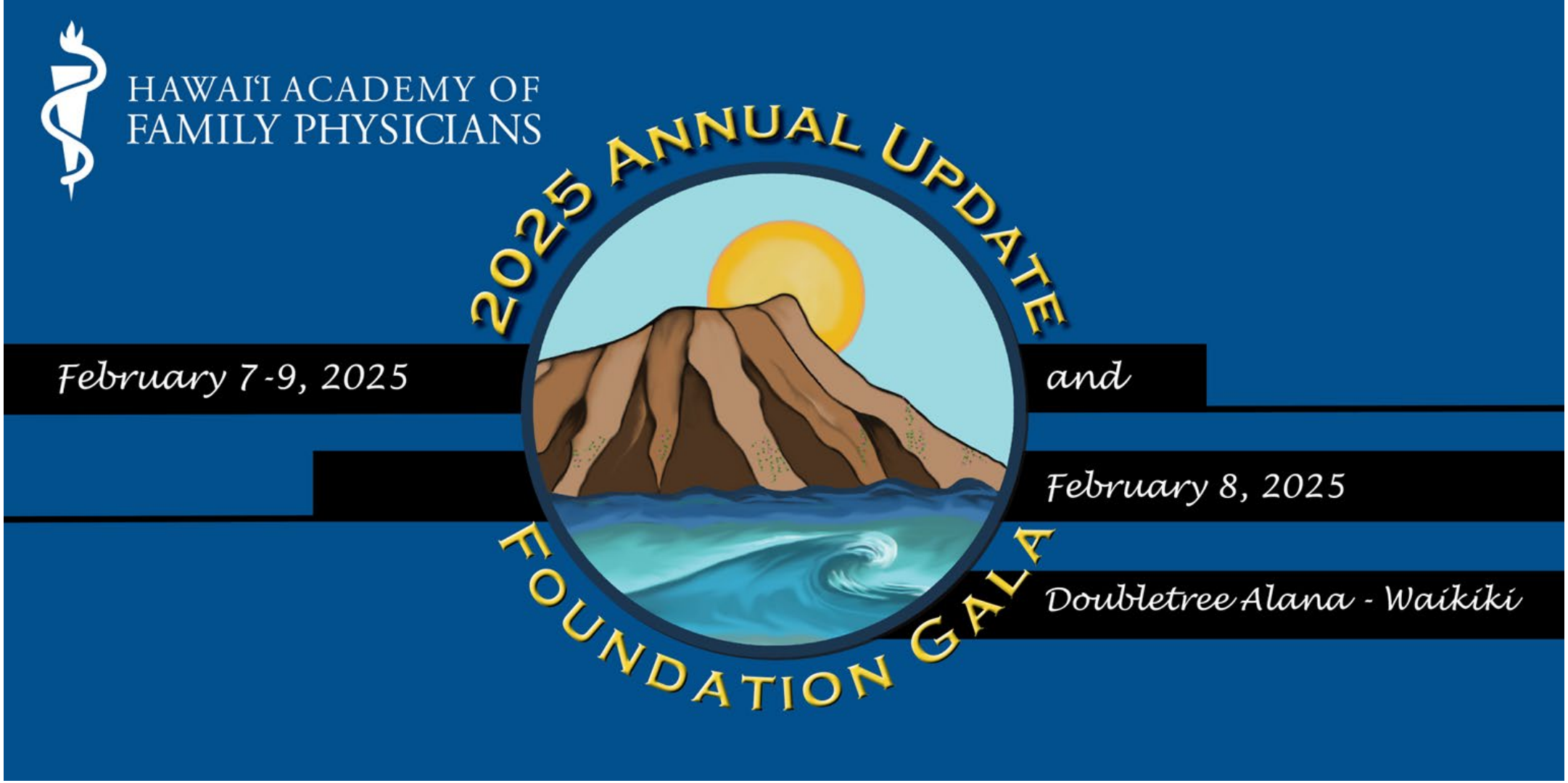
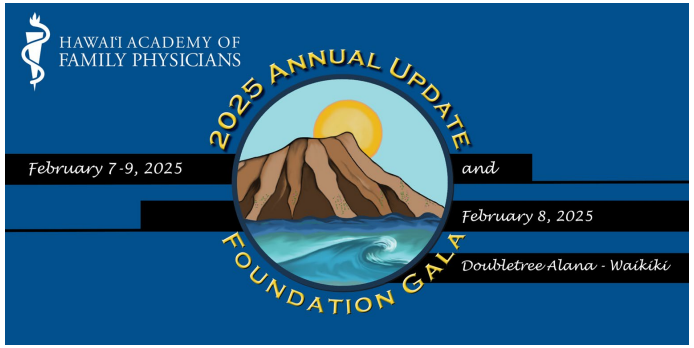


Common Pregnancy Complaints & Management

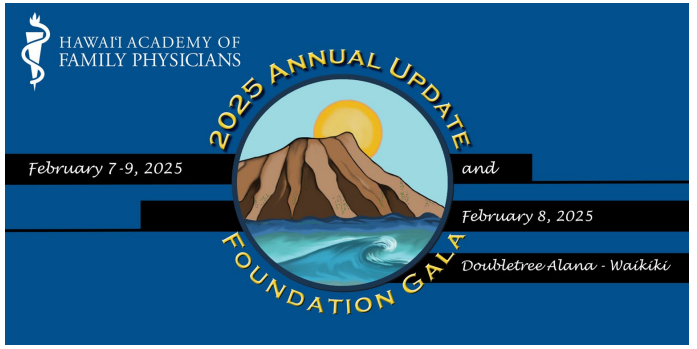
Patty Tran, DO
Komal Soin, MD, MPH



DISCLOSURE

We don’t have any financial disclosures.

Learning objectives

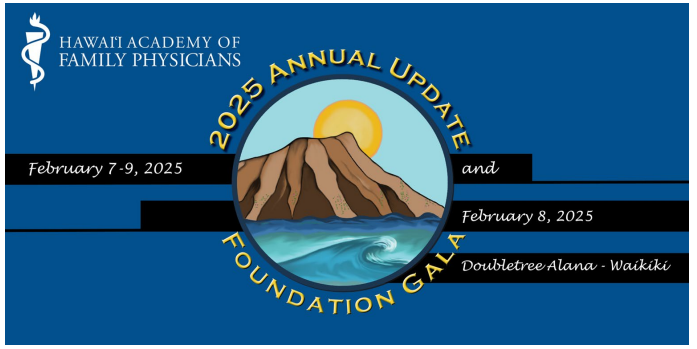


1. Identify the most common complaints experienced during pregnancy
2. Explore lifestyle and nutritional approaches that can help alleviate pregnancy symptoms
3. Apply evidence-based practices to effectively manage common pregnancy complaints

FIRST TRIMESTER

- Morning sickness
- 1st trimester bleeding
- Dietary recommendations

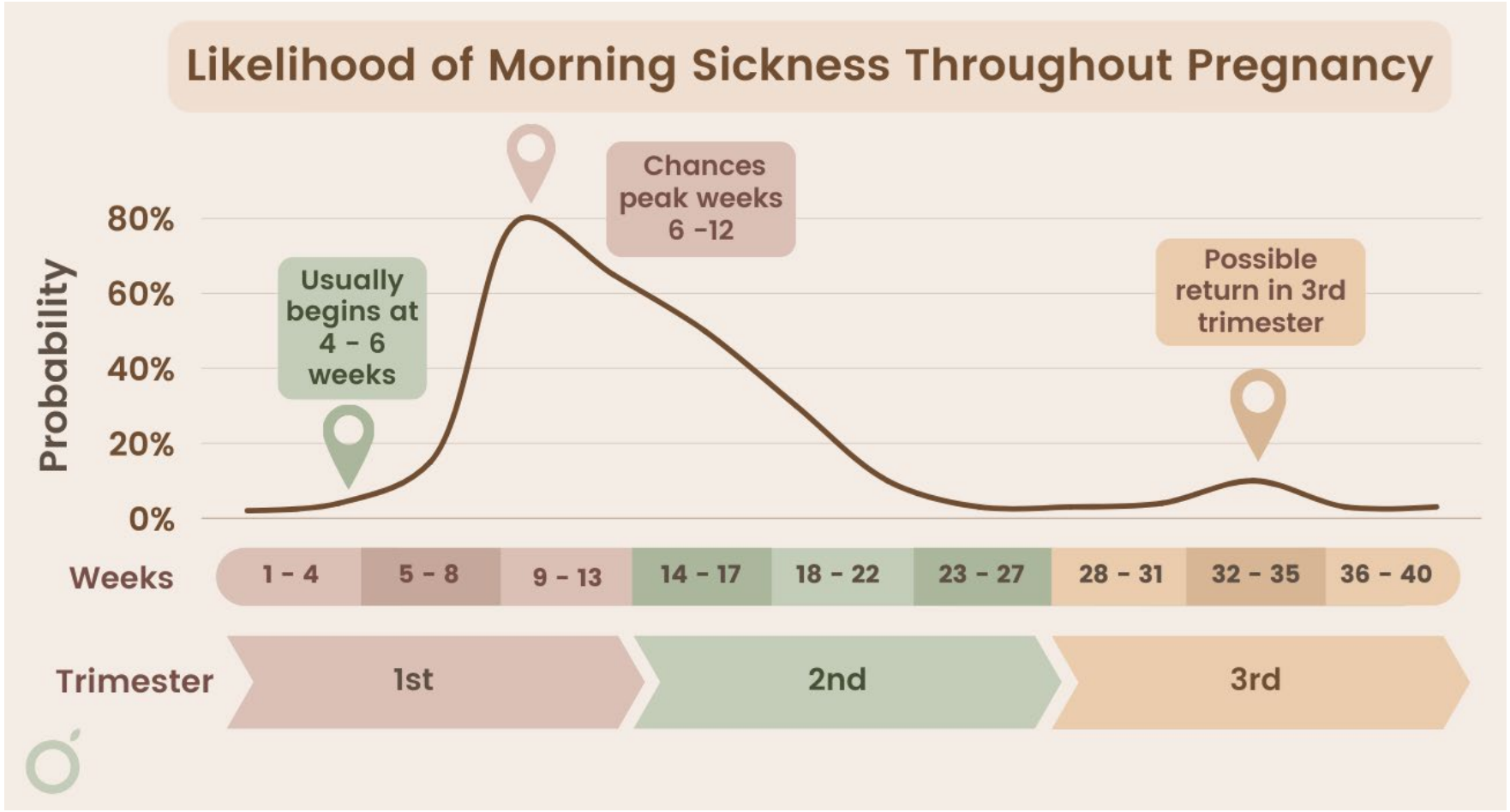
Case



Peggy is a healthy 24 years old G1P0000 female at 9w0d who presents to your office for prenatal care.

She reports feeling nauseous with low appetite for the last 3 weeks

Nausea/Vomiting (Morning sickness)



https://guavahealth.com/article/morning-sickness-timing-intensity-management

Nausea/Vomiting
Non-pharmacologic treatments

Image: Cleveland clinic

- Frequent small meals throughout the day
- Avoiding foods that further slow gastric emptying (high-protein or fatty foods) or have intense smells or tastes

Treatment	*Comment*
Acupuncture and acupressure	
Auricular acupressure	Found to be ineffective[22]
P6 acupressure	Pressure applied with fingers or a device to the P6 acupressure point (located two or three finger breadths proximal to the wrist crease, midline on the forearm between the large flexor tendon); commonly used but found to be ineffective vs. placebo[23]
P6 acupuncture	Found to be ineffective vs. no treatment[24]
Sham acupuncture	Found to be ineffective vs. no treatment[24]
Traditional acupuncture	Found to be ineffective vs. no treatment or placebo[24,25]
Herbal therapies	
Ginger	Two trials show symptom improvement vs. placebo,[26,27] and four trials show symptom improvement similar to that with vitamin B_6[28-31]; ginger extract (125 to 250 mg every six hours) should be considered; ginger tea or ginger ale can also be used as adjunctive treatment

https://www.aafp.org/pubs/afp/issues/2014/0615/p965.html

Image: Cleveland clinic

Which of the following are first line pharmacological treatments for morning sickness?

