

Teresa Fletcher, MSN,  
APRN-CNP  
School Based Health  
Center

# The Use of Contraception for Menstrual Management

# Disclosures

- ◊ I don't work in adolescent medicine anymore but its still a passion of mine!
- ◊ I have nothing to disclose

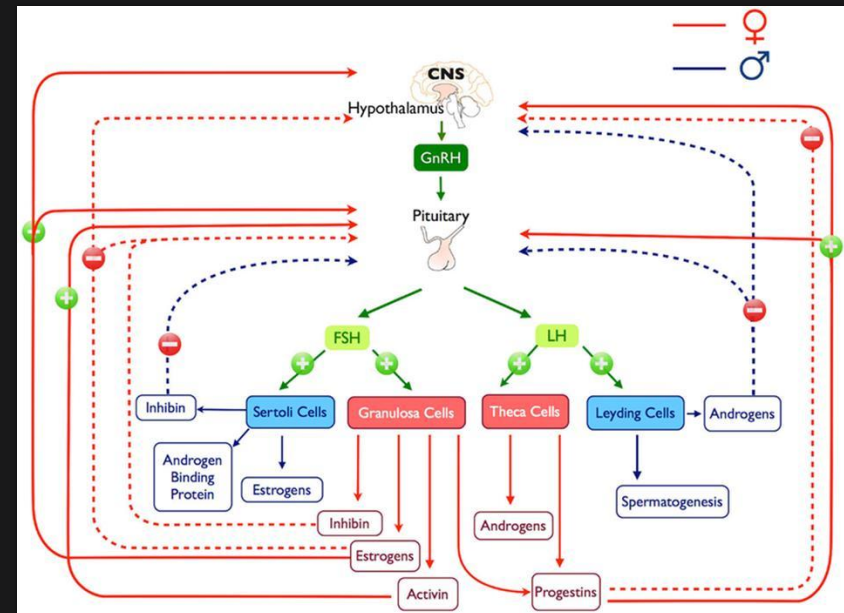
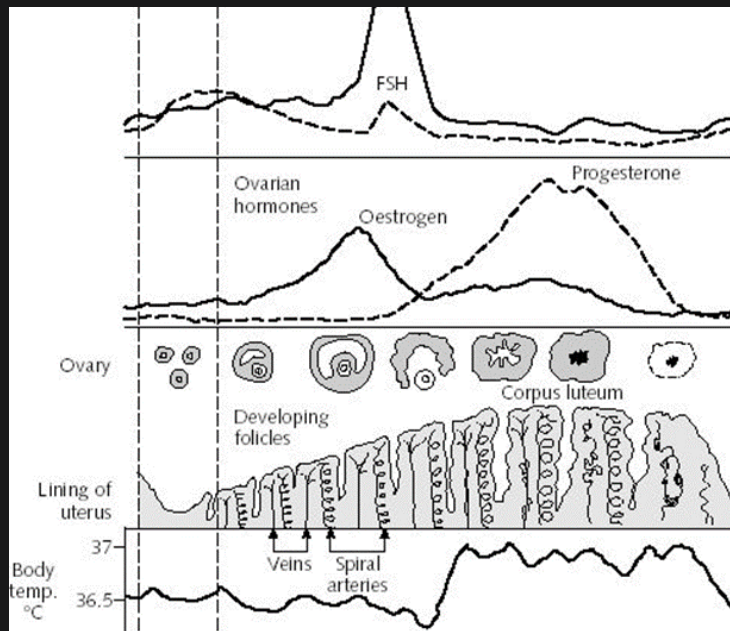


# Objectives

- ◊ Identify indications for contraception for menstrual management.
- ◊ Discuss pharmacological use for menstrual management.
- ◊ Define criteria of when to refer patients to Adolescent Medicine or other specialists.

# Review of Female Adolescent Development

- ◇ Just remember to TAP Me
  - ◇ Thelarche- Breast development
  - ◇ Adrenarche – Pubic hair Development
  - ◇ Peak Height Velocity
  - ◇ Menarche- The first period



