Elizabeth Hartman, MD
Associate Professor UNMC
Department of Neurological Sciences
General and Headache Neurology
Division Chief
Neurology Clinic Director
UCNS Headache Medicine certified

Migraine in Women

Olson Center for Women's Health and
UNMC College of Nursing
2025 Webinar Series
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Migraine in Women

- Why do women get migraine?
- How do we diagnose migraine?
- Migraine and health
- Migraine treatments

Migraine in Women

- **Why do women get migraine?**
- How do we diagnose migraine?
- Migraine and health
- Migraine treatments

Why do women get migraine?

- Neurological disorder of central brain processing/hyperexcitability
  - Hyperexcitability threshold lower in females

- Hormonal fluctuations can impact migraine

- 12% of the population has migraine
  - 25 million in USA
  - 2-7% with chronic migraine (more than 15 headaches/month)

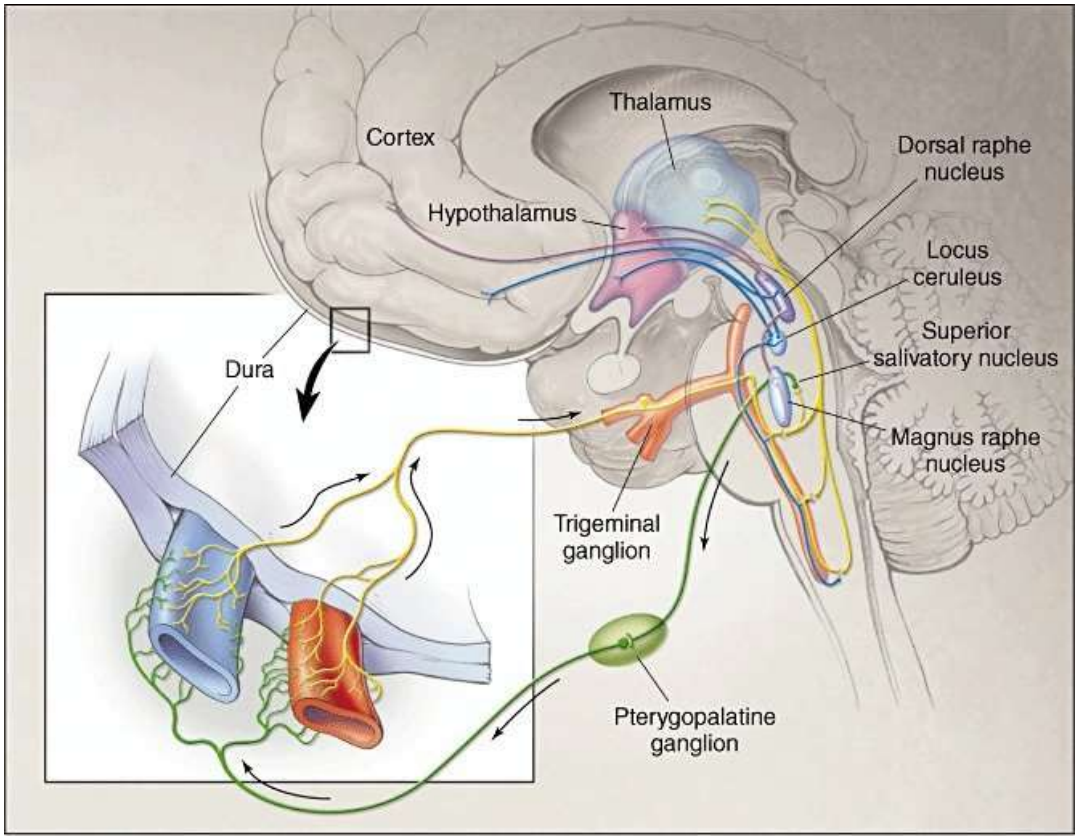
- Migraine impacts females more commonly than males (18% vs 6%)
  - Second leading cause of global disability overall
  - First cause of disability in young women DALYs (daily adjusted life years)

Migraine

- Strongly hereditary
  - Family history not always present
  - May be triggered by trauma
- More than “just a headache”
- May be associated with additional neurological symptoms
  - Aura
  - Hemiplegic
  - Vestibular
  - Brainstem

Migraine

- Central hyperexcitability
  - Cortical spreading depression
- Trigeminovascular system (brainstem nucleus)
  - Input from Trigeminal nerve
  - Output to thalamus, cortex and other brainstem nuclei
- Hypothalamus
  - Prodromal symptoms