A. Ondansetron (Zofran)
B. Dimenhydrinate (Dramamine)
C. Diphenhydramine (Benadryl)
D. Vitamin B6 +/- Doxylamine (Unisom)

Image: Cleveland clinic

First Line Therapy: Nonpharmacologic options

Convert prenatal vitamin to folic acid supplement only
Ginger capsules 250 mg four times daily
Consider P6 acupressure with wrist bands

↓ Persistent symptoms

Pharmacologic Options*

Vitamin B_6 (pyridoxine) 10–25 mg orally (either taken alone or in combination with Doxylamine† 12.5 mg orally), 3 or 4 times per day. Adjust schedule and dose according to severity of patient's symptoms.

OR

Vitamin B_6 (pyridoxine) 10 mg/Doxylamine 10 mg combination product, two tablets orally at bedtime initially, up to four tablets per day (one tablet in the morning, one tablet in midafternoon, and two tablets at bedtime)

OR

Vitamin B_6 (pyridoxine) 20 mg/Doxylamine 20 mg combination product, one tablet orally at bedtime initially, up to two tablets per day (one tablet in the morning and one tablet at bedtime)

↓ Persistent symptoms

ACOG Practice Bulletin #189 – Nausea & Vomiting of Pregnancy

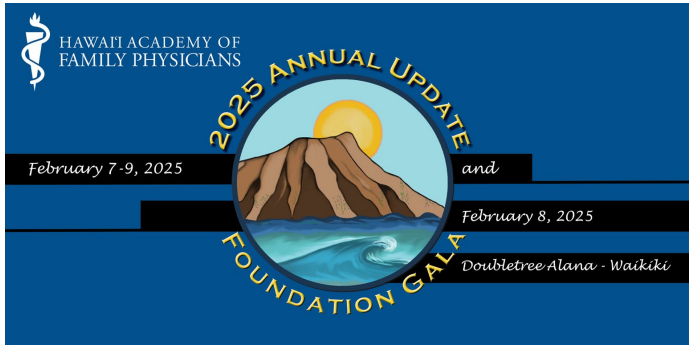
Add the following:
(presented here in alphabetical order)

Dimenhydrinate, 25–50 mg every 4–6 hours, orally as needed
(not to exceed 200 mg per day if patient also is taking doxylamine)
OR
Diphenhydramine, 25–50 mg orally every 4–6 hours
OR
Prochlorperazine, 25 mg every 12 hours rectally
OR
Promethazine, 12.5–25 mg every 4–6 hours, orally or rectally

Image: Cleveland clinic

ACOG Practice Bulletin #189 – Nausea & Vomiting of Pregnancy

Case continues



Peggy, 24 year old G1P0 female, is now at 10w2d.

She reports vaginal bleeding over the last 3 days.

Questions to ask

Image: Shutterstock

- When was her LMP? When was her first positive pregnancy test?
- Has she had an Ultrasound (U/S)?
- How much bleeding is she having?
  - How many pads has she gone through?
  - Any clots?
  - Is she having any symptoms of acute blood loss?
- Is she having any pain? Is she having any cramping?
- Does she know her blood type?

1st Trimester Bleeding

Image: Shutterstock

Differential Diagnosis

- Threatened abortion
- Early pregnancy loss
- Ectopic pregnancy
- Subchorionic hemorrhage
- Gestational trophoblastic disease
- Non obstetric causes

Evaluation


Image: Shutterstock

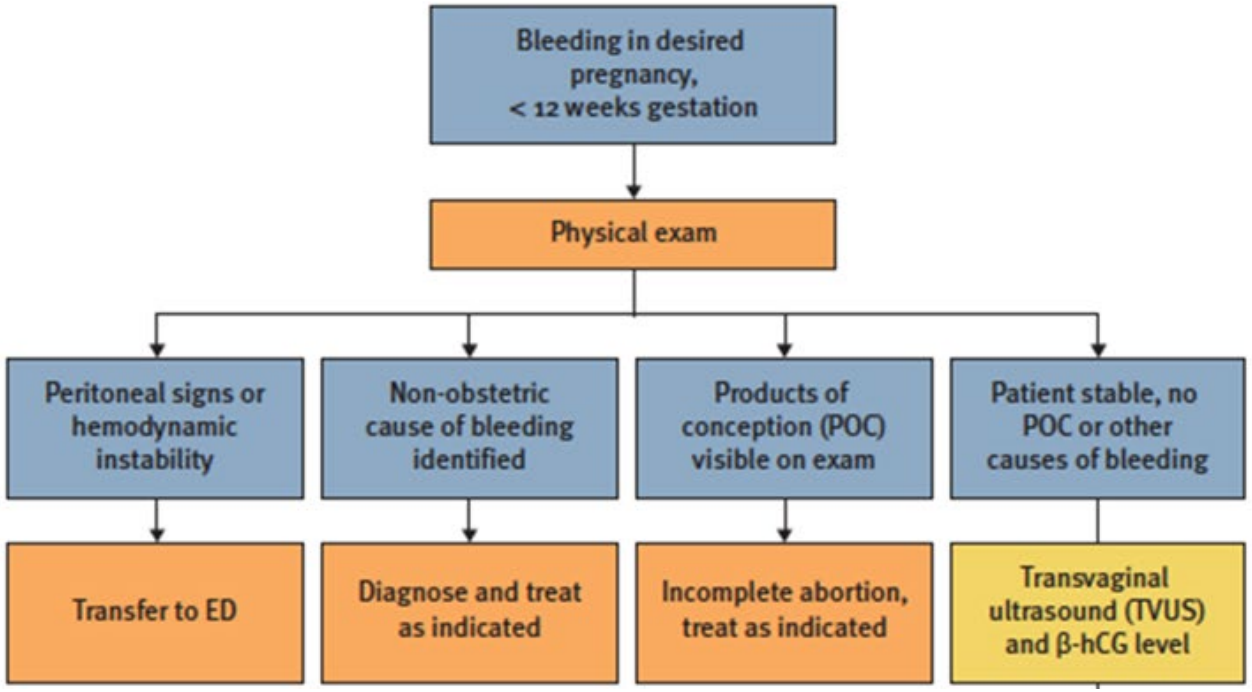
All women with first trimester bleeding need

- A history and exam (including speculum/bimanual examination)
- Rh status
- Evaluation with an U/S
  - if U/S not available, then serial β-hCGs.

Evaluation

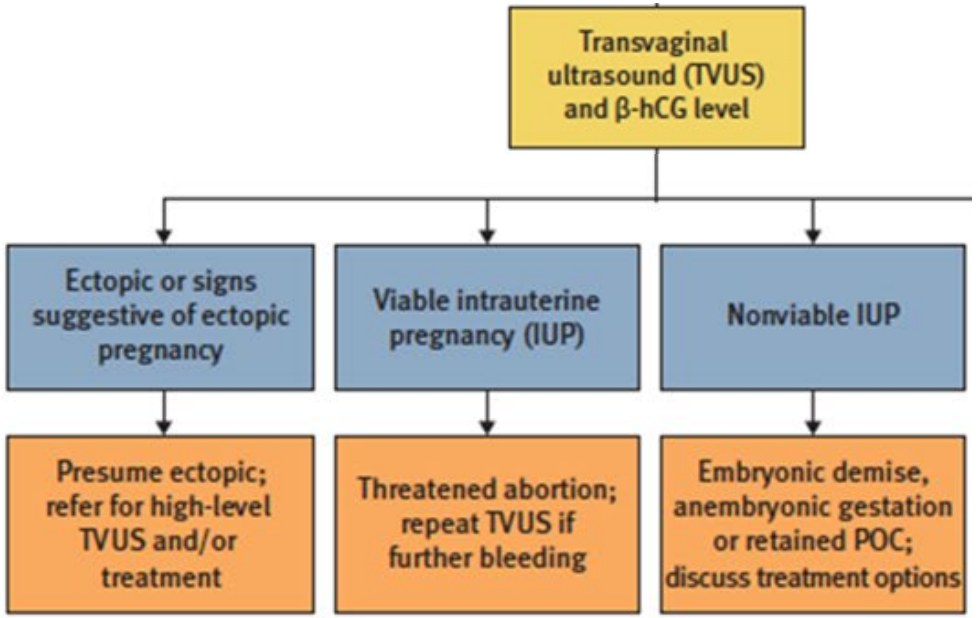

Image: Shutterstock

Figure 1. Evaluation of first trimester bleeding



Evaluation


Image: Shutterstock

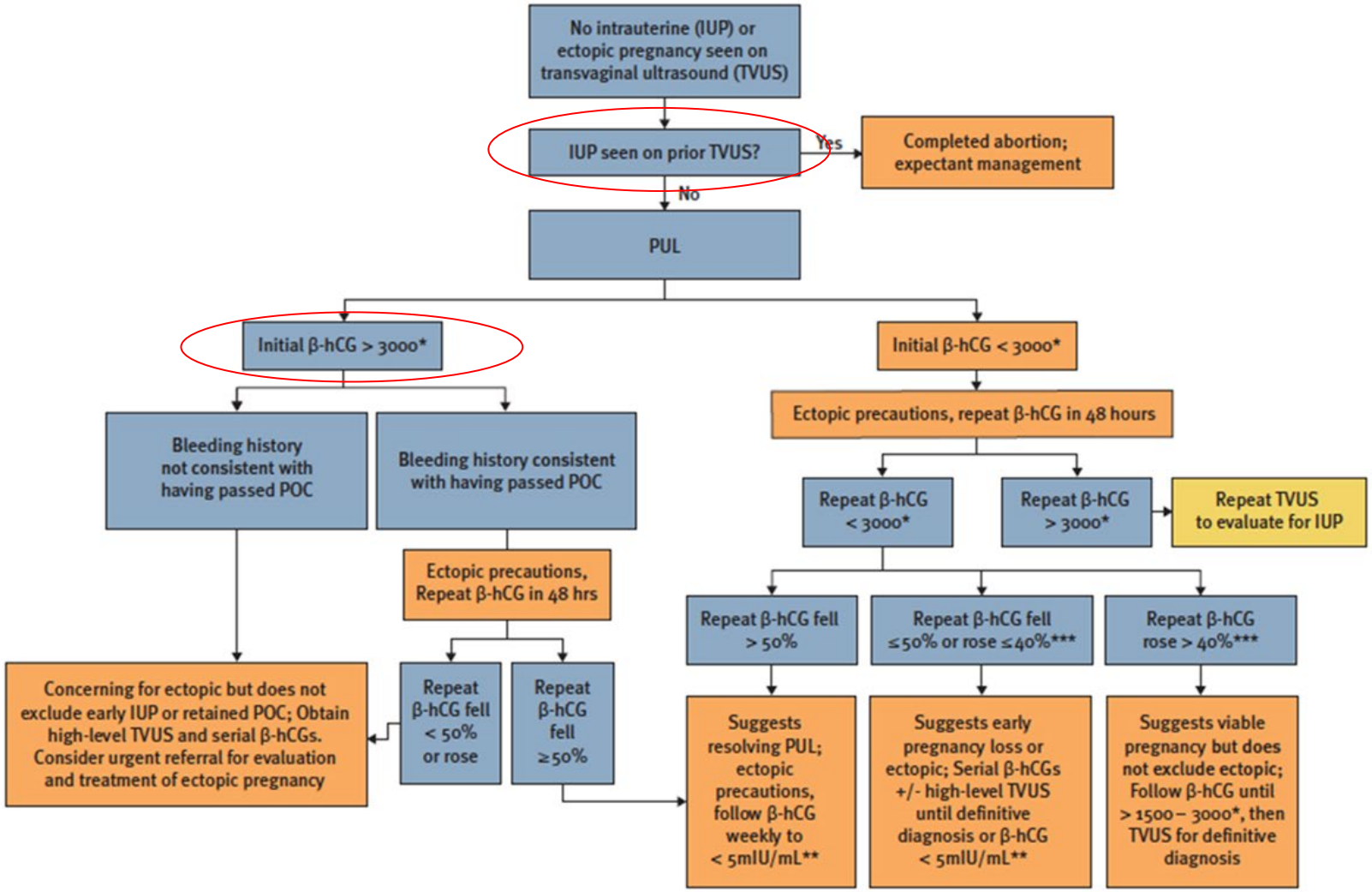


reproductive health access project

Evaluation

- B-HCG drop >50% => miscarriage
- B-HCG increases >40% => viable pregnancy (ectopic pregnancy not ruled out)

Figure 2. Evaluation of first trimester bleeding in Pregnancy of Unknown Location (PUL)



* the β-HcG level at which an intrauterine pregnancy should be seen on transvaginal ultrasound is referred to as the discriminatory zone and varies between 1500-3000 mIU depending on the machine, the sonographer, and number of gestations.