# The Menstrual Cycle

# Menarche

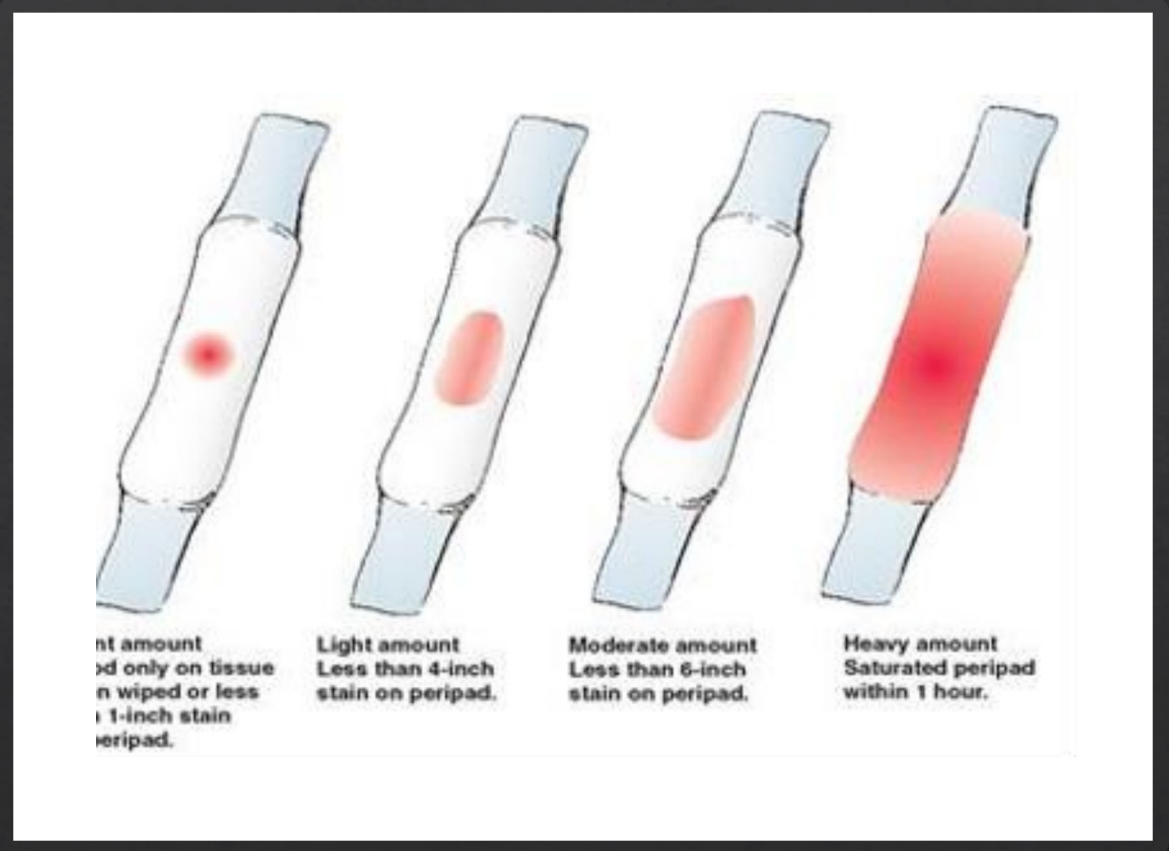
- ◇ between 9 and 15
  - ◇ Median age is 12-13 years
- ◇ Bleeding lasts 2-7 days
- ◇ Wide variation of cycle length from 20 to 60+ days
- ◇ 30 to 40 mL of blood loss per cycle
- ◇ Early menstrual cycles are usually anovulatory.
- ◇ By 3 years majority of females have cycles last from 21 to 45 days.
- ◇ Normal adult cycle is established 6 years post menarche

# What's normal?

- ◇ Cycles are 21-45 days in length
- ◇ Using 6 or less products per day
- ◇ Bleeding less than 10 days
- ◇ Cramps typically increase from the age of menarche
- ◇ Periods do not interfere with school or other activities

## Taking a Menstrual History

- ◆ Age at menarche
- ◆ LMP
- ◆ Days of menstrual bleeding
- ◆ Heaviness of flow
- ◆ Length of cycle
- ◆ Other symptoms what happen before during or after menses
- ◆ Also includes a sexual history.







# Menstrual Problems

# Amenorrhea

- ◇ Primary
  - ◇ No menses by the age of 15 or 3 years post Thelarche
  - ◇ Causes
    - ◇ Primary ovarian insufficiency
    - ◇ Congenital absence of uterus or vagina
    - ◇ Anatomical outflow blockage
    - ◇ Androgen insensitivity.
- ◇ Secondary Amenorrhea
  - ◇ Greater than 6 months without a menses (some say 3 months)
- ◇ *You can not just treat with medication!*
- ◇ *Further evaluation IS needed!*



# Primary Amenorrhea Evaluation

- ◇ Rule out pregnancy
- ◇ Anatomic abnormalities
  - ◇ Congenital abnormality in mullerian
  - ◇ Congenital defect of urogenital sinus development
  - ◇ Intrauterine adhesions
- ◇ Disorders of the H-P-O axis
  - ◇ Hypothalamic dysfunction
  - ◇ Pituitary dysfunction
  - ◇ Ovarian dysfunction

