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# PAG for the Primary Care Provider

Minnesota Academy of Family Physicians 2025 Spring Refresher
4.10.25

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# Disclosures

None

## Children's Minnesota

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# Objectives

- Develop differential diagnosis for common **prepubertal vulvovaginal conditions**
- Obtain relevant menstrual history
- Order pertinent workup for common **menstrual disturbances**
- Prescribe **hormonal contraceptives** with confidence

# Why?

- PAG can feel like a black box
- Amenorrhea is confusing
- It’s probably not a yeast infection

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# PREPUBERTAL VULVAR CONDITIONS

# Prepubertal vulvar conditions

- Labial adhesions
- Nonspecific vulvovaginitis
- Lichen sclerosus
- Aphthous ulcers*

*Not specific to prepubertal patients

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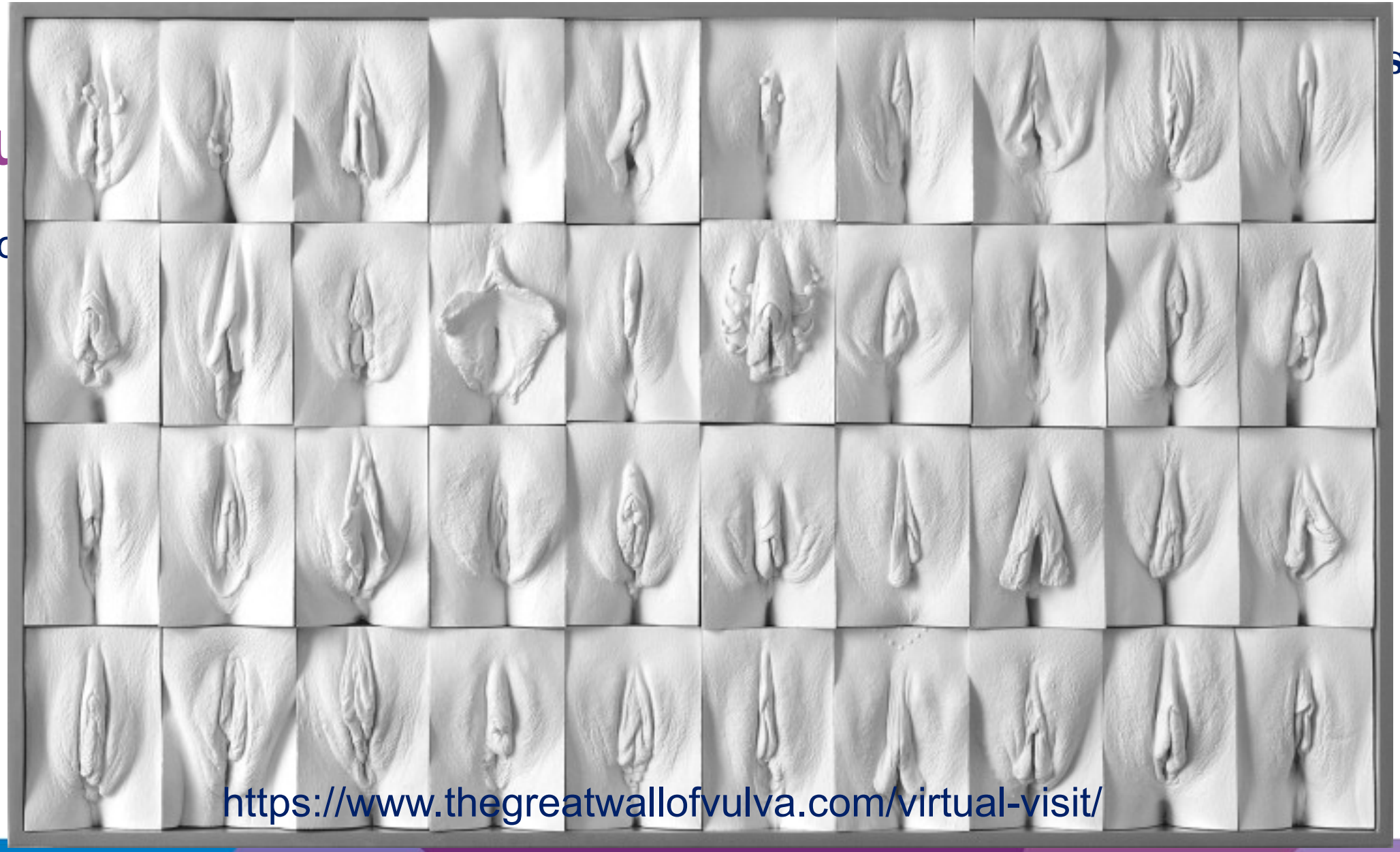
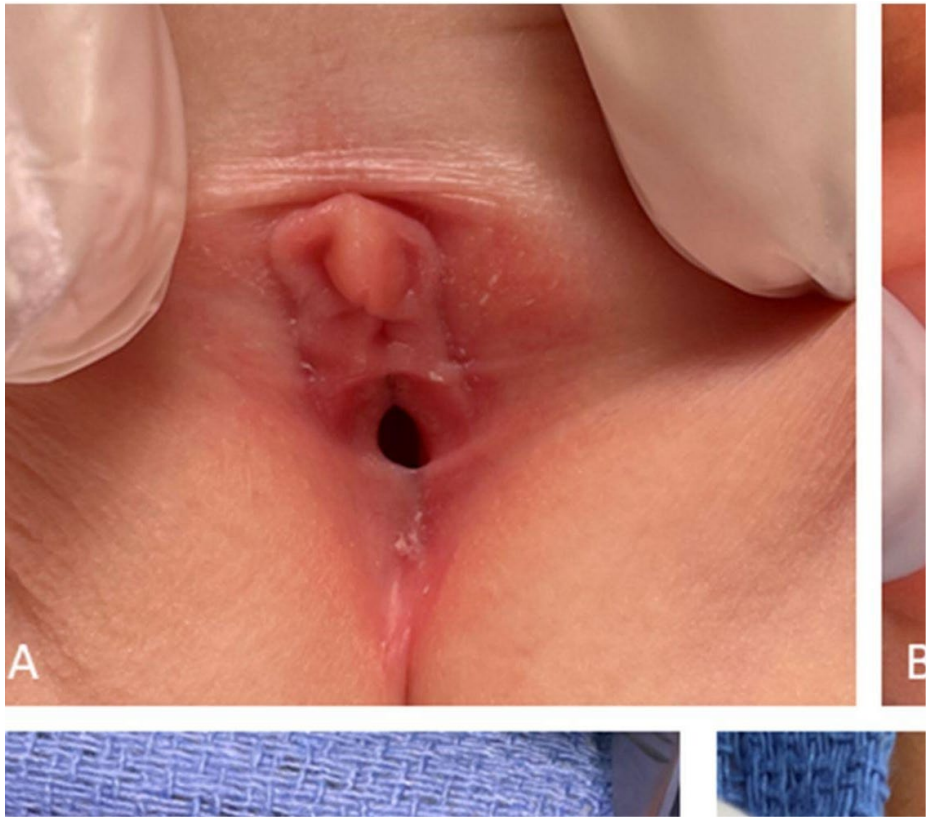


