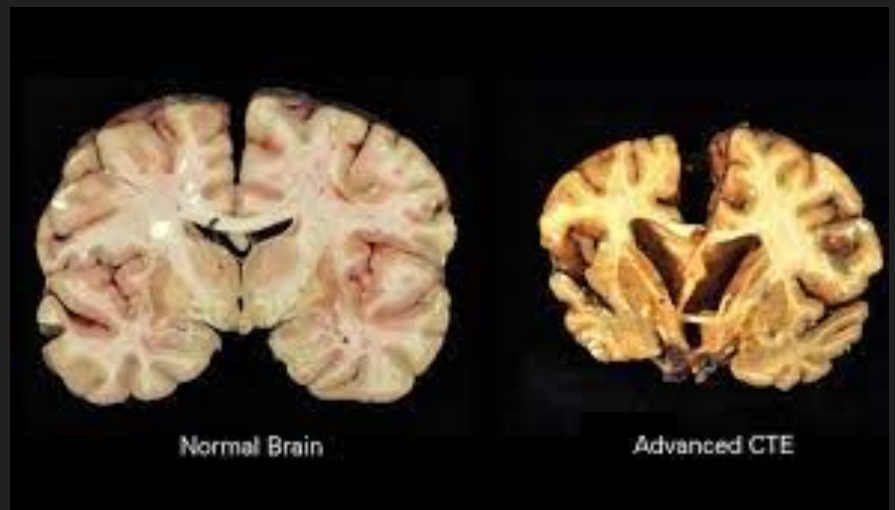
Blow to head

Confusion

Headache

Nausea/Vomiting

Post-concussive symptoms  
can last for weeks



## Subdural hematoma

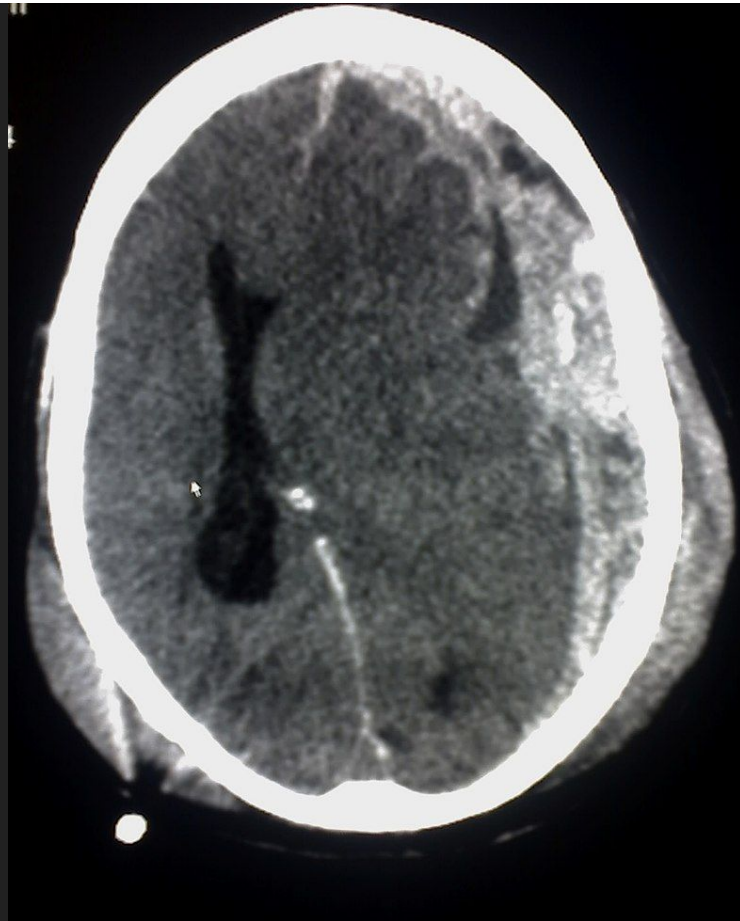
Venous injury

-Advanced age

-Alcoholism

-Anticoagulation

Can accumulate slowly



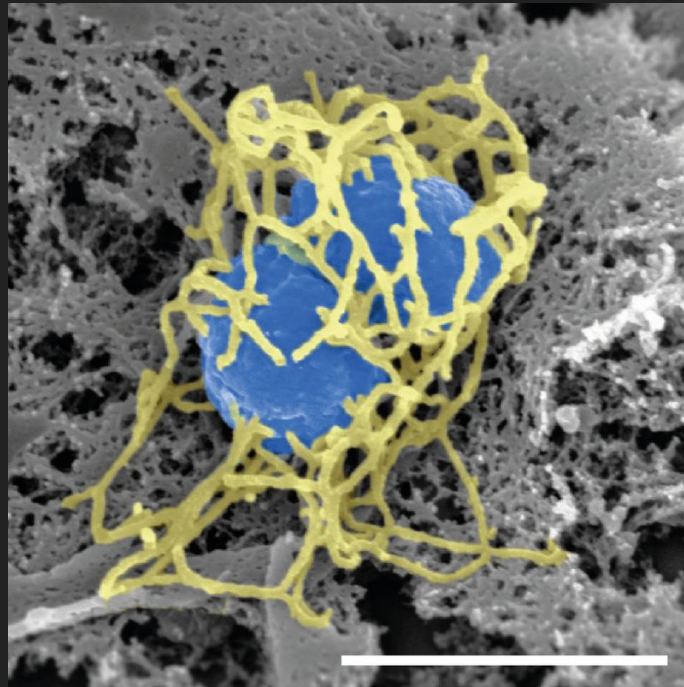