# Secondary Amenorrhea Evaluation

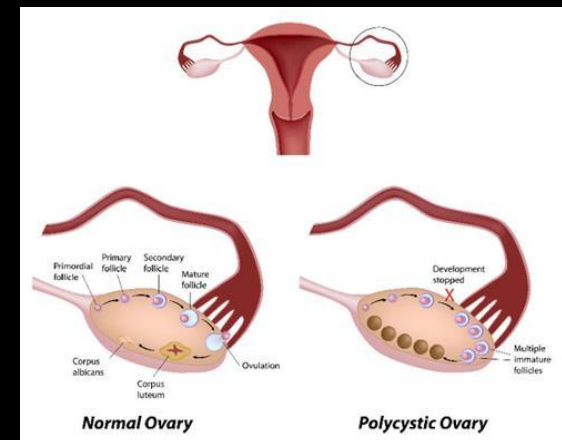
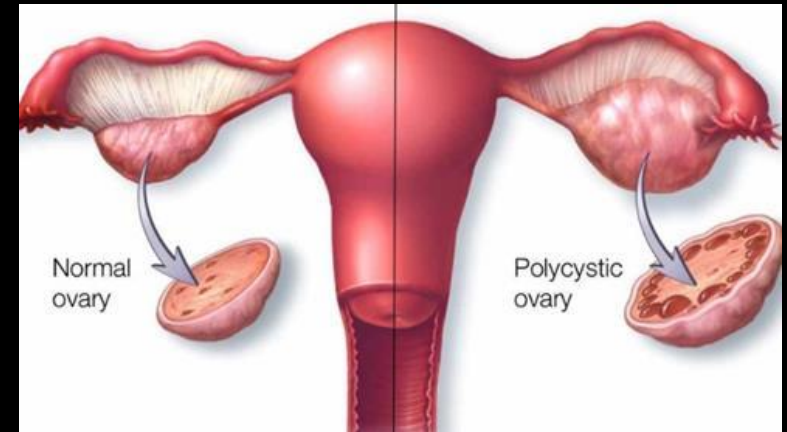
- ◇ Pregnancy MUST be ruled out!
- ◇ Ovary related
- ◇ Hypothalamic dysfunction
- ◇ Pituitary disease
- ◇ Uterine disease
- ◇ Endocrine disorders
- ◇ Latogenic- due to chemotherapy, radiation or hormonal contraception.

# PCOS

- ◇ Most common cause of infertility
  - ◇ Ovulatory dysfunction
  - ◇ Hyperandrogenism
- ◇ Risk for
  - ◇ Metabolic syndrome
  - ◇ Type 2 DM
  - ◇ Cardiac disease
  - ◇ Endometrial cancer
- ◇ Signs and symptoms for the adolescent
  - ◇ Obesity
  - ◇ Hirsutism
  - ◇ Treatment resistant acne
  - ◇ Menstrual irregularity

# PCOS Diagnosis

- ◇ IT's COMPLICATED
- ◇ Hyperandrogenism
  - ◇ Elevated free testosterone and SHBG
- ◇ Oligo-anovulation (irregular menses/  
skipping periods)
- ◇ Polycystic ovary (hard to see in adolescents)



# PCOS Treatment

- ◇ Treat the symptoms
  - ◇ Menstrual irregularity
  - ◇ Hirsutism and acne
  - ◇ Obesity and insulin resistance

# Irregular Menstrual Bleeding

- ◇ Usually caused by anovulation
  - ◇ Could be too frequent or infrequent
- ◇ Common in the 1<sup>st</sup> 1-2 years after menarche
- ◇ When to worry?
  - ◇ >3-6 months between periods
  - ◇ Bleeding that doesn't seem to stop
  - ◇ Other hyper androgen symptoms
  - ◇ Symptoms of anemia



# Causes that trigger anovulatory bleeding

Hypothalamic-  
pituitary-ovarian  
axis defect

Polycystic ovary  
syndrome

Obesity

Eating disorder

Female athlete  
triad

Psychological  
stress

Thyroid  
problems

Diabetes mellitus

Increased  
prolactin levels

Medications like  
anti-seizure  
medications,  
antipsychotics

# Heavy Menstrual Bleeding

- ◇ Bleeding for >7 days
- ◇ Blood loss >80mL
- ◇ Woman's perspective of increased menstrual volume
- ◇ Excessive menstrual blood loss that interferes with the woman's physical, emotional, social, and material quality of life
- ◇ Do a more extensive bleeding hx



# Dysmenorrhea: Painful Periods


- ◇ What's the cause?
  - ◇ PROSTOGLANDINS
    - ◇ They are found in the lining of the uterus and cause the muscles and the blood vessels of the uterus to contract.
    - ◇ Pain starts 1-3 days pre menses
    - ◇ Highest level at 24 hours post initiation of menses
    - ◇ Subsides by 2-3 days of menses
  - ◇ Pain can radiate to lower back and thighs
  - ◇ Other symptoms include
    - ◇ Nausea, loose stools, headaches and dizziness.