https://www.thegreatwallofvulva.com/virtual-visit/

Eyk NV. J Obstet Gynaecol Can. 2009

# Labial adhesions

- Pathophysiology
  - Hypoestrogenic state
  - Vulvar inflammation
  - 3.3% of 13-23 month olds
- Presentation
  - Often asymptomatic
  - Rarely irritation or UTI
- Exam findings
  - Midline labia minora agglutination
  - Degree of adhesions varies






Recurrence rates after surgical management of labial adhesions. Morin, Jacqueline P. et al. Journal of Pediatric Urology, Volume 17, Issue 5, 705.e1 - 705.e5

# Labial adhesions

- Treatment
  - Observation
    - Asymptomatic
    - Still in diapers
    - Often resolve at puberty
  - Topicals with gentle traction
    - Premarin, estrace cream
    - Betamethasone 0.1% *ointment*
    - BID until separated x2-6 weeks
  - Separation
    - Rarely indicated
    - Topical EMLA + qtip in office if thin

# Labia

- Recu
  - 
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North American Society for Pediatric and Adolescent Gynecology
www.naspag.org

Health professionals committed to the reproductive needs of children and adolescents

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## Caring For Your Child With Labial Adhesions

### What are labial adhesions?

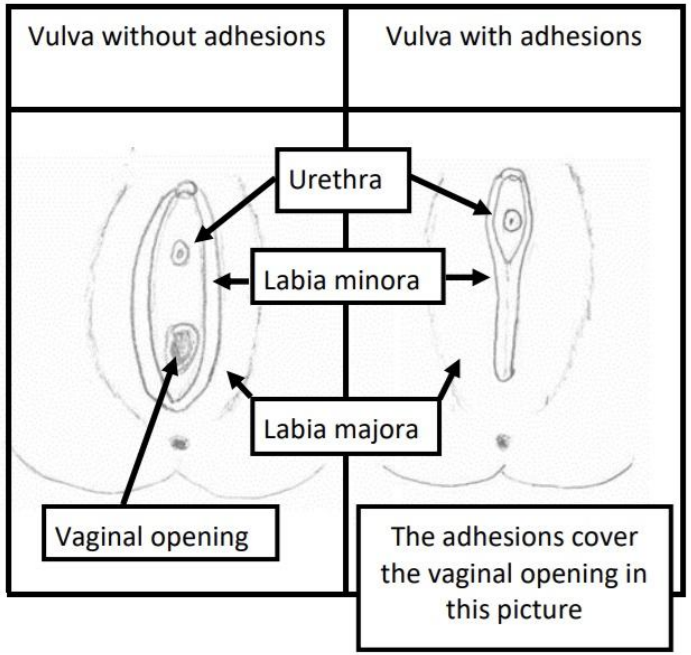
Labial adhesions happen when the small inner lips of the genitals, called the labia minora, stick together in the center instead of being apart.

### What causes labial adhesions?

Labial adhesions often form at a very young age. They are most often found in babies or toddlers. Before puberty, the body doesn't make estrogen and the labia minora are more sensitive. When the labia minora are irritated from urine or stool in the diaper, soaps, infection, or even an allergy, the labia can stick together. Some children have very sensitive skin and are more likely to have this happen. Trauma or injury to the genitals can cause adhesions to form.

### What are the symptoms of labial adhesions?

Some children have no symptoms and it is just something a caregiver or healthcare provider notices.




### How are labial adhesions treated?

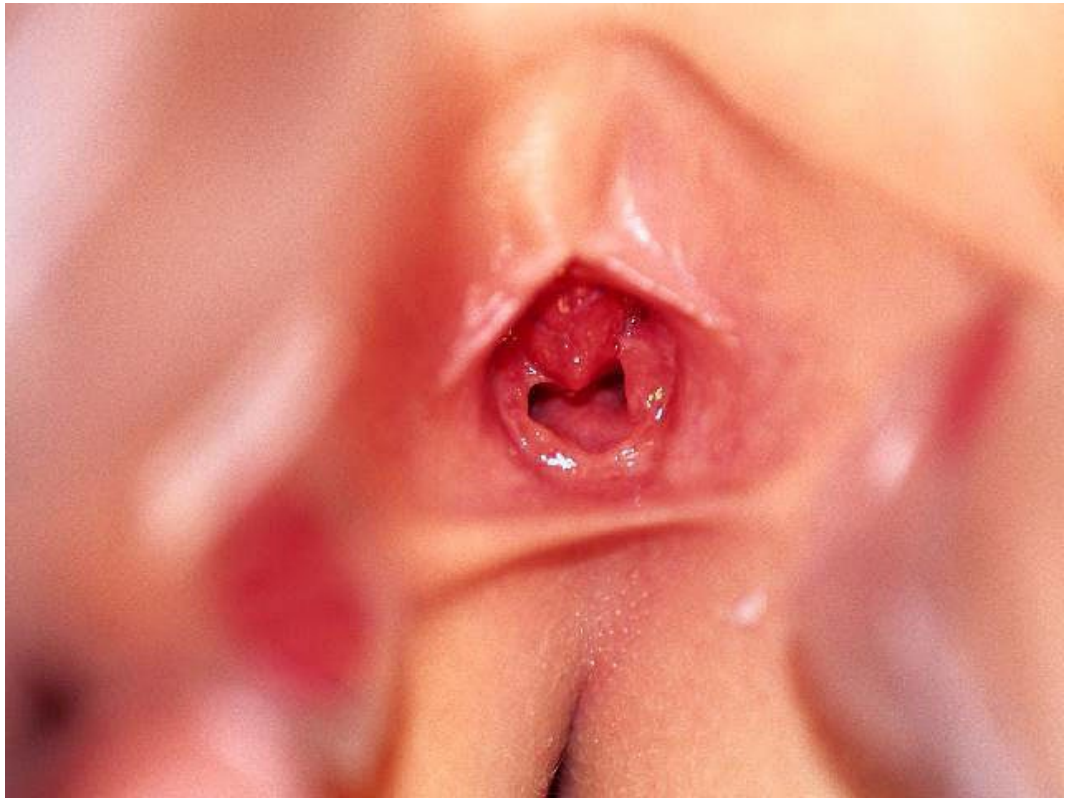
If there are no symptoms or if the adhesions are small, no treatment is needed. The adhesions will get better as puberty begins. When the body starts to make