** β-hCG needs to be followed to zero only if ectopic pregnancy has not been reliably excluded. If a definitive diagnosis of completed miscarriage has been made, there is no need to follow further β-hCG levels.

*** In a viable intrauterine pregnancy, there is a 99% chance that the β-hCG will rise by at least 33-49% in 48 hours depending on the initial β-hCG values.

November 2017 / www.reproductiveaccess.org

reproductive health access project

Image: Shutterstock

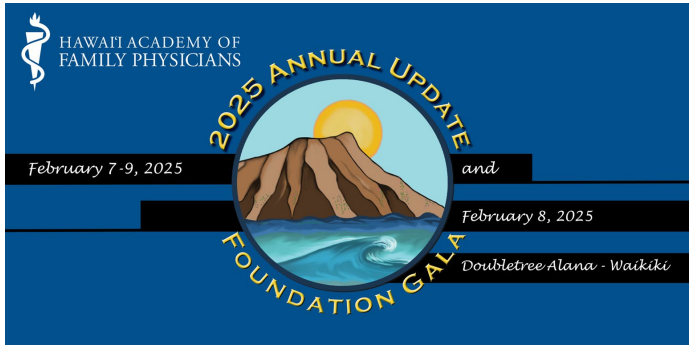
How common is first trimester bleeding?

A. 10%

B. 25%

C. 40%

D. 50%

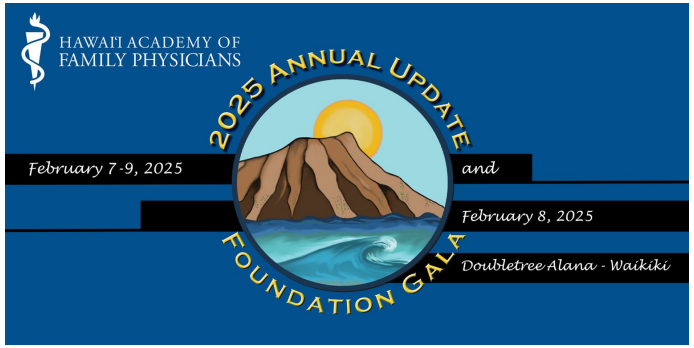


Peggy is a healthy 24 year old G1P0 female at 11w0d

She comes back a week later. Morning sickness and vaginal bleeding have all resolved.

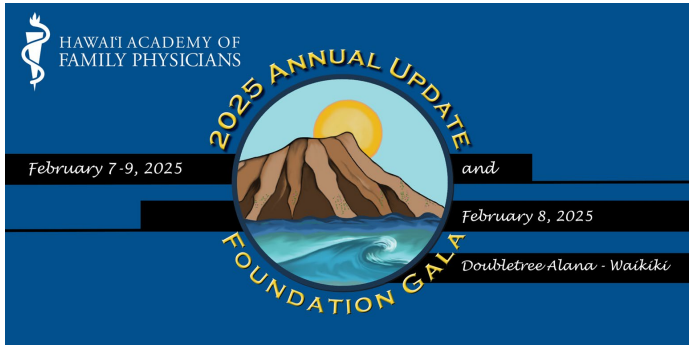
She asks you for dietary advice.

How much coffee can she consume per day?



Up to how much caffeine can she consume in one day?

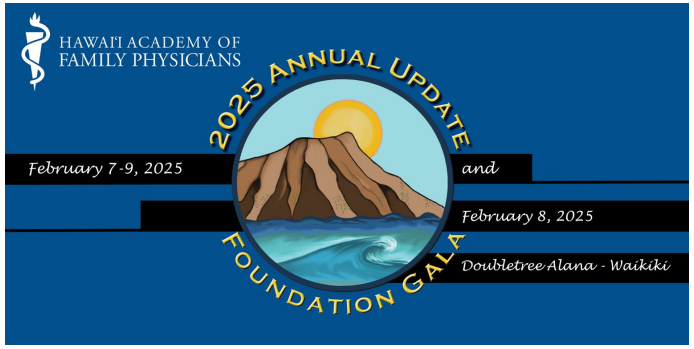
A. 100mg
B. 200mg
C. 400mg
D. 500mg



Up to how much caffeine can she consume in one day?

A. 100mg
B. 200mg
C. 400mg
D. 500mg

Dietary Questions: Coffee



ACOG recommends <200mg caffeine per day

= One 12 ounce Cup of Coffee

Caffeine sources

- Tea
- Soda
- Energy Drinks
- Chocolate :)

What's the Buzz?

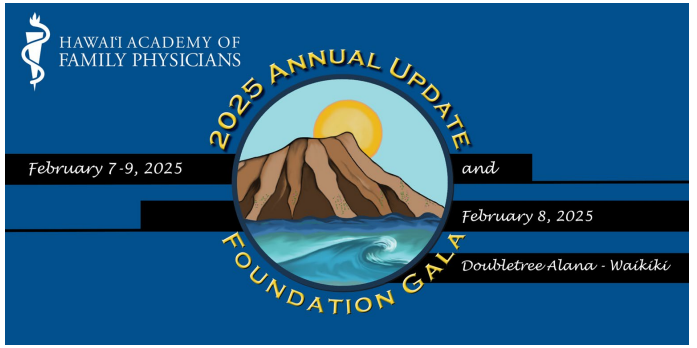
How espresso stacks up against other caffeinated beverages

16-oz energy drink	140 milligrams (approx.)
8-oz cup black coffee	94.8 milligrams
8-oz cup green tea	29.4 milligrams
12-oz can cola	27 milligrams
8-oz cup decaf black coffee	4 milligrams

Source: USDA Food Central database

RS

Pregnancy Myths and Practical Tips | AAFP
https://www.realsimple.com/how-much-caffeine-is-in-a-shot-of-espresso-8414293



Dietary Questions

General Diet information:

- Wash fruit and vegetables before eating raw or cooked
- Avoid
  - unpasteurized juice and milk
  - soft cheeses and unpasteurized cheeses
  - premade meats (deli, chicken, tuna salad)
  - raw sprouts
  - improper/contaminated water
  - undercooked/raw meats, fish, eggs
  - raw dough

Supplements

- Prenatal vitamins: folic acid to prevent neural tube defects
- Avoid herbal supplements and teas like Ginkgo biloba, certain green teas, chamomile tea. Ginger is ok

Which of the following fish contains the highest Mercury level?

A. Catfish 

A. Snapper 

A. Orange roughy 

A. Tuna, albacore/white 

Which of the following fish contains the highest Mercury level?

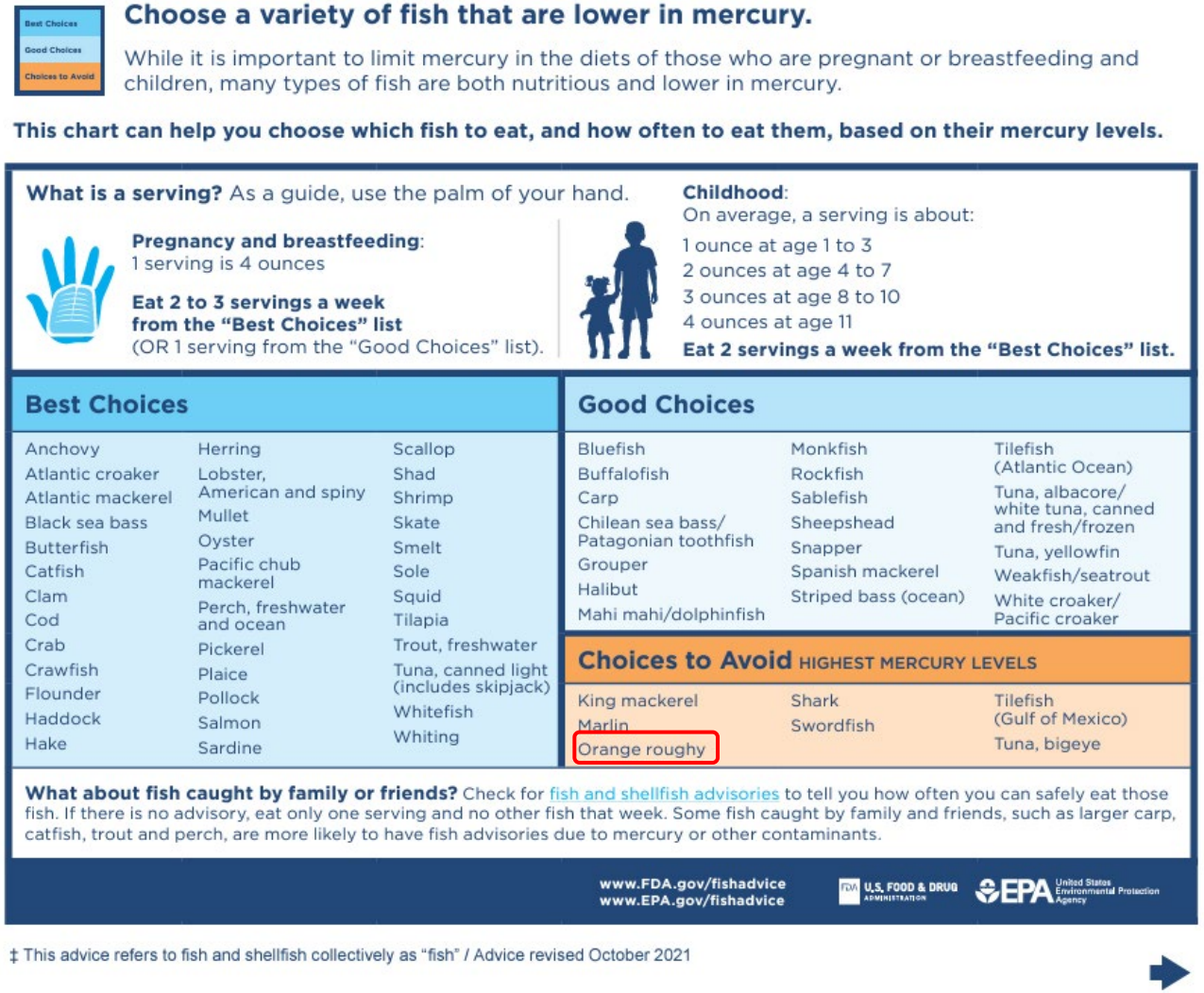
A. Catfish

A. Snapper

A. Orange roughy

A. Tuna, albacore/white

Dietary Questions



Choose a variety of fish that are lower in mercury.

While it is important to limit mercury in the diets of those who are pregnant or breastfeeding and children, many types of fish are both nutritious and lower in mercury.

This chart can help you choose which fish to eat, and how often to eat them, based on their mercury levels.

What is a serving? As a guide, use the palm of your hand.

Pregnancy and breastfeeding:
1 serving is 4 ounces

Eat 2 to 3 servings a week from the "Best Choices" list
(OR 1 serving from the "Good Choices" list).

Childhood:
On average, a serving is about:
1 ounce at age 1 to 3
2 ounces at age 4 to 7
3 ounces at age 8 to 10
4 ounces at age 11

Eat 2 servings a week from the "Best Choices" list.