- Increased blood levels of CGRP (calcitonin gene-related peptide), PACAP, VIP during migraine

Migraine

- We can’t change a migraine brain, but we can help manage it

- Somethings do get better with age!
  - Migraine improves for most women, especially post-menopause

Migraine in Women

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- **How do we diagnose migraine?**
- Migraine and health
- Migraine treatments

Migraine diagnosis

- Headache lasting 4-72 hours untreated with at least 2 of the following:
  - Unilateral
  - Pulsating quality
  - Moderate to severe intensity
  - Aggravated by or avoidance of routine physical activity

- And associated with either:
  -photophobia and phonophobia
  or nausea

- At least 5 attacks

Migraine

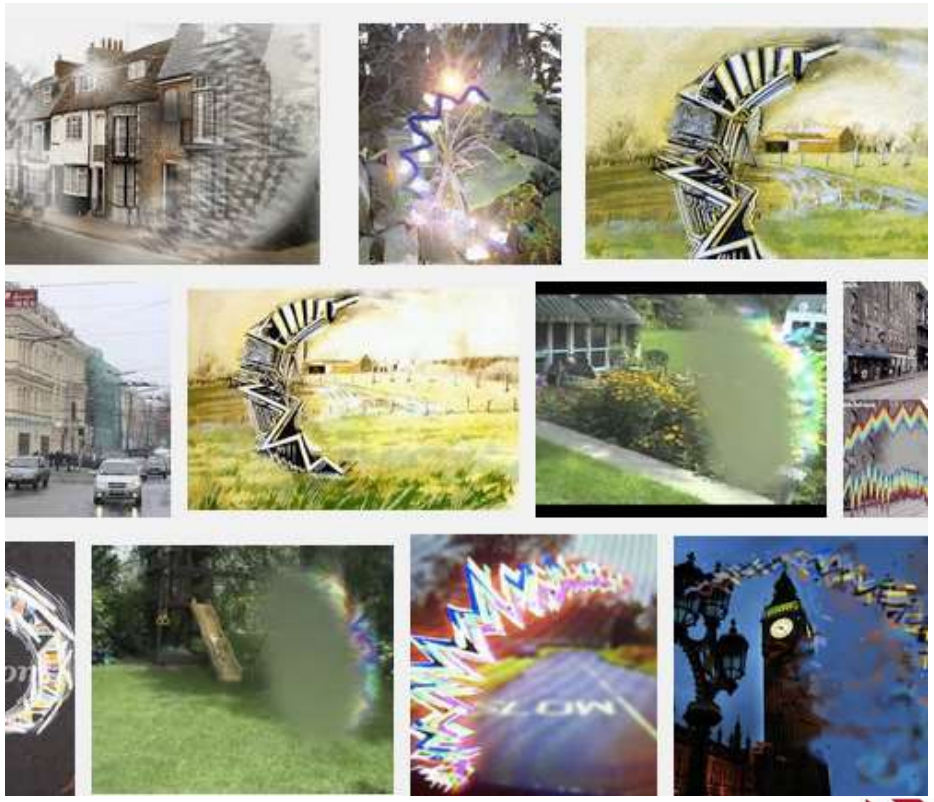
- May have prodrome 1-2 days prior to headache
  - Yawning, fatigue, poor concentration
  - Neck pain
  - Food cravings, nausea
  - Light or sound sensitivity

- 33% have aura
  - 90% visual (scintillating scotoma, fortification spectrum)
  - May be isolated, occur before or during headache
  - 5-60 minutes

- May have postdrome
  - Fatigue, elated or depressed mood for up to 48hrs

Migraine symptoms

- Aura (visual, sensory, language)
- Hemiplegic migraine
- Vestibular migraine
- Brainstem aura
- Visual snow syndrome
- Primary stabbing headache



Tension type headache vs Migraine

- Tension type headache is the most common headache type
  - Usually mild and self limited
  - May have associated photophobia OR phonophobia (not both)
  - Does not worsen with or limit routine activity

- Can have both tension type and migraine headaches

Migraine Diagnosis

- Clinical diagnosis
- Chronic migraine if more than 15 headache days per month (8 or more migraines)
- Do NOT need neuroimaging to diagnose
  - obtain if red flags to rule out a secondary cause

Red Flags

If present, then evaluation with physician is indicated to ensure no serious medical problem such as stroke, brain aneurysm or tumor