# Nonspecific vulvovaginitis

- Pathophysiology
  - Hygiene issues
  - Cultures often normal
  - Respiratory, enteric pathogens
- Presentation
  - Discharge
  - Itching
  - Burning
- Pertinent history
  - Irritants
  - Wiping technique
  - Bathing habits

# Nonspecific vulvovaginitis

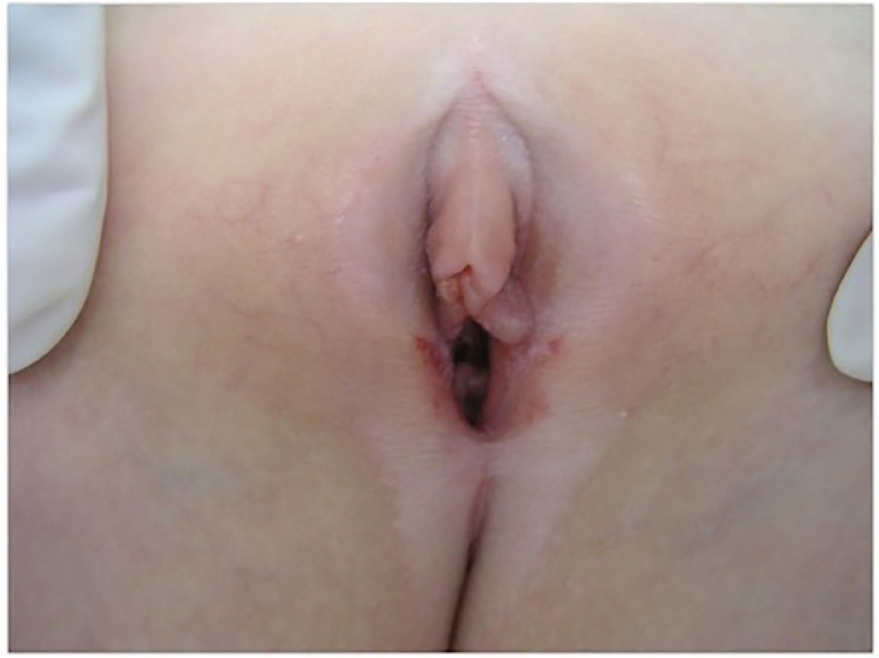
- Exam
  - Normal!
- Workup
  - Urine culture
  - Swabs rarely necessary
- Treatment
  - Sitz baths- plain water
  - Reassurance
  - Hygiene education
  - Barrier ointments
  - Eliminate irritants



Herter LD, Tavares de França N, *et al.*, *Glob Libr Women's Med*
*ISSN: 1756-2228; DOI 10.3843/GLOWM.421013*

# Lichen sclerosus

- Pathophysiology
  - Unclear
  - Autoimmune
- Presentation
  - Pain
  - Itching
  - Fissures
  - Constipation
- Exam
  - Hypopigmentation
  - Fissures
  - Telangiectasias

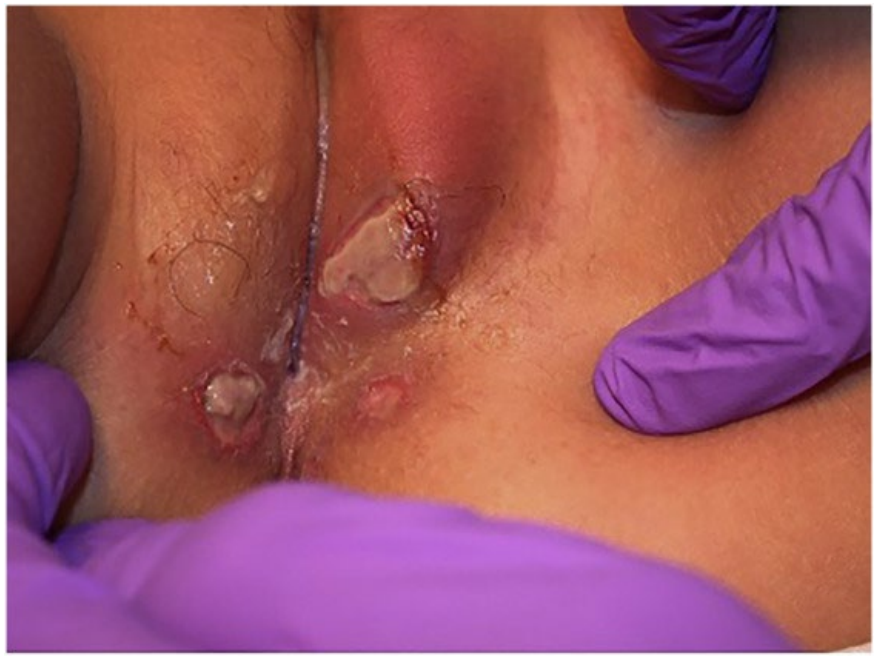


# LS

- Treatment
  - Clobetasol 0.05% ointment BID x6 weeks
  - Taper/wean potency for maintenance
  - Goal is to manage symptoms and prevent scarring
  - Miralax for constipation
  - Barrier ointments
- Prognosis
  - Flares are common
  - Unclear resolution rates at puberty

# Vulvar aphthous ulcers

- Pathophysiology
  - Unclear
  - Hypersensitivity to viral particle
- Presentation
  - Early puberty (avg 12-14 yo)
  - Pain, itching, dysuria
  - Often post-viral
- Exam
  - Ulcerations with gray fibrinous base
  - Large kissing lesions



Evans, et al. JPAG 2025

# Vulvar aphth

- Treatment
  - Sitz baths
  - Topical lidoca
  - Topical clobe
  - Medrol dosep
- Prognosis
  - Recurrence i

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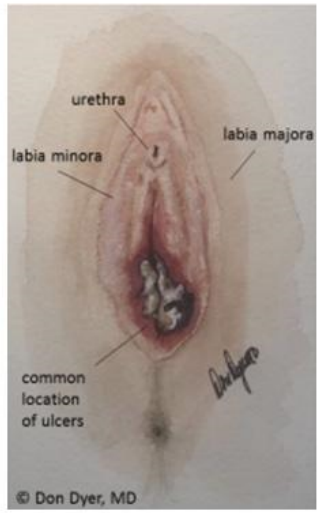
## Vulvar Aphthous Ulcers

### What are vulvar aphthous ulcers?

Vulvar aphthous ulcers are lesions, like uncovered blisters, that form on the vulva (structures surrounding the vaginal opening). They are similar to the "canker sores" you can get in your mouth but can be quite deep and large. They are most commonly found on the inner surface of the labia minora (inner "lips" around the vaginal opening) and are often on both labia.