Best Choices

- Anchovy
- Atlantic croaker
- Atlantic mackerel
- Black sea bass
- Butterfish
- Catfish
- Clam
- Cod
- Crab
- Crawfish
- Flounder
- Haddock
- Hake
- Herring
- Lobster, American and spiny
- Mullet
- Oyster
- Pacific chub mackerel
- Perch, freshwater and ocean
- Pickerel
- Plaice
- Pollock
- Salmon
- Sardine
- Scallop
- Shad
- Shrimp
- Skate
- Smelt
- Sole
- Squid
- Tilapia
- Trout, freshwater
- Tuna, canned light (includes skipjack)
- Whitefish
- Whiting

Good Choices

- Bluefish
- Buffalofish
- Carp
- Chilean sea bass/ Patagonian toothfish
- Grouper
- Halibut
- Mahi mahi/dolphinfish
- Monkfish
- Rockfish
- Sablefish
- Sheepshead
- Snapper
- Spanish mackerel
- Striped bass (ocean)
- Tilefish (Atlantic Ocean)
- Tuna, albacore/ white tuna, canned and fresh/frozen
- Tuna, yellowfin
- Weakfish/seatrout
- White croaker/ Pacific croaker

Choices to Avoid HIGHEST MERCURY LEVELS

- King mackerel
- Marlin
- Orange roughy
- Shark
- Swordfish
- Tilefish (Gulf of Mexico)
- Tuna, bigeye

What about fish caught by family or friends? Check for fish and shellfish advisories to tell you how often you can safely eat those fish. If there is no advisory, eat only one serving and no other fish that week. Some fish caught by family and friends, such as larger carp, catfish, trout and perch, are more likely to have fish advisories due to mercury or other contaminants.

www.FDA.gov/fishadvice
www.EPA.gov/fishadvice

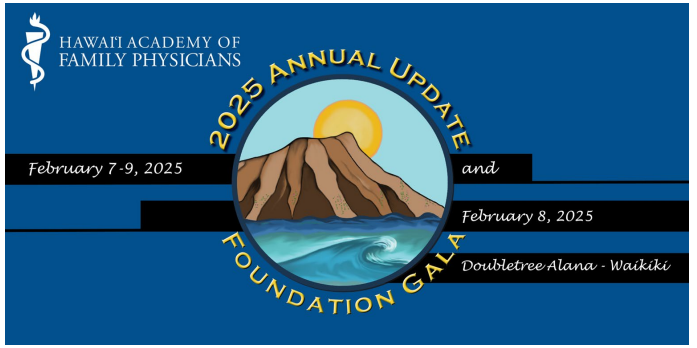
U.S. FOOD & DRUG ADMINISTRATION · EPA United States Environmental Protection Agency

‡ This advice refers to fish and shellfish collectively as "fish" / Advice revised October 2021

Advice about Eating Fish | FDA

SECOND TRIMESTER

- Common cold
- GERD
- Headache
- Urinary tract infection

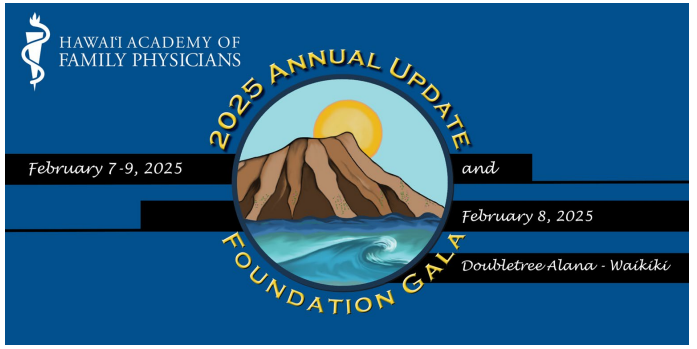


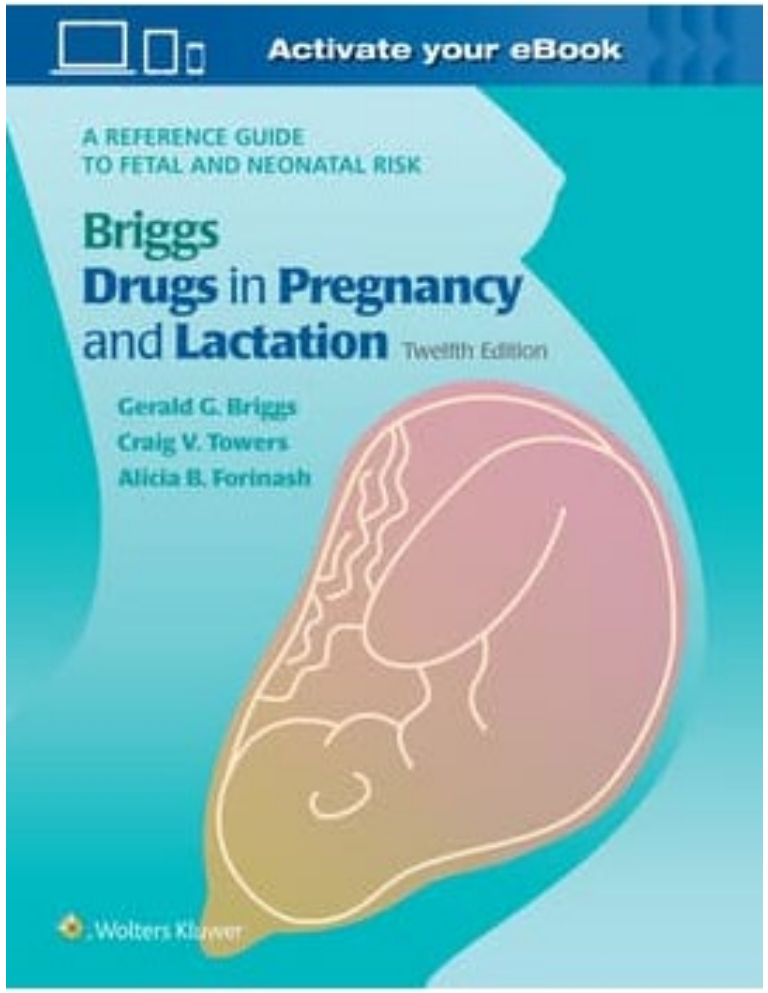
Peggy is a healthy 24 year old G1P0 female at 24w0d

She reports that she might have caught a cold over the weekend.

She wants to know which OTC medications are safe to take.

Medications in Pregnancy





FDA Pregnancy Categories (A,B,C,D,X) - replaced in 2015 with narrative statements:

Pregnancy (includes Labor and Delivery):

- Pregnancy Exposure Registry
- Risk Summary
- Clinical Considerations
- Data

Lactation (includes Nursing Mothers)

- Risk Summary
- Clinical Considerations
- Data

Meds – Analgesics, Antipyretics

Table 4. Safety of Over-the-Counter Analgesics and Antipyretics in Pregnancy

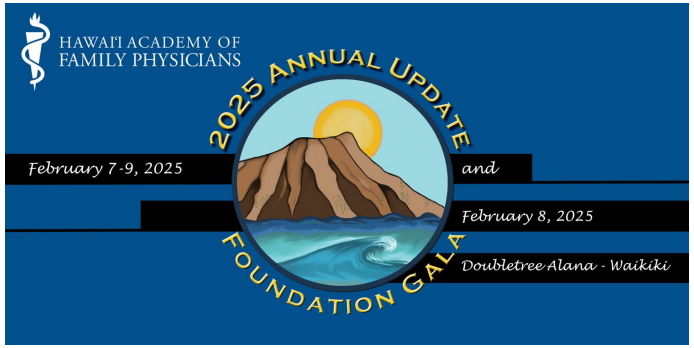
Medication	*Drug class*	*Pregnancy risk category**	*Crosses the placenta?*	*Use in pregnancy*
Acetaminophen	Nonnarcotic analgesic/ antipyretic	B	Yes	Drug of choice
Aspirin	Salicylate analgesic/ antipyretic	C in the first and second trimesters, D in the third trimester	Yes	Should be avoided in pregnancy unless needed for specific indications
Naproxen	NSAID analgesic	B in the first and second trimesters, D in the third trimester	Yes	Should be avoided in the third trimester
Ibuprofen	NSAID analgesic	C in the first and second trimesters, D in the third trimester	Yes	Should be avoided in the third trimester

NSAID = nonsteroidal anti-inflammatory drug.

**—Based on pregnancy risk category definitions from the U.S. Food and Drug Administration (Table 2) and other sources.*

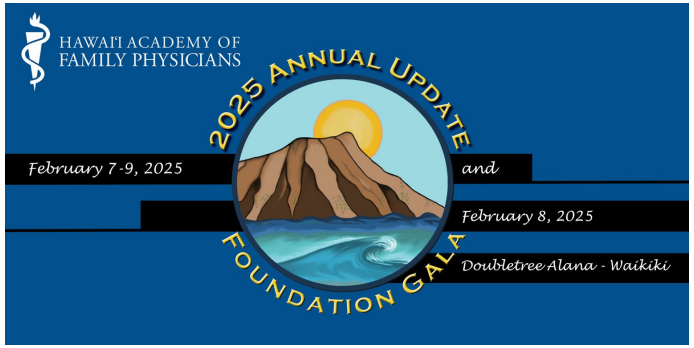
Information from references 10 through 16.

Photo from:https://www.freemalaysiatoday.com/category/leisure/2018/02/07/antibiotics-during-pregnancy-could-increase-a-childs-risk-of-infection/
https://www.aafp.org/pubs/afp/issues/2014/1015/p548.html



Which cold medication should you tell her to avoid?

A. Loratadine
B. Guaifenesin DM
C. Pseudoephedrine
D. Diphenhydramine



Which cold medication should you tell her to avoid?

A. Loratadine
B. Guaifenesin DM
C. Pseudoephedrine
D. Diphenhydramine

Meds- Antihistamines, Decongestants, Expectorants

Table 3. Safety of Over-the-Counter Antihistamines, Decongestants, and Expectorants in Pregnancy

Medication	*Drug class*	*Pregnancy risk category**	*Crosses the placenta?*	*Use in pregnancy*
Diphenhydramine (Benadryl)	First-generation (nonselective) antihistamine/antiemetic	B	Yes	Possible oxytocin-like effects at high doses
Brompheniramine	First-generation (nonselective) antihistamine	C	Not known	Limited data
Chlorpheniramine	First-generation (nonselective) antihistamine	C	Not known	Drug of choice
Pheniramine	Ophthalmic antihistamine/ decongestant (pheniramine 0.3%/naphazoline 0.025%)	C	Not known	Limited data; likely low risk with limited use
Cetirizine (Zyrtec)	Second-generation (selective, nonsedating) antihistamine	B	Not known	Acceptable alternative to first-generation agents
Loratadine (Claritin)	Second-generation (selective, nonsedating) antihistamine	B	Not known	Acceptable alternative to first-generation agents
Fexofenadine (Allegra)	Second-generation (selective, nonsedating) antihistamine	C	Not known	No human data, animal data suggest some risk
Phenylephrine	Sympathomimetic decongestant	C	Yes†	Safety not established, should be avoided in first trimester
Pseudoephedrine	Sympathomimetic decongestant	C	Not known	Behind-the-counter purchase; possible association with gastroschisis, small intestinal atresia, and hemifacial microsomia; should be avoided in first trimester
Guaifenesin	Expectorant	C	Not known	~~Safety not established, should be avoided in first trimester~~
Dextromethorphan	Nonnarcotic antitussive	C	Not known	Appears to be safe in pregnancy

**—Based on pregnancy risk category definitions from the U.S. Food and Drug Administration (Table 2) and other sources.*
†—Based on animal data and on human data in term pregnancies.[11,12]

Information from references 10 through 16.

Safe in pregnancy

https://www.aafp.org/pubs/afp/issues/2014/1015/p548.html

Meds- Antacids

Table 5. Safety of Over-the-Counter Antacids, Antidiarrheals, and Laxatives in Pregnancy

Medication	*Drug class*	*Pregnancy risk category**	*Crosses the placenta?*	*Use in pregnancy*
Cimetidine (Tagamet)	Selective histamine H_2 antagonist	B	Yes	Potential weak antiandrogenic activity (only observed in animal studies)
Famotidine (Pepcid)	Selective H_2 antagonist	B	Yes	Limited human data
Nizatidine (Axid)	Selective H_2 antagonist	B	Yes	Limited human data
Ranitidine (Zantac)	Selective H_2 antagonist	B	Yes	May be preferable to cimetidine for chronic use
Omeprazole (Prilosec)	Proton pump inhibitor	C†	Yes	Most human data suggest it is safe throughout pregnancy
Aluminum hydroxide	Antacid	Not available	Not known	Considered safe in pregnancy; risk of neurotoxicity with high doses
Calcium carbonate	Antacid	Not available	Yes	Drug of choice; risk of milk-alkali syndrome with high doses
Magnesium hydroxide, magnesium carbonate	Antacid	Not available	Not known	Considered safe in pregnancy; magnesium may cause tocolysis in late pregnancy, but this is not a risk with over-the-counter preparations
Simethicone (available as a single agent and contained in multiple combination antacids)	Antiflatulent	C	No	Limited data; not absorbed, so considered safe in pregnancy
Bismuth subsalicylate (Pepto-Bismol)	Antidiarrheal	C	Not known	Insufficient data; should be avoided during pregnancy, especially in the second and third trimesters because it has a salicylate portion‡
Loperamide (Imodium)	Antidiarrheal	C	Not known	Limited human data; questionable association with cardiovascular defects
Mineral oil	Emollient laxative	C	No (not absorbed)	Should be avoided in pregnancy, may interfere with absorption of fat-soluble vitamins§
Castor oil	Laxative/oxytocic	X	Not known	Should be avoided in pregnancy, potential for maternal/fetal morbidity
Polyethylene glycol 3350 (Miralax)	Osmotic laxative	C	Not known	Drug of choice for chronic constipation

https://www.aafp.org/pubs/afp/issues/2014/1015/p548.html

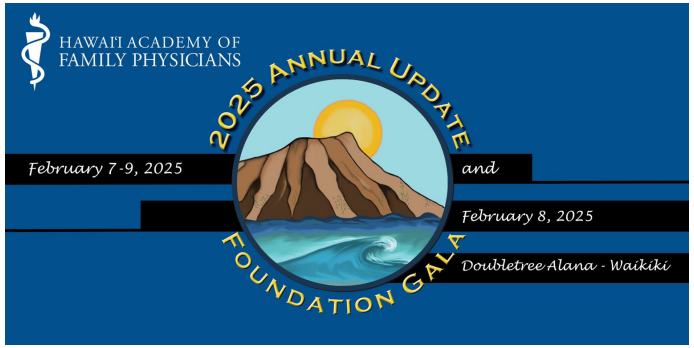


Table 1. Online Resources for Information on Medication Use in Pregnancy

Centers for Disease Control and Prevention
http://www.cdc.gov/pregnancy/meds (facts sheets for patients; link to LacMed, a database of medications that might be used during lactation)