## Traumatic Subarachnoid

Venous shear injury

Blood collects in the sulci



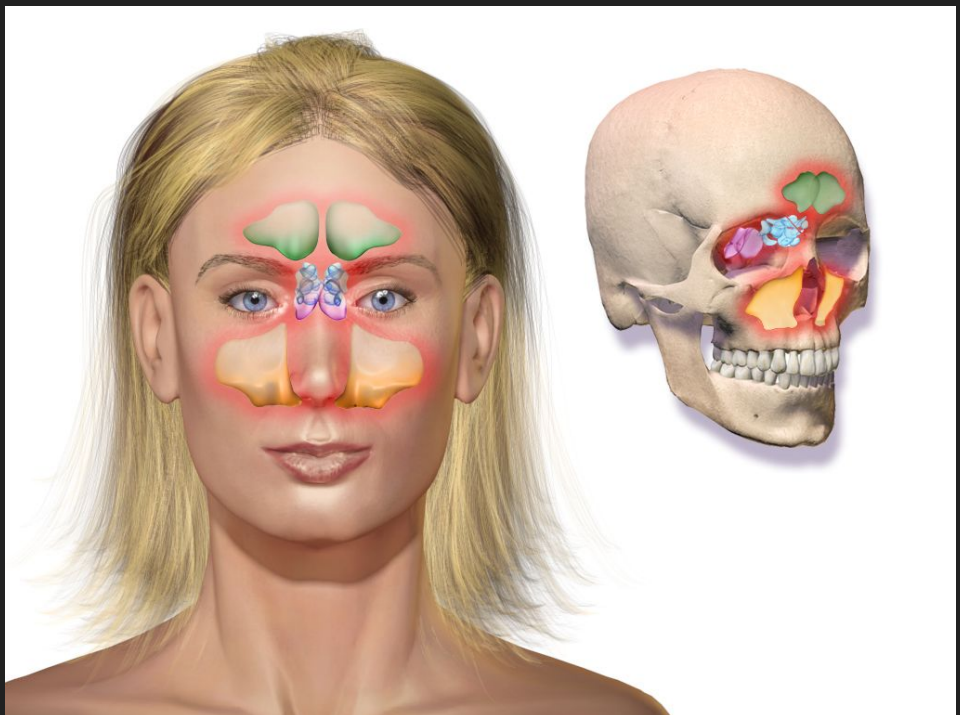
# Infectious Causes of Headache



## Sinusitis

Pressure in sinuses,  
congestion

Associated with allergies, cold  
symptoms





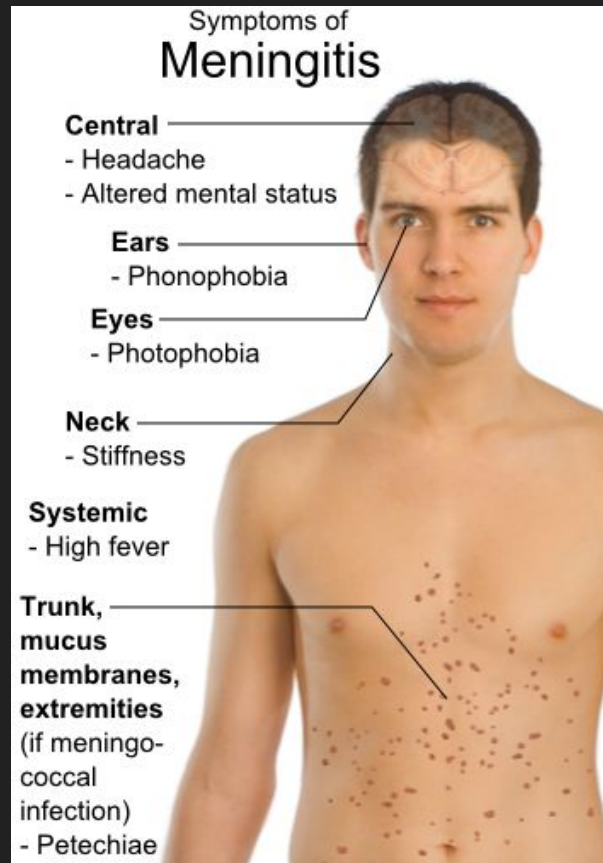
# Meningitis

Can be viral, bacterial or fungal

