



What I See the Most of.....

- ▶ Variations of normal
- ▶ Menstrual regulation or improvement
- ▶ Contraception
- ▶ PCOS in teenagers
- ▶ Red, irritated skin
- ▶ Acquired adhesions
- ▶ Functional ovarian cysts

▶ Rare – blood disorders – pediatricians and emergency departments are on top of this and manage it well with pediatric hematologists

FYI

- ▶ All photographs of real patient examples are from teaching photos available through NASPAG (North American Society of Pediatric and Adolescent Gynecology) or other professional teaching sites.

QUESTION #1

TRUE OR FALSE?

YOU NEED PARENTAL CONSENT TO SEE A 13 YEAR OLD GIRL WHO REQUESTS "A SHOT" FOR BIRTH CONTROL

Treatment of a Minor

- ▶ A minor may receive birth control without parental consent. (Cal. Family Code § 6925).
- ▶ "A minor may consent to medical care related to the prevention or treatment of pregnancy," except sterilization. (Cal. Family Code § 6925).
- ▶ "A minor who is 12 years of age or older and who may have come into contact with an infectious, contagious, or communicable disease may consent to medical care related to the diagnosis or treatment of the disease, if the disease... is one that is required by law...to be reported..., or is a related sexually transmitted disease....." (Cal. Family Code § 6926).

California Minor Consent Laws
http://www.csus.edu/indiv/b/brocks/courses/eds%20245/handouts/week%207/ca_minor_consent.pdf

Basic Exam

- ▶ Speak directly to the patient
- ▶ Tell her what you are going to look at
- ▶ Have her practice before you look
- ▶ Try to relate what she is doing to something she is familiar with
- ▶ Let parent sit with her if she prefers
- ▶ Usually get good cooperation

Basic Exam



https://www.researchgate.net/figure/230588254_fig7_Figure-3-Frog-leg-position-on-exam-table

Basic Exam



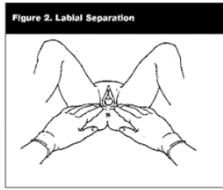
https://www.researchgate.net/figure/230588254_fig7_Figure-3-Knee-chest-position-on-exam-table

Basic Exam



https://www.researchgate.net/figure/230588254_fig1_Figure-4-Child-on-parent's-lap

Basic Exam



<https://www.ahcmedia.com/articles/75689-evaluating-pediatric-sexual-abuse-in-the-emergency-department?trendmd-shared=1>

Basic Exam



Donald Greydanus, MD. *Concepts of Pediatric and Adolescent Gynecology*. Web.

Summary of Pearls – Basic Exam

- 1 Never force an exam. Determine best parental involvement based on patient age/confidentiality.
- 2 Think about different positions that give you a good view, but also make the patient comfortable.
- 3 Gentle traction on inferior labia or lateral to vaginal area. "Blow a balloon, blow out a candle, etc"

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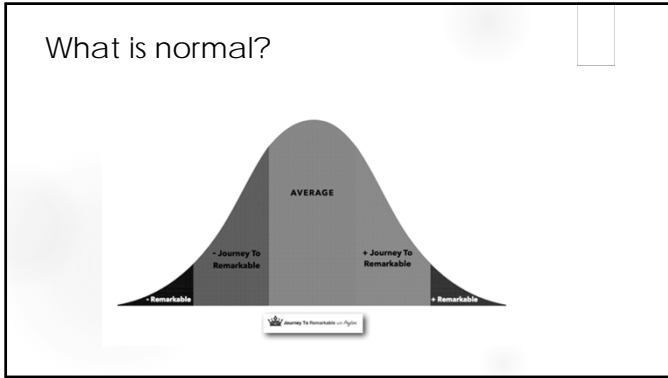
TRUE OR FALSE?

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CONTROL

QUESTION #2

ACCORDING TO ACOG, WHAT IS
THE AVERAGE AGE OF ONSET FOR
MENARCHE NOW?

- A. 12.4
- B. 11.4
- C. 10.4
- D. 9.4



Menstrual Period – Vital Sign

Usually the menstrual period is not the problem itself. An abnormal menstrual period is telling you that something is going on that is causing the abnormal bleeding.