# Premenstrual Syndrome (PMS)

- ◇ Starts 1 week before menses until 1-2 days after the start of menses
- ◇ Common symptoms include:
  - ◇ mood swings, breast soreness, bloating, acne, cravings for certain foods, increased hunger and thirst, and fatigue.
- ◇ Other symptoms:
  - ◇ constipation or diarrhea, irritability, and depression

# Premenstrual Dysphoric Disorder (PMDD)

- ◇ Starts sooner compared to PMS
- ◇ Symptoms more severe
- ◇ Mood changes and depression more prominent
- ◇ Considered chronic and needs to be with every menses for 6 months in order to be diagnosed
- ◇ SSRIs are considered 1<sup>st</sup> line treatment



Treatment?  
Treat the cause....  
If you know what that is.





What medications  
are used to treat  
menstrual problems?

# Nonsteroidal Anti-inflammatory Drugs

- Decrease the prostaglandin production in the endometrium → vasoconstriction → decreased blood loss
- Ibuprofen
  - 600mg, once per day
- Naproxen
  - 500mg at onset and repeat dose in 3-5 hours
  - 250-500mg every 12 hours
- Mefenamic Acid
  - 500mg, three times a day

# NSAID Uses

- Typically used to treat menstrual pain
- Can also be used to minimize lighten and shorten bleeding when taken scheduled
- 
- Not a contraception
- Not a hormone

## Tranexamic Acid

- Antifibrinolytic agent
- Approved for the treatment of HMB
- Used only during menstruation
  - 1300mg, three times a day
  - Up to 5 days
- Not a contraception
- Not a hormone



# Aminocaproic Acid

- Antifibrinolytic agent
- Used only during menstruation
  - 50-100 mg/kg every 6 hours
  - Not a contraceptive
  - Not a hormone

The background is a complex abstract composition. It features large, organic shapes in shades of green, blue, and grey. These shapes are filled with various patterns: some are solid, some have a fine dot pattern, some have a wavy line pattern, and others have a cross-hatch pattern. Small, black, wavy lines are scattered throughout the composition, adding a sense of movement and texture. The overall effect is a rich, layered visual field.

# Treatment with Contraception

# The Hormones...

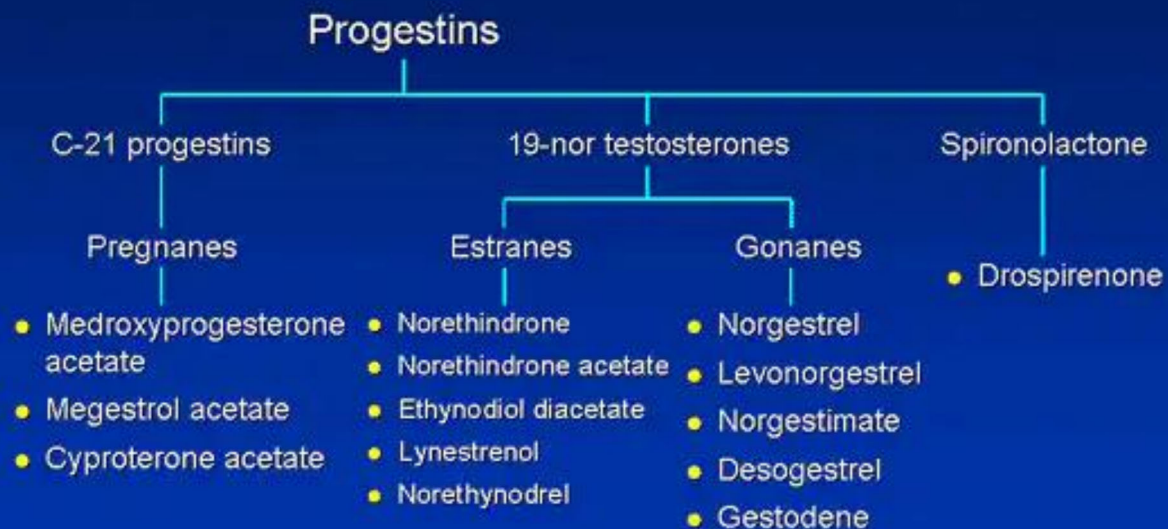
## Estrogen

- ◊ Ethinyl estradiol
- ◊ Mestranol

## Progestin

- ◊ Norethynodrel
- ◊ Norethindrone
- ◊ Norethindrone acetate
- ◊ Norgestimate
- ◊ Desogestrel
- ◊ Ethynodiol diacetate
- ◊ Norgestrel
- ◊ Levonorgestrel
- ◊ Drospirenone