- Focal neurological symptoms or signs — Impairments in speech, vision, balance, sensation or strength
- New onset over age 50
- Sudden, severe onset headache or significant change in headache character or severity, especially rapidly increasing frequency
- History of cancer
- Tobacco history
- Headache awakening from sleep or worse with Valsalva

Migraine in Women

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- **Migraine and health**
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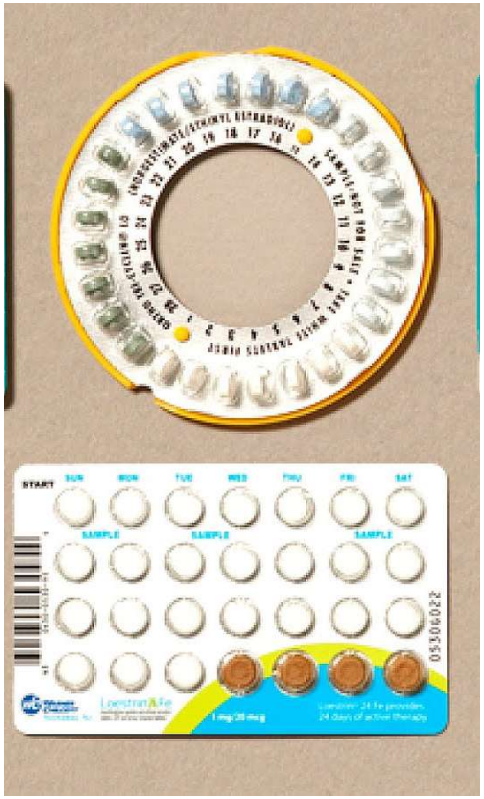
Migraine and Health

Women with migraine with aura have increased risks:

- Stroke
- Hypertensive disorders of pregnancy
  - including eclampsia
- Atrial fibrillation

Evaluate risk:benefit of estrogen containing oral contraceptive pill or hormone replacement therapy in women with migraine with aura

- Continuous OCP may reduce menstrual migraines
- Avoid if prior history of blood clots
- Caution of tobacco use
- Caution if 2 or more vascular risk factors



Migraine and Health

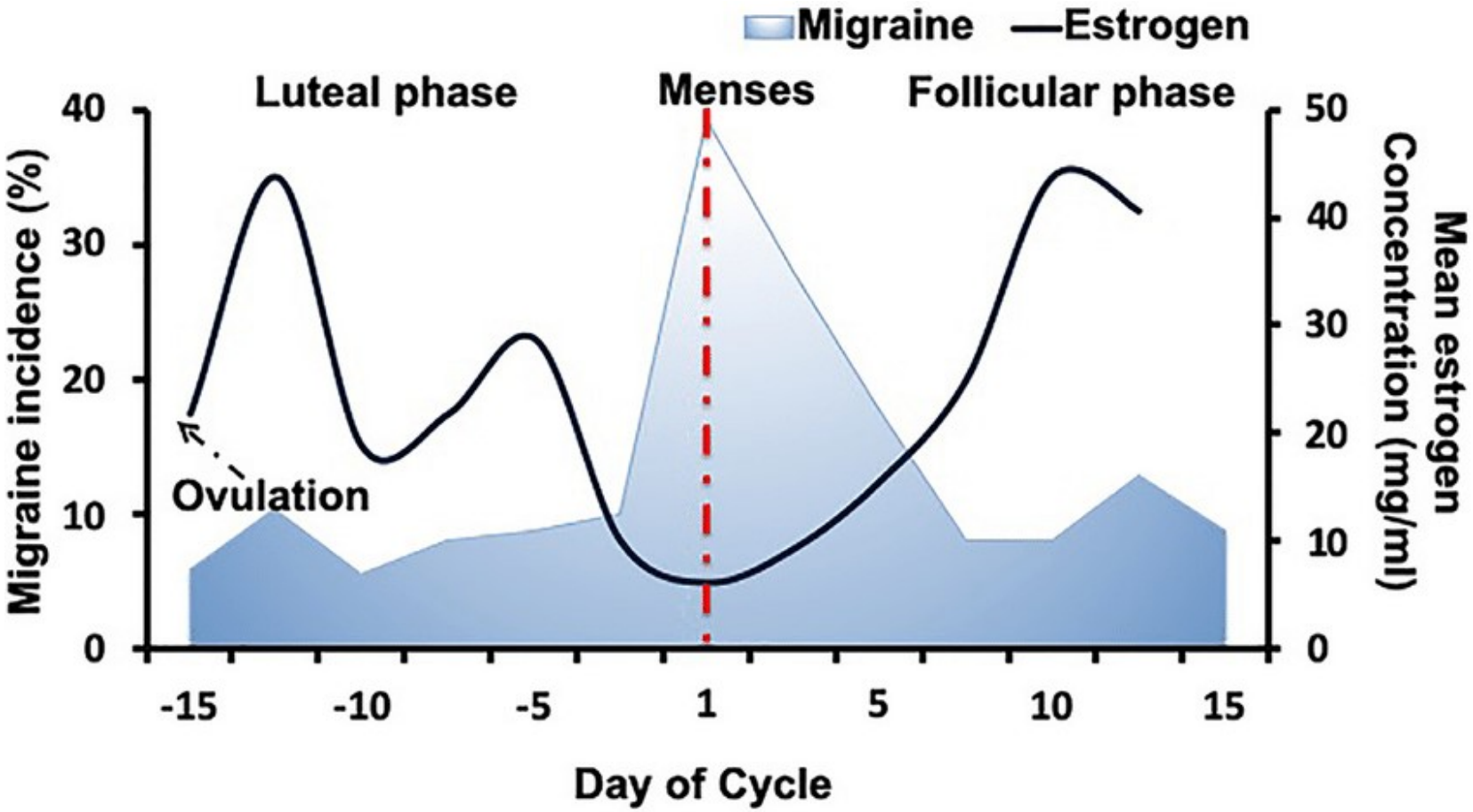
- Medical issues may worsen migraine
  - Insomnia or Obstructive sleep apnea
  - Hypertension
  - Bruxism or TMJ issues
  - Thyroid disease
  - Stress, depression or anxiety
  - Obesity, inactivity
  - Perimenopause (estrogen fluctuations)
  - Allergies, sinusitis or dental disease
  - Neck tension/degenerative changes
  - Fibromyalgia, chronic pain, hypermobility
  - Nutritional deficiencies (Vitamin B12)