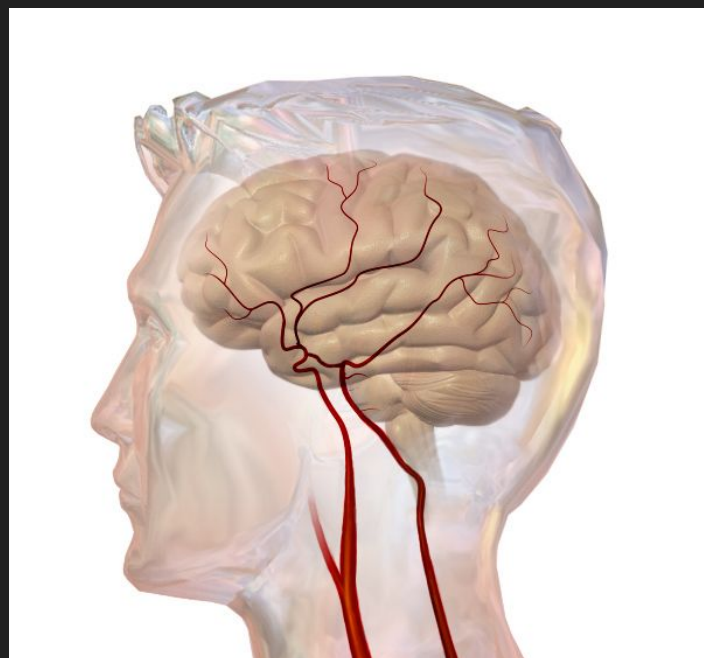
Bacterial form is highly contagious

Headache +fever/rash= **\*PPE\***

Can progress to septic shock, seizures



# Vascular Causes of Headache



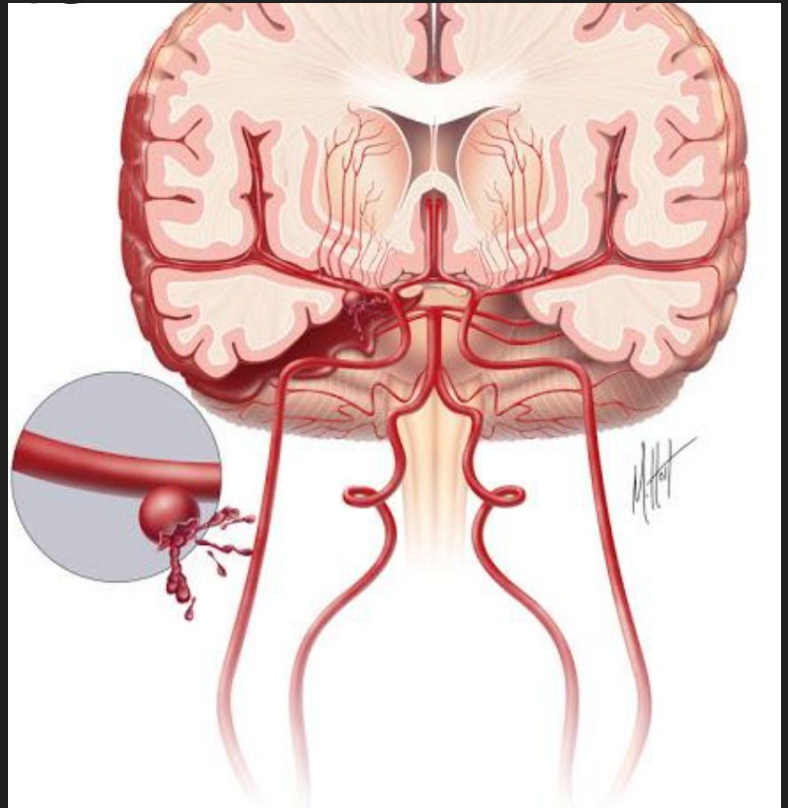
## Spontaneous Subarachnoid

Worst headache of my life

Can lead to seizures, stroke symptoms