## Classification of Progestins





# What do they do?

- ◆ Estrogens

- ◆ Suppression of ovarian hormones which cause ovulation
- ◆ Stabilize the endometrial lining

- ◆ Progestins

- ◆ Thin the endometrial lining
- ◆ Thickens cervical mucous
- ◆ Decreases normal tubal motility and peristalsis
- ◆ Suppress ovulation – THIS IS NOT CONSISTANT



# Hormonal Contraception

- Can usually provide menstrual management
- Many options, but they are not all created equal
- CDC Medical Eligibility Criteria (MEC)
- CDC Selected Practice Recommendations (SPR)
  - Initiation
  - Tests/exams
  - Follow up
  - Troubleshooting

**US MEC**

**US SPR**



There's an APP for that





Condition	Sub-Condition	Cu-IUD		LNG-IUD		Implant		DMPA		POP		CHC		
		I	C	I	C	I	C	I	C	I	C	I	C	
Diabetes	a) History of gestational disease			1		1		1		1		1		
	b) Nonvascular disease													
	i) Non-insulin dependent			1	2	2	2	2	2	2	2	2	2	
	ii) Insulin dependent			1	2	2	2	2	2	2	2	2	2	
	c) Nephropathy/retinopathy/neuropathy <sup>‡</sup>			1	2	2	3	2	3	2	3/4*	3/4*	3/4*	
	d) Other vascular disease or diabetes of >20 years' duration <sup>†</sup>			1	2	2	3	2	3	2	3/4*	3/4*	3/4*	
Dysmenorrhea	Severe			2	1	1	1	1	1	1	1	1	1	
Endometrial cancer <sup>§</sup>		4	2	4	2	1	1	1	1	1	1	1	1	
Endometrial hyperplasia				1	1	1	1	1	1	1	1	1	1	
Endometriosis				2	1	1	1	1	1	1	1	1	1	
Epilepsy <sup>§</sup>	(see also Drug Interactions)			1	1	1*	1*	1*	1*	1*	1*	1*	1*	
Gallbladder disease	a) Symptomatic													
	i) Treated by cholecystectomy			1	2	2	2	2	2	2	2	2	2	
	ii) Medically treated			1	2	2	2	2	2	2	2	3	3	
	iii) Current			1	2	2	2	2	2	2	2	3	3	
	b) Asymptomatic			1	2	2	2	2	2	2	2	2	2	
	Gestational trophoblastic disease <sup>¶</sup>	a) Suspected GTD (immediate postevacuation)												
	i) Uterine size first trimester			1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	
	ii) Uterine size second trimester			2*	2*	1*	1*	1*	1*	1*	1*	1*	1*	
	b) Confirmed GTD													
	i) Undetectable/non-pregnant β-hCG levels			1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	
	ii) Decreasing β-hCG levels			2*	1*	2*	1*	1*	1*	1*	1*	1*	1*	
	iii) Persistently elevated β-hCG levels or malignant disease, with no evidence or suspicion of intrauterine disease			2*	1*	2*	1*	1*	1*	1*	1*	1*	1*	
	iv) Persistently elevated β-hCG levels or malignant disease, with evidence or suspicion of intrauterine disease			4*	2*	4*	2*	1*	1*	1*	1*	1*	1*	
	Headaches	a) Nonmigraine (mild or severe)			1	1	1	1	1	1	1	1	1*	1*
b) Migraine														
i) Without aura (includes menstrual migraine)				1	1	1	1	1	1	1	1	2*	2*	
ii) With aura				1	1	1	1	1	1	1	1	4*	4*	
History of bariatric surgery <sup>†</sup>	a) Restrictive procedures			1	1	1	1	1	1	1	1	1	1	
	b) Malabsorptive procedures			1	1	1	1	1	1	3		COCs: 3 P/R: 1	COCs: 3 P/R: 1	
History of cholestasis	a) Pregnancy related			1	1	1	1	1	1	1	1	2	2	
	b) Past COC related			1	2	2	2	2	2	2	2	3	3	
History of high blood pressure during pregnancy				1	1			1	1	1	1	2	2	
History of Pelvic surgery				1	1	1	1	1	1	1	1	1	1	
HIV	a) High risk for HIV			1*	1*	1*	1*	1	1	1	1	1	1	
	b) HIV infection							1*	1*	1*	1*	1*	1*	
	i) Clinically well receiving ARV therapy			1	1	1	1	If on treatment, see Drug Interactions						
	ii) Not clinically well or not receiving ARV therapy <sup>‡</sup>			2	1	2	1	If on treatment, see Drug Interactions						