These ulcers are not thought to be an infection, but in some cases may be triggered by another viral illness in your body such as influenza or mononucleosis (also known as "mono" or Epstein Barr Virus). Stress on your immune system from these infections may cause the ulcers to form.

Your healthcare provider may swab the ulcer and send it for culture to rule out an infectious cause or complication.




### What are common symptoms?

Many patients feel ill for a few days before the ulcers appear, with cough, sore throat, achiness or low-grade fever. They may develop some discomfort in the vulvar area and may notice red/purple blisters forming. The blisters then open and can be very painful. They are often larger and deeper than ulcers caused by the herpes virus. The labia can sometimes become quite swollen, as well. After a few days, a scab may form over the ulcer.

Vaginal discharge (clear, white, yellow or brown) is very common.

Most ulcers heal within 7-14 days.

If you have recurrent episodes of both oral and vulvar ulcers that are present at the same time, you should let your healthcare provider know.

If you find it painful to urinate, you can try urinating in a sitz bath of warm water or use a squirt bottle of water to dilute the urine. If you are unable to urinate at all, you should let your healthcare provider know right away.

### How are vulvar aphthous ulcers treated?

Supportive measures are often used to help with pain, speed up healing, and prevent scarring:

- Oral pain medications (ibuprofen, naproxen, acetaminophen)
- Topical lidocaine gel (numbing gel)
- Sitz baths to clean area and for comfort (sit in plain warm water in your bathtub for 10-15 minutes)
- A topical steroid ointment and/or a course of oral steroids may be recommended to help speed up healing.
- Antibiotics are not effective for treating vulvar aphthous ulcers

Approved: 1/2020 North American Society for Pediatric and Adolescent Gynecology www.naspag.org

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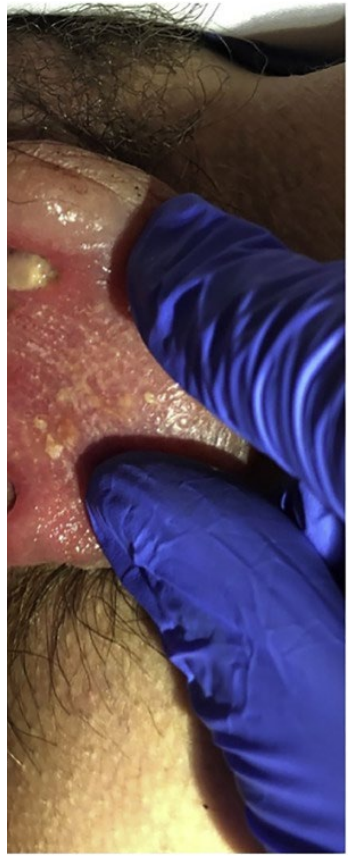

Nonsexually Acquired Genital Ulcers
Jacquelyn R. et al. Journal of Pediatric
me 38, Issue 1, 4 - 10

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# MENSTRUAL CYCLE CONCERNS

# The menstrual cycle is a vital sign

- Median age of menarche: 12-13 years old
  - By age 15, 98% of female patients will have had menarche

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

**COMMITTEE OPINION**

Number 651 • December 2015
Reaffirmed 2020

*(Replaces Committee Opinion 349, November 2006)*

**Committee on Adolescent Health Care**

*The American Academy of Pediatrics endorses this document. This document reflects emerging concepts on patient safety and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.*

**Menstruation in Girls and Adolescents: Using the Menstrual Cycle as a Vital Sign**

# Abnormal pubertal cadence

- Delayed puberty
  - **No menses by 15 years old**
  - No menses by 13 years old + no growth/secondary sexual characteristics
  - No menses > 3 years from onset of thelarche
  - No menses by age 14 + hirsutism
- Precocious puberty
  - Onset of pubertal characteristics prior to 8 years old in females
  - Central vs peripheral causes

# Normal menstrual cycle parameters

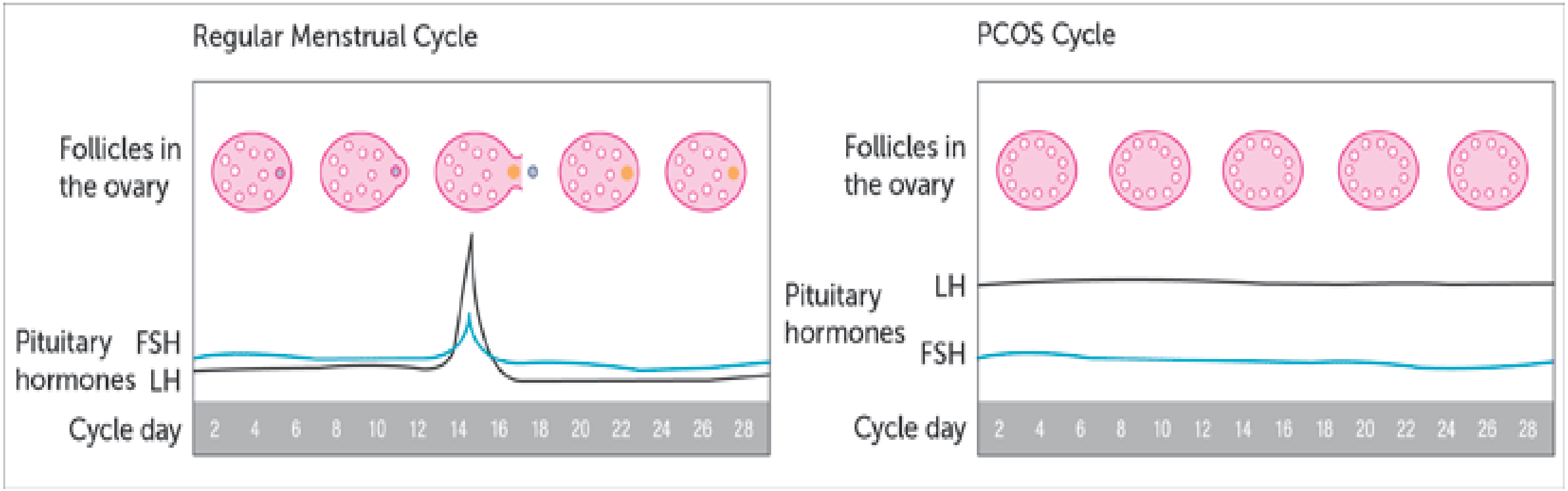
- Menstrual cycle interval length:
  - First 1-2 years after menarche: 21 – 45 days
  - After year 2: 21- 35 days
- Menstrual flow length: 7 days or less
- Menstrual product use: 3 – 6 pads or tampons per day