American College of Obstetricians and Gynecologists. Committee Opinion No. 651. Menstruation in girls and adolescents: using the menstrual cycle as a vital sign. *Obstet Gynecol*. 2015;126(6):e143-e146. Available at: <http://www.acog.org/-/media/Committee-Opinions/Committee-on-Adolescent-Health-Care/co651.pdf?dmc=1&ts=2015112411701404887>

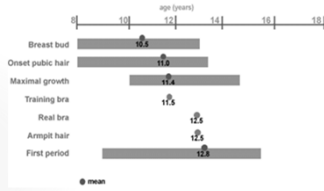
Endorsed by the American Academy of Pediatrics in 2015.

What is normal? Menstrual Period

- ▶ Age of onset – study of nearly 18,000 girls
 - ▶ 12.43 years (ACOG)¹
 - ▶ African Americans- 50% before age 8 ³
 - ▶ Precocious puberty – onset of menses before age 6-7 ³
- ▶ Range 20-45 days, average of 32.2 days ²
- ▶ Lasts 3-7 days on average
- ▶ Use 3-6 tampons or pads in 24 hours

1. ACOG Committee Opinion #651. December 2015.
 2. Paula Hillard, MD. Stanford University. Menstruation in adolescents: What is normal? 2008.
 3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2644006/>

What is normal? Menstrual Period



Sarpolis, K. *First menstruation: Average age and physical signs.* (2011). <http://www.obgyn.net/sexual-health/first-menstruation-average-age-and-physical-signs>

What is normal? Menstrual Period

- ▶ ACOG – May take up to 6 years for menstrual cycles to become regular.
- ▶ Hillard – May take up to 9 years for menstrual cycles to become regular.
- ▶ Hypothalamus-Pituitary-Ovarian (HPO) Axis takes time to mature, and girls will have many irregular anovulatory months.

- ACOG Committee Opinion #651. December 2015.
- Paula Hillard, MD. Stanford University. *Menstruation in adolescents: What is normal?* 2008. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2644006/2015>.
- *Your first period – Especially for teens* – ACOG <https://www.acog.org/Patients/FAQs/Your-First-Period-Especially-for-Teens>

What is normal? Menstrual Period

- ▶ How do we count the menstrual cycle? Day 1 to Day 1



<https://www.vertex42.com/calendars/menstrual-cycle-calendar.html>

Summary of Pearls – Normal

1

The menstrual period is a vital sign – look at it just as you would look at a blood pressure or a temperature.

2

Average age of menstrual period onset is still around 11 – 12 years old

3

Can take up to NINE years for menstrual periods to become reliably regular

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QUESTION #3

TRUE OR FALSE? (2 points!)

- NSAIDs CAN REDUCE MENSTRUAL BLEEDING UP TO 50%
- OCPs INCREASE THE RISK OF TEEN MORTALITY

Ok- it's normal- but they still want to do something about it!

- ▶ Blood tests? Don't over test. A normal CBC can be reassuring.
- ▶ Ultrasound? Very rare to find a problem in this age group. In all the years (20) I have been providing service to this population I have found 1 didelphys uterus and 1 polyp.
- ▶ Ultrasound does not pick up endometriosis unless there is an ovarian endometrioma. Ultrasound does not pick up imperforate hymen. Functional ovarian cysts make families worry about "cysts."

Ok- it's normal- but they still want to do something about it!

- ▶ Years since menarche and height
- ▶ Usually a girl has at least 2 years more of potential growth in height after menarche
- ▶ "...estrogen does not induce growth plate ossification directly; instead, estrogen accelerates the programmed senescence of the growth plate, thus causing earlier proliferative exhaustion and consequently earlier fusion." (Weise, 2001)

Weise, M. et al. *Effects of estrogen on growth plate senescence and epiphyseal fusion.* Proc Natl Acad Sci U S A. 2001

Ok- it's normal- but they still want to do something about it!

- ▶ NSAIDS – reduce flow by 20-50% (NHS)
 - ▶ No difference ibuprofen (Motrin®, Advil®), naproxen (Naprosyn®, Anaprox®), mefenamic acid (Ponstel®)
- ▶ Safe if taken with food
- ▶ No risk DVT
- ▶ Start of first sign of menstrual flow, take regularly TID-QID for 2-4 days – take for only a couple of days, not daily

- ▶ Difficult to get girls to take the medication regularly
- ▶ There is risk of GERD

<https://www.nhs.uk/Conditions/Periods-heavy/Pages/Treatment.aspx>

Ok- it's normal- but they still want to do something about it!