Clinical Pharmacology
http://www.clinicalpharmacology.com (medication summaries, used by most pharmacies, membership required)

National Library of Medicine
http://dailymed.nlm.nih.gov/dailymed/about.cfm (information for physicians and patients; more current than U.S. Food and Drug Administration website)

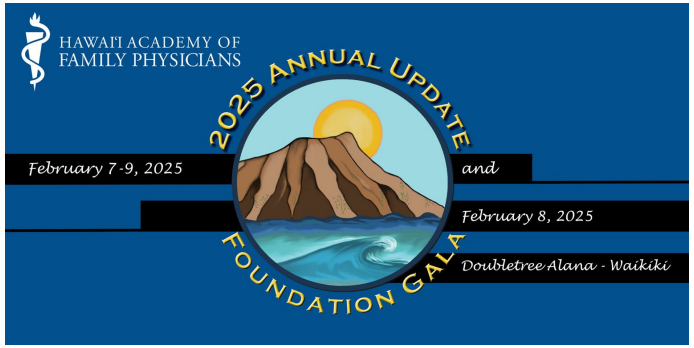
Online Physicians' Desk Reference
http://www.pdr.net (medication reference for physicians, membership required)

Organization of Teratology Information Specialists
http://www.mothertobaby.org/fact-sheets-s13037 (fact sheets for patients)

Reproductive Toxicology Center
http://www.reprotox.org (medication summaries; membership required)

University of Toronto, The Hospital for Sick Children, Motherisk Program
http://www.motherisk.org/women/drugs.jsp (index of medications, including over-the-counter)
http://www.motherisk.org/women/mothernature.jsp (index of herbal products)

U.S. Food and Drug Administration
http://www.fda.gov/ForConsumers/ByAudience/ForWomen/WomensHealthTopics/ucm117976.htm#Medicine_and_Pregnancy (resources for patients)



Peggy is a healthy 24 year old G1P0 female at 26w0d

She reports that her cold has improved, however she has had a lingering headache for the last 2 days

“Doc I have a headache”

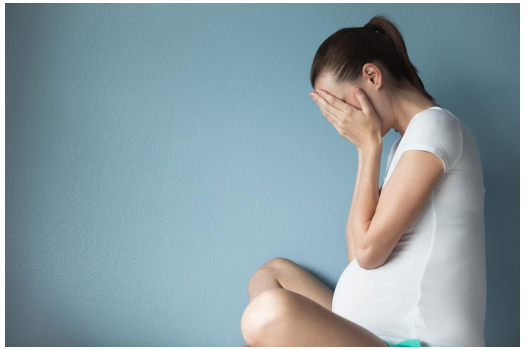


Image: psychiatrist.com

Determine Primary vs Secondary Headache

- Primary = present pre-pregnancy - eg. migraine, tension, cluster, sinusitis

- Secondary = 1. Has no hx of primary headache

  OR

  2. This is a pre-existing headache that has changed in intensity or quality

photo from https://www.psychiatrist.com/collection/focus-on-womens-mental-health/

“Doc I have a headache”

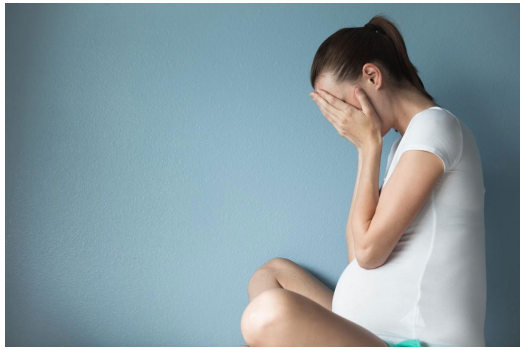


Image: psychiatrist.com

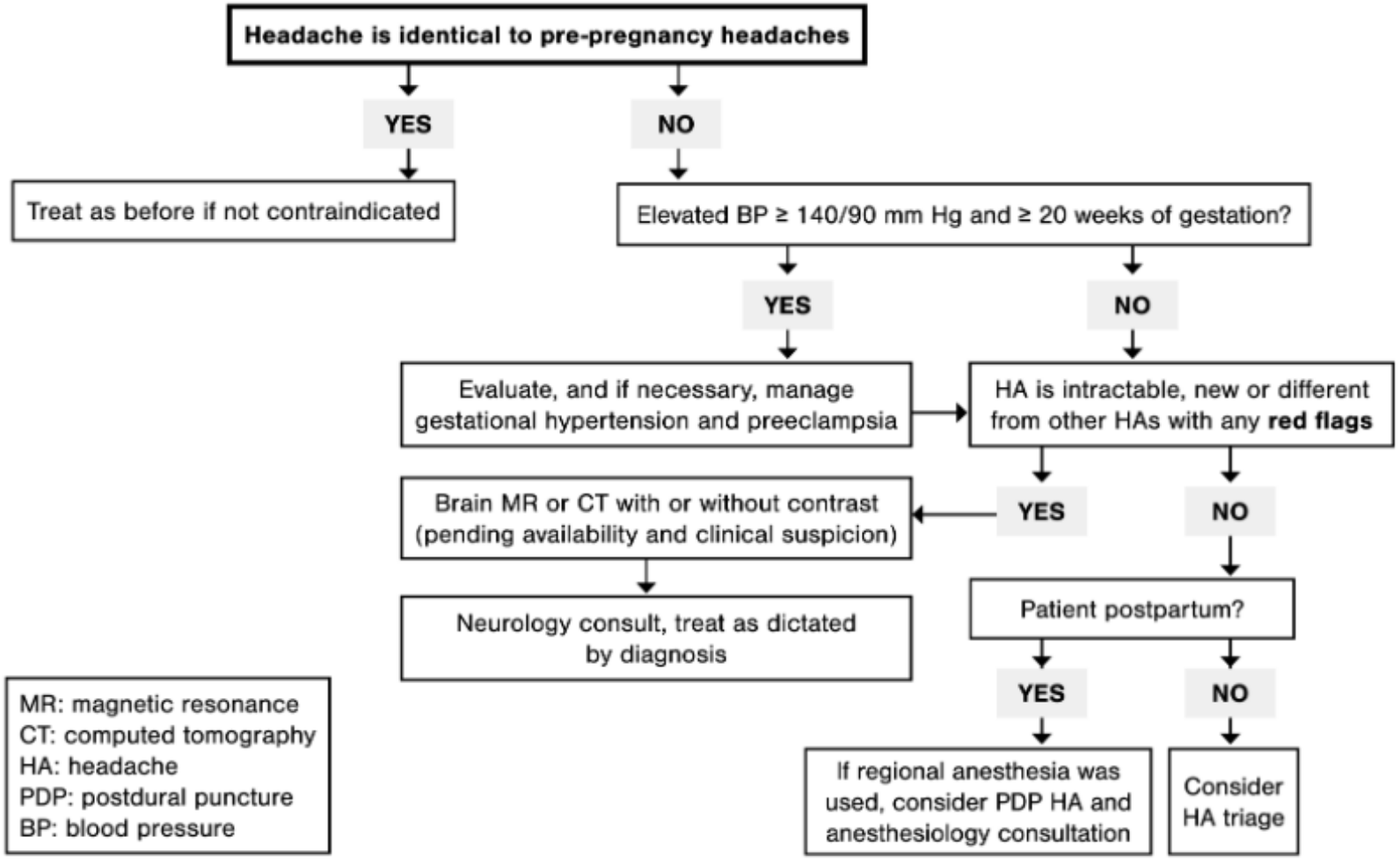


Figure 1. Evaluation and management of secondary headache.

“Doc I have a headache”

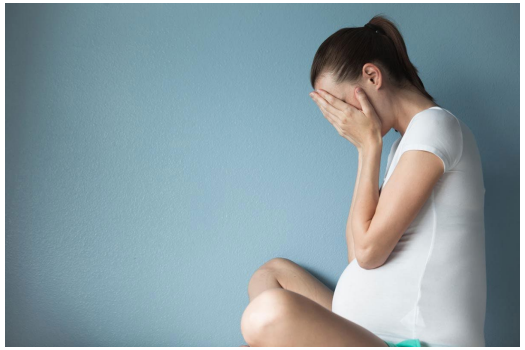


Image: psychiatrist.com

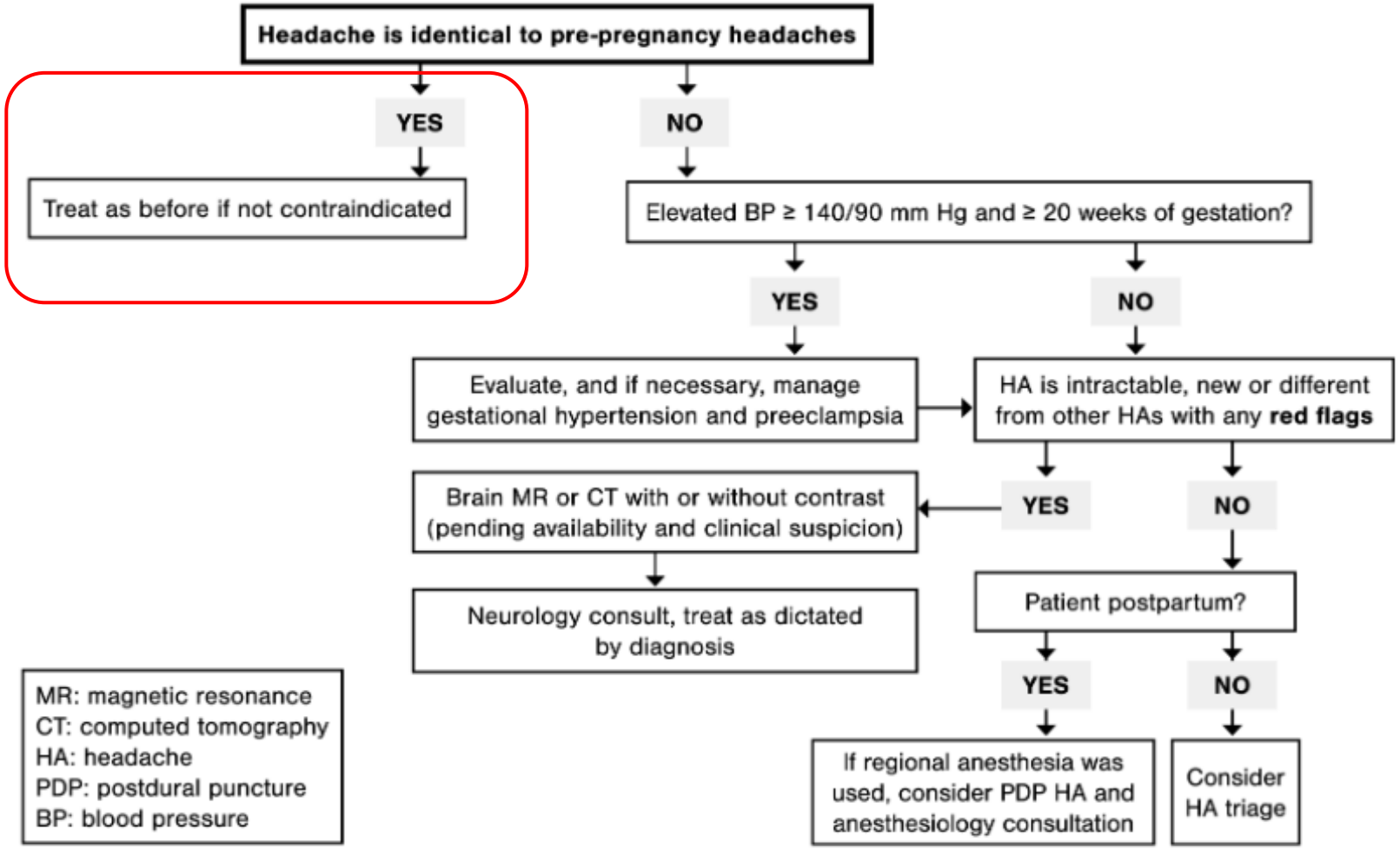


Figure 1. Evaluation and management of secondary headache.