- Menstrual cycle interval is measured from first day of menses of a cycle until the first day of menses of the next cycle
  - First day of bleeding is Day 1
- Use an app or calendar to track menses

# Anovulatory menstrual bleeding

- Bleeding occurring in the absence of an organized ovulatory signal
  - HPO immaturity
  - PCOS

- Possible patterns:
  - Absence of menses (amenorrhea- primary or secondary)
  - Frequent menses or persistent spotting (cycle length <21 days)
  - Infrequent menses (cycle length > 35 – 45 days)




https://youngwomenshealth.org/guides/polycystic-ovary-syndrome/

# Polycystic Ovary Syndrome (PCOS)

- Common condition of reproductive age natal females with prevalence of ~10%

- Spectrum of phenotypes
  - Features can include:
    - » Abnormal uterine bleeding patterns
    - » Hyperandrogenism or hyperandrogenic features
    - » Metabolic syndrome (insulin resistance, diabetes)
    - » Polycystic appearing ovaries in adult patients

# PCOS in adolescents

- Criteria in adolescents does not involve appearance of the ovaries
- No consensus guidelines on diagnostic criteria for adolescents
  - Consider longitudinal evaluation (1 – 2 years)
  - "At risk for PCOS"
  - International guideline 2018:
    - Hyperandrogenism (clinical or biochemical)
    - Oligo-anovulation
- Do not delay management of bothersome symptoms like acne, hirsutism, and irregular menses

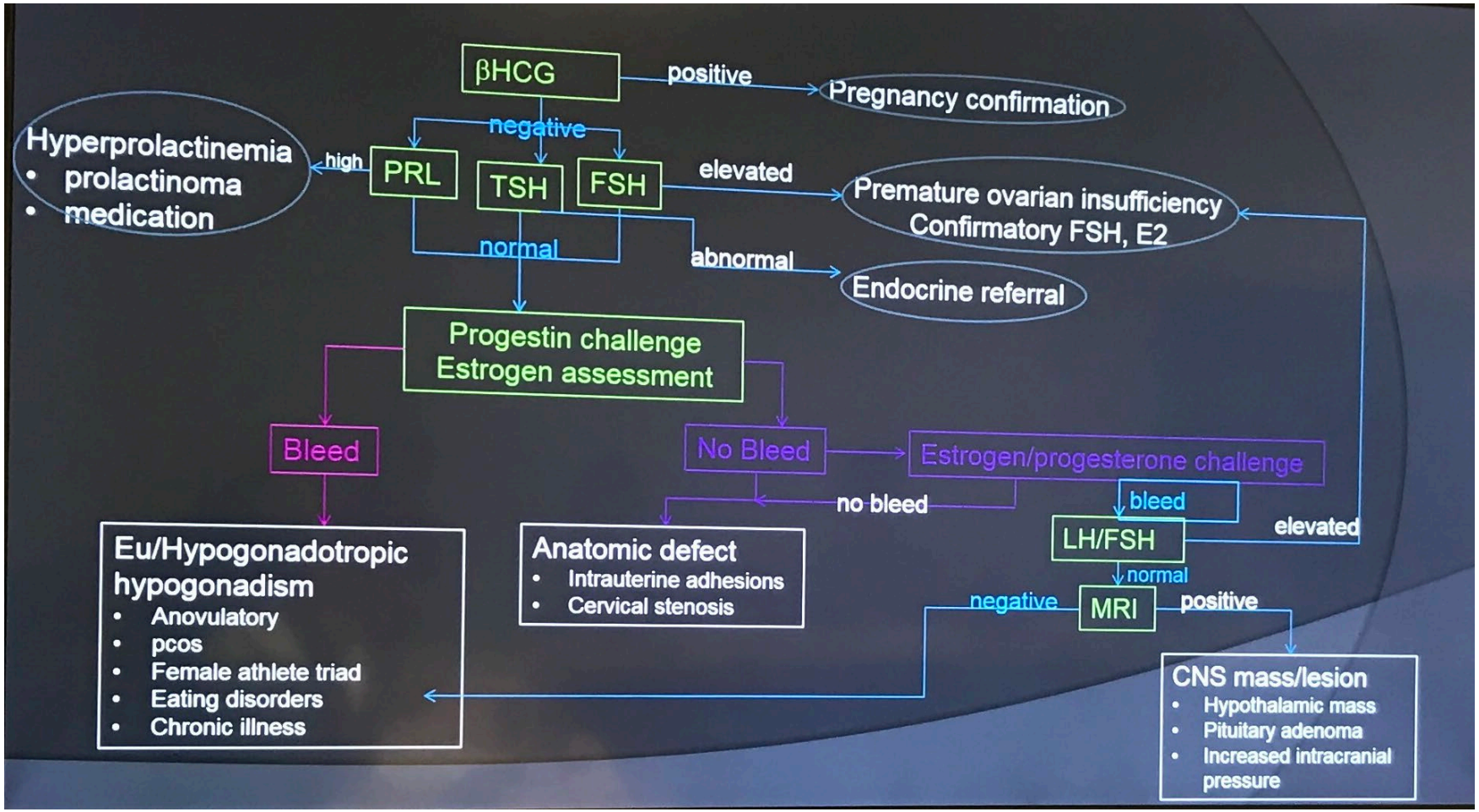
# “PCOS labs”

- FSH → *elevated in POI*
- LH → *(can have elevated LH:FSH ratio in PCOS)*
- Estradiol → *low in hypothalamic amenorrhea*
- **Free, total Testosterone → *elevated in PCOS***
- 17 OHP → *elevated in late onset CAH*
- DHEA-S → *elevated in adrenal tumor (>500)*
- TSH/free T4
- Prolactin
- UPT

# PCOS management in adolescents

- **Abnormal uterine bleeding:**
  - Hormonal medications (ex. Combined hormonal contraceptive pills)
  - Cyclic progestin
- **Hyperandrogenism/hyperandrogenic symptoms:**
  - Hormonal medications
  - Hair removal techniques
  - Management of acne
- **Metabolic syndrome**
  - Metformin
  - Endocrinology referral
  - Lifestyle changes
  - Supplements