- ▶ "Minipill" (Norethindrone) (Nor-Q-D°, Micronor®)
- ▶ Does reduce menstrual flow better than NSAID
- ▶ Do need to take daily
- ▶ No placebo week – so make sure patient knows that if she is also using it for birth control there is no "blank" week
- ▶ Probably does not help acne

- ▶ Subdermal Implant – Etonogestrel (Nexplanon®)
- ▶ Long acting – 3 years currently

<https://www.nhs.uk/Conditions/Periods-heavy/Pages/Treatment.aspx>

Ok- it's normal- but they still want to do something about it!

- ▶ Oral contraceptives
- ▶ Many brands – no statistical difference in which brand you choose
- ▶ I like to start with a monophasic 20 mcg OCP. There is always room to go up in dose.
- ▶ Must take daily. Missed pills lead to break through bleeding.
- ▶ Common side effects – upset stomach, breast tenderness
- ▶ Improves acne! (Increases SHBG) Many brands emphasize better efficacy for acne – no statistical difference

Ok- Is it safe?

- ▶ **J Adolesc Health. 1992 Jun;13(4):333-6**
- ▶ 51% of teens will have been sexually active by the age of 18
- ▶ "The risk of death from oral contraceptive use for teenagers is virtually nil"

- ▶ **www.who.int/mediacentre/factsheets/fs364/en**
- ▶ "Complications during pregnancy and childbirth are the second cause of death for 15-19 year-old girls globally. Every year, some 3 million girls aged 15 to 19 undergo unsafe abortions. Babies born to adolescent mothers face a substantially higher risk of dying than those born to women aged 20 to 24"

Ok- it's normal- but they still want to do something about it!

- ▶ Tranexamic Acid (Lysteda®, Femstrual®, Cyclokapron®)
- ▶ Antifibrinolytic – works on the coagulation pathway
- ▶ Slows down the breakdown of clots, which then prevents prolonged bleeding (synthetic amino acid lysine)
- ▶ NOT to be used if (short list)
 - ▶ History of DVT, PE
 - ▶ if using OCP or other medications that increase DVT risk
 - ▶ Using an anticoagulant (heparin, warfarin, etc)
 - ▶ Under age 18 (Femstrual®)
 - ▶ Pregnant (Class B?)

<https://www.nhs.uk/Conditions/Periods-heavy/Pages/Treatment.aspx>

Summary of Pearls –

- 1 NSAIDs can reduce menstrual bleeding by up to 50%, are only needed a few days, do not increase DVT risk, and allow teenagers to get tall!
- 2 OCP's probably won't kill a teenager, but pregnancy might!
- 3 Future of menstrual management is changing....stay tuned.

QUESTION #3

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➤ NSAIDs CAN REDUCE MENSTRUAL BLEEDING UP TO 50%

➤ OCPs INCREASE THE RISK OF TEEN MORTALITY

QUESTION #3

TRUE OR FALSE? (2 points!)

➤ NSAIDs CAN REDUCE MENSTRUAL BLEEDING UP TO 50% TRUE

➤ OCPs INCREASE THE RISK OF TEEN MORTALITY FALSE

Extra Bonus Pearl (and point!)
(AKA-Public Service Announcement!)

Please screen all teens 15 years and older for chlamydia.

Age based screening, and not based on whether they admit to sexual activity. Collect urine while they are in the office and send it to the lab if you can. Chlamydia infection can cause spotting!



QUESTION #4

TRUE OR FALSE?

INTRAUTERINE DEVICES (IUD) ARE NOT FDA APPROVED FOR TEENS

Birth control –What’s best for teens?



Birth control –What’s best for teens?

- ▶ LARC (long-active reversible contraception)
- ▶ Sub-dermal implant with progestin (Nexplanon[®]) (3 Years)
- ▶ Intra-uterine device (IUD)
- ▶ Mirena[®] (5 years)
- ▶ Paragard[®] (10 years)
- ▶ Injectable (Depo-provera[®]) (12 weeks)
- ▶ Vaginal ring (NuvaRing[®]) (3 weeks, 1 week out)

Birth control –What’s best for teens?