Migraine and Menses

- Pure menstrual migraine
  - Migraine occurring within only 2 days prior to and after start of menses
  - At least 2 out of 3 menstrual cycles
  - Migraine does NOT occur at other times of cycle

- Menstrually related migraine
  - Migraine occurring within 2 days prior to and after start of menses
  - At least 2 out of 3 menstrual cycles
  - Migraine also occurs at other times of cycle

Menstrual Migraine



Migraine and Pregnancy

- For most women, migraine improves during pregnancy especially after 2nd trimester
  - Migraine with aura is less likely to improve
- Important to monitor blood pressure during pregnancy
- Continue to treat migraine during pregnancy
  - Health mother = healthy infant
  - Avoid some medications

Migraine and Menopause

- Migraine pattern and/or frequency often changes during peri-menopause
- Significant hormonal and menstrual fluctuations
- For most women, migraine improves during menopause (>12 months from last menses)
- Aura may change
  - Important to consider TIA/stroke evaluation especially if vascular risk factors

Migraine in Women

- Why do women get migraine?
- How do we diagnose migraine?
- Migraine and health
- **Migraine treatments**

Treatment

Evaluate for triggers

Inadequate sleep

Dehydration

Prolonged fasting

Excess caffeine or other stimulants such as nicotine

Menses, perimenopause

Medications (vasodilators such as nitroglycerin)

Barometric pressure changes/weather

Screens/bright lights

Medical problems

Canadian Migraine Tracker

Headache diary can be helpful

Treatment

- Regular medical check ups for general health
  - Screening for hypertension, mood, sleep issues, etc

- Keep eye exam up to date
  - Eye strain can be a trigger
  - FL-41 tint may help with screen/light sensitivity

- Keep dental exam up to date

Treatment

- Not all triggers are avoidable
- Many migraines do not have a clear trigger
- Migraine is not someone's fault (it is a brain problem)
- Every individual with migraine should have an effective acute/rescue treatment
- Individuals with frequent (4 or more days per month) and/or disabling migraines should be offered preventive/prophylactic treatment

Nutraceutical Treatments

- Magnesium, Riboflavin (B2)
- CoQ-10
- Feverfew*
- Butterbur*
- Ginger (for nausea)
- Relatively rare food triggers
  - Processed foods, high salt, preservatives, artificial sweeteners, gluten, dairy
  - Alcohol
  - Low tyramine diet can be helpful to some
  - Avoid prolonged fasting or dehydration