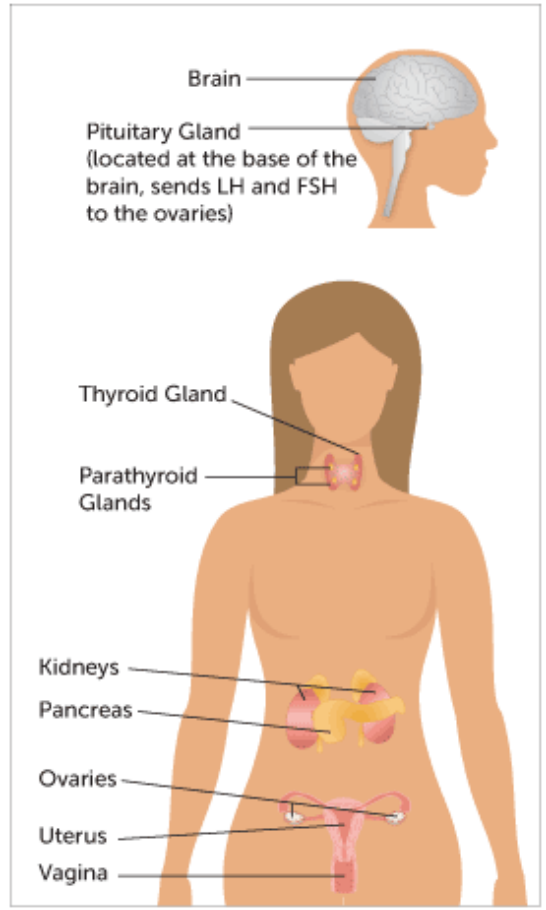
# Amenorrhea




Courtesy of Dr. Amy Vallerie

# Primary amenorrhea

- History
  - Hypothalamic stressors (hypothalamic hypogonadism)
    - Sleep
    - Stress
    - Nutrition/exercise/growth chart
  - Medical history (hypothalamic vs hyperthalamic)
    - Hx cancers/chemo
    - Chronic medical conditions
    - Medications

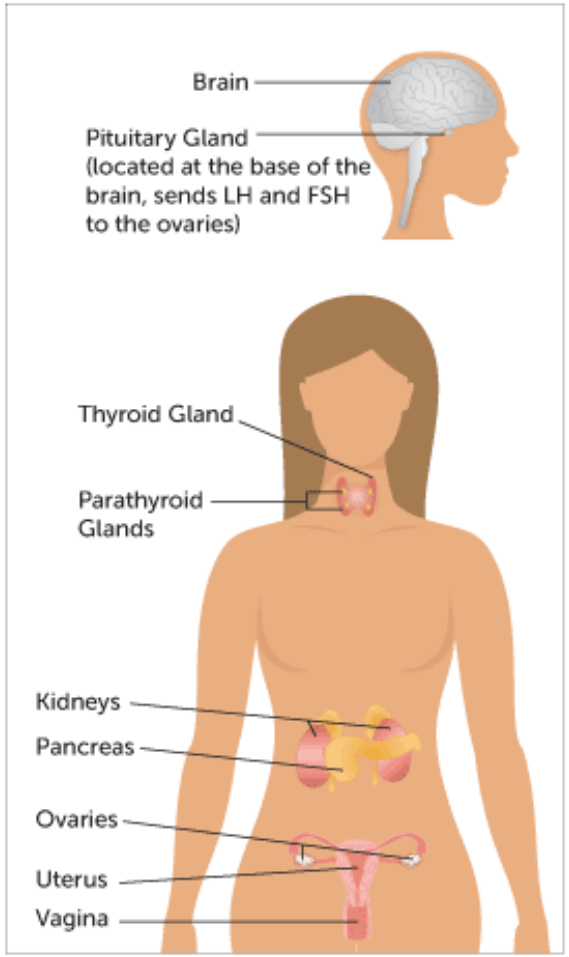



https://youngwomenshealth.org/guides/polycystic-ovary-syndrome/

# Primary amenorrhea

- ***Exam***
  - Breast exam (puberty status)
  - GU exam (MRKH, AIS, imperforate hymen, transverse septum)

- "PCOS labs"