	Paragard®	Mirena®
Efficacy length	10 years	5 years
Menstrual flow	Same or heavier or spotting	Absent or frequent spotting and discharge
Failure rate	Less than 1 in 100	Less than 1 in 100
Pain	Cramps	Abdominal/pelvic pain
Less common risks	PID Ectopic Uterine perforation Expulsion	PID Severe infection Ectopic Uterine perforation Expulsion Ovarian cysts
Protect from STDs	No	No

FDA: US Food and Drug Administration web site. *Birth Control: Medicines to Help You*

Summary of Pearls – Contraception

- 1 Think of LARC!
- 2 OCPs will help with menstrual cycling, acne, and may reduce cysts.
- 3 Don't forget to talk about STD prevention when prescribing contraception

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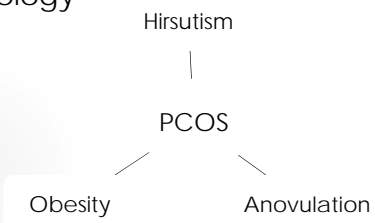
INTRAUTERINE DEVICES (IUD) ARE
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QUESTION #5

TRUE OR FALSE?

PCOS IS A CLINICAL DIAGNOSIS
OF BOTH ADULTS AND TEENS

PCOS – A hot topic in adolescent
Gynecology



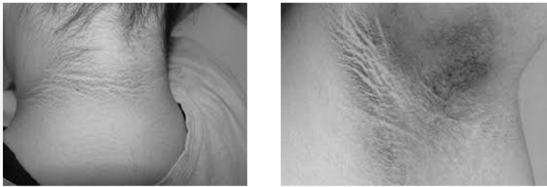
PCOS – A hot topic in adolescent Gynecology

Hirsutism and Acne



PCOS – A hot topic in adolescent Gynecology

Acanthosis Nigricans



PCOS – A hot topic in adolescent Gynecology

The diagnosis of PCOS is based on hyperandrogenism or chronic anovulation in the absence of specific pituitary and/or adrenal disease.

4-12% of reproductive women

PCOS – A hot topic in adolescent Gynecology

Rule out Pregnancy
HCG

Sheehan. 2004. *Polycystic Ovarian Syndrome: Diagnosis and Management*.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1069067/>

PCOS – A hot topic in adolescent Gynecology

Rule out Pituitary Disorders
Prolactin (PRL)
Thyroid Stimulating Hormone (TSH)

Sheehan. 2004. *Polycystic Ovarian Syndrome: Diagnosis and Management*.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1069067/>

PCOS – A hot topic in adolescent Gynecology

Rule out Adrenal Gland Issues
17-OH-Progesterone
DHEA(S)

Sheehan. 2004. *Polycystic Ovarian Syndrome: Diagnosis and Management*.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1069067/>

PCOS – A hot topic in adolescent Gynecology

Rule out Ovarian Tumor and Hyperthecosis

Testosterone

Sheehan. 2004. *Polycystic Ovarian Syndrome: Diagnosis and Management.*
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1069067/>

PCOS – A hot topic in adolescent Gynecology

Rule out Cushing's Disease

24-hour urine free cortisol

Sheehan. 2004. *Polycystic Ovarian Syndrome: Diagnosis and Management.*
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1069067/>

PCOS – A hot topic in adolescent Gynecology



PCOS – A hot topic in adolescent Gynecology

Traditional Labs
LH:FSH 2:1, 3:1, 4:1

PCOS – A hot topic in adolescent Gynecology

HAIR-AN
Fasting insulin

PCOS – A hot topic in adolescent Gynecology

Oral Contraceptives	Metformin
Help regulate a menstrual flow that is predictable and lighter	Reduce the insulin
Increases Sex Hormone Binding Globulin Reduce free testosterone	Improve ovarian cyclic function
Reduce hirsutism and future abnormal hair growth	Reduce acanthosis nigricans
Reduce acne	Lose weight

Summary of Pearls – PCOS

1

HAIR-AN - lifelong diagnosis with future health implications

2

Think of locations for labs – consider fasting insulin

3

OCPs and/or Metformin for long-term treatment

QUESTION #5

TRUE OR FALSE?

PCOS IS A CLINICAL DIAGNOSIS OF BOTH ADULTS AND TEENS

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QUESTION #6

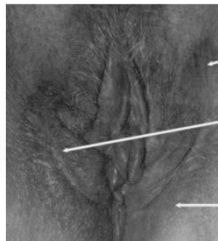
TRUE OR FALSE?

VAGINAL YEAST INFECTIONS ARE COMMON IN PREMENARCHAL GIRLS.

Red Skin – Common Reasons!
Diaper rash with candida



Red Skin – Common Reasons!
Contact dermatitis



Symmetrical
Slightly raised, even erythema
Bright red
Often severe itching or stinging
Extends only to area of exposure

Red Skin – Common Reasons! Allergen of the Year!