Usually young

Mortality approaches 40%



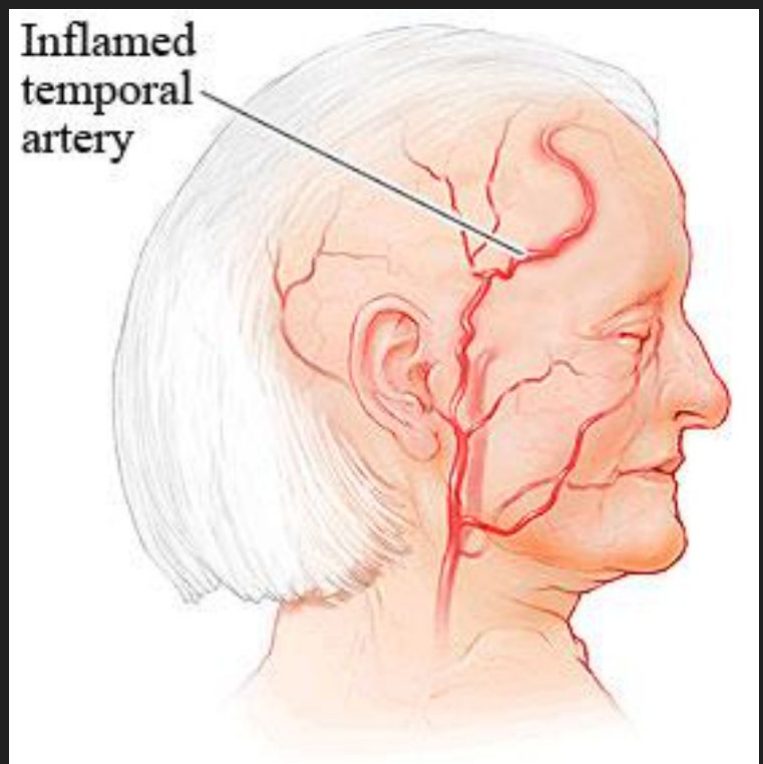
## Temporal Arteritis

Inflammation of the Temporal Artery

Pain with chewing

Blurred vision

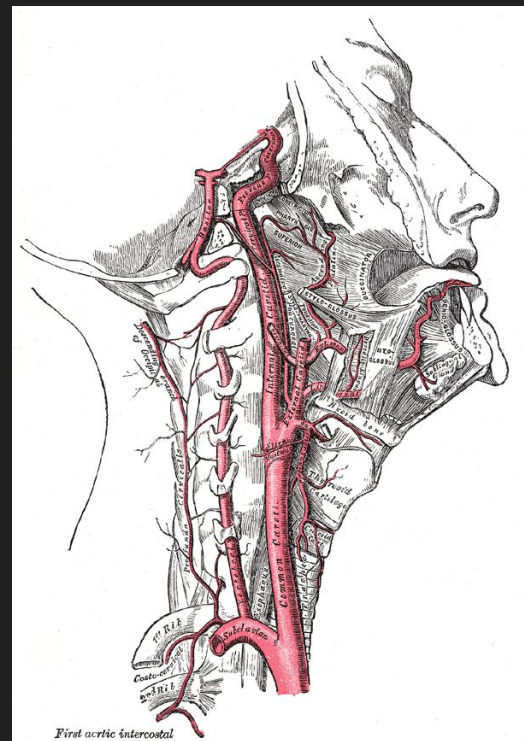
Tenderness to palpation



# Carotid Artery Dissection

Symptoms: Headache, neck pain, vision changes, stroke symptoms.