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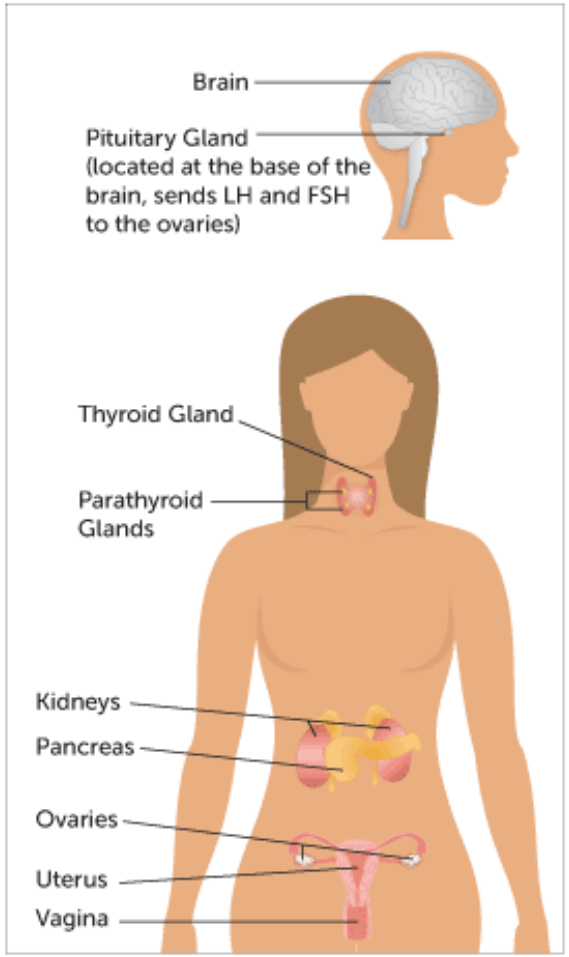
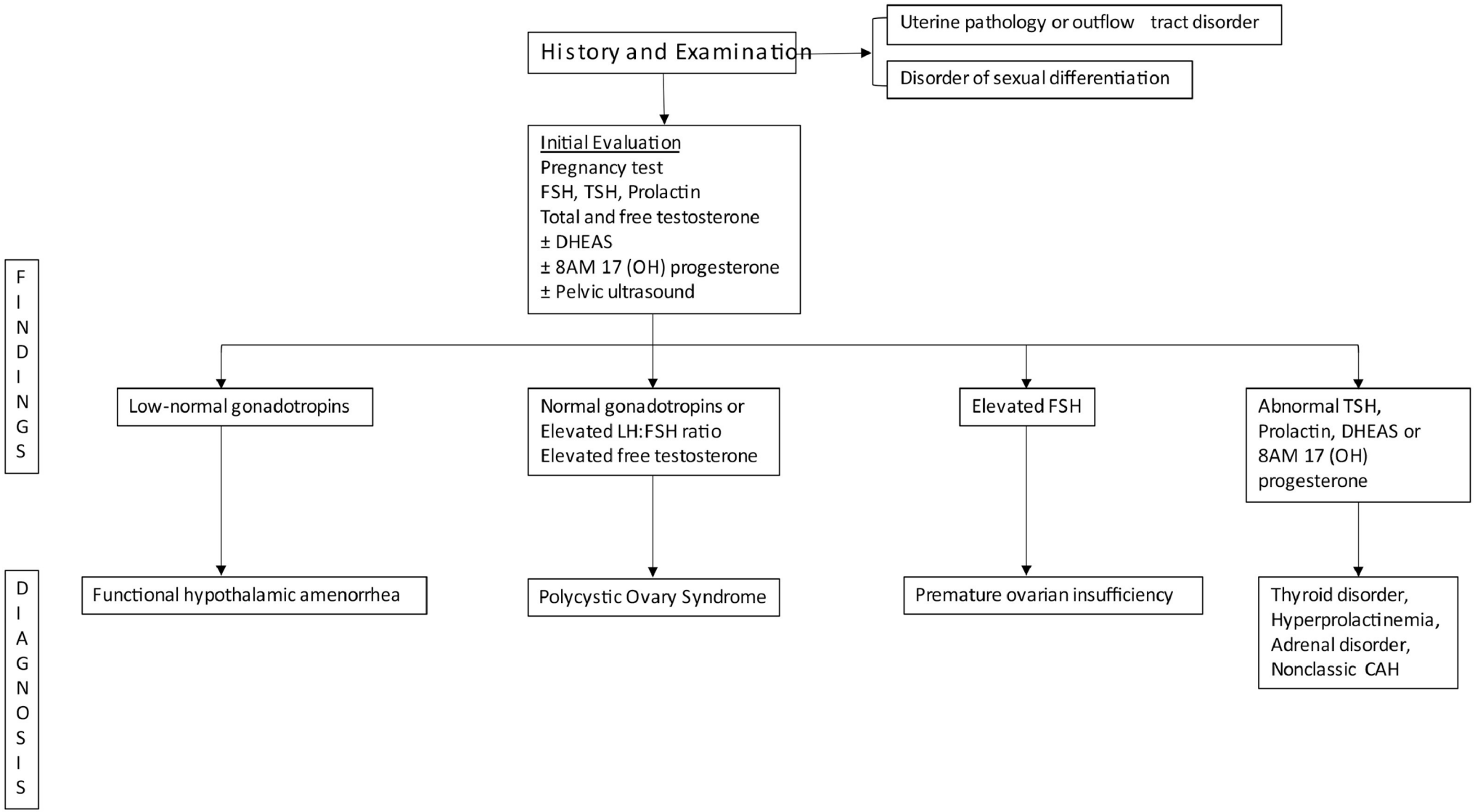
- TSH/free T4
- Prolactin
- UPT

# Primary amenorrhea

- Imaging
  - Pelvic US (MRKH, AIS, anovulation)
  - Bone age (constitutional delay)

- Treatment
  - Depends on etiology



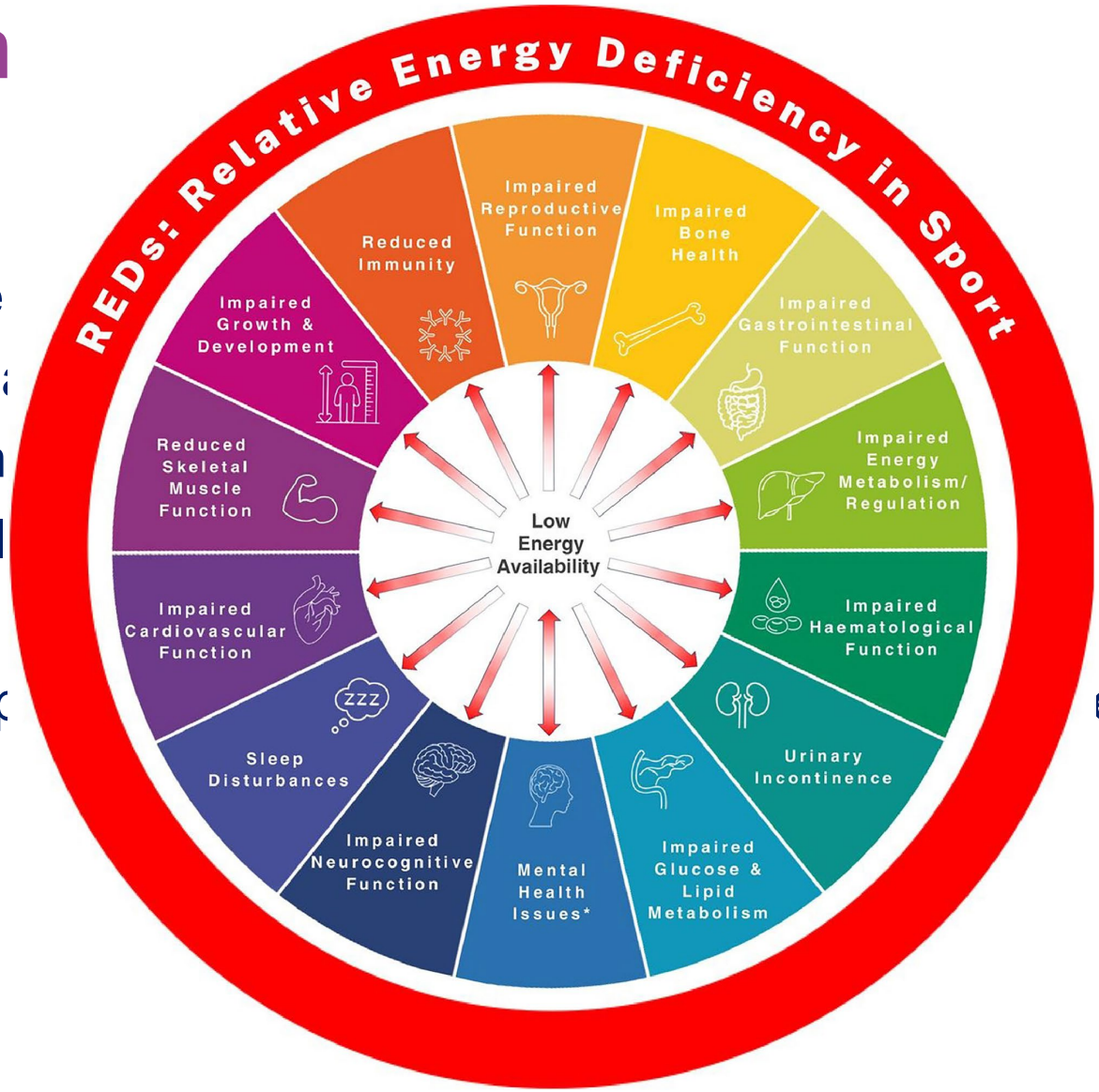



Romano, M. E., et al. (2020).