“Doc I have a headache”

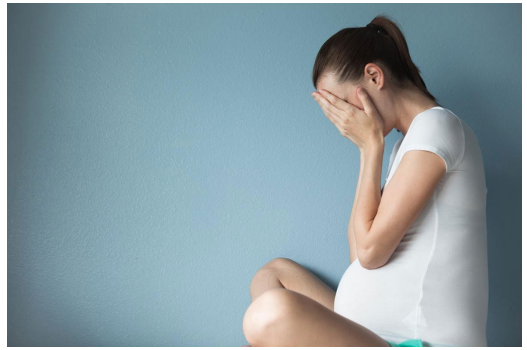


Image: psychiatrist.com

Primary Headache

*** Treat with prior meds if no contraindication in pregnancy

- 1st line = Acetaminophen and rest
- Can also try diphenhydramine, metoclopramide, caffeine <200mg/day
- Balance risk/benefits with ondansetron, sumatriptan
- Avoid Fioricet

- 60-80% of migraines improve by 2nd trimester, although some will get worse some may develop new aura

“Doc I have a headache”

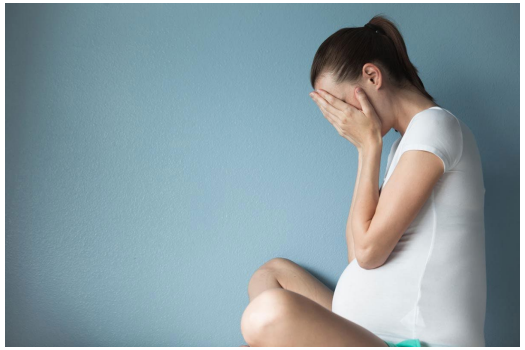


Image: psychiatrist.com

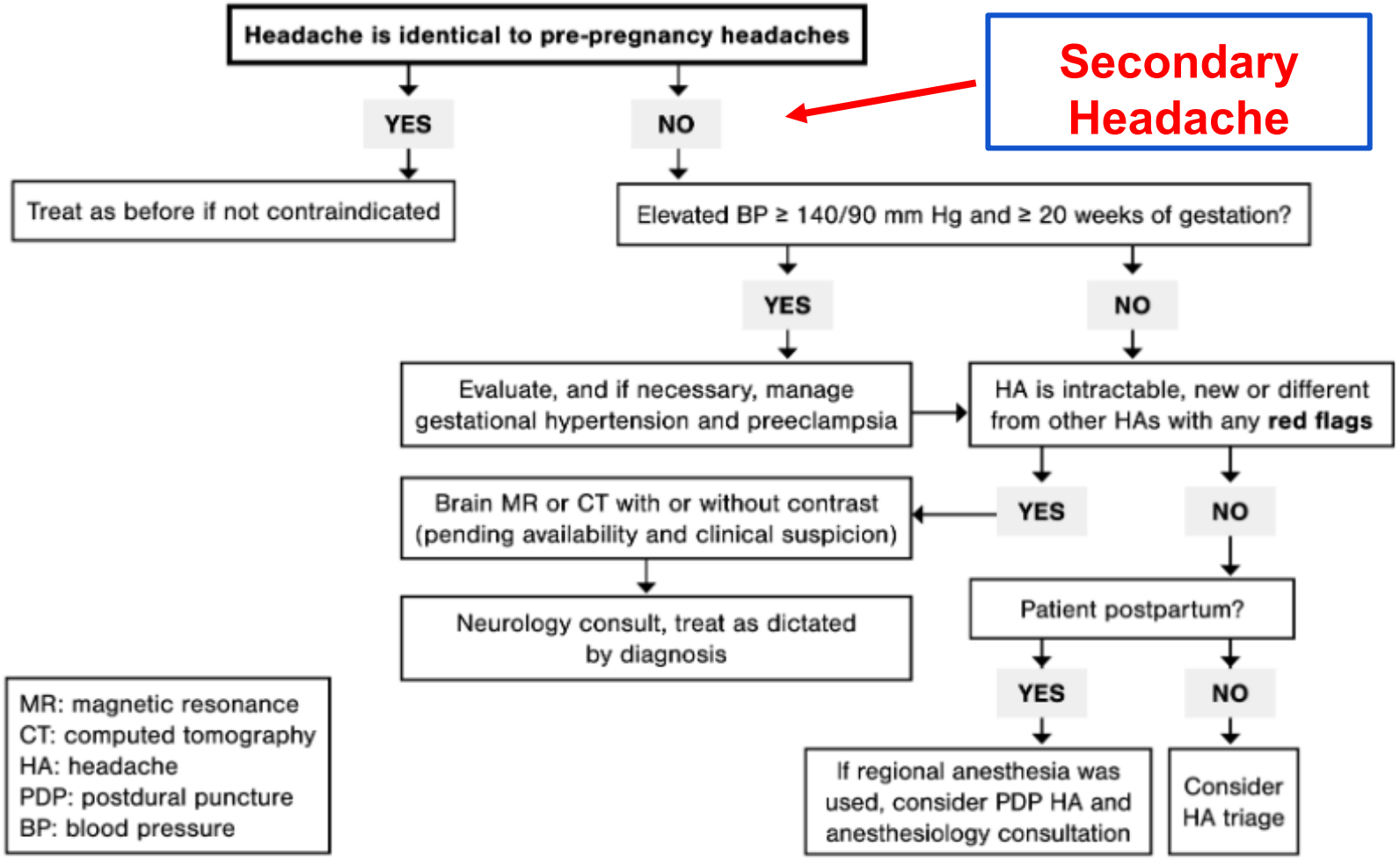


Figure 1. Evaluation and management of secondary headache.

“Doc I have a headache”

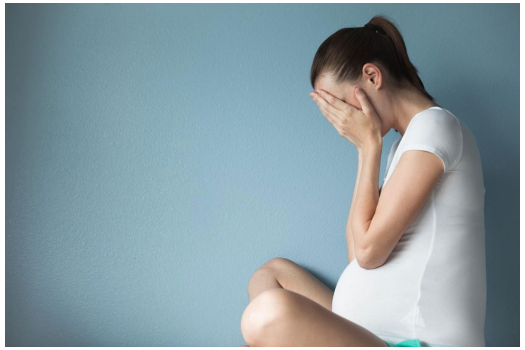


Image: psychiatrist.com

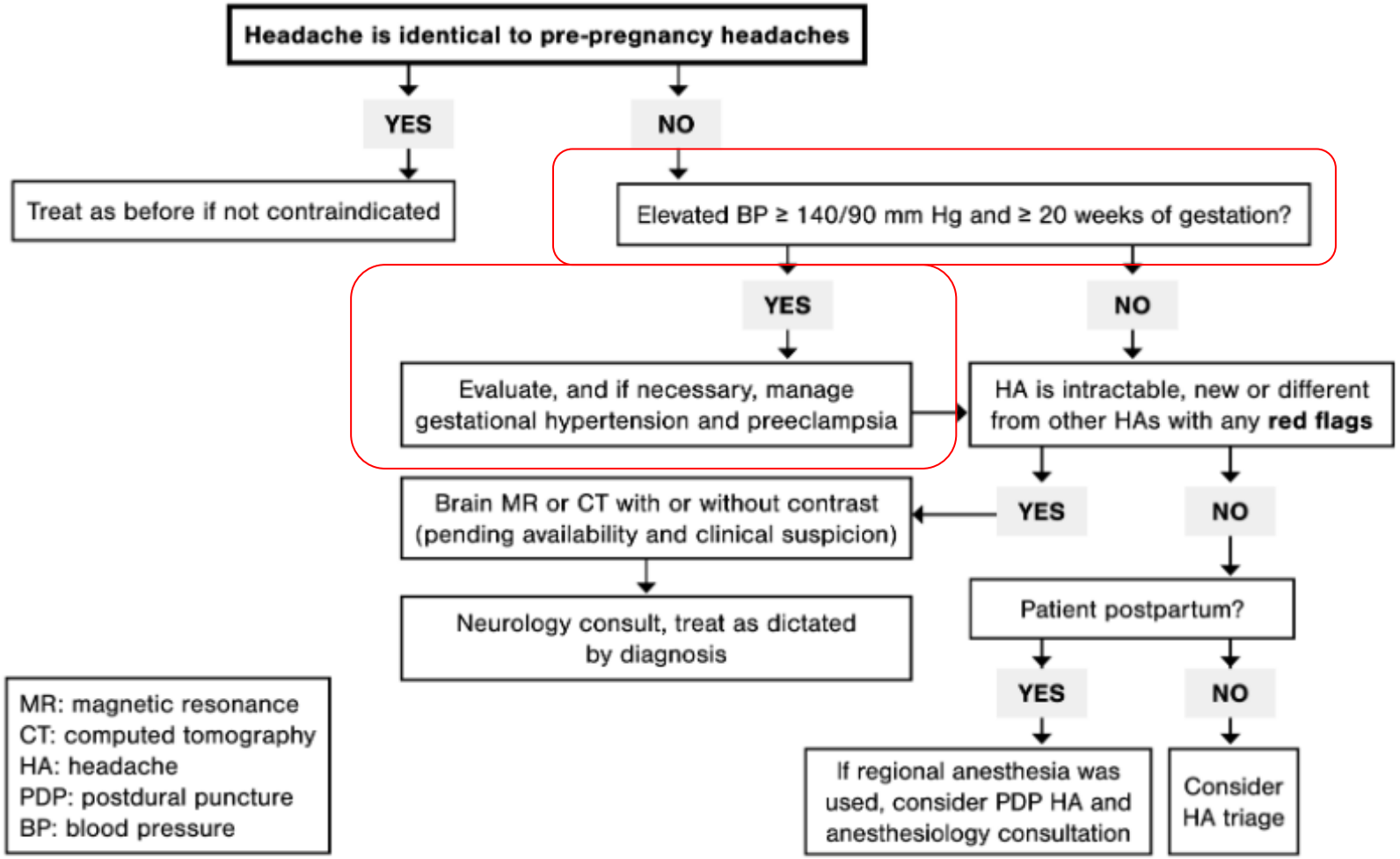
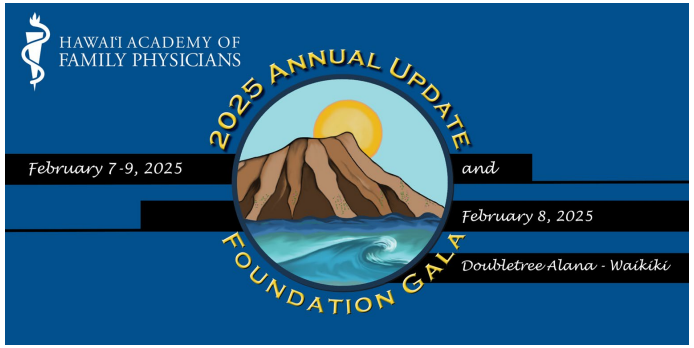


Figure 1. Evaluation and management of secondary headache.