Condition	Sub-Condition	Cu-IUD		LNG-IUD		Implant		DMPA		POP		CHC	
		I	C	I	C	I	C	I	C	I	C	I	C
Pregnancy		4*		4*		NA*		NA*		NA*		NA*	
Rheumatoid arthritis	a) On immunosuppressive therapy	2	1	2	1	1		2/3*		1		2	
	b) Not on immunosuppressive therapy	1		1		1		2		1		2	
Schistosomiasis	a) Uncomplicated	1		1		1		1		1		1	
	b) Fibrosis of the liver <sup>†</sup>	1		1		1		1		1		1	
Sexually transmitted diseases (STDs)	a) Current purulent cervicitis or chlamydial infection or gonococcal infection	4	2*	4	2*	1		1		1		1	
	b) Vaginitis (including trichomonas vaginalis and bacterial vaginosis)	2	2	2	2	1		1		1		1	
	c) Other factors relating to STDs	2*	2	2*	2	1		1		1		1	
Smoking	a) Age <35	1		1		1		1		1		2	
	b) Age ≥35, <15 cigarettes/day	1		1		1		1		1		3	
	c) Age ≥35, ≥15 cigarettes/day	1		1		1		1		1		4	
Solid organ transplantation <sup>‡</sup>	a) Complicated	3	2	3	2	2		2		2		4	
	b) Uncomplicated	2		2		2		2		2		2*	
Stroke <sup>‡</sup>	History of cerebrovascular accident	1		2		2	3	3		2	3	4	
Superficial venous disorders	a) Varicose veins	1		1		1		1		1		1	
	b) Superficial venous thrombosis (acute or history)	1		1		1		1		1		3*	
Systemic lupus erythematosus <sup>‡</sup>	a) Positive (or unknown) antiphospholipid antibodies	1*	1*	3*		3*		3*	3*	3*		4*	
	b) Severe thrombocytopenia	3*	2*	2*		2*		3*	2*	2*		2*	
	c) Immunosuppressive therapy	2*	1*	2*		2*		2*	2*	2*		2*	
	d) None of the above	1*	1*	2*		2*		2*	2*	2*		2*	
Thyroid disorders	Simple goiter/ hyperthyroid/hypothyroid	1		1		1		1		1		1	
Tuberculosis <sup>‡</sup> (see also Drug Interactions)	a) Nonpelvic	1	1	1	1	1*		1*		1*		1*	
	b) Pelvic	4	3	4	3	1*		1*		1*		1*	
Unexplained vaginal bleeding	(suspicious for serious condition) before evaluation	4*	2*	4*	2*	3*		3*		2*		2*	
Uterine fibroids		2		2		1		1		1		1	
Valvular heart disease	a) Uncomplicated	1		1		1		1		1		2	
	b) Complicated <sup>†</sup>	1		1		1		1		1		4	
Vaginal bleeding patterns	a) Irregular pattern without heavy bleeding	1	1	1		2		2		2		1	
	b) Heavy or prolonged bleeding	2*	1*	2*		2*		2*		2*		1*	
Viral hepatitis	a) Acute or flare	1		1		1		1		1		3/4*	2
	b) Carrier/Chronic	1		1		1		1		1		1	1
<b>Drug Interactions</b>													
Antiretrovirals used for prevention (PrEP) or treatment of HIV	Fosamprenavir (FPV)	1/2*	1*	1/2*	1*	2*		2*		2*		3*	
	All other ARVs are 1 or 2 for all methods.												
Anticonvulsant therapy	a) Certain anticonvulsants (phenytoin, carbamazepine, barbiturates, primidone, topiramate, oxcarbazepine)	1		1		2*		1*		3*		3*	
	b) Lamotrigine	1		1		1		1		1		3*	
Antimicrobial therapy	a) Broad spectrum antibiotics	1		1		1		1		1		1	
	b) Antifungals	1		1		1		1		1		1	
	c) Antiparasitics	1		1		1		1		1		1	
	d) Rifampin or rifabutin therapy	1		1		2*		1*		3*		3*	
SSRIs		1		1		1		1		1		1	
St. John's wort		1		1		2		1		2		2	