# Relative en
# (RED-S)

- Formerly “female
- Low energy avail
- Menstrual dysfun
- Can have normal

- Longstanding hyp ensity

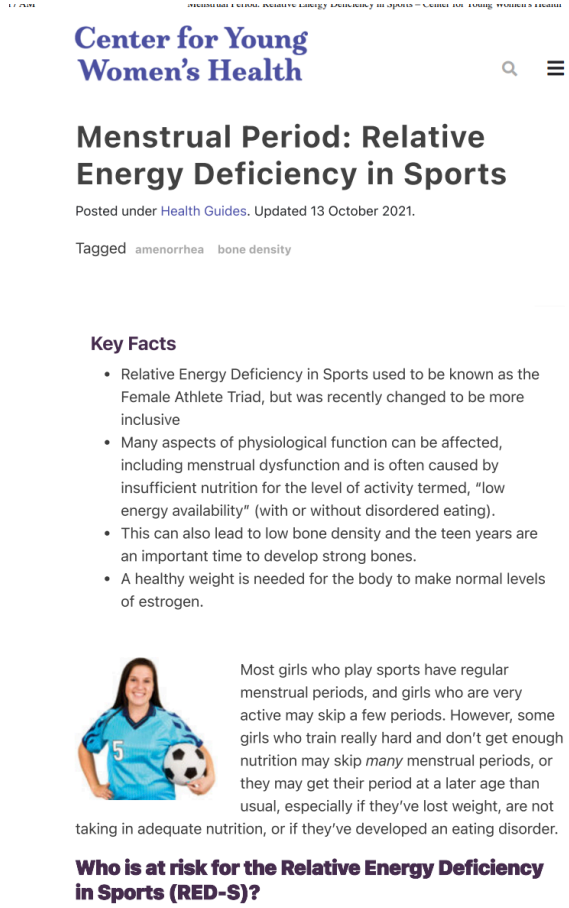



Romano, M. E., et al. (2020).

# Relative energy deficiency in sports (RED-S)

- Evaluation
  - Check labs- diagnosis of exclusion

- Management
  - Correct the energy imbalance
    - » Nutrition referral
    - » Multidisciplinary approach
  - Cyclic progestins
  - Avoid contraceptives unless sexually active



Center for Young Women's Health

## Menstrual Period: Relative Energy Deficiency in Sports

Posted under Health Guides. Updated 13 October 2021.

Tagged amenorrhea bone density

**Key Facts**

- Relative Energy Deficiency in Sports used to be known as the Female Athlete Triad, but was recently changed to be more inclusive
- Many aspects of physiological function can be affected, including menstrual dysfunction and is often caused by insufficient nutrition for the level of activity termed, "low energy availability" (with or without disordered eating).
- This can also lead to low bone density and the teen years are an important time to develop strong bones.
- A healthy weight is needed for the body to make normal levels of estrogen.

Most girls who play sports have regular menstrual periods, and girls who are very active may skip a few periods. However, some girls who train really hard and don't get enough nutrition may skip *many* menstrual periods, or they may get their period at a later age than usual, especially if they've lost weight, are not taking in adequate nutrition, or if they've developed an eating disorder.

**Who is at risk for the Relative Energy Deficiency in Sports (RED-S)?**

https://youngwomenshealth.org/guides/female-athlete-triad/#

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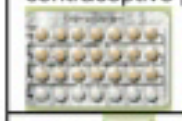
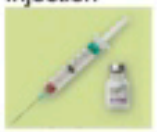
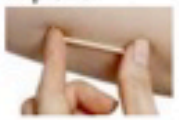
# CONTRACEPTIVE PEARLS

| | Method | Administration | Expected bleeding pattern | Advantages | Disadvantages | Contraceptive failure rate |
|---|---|---|---|---|---|---|
| Combined estrogen and progesterone medications | Combined oral contraceptive pills  | Daily | • Regular, predictable cycles | • Many doses, formulations<br>• Easily reversible<br>• Improves acne | • Temporary/mild: nausea, irregular bleeding, breast pain<br>• Serious: increased blood pressure<br>• Rare/severe: blood clots<br>• Not recommended for patients with migraines with aura, high blood pressure, personal/family history of blood clots, limited mobility, and some other medical conditions | 6-9 pregnancies per 100 women a year |
| | Patch  | Weekly | | • Easily reversible<br>• Improves acne | | |
| | Vaginal ring  | Monthly | | | | |
| | Drospirenone pill | Daily | | | • Potential for irregular bleeding patterns or no bleeding | |
| Progesterone only medications | Progesterone only pills  | Daily | • Limited bleeding at higher doses | • Many options for dosing<br>• Easily reversible | • Potential for increased acne, mood changes, and weight gain at higher doses<br>• Requires consistent timing of administration | |
| | Injection  | Every 3 months | • Irregular bleeding<br>• 80% rate of no bleeding with long-term use | • Less frequent administration | • Potential for increased acne, weight gain, and mood changes<br>• Reversible bone loss<br>• Not recommended for patients with low bone strength | |
| | Implant  | Every 3 years | • Lighter, irregular bleeding<br>• 25% rate of no bleeding with long-term use | • Ease of continuation | • Requires office procedure for placement<br>• Highest rates of persistent, unpredictable bleeding | Less than 1 pregnancy per 100 women in a year |
| | Intrauterine device (IUD)  | Every 8 years | • Lighter bleeding<br>• 50-60% rate of no bleeding with long-term use | • Ease of continuation<br>• Limited systemic hormone circulation | • Requires pelvic exam and procedure for placement (office or operating room)<br>• Irregular bleeding and cramping for several weeks to months after placement<br>• Not recommended for patients with abnormal uterine shape or small uterus | |

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# Questions?


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