- ACDS Allergens of the Year
- 2016 Cobalt
 - 2015 Formaldehyde
 - 2014 Benzophenones
 - 2013 Methylisothiazolinone
 - 2012 Acrylate
 - 2011 Dimethyl fumarate
 - 2010 Neomycin
 - 2009 Mixed dialkyl thiourea
 - 2008 Nickel
 - 2007 Fragrance
 - 2006 p-Phenylenediamine
 - 2005 Corticosteroids
 - 2004 Cocamidopropyl betaine
 - 2003 Bacitracin
 - 2002 Thimerosal
 - 2001 Gold
 - 2000 Disperse Blue Dyes

Summary of Pearls – Red Skin

- 1 Candida vulvovaginitis is rare premenarchal girls
- 2 Contact dermatitis from urine and wipes is common
- 3 “Allergen of the year”

QUESTION #6

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QUESTION #6

TRUE OR FALSE?

VAGINAL YEAST INFECTIONS ARE COMMON IN PREMENARCHAL GIRLS.

QUESTION #7

TRUE OR FALSE?

SURGERY IS USUALLY REQUIRED FOR ACQUIRED GENITAL ADHESIONS?

Acquired Labial Adhesions



Acquired Labial Adhesions



Acquired Labial Adhesions

Treatment
Try to avoid forcing the labia open - painful Rare that you need surgical intervention
Estrogen cream - Estradiol 2-8 weeks
Topical steroid cream Hydrocortisone 2-8 week
DO NOT APPLY WITH A Q-TIP USE SOME PRESSURE WITH A CLEAN FINGER FOR APPLICATION!

Summary of Pearls - Labial Adhesions

- 1 EXACT ETIOLOGY IS UNKNOWN
- 2 SURGERY RARELY REQUIRED
TOPICAL ESTRADIOL OR STEROID CREAM 2-8 WEEKS
USUALLY RESOLVES THE ISSUE
- 3 DO NOT APPLY WITH A Q-TIP!

QUESTION #7

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QUESTION #7

TRUE OR FALSE?

SURGERY IS USUALLY REQUIRED
FOR ACQUIRED GENITAL
ADHESIONS?

QUESTION #8

TRUE OR FALSE?

CYSTS ARE INTERESTING!

Ovarian cysts

- ▶ Ovarian cysts are common as the teenager has a more mature H-P-O axis
- ▶ 99% are benign
- ▶ Ovaries are their largest in the teen years
- ▶ Ovarian cyst under 8 needs careful evaluation, especially if there are other androgenic or estrogenic signs and symptoms

Ovarian cysts – ovulatory follicle



Simple cyst measuring 3.6 cm

Google Images

Ovarian cysts – Hemorrhagic cyst



Google Images

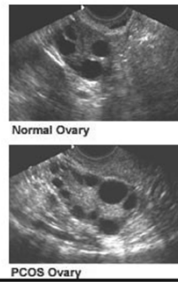
Ovarian cysts - Endometrioma



Google Images

Ovarian cysts - PCOS

Ultrasound of Ovaries



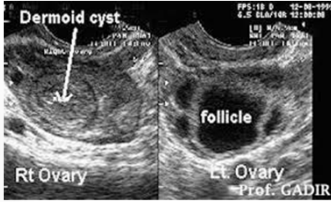
Google Images

Ovarian cysts - Dermoid (Mature Teratoma)



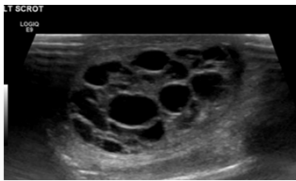
Google Images

Ovarian cysts – Dermoid (Mature Teratoma)



Google Images

Ovarian cysts – Granulosa Cell Tumor



Google Images

Ovarian cysts - Management

- ▶ Oral contraceptives (OCPs) can help reduce recurrent, painful ovarian cysts that result from ovulation
- ▶ Girls with recurrent hemorrhagic cysts and ruptured cysts can benefit from OCPs
- ▶ An endometrioma or a dermoid cyst are going to need surgery
- ▶ Cysts usually aren't a risk for torsion until they are larger than 6 cm – but – anything can happen

Summary of Pearls – Cysts

1

The majority of cysts seen in this population are benign follicles or hemorrhagic cysts

2

OCP may reduce ovarian cyst function – but not always – other products reduce ovulation even less

3

Torsion signs and symptoms should be evaluated. Save the ovaries!

QUESTION #8

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CYSTS ARE INTERESTING!

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