- Physical activity/exercise

*NOT safe with pregnancy/breastfeeding

Acute/Rescue treatments

- OTC: Acetaminophen, ibuprofen and/or aspirin, acetaminophen, caffeine

- Triptans (suma-, riza-, ele-, zolmi-, frova-, nara-, almotriptan)
  - Most likely to be effective. PO, nasal and injection formulations
  - Avoid if stroke, coronary artery disease or uncontrolled hypertension
  - Safe during pregnancy

- Gepants (ubroge-, rime- and zavegepant)
  - May have less side effects than triptan
  - No risk with stroke or coronary artery disease history

- Ditan (lasmiditan)
  - Sedation, avoid driving 8 hours after taking

Status migrainosus treatments

- Hydration (oral liquids and/or IV NS)
- NSAID or steroid (ketorolac, methylprednisolone or dexamethasone)
- Anti-emetic (promethazine, prochlorperazine, metoclopramine, ondansetron)
- Anti-histamine (diphenhydramine, hydrozyzine)

- Magnesium
- Valproic acid (must have negative pregnancy test if childbearing potential)
- DHE

- Nerve blocks and/or trigger point injections
- Sphenopalatine ganglion (SPG) block

Avoid opioids and butalbital products

Preventive/Prophylactic treatments

- Goal to improve migraine frequency by at least 50%
- Most take time to work, should give 2-3 month trial unless side effects
- Many can be helpful for co-morbid symptoms such as insomnia, anxiety, tremor and/or neck tension
- Be mindful of potential pregnancy and/or lactation plans for safety
- Help avoid Medication Overuse Headache

Medication	Typical Dose(s)	Common Side effects	Pregnancy	Other
Anti-hypertensive				
propranolol	10-120mg daily/BID	tiredness, lightheadedness	+/-	may help anxiety or tremor
verapamil	120-360mg daily		+	
candesartan	4-16mg daily	lightheadedness,	--	
lisinopril	5-40mg daily	cough/angioedema	--	
Anti-seizure				
topiramate	25-300mg daily/BID	tingling, weight loss	--	negative cognitive or mood, kidney stones
gabapentin	100-3600mg/day	tiredness, weight gain	+/-	may help body pain
valproic acid	250-1000mg/day	tremor, weight gain, liver injury	--	high risk of fetal malformations
TCA/SNRI				
ami/nortriptyline	10-50mg bedtime	tiredness, dry mouth	+/-	palpitations
venlafaxine	37.5-150mg morning	nausea	+/-	withdrawal symptoms when stop
CGRP				
Ajovy	subcut monthly	local injection reaction	--	
Emgality	subcut monthly	local injection reaction	--	
Aimovig	subcut monthly	local injection reaction, constipation	--	elevated blood pressure
Qulipta	30-90 mg daily	nausea, constipation	-	fatigue, weight loss
Nurtec ODT	75mg QOD	nausea, constipation	-	
Vyepti	100-300mg IV q3m	infusion reaction	--	
Injection				
BOTOX	150-200 units IM q12wk	transient weakness	+	

Headache Treatment in Pregnancy

Safe

- Acetaminophen
- Sumatriptan
- Metoclopramide (PO, IV)
- Diphenhydramine (PO, IV)
- Magnesium sulfate (PO, IV)
  - (infant bony abnormality risk with high dose IV longterm)
- Opioids
- Amitriptyline
- Verapamil
- OnabotulinumtoxinA
  - Does not cross placenta

Not Safe

- Valproate
  - 15% risk of fetal malformations including neural tube deficits
- Topiramate
  - cleft lip/palate

- NSAIDs (1/3rd trimester)
- Beta blockers (3rd trimester)
- SNRIs (insufficient data)
- CGRP inhibitors (not studied)

Migraine devices

- External trigeminal nerve stimulation (Cefaly)
- Non-invasive vagus nerve stimulation (gammaCore)
- Remote electrical neuromodulation (Nerivio)
- Single pulse transcranial magnetic stimulation (sTMS mini, SAVI dual)
- Trigeminal and occipital neuromodulation (Relivion)

- Transcutaneous electrical nerve stimulation (TENS unit)
- Caloric vestibular stimulator
- Inner ear pressure stimulation (Zok)

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Learning Objectives

- Describe the impact that migraine has on women.
- Identify symptoms of migraine.
- Discuss common migraine treatments.

Questions?

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Thank you!

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