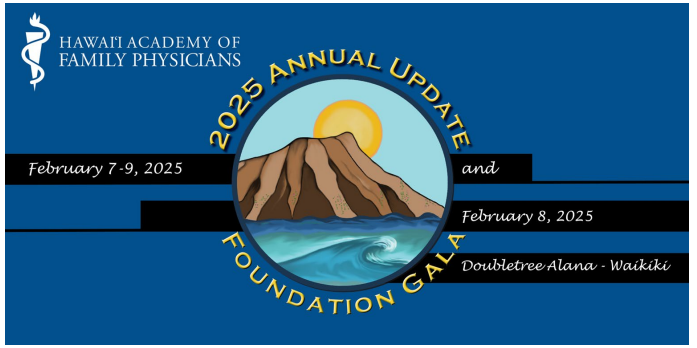


Peggy is a healthy 24 years old G1P0 female at 27w0d

Her common cold resolved. Her headache got better.

But now she reports increased urinary frequency and burning with urination

Urinary complaints

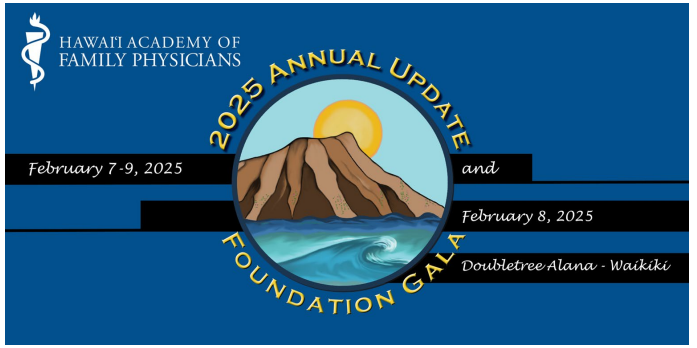


Obtain Tests

- UA with microscopy
- Urine culture if positive or unsure
- Empirically treat with antibiotics if UA abnormal

In pregnancy - Leukocytes in UA can be normal

- If UA abnormal but culture negative, obtain:
  - Wet mount or vaginitis panel
  - GC/CT testing - vaginal swab preferred, urine still okay

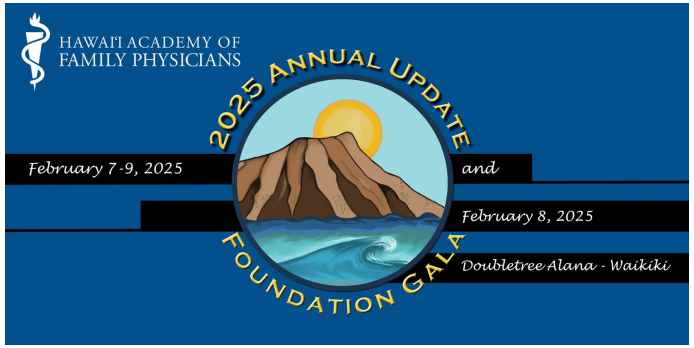


Which commonly used medication to treat acute cystitis should be avoided in the 1st trimester?

A. Nitrofurantoin

B. Cephalexin

C. Fosfomycin

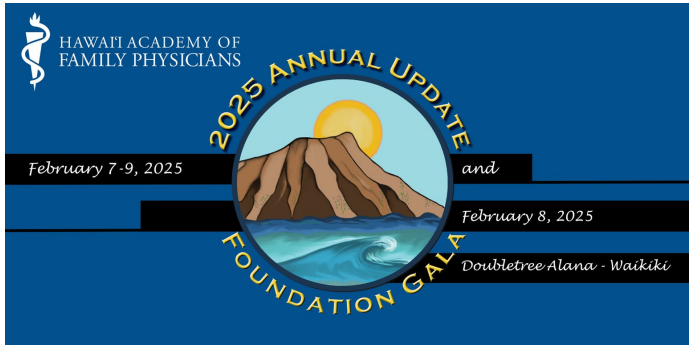


Which commonly used medication to treat acute cystitis should be avoided in the 1st trimester?

A. Nitrofurantoin

B. Cephalexin

C. Fosfomycin



Treatment - Acute Cystitis

Table 1. Antibiotic Regimens for Treatment of Asymptomatic Bacteriuria and Acute Cystitis

Antimicrobial	Regimen	Considerations
Nitrofurantoin	100 mg orally every 12 h for 5–7 d	Reasonable to offer in the 1st trimester if no appropriate alternatives are available Avoid as treatment for pyelonephritis due to inability to reach therapeutic levels in the kidney
Cephalexin*	250–500 mg orally every 6 h for 5–7 d	
Sulfamethoxazole-trimethoprim	800/160 mg every 12 h for 5–7 d	Reasonable to offer in the 1st trimester if no appropriate alternatives are available In areas with more than 20% resistance to trimethoprim-sulfamethoxazole, avoid if initiating treatment before culture results are available
Fosfomycin	3 g orally once	Avoid as treatment for pyelonephritis due to inability to reach therapeutic levels in the kidney
Amoxicillin*	500 mg orally every 8 h for 5–7 d 875 mg orally every 12 h for 5–7 d	High degree of resistance; avoid if initiating treatment before culture results are available
Amoxicillin—clavulanate*	500 mg orally every 8 h for 5–7 d 875 mg orally every 12 h for 5–7 d	High degree of resistance; avoid if initiating treatment before culture results are available

*For patients with a β-lactam allergy for whom other classes of antibiotic are inappropriate, further investigation regarding the severity of allergic reaction is necessary. For patients at low risk for anaphylaxis, treatment with cephalosporins would be appropriate; however, individuals at high risk for anaphylaxis would need to be treated with an alternative regimen.

Modified from:

1. Matuszkiewicz-Rowińska J, Małyszko J, Wieliczko M. Urinary tract infections in pregnancy: old and new unresolved diagnostic and therapeutic problems. Arch Med Sci 2015;11:67–77. doi: 10.5114/aoms.2013.39202

2. Wang T, Wu G, Wang J, Cui Y, Ma J, Zhu Z, Qiu J, Wu J. Comparison of single-dose fosfomycin tromethamine and other antibiotics for lower uncomplicated urinary tract infection in women and asymptomatic bacteriuria in pregnant women: a systematic review and meta-analysis. Int J Antimicrob Agents 2020;56:106018. doi: 10.1016/j.ijantimicag.2020.106018

Treatment - Acute Cystitis

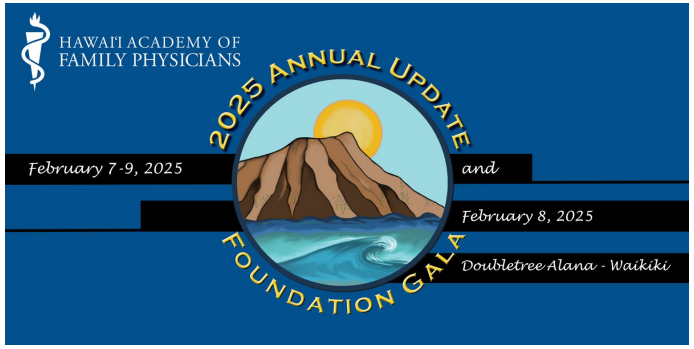


Table 1. Antibiotic Regimens for Treatment of Asymptomatic Bacteriuria and Acute Cystitis

Antimicrobial	Regimen	Considerations
Nitrofurantoin	100 mg orally every 12 h for 5–7 d	Reasonable to offer in the 1st trimester if no appropriate alternatives are available Avoid as treatment for pyelonephritis due to inability to reach therapeutic levels in the kidney
Cephalexin*	250–500 mg orally every 6 h for 5–7 d	
Sulfamethoxazole-trimethoprim	800/160 mg every 12 h for 5–7 d	Reasonable to offer in the 1st trimester if no appropriate alternatives are available In areas with more than 20% resistance to trimethoprim-sulfamethoxazole, avoid if initiating treatment before culture results are available
Fosfomycin	3 g orally once	Avoid as treatment for pyelonephritis due to inability to reach therapeutic levels in the kidney
Amoxicillin*	500 mg orally every 8 h for 5–7 d 875 mg orally every 12 h for 5–7 d	High degree of resistance; avoid if initiating treatment before culture results are available
Amoxicillin—clavulanate*	500 mg orally every 8 h for 5–7 d 875 mg orally every 12 h for 5–7 d	High degree of resistance; avoid if initiating treatment before culture results are available

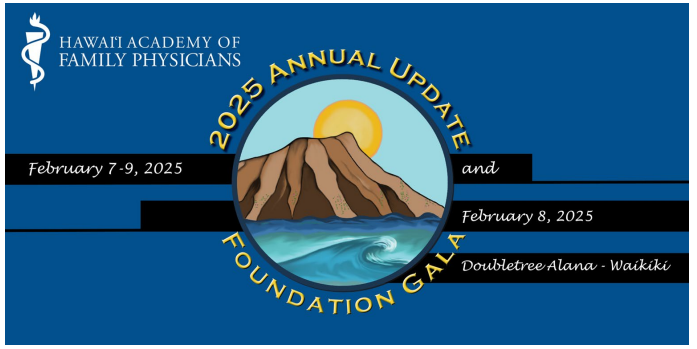
*For patients with a β-lactam allergy for whom other classes of antibiotic are inappropriate, further investigation regarding the severity of allergic reaction is necessary. For patients at low risk for anaphylaxis, treatment with cephalosporins would be appropriate; however, individuals at high risk for anaphylaxis would need to be treated with an alternative regimen.

Modified from:

1. Matuszkiewicz-Rowińska J, Małyszko J, Wieliczko M. Urinary tract infections in pregnancy: old and new unresolved diagnostic and therapeutic problems. Arch Med Sci 2015;11:67–77. doi: 10.5114/aoms.2013.39202

2. Wang T, Wu G, Wang J, Cui Y, Ma J, Zhu Z, Qiu J, Wu J. Comparison of single-dose fosfomycin tromethamine and other antibiotics for lower uncomplicated urinary tract infection in women and asymptomatic bacteriuria in pregnant women: a systematic review and meta-analysis. Int J Antimicrob Agents 2020;56:106018. doi: 10.1016/j.ijantimicag.2020.106018

Recurrent UTI

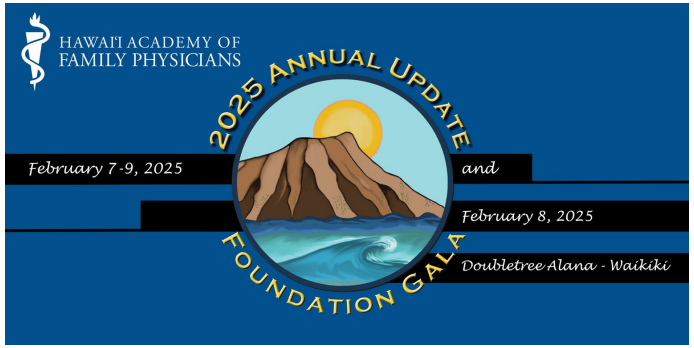


- Recurrent UTIs occur in 4% to 5% of pregnancies
- Suppressive regimens include
  - **Nitrofurantoin**: 100 mg daily
  - **Cephalexin** 250 to 500 mg daily

- Consider Nephrolithiasis in patients with recurrent UTI and back pain, gross hematuria, or recurrent pyelonephritis

https://www.obgproject.com/tag/uti-and-pregnancy/

UTI – Pyelonephritis



- Risks: preterm labor, labor, ARDS, sepsis, acute renal insufficiency
- **Inpatient treatment** recommended for fluid hydration and empiric antibiotics
  - **14 day total course** of therapy
  - Follow up suppressive therapy may be considered

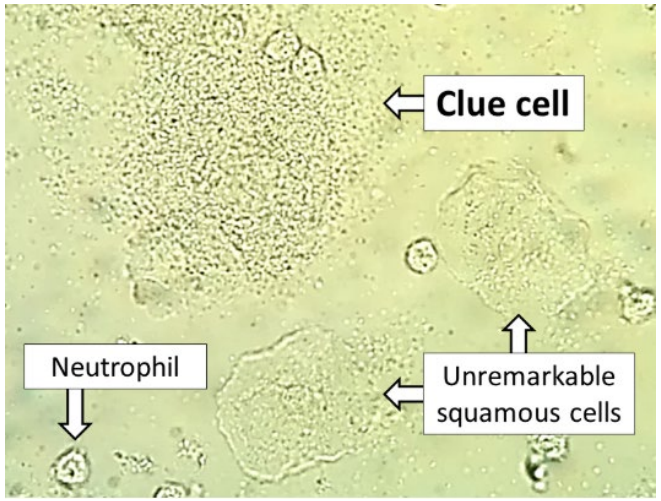
https://www.obgproject.com/tag/uti-and-pregnancy/

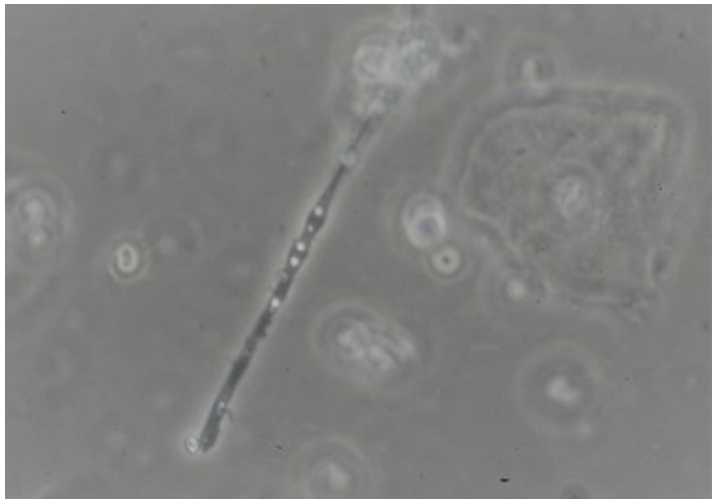
Vaginitis

Treat only if symptomatic

Don’t treat the test

- Vaginal candidiasis - topical Azoles
- Bacterial vaginosis - oral or topical Metronidazole





Source: Wikimedia commons

THIRD TRIMESTER

- Stretch marks
- Constipation
- Low back pain

Peggy is a healthy 24 years old G1P0 female at 32w0d

Her stretch marks are becoming more noticeable. She wants to know what treatments are available.