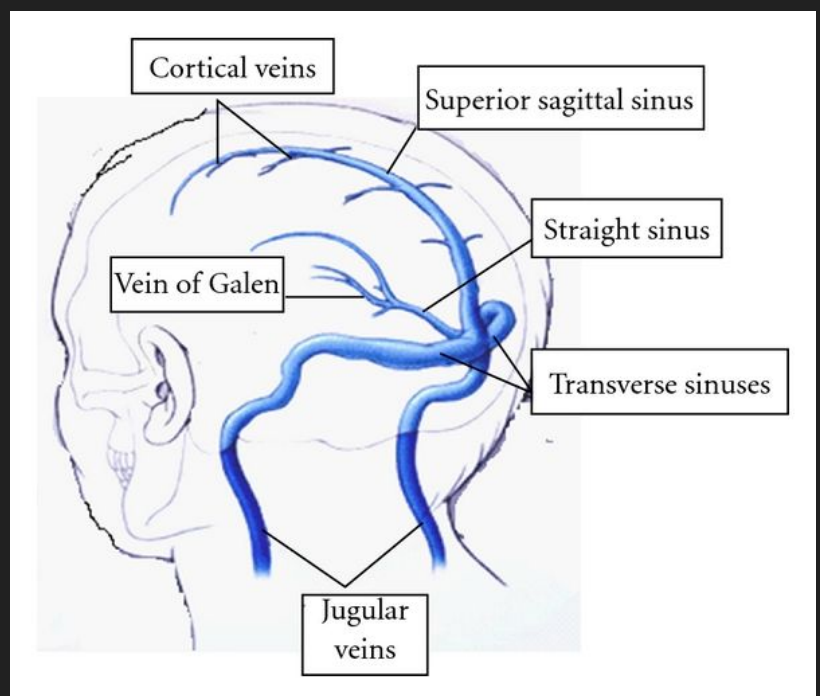
Causes: Chiropractic manipulation, sports injuries, motor vehicle collisions, strangulation



# Dural Venous Sinus Thrombosis

Symptoms: Headache, vision changes, stroke symptoms

Risk factors: Clotting disorder, hormones, infections, trauma.



## Intracranial Pressure



## Tumors

Mass Effect

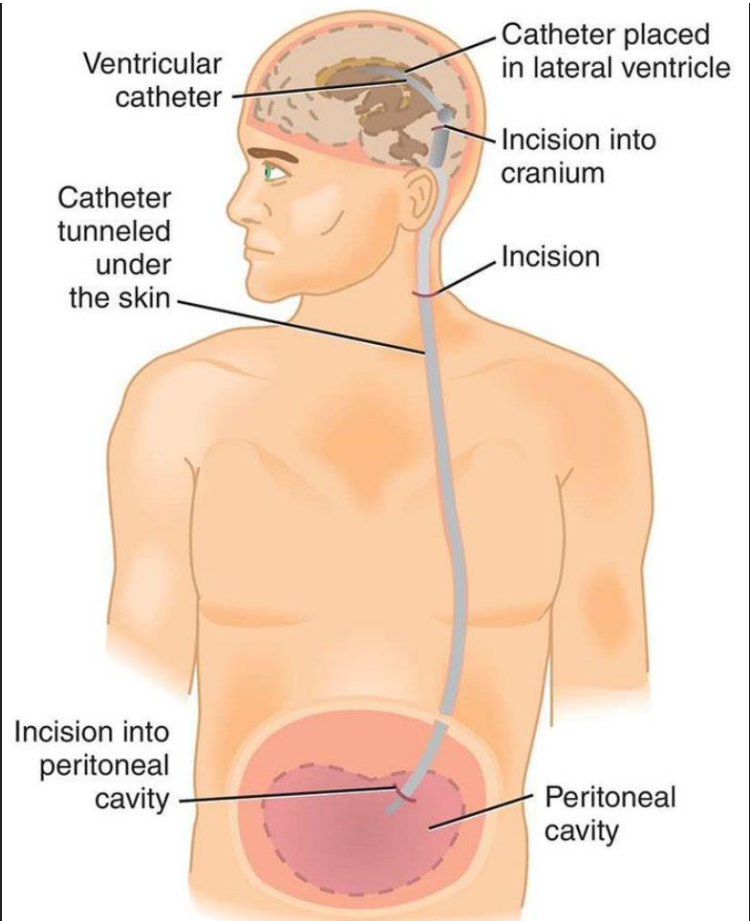
Most brain tumors are mets from elsewhere