# Combined Oral Contraceptive Pill

## The Combination pill

- ◇ Contains both an estrogen and a progestin
- ◇ 21 or 24 days of hormone pills and 7 or 4days of placebo
- ◇ Risks
  - ◇ Blood clotting
  - ◇ The venous thrombotic risk clearly differed by the type of progestin and was positively affected by the dose of estrogen
- ◇ Common Side effects
  - ◇ Estrogen: nausea, Headache, breast tenderness, leukorrhea, fluid retention, thrombosis
  - ◇ Progestin: Appetite increase, mood changes, acne, itching, headache, breast size increase

# Combined Oral Contraceptive Pill

- Ethinyl Estradiol
  - Varies from 10-50 mcg
  - Generally recommend 30-35 mcg pill
- 4 generations of progesterone
  - Based on when they were released
  - Third and fourth generations are considered less androgenic



# Oral Contraceptive Pill

- ◊ Monophasic
  - ◊ Same levels of hormones for all hormone pills
  - ◊ Ortho-Cyclen : Norgestimate-Ethinyl Estradiol 0.25mg/ 35mcg
- ◊ Biphasic
  - ◊ Two levels of hormones for hormone pills 10 with one level and 11 with the second level
  - ◊ Ortho-Novum 10/11: Norethin-Ethinyl Estradiol Biphasic 0.05mg/ 35mcg - 1mg/ 35mcg



# Oral Contraceptive Pill

## ◊ Triphasic

- ◊ Three levels of hormones for hormone pills usually a different level every 7 days
- ◊ Ortho Tri-cyclen: Norgestimate-Ethinyl Estradiol Triphasic 0.18-0.215-0.25mg/ 35mcg

## ◊ Extended Cycle

- ◊ 77 days of hormone and 7 days of placebo
- ◊ Increased risk of midcycle bleeding
- ◊ Seasonale: Levonorgestrel- Ethinyl Estradiol 0.15mg/ 30mcg

## ◊ Law suits related to OCP

- ◊ Why? Thrombosis

# COCP Uses

- ◇ Contraception
- ◇ Hyperandrogenism (Acne)
- ◇ Pelvic pain/ dysmenorrhea
- ◇ Ovarian cysts
- ◇ PMS/PMDD

## But Teresa... What's your go to Pill?

- ◇ Ethinyl Estradiol/ Norgestimate (0.035mg/ 0.25mg)
  - ◇ 22 Brand names
  - ◇ Affordable \$11 without insurance covered by most insurances
- ◇ ethinyl estradiol/ norgestrel (0.030mg/ 0.3mg)
  - ◇ Tends to work good for heavier bleeders
  - ◇ On inpatient hospital formulary
- ◇ Ethinyl Estradiol/ Drospirenone (0.02mg/ 3mg)
  - ◇ The progesterone decreases androgen levels
  - ◇ Great for acne, PCOS and PMDD

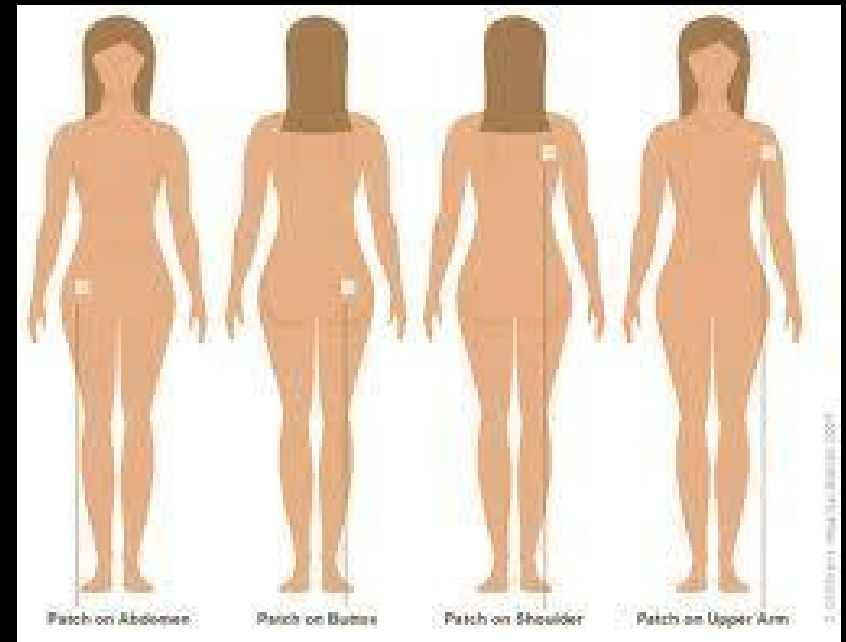
# Oral Contraceptive Pill

Progestin only: “the mini pill”

- ◊ Does not contain estrogen
- ◊ More time sensitive
- ◊ Is a continuous pill
- ◊ More chance for breakthrough bleeding
- ◊ Micronor: Norethindrone 0.35mg
- ◊ Why to choose this pill over a combined OCP