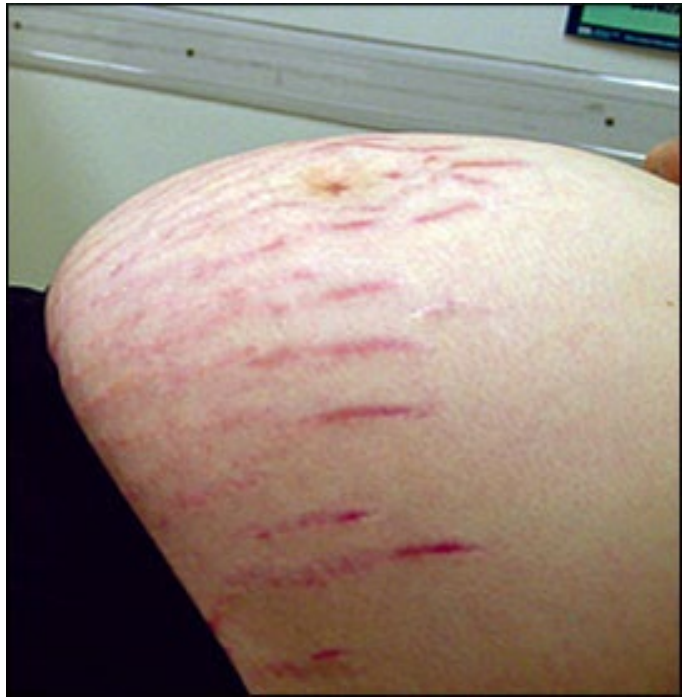


Image: AAFP

Which of the following statement is NOT true about pregnancy stretch marks (Striae gravidarum)

A. It affects up to 90% of pregnant women

B. Topical products such as vitamin E cream, aloe vera lotion can help prevent stretch marks

C. There is a significant association between family history and the development of striae gravidarum

Which of the following statement is NOT true about pregnancy stretch marks (Striae gravidarum)

A. It affects up to 90% of pregnant women

B. Topical products such as vitamin E cream, aloe vera lotion can help prevent stretch marks

C. There is a significant association between family history and the development of striae gravidarum

Striae Gravidarum (Stretch marks)

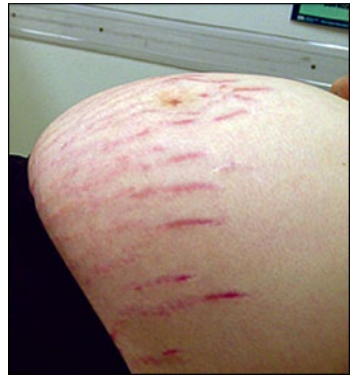


Image: AAFP

- Vitamin E cream, cocoa butter, aloe vera lotion, olive oil
  => no evidence that they are effective
- Most striae fade to pale- or flesh-colored lines and shrink postpartum
- Postpartum treatments (*limited evidence*)
  - topical tretinoin (Retin-A) or oral tretinoin (Vesanoid) therapy
    - Unknown safety in breastfeeding women
  - laser treatment

Am Fam Physician. 2007;75(2):211-218

Constipation

- Increase dietary fiber intake
  - Recommended daily amount ~ 30 g/d
- Hydration
- Physical activities

Studies examining safety in pregnancy and systemic absorption of commonly used laxatives

DRUG	TYPE OF STUDY	DETAILS	OUTCOMES
Psyllium	Surveillance	100 > N < 199 during first trimester	No increased risk of malformations[7]
Docusate sodium	Prospective	N = 116 anytime during pregnancy	No increased risk of malformations[8]
	Surveillance	N = 473 during first trimester	No increased risk of malformations (1/473 = 0.2%)[7]
	Surveillance	N = 319 during first trimester	No increased risk of malformations (3/319 = 0.9%)[9]
	Surveillance	N = 232 during first trimester	No increased risk of malformations (9/232 = 3.9%)[10]
Lactulose	Pharmacokinetics	N = 6 adults given lactulose	Systemic bioavailability < 3%[11]
Polyethylene glycol	Pharmacokinetics	N = 11 adults given polyethylene glycol	Not absorbed[12]
Bisacodyl	Pharmacokinetics	N = 12 adults given oral and rectal bisacodyl	Minimal absorption[13]
	Pharmacokinetics	N = 16 adults given bisacodyl suppository	Systemic bioavailability < 5%[14]
Senna	Case-control	N = 506 cases (260 during first trimester)	No increased risk of malformations (OR 0.8; 95% CI 0.4–1.4) or adverse pregnancy outcomes[15]
	Pharmacokinetics	N = 937 control (500 during first trimester); N = 10 adults given senna	Systemic bioavailability < 5%[16]

OR—odds ratio.

Data from Jick et al,[7] Heinonen et al,[8] Aselton et al,[9] Briggs et al,[10] Carulli et al,[11] Wilkinson,[12] Roth and Beschke,[13] Flig et al,[14] Acs et al,[15] and Krumbiegel and Schulz.[16]

Back pain

Therapy	1st trimester	2nd trimester	3rd trimester	Labor	Postpartum
CAM (acupuncture, acupressure, massage) [52, 53]	Do not use (may stimulate uterine contractions)	Use with caution (experienced therapist; not a high risk pregnancy)	Use with caution (experienced therapist; not a high risk pregnancy)	Use with caution (experienced therapist; not a high risk pregnancy)	Safe
Physical therapy (TENS unit) [52]	Safe	Safe	Safe	N/A	Safe
Hydrotherapy/aqua therapy [54]	Use with caution (avoid hot tubs)	Use with caution (avoid hot tubs)	Use with caution (avoid hot tubs)	Use with caution (birthing pool)	Safe (avoid if C-section)
Cognitive behavioral therapy, biofeedback [52]	Safe	Safe	Safe	Safe	Safe
Chiropractic care [54]	Use with caution (pressure off abdomen)	Safe	Use with caution (avoid lying on back)	N/A	Safe

Pregnancy-related low back pain - PMC

Back exercises

1 4-Point Kneeling

Strengthens and tones the abdominal muscles.

2 Seated Leg Raises

Strengthens abdominal muscles and helps with balance and stability.

3 Seated Overhead Triceps Extension

Stretches and strengthens the triceps (upper arm muscle) and chest muscles. Also works abdominal and hip muscles.

4 Ball Wall Squat

Stretches the muscles of the legs and buttocks. If you have any knee pain, do not do this exercise. If you can, work up to repeating this exercise 10 to 12 times.

Exercises During Pregnancy: 8 Exercises and Stretches You Can Do at Home | ACOG

Back exercises

5 Ball Shoulder Stretch

Stretches the upper back, arms, and shoulders.

1. Kneel on the floor with the exercise ball in front of you. Put your hands on either side of the ball.
2. Move your buttocks back toward your hips while rolling the ball in front of you. Keep your eyes on the floor. Do not arch your neck. Go only as far as comfortable to feel a gentle stretch. Hold for a few seconds.

6 Seated Side Stretch

Eases tension on the sides of your body and stretches your hip muscles.

7 Kneeling Heel Touch

Tones muscles of the upper back, lower back, and abdomen.

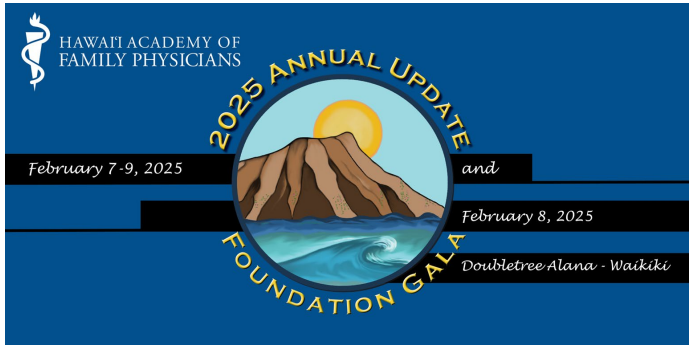
1. Kneel on an exercise mat.
2. Using a slow, controlled movement, rotate your torso to the right. Bring your right hand back and touch your left heel. Extend your left arm above your head for balance.
3. Repeat with the opposite side.

8 Standing Back Bend

Helps counteract the forward bending that happens during pregnancy as your uterus grows.

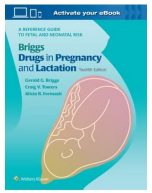
Exercises During Pregnancy: 8 Exercises and Stretches You Can Do at Home | ACOG

Useful Resources



- Am Fam Physician. 2018;98(9):595-602 T
  - The Pregnant Patient: Managing Common Acute Medical Problems
- AAFP articles
- Reproductive Health Access Project
- Briggs Drugs in Pregnancy and Lactation
- ACOG Practice Bulletins
- OBG project

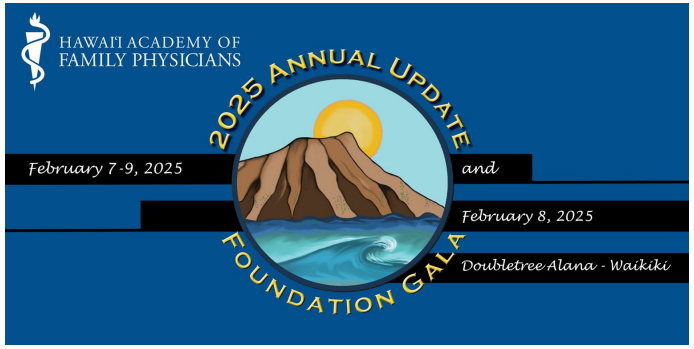
reproductive health access project



ACOG | Clinical
The American College of Obstetricians and Gynecologists

OBG PROJECT®
For Physicians. By Physicians.™

References



- https://guavahealth.com/article/morning-sickness-timing-intensity-management
- https://www.aafp.org/pubs/afp/issues/2014/0615/p965.html
- https://www.aafp.org/pubs/afp/issues/2018/1101/p595.html
- ACOG Practice Bulletin #189 – Nausea & Vomiting of Pregnancy
- ACOG Clinical Practice Bulletin #3
- https://www.obgproject.com/tag/uti-and-pregnancy/
- *Am Fam Physician.* 2007;75(2):211-218
- https://www.gastrojournal.org/article/S0016-5085(24)05118-7/fulltext
- https://www.reproductiveaccess.org/wp-content/uploads/2014/10/2017-11-EPL-algorithm.pdf
- https://www.stanfordchildrens.org/en/topic/default?id=common-discomforts-during-pregnancy-85-P01207
- https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Common-Complaints-in-Pregnancy.pdf
- https://www.reproductiveaccess.org/wp-content/uploads/2017/12/Facilitators-Guide.pdf
- https://unmhealth.org/services/womens-health/_images/back-exercises_9-13-21_english_812-1840.pdf
- Exercises During Pregnancy: 8 Exercises and Stretches You Can Do at Home | ACOG
- Treating constipation during pregnancy | The College of Family Physicians of Canada