# VP Shunt

Shunt can become clogged due to hardware issue or infection

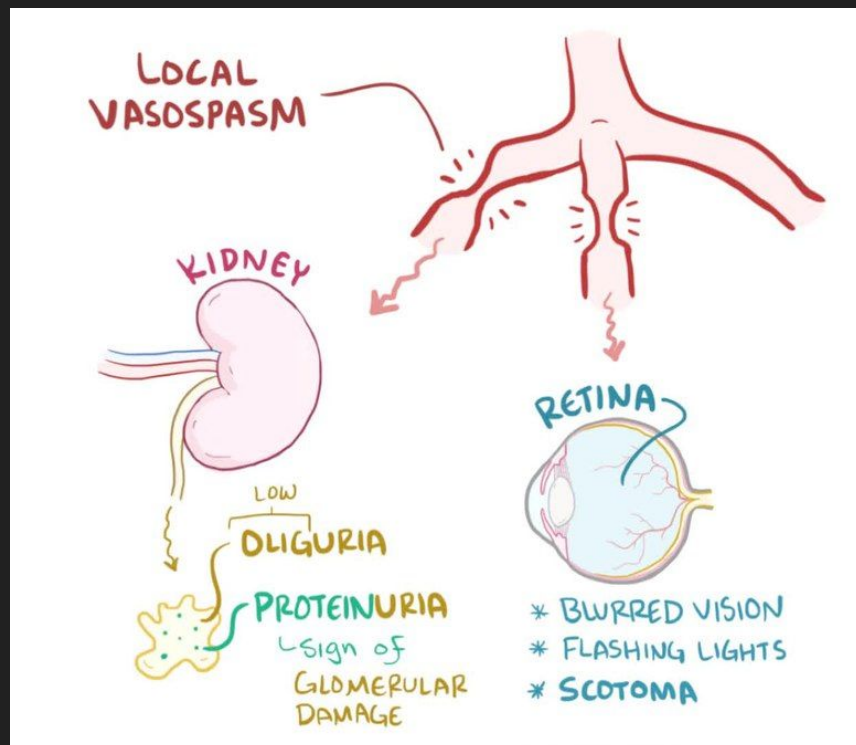
Overdrainage can also cause headache



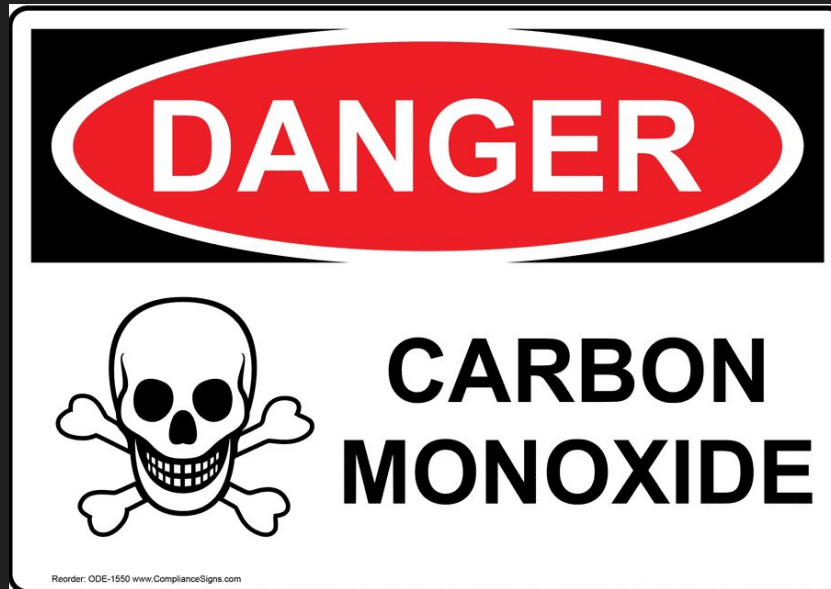
# Preeclampsia

Hypertension is ALWAYS AN EMERGENCY in a pregnant patient.

Patients are at risk up to 12 weeks post-partum.



Two or more people at the same place with headaches?



## Primary vs Secondary Headaches

### Primary:

Tension

Cluster

Migraine

### Secondary:

Trauma

Infection

Vascular

ICP

Toxicity

# Headache Red Flags

Thunderclap

Fever, Rash or LOC

Meningeal signs

New headache in pt with HIV or cancer

New or different aura

New onset headache in patients <10 or >50

Recent head trauma

Blood thinners



## References and Further Reading

Jarvis JL, Johnson B, Crowe RP. Out-of-hospital assessment and treatment of adults with atraumatic headache. *Journal of the American College of Emergency Physicians Open*. 2020;1(1):17-23. doi:[10.1002/emp2.12006](https://doi.org/10.1002/emp2.12006)

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