# The Patch

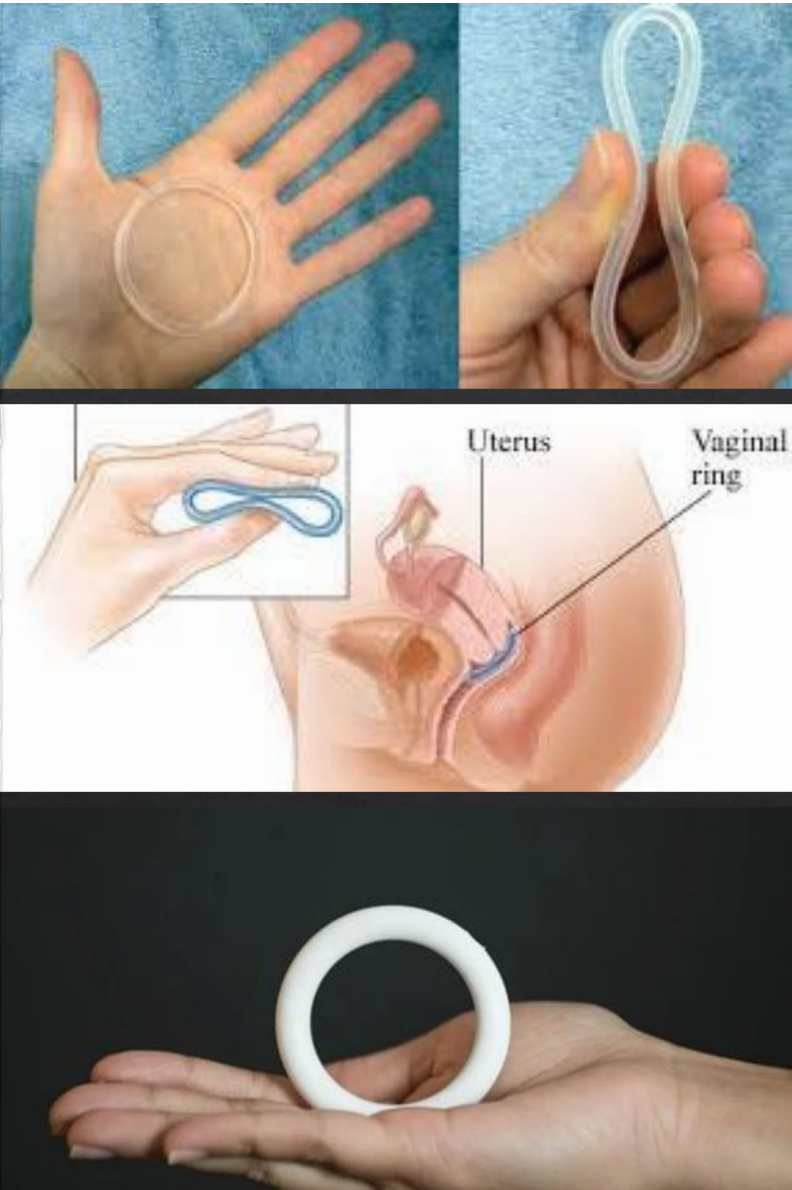
- ◆ Norelgestromin-ethinyl estradiol 150mcg/20 mcg
  - ◆ Transdermal patch, placed weekly x 3 weeks, the 4<sup>th</sup> week no patch is placed and menses occurs





# The Ring

- ◆ Etonogestrel- Ethinyl Estradiol 0.12mg/0.015mg
  - ◆ Flexible colorless transparent vaginal ring
  - ◆ Placed into the vagina for 3 weeks and removed and left out for 1 week, a new ring is then placed
- ◆ Segesterone acetate/ethinylestradiol (0.15mg/0.013mg)
  - ◆ Same ring used for 1 year
  - ◆ Does not need refrigerated
  - ◆ Less ridged design





# The Shot

- ◇ medroxyprogesterone 150 mg IM or 104 mg SQ
  - ◇ Given at 10-15 week intervals
  - ◇ Does not contain an estrogen



# Long Acting Reversible Contraception (LARCS)

- ◇ Why?
  - ◇ AAP 9/2014
    - ◇ The recommendation that the first-line contraceptive choice for adolescents who choose not to be abstinent is a Long Acting Reversible Contraceptive (LARC)
  - ◇ Little room for error + better success and decreased unintended pregnancies

<https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/AAP-Updates-Recommendations-on-Teen-Pregnancy-Prevention.aspx#sthash.ncV9j33C.dpuf>

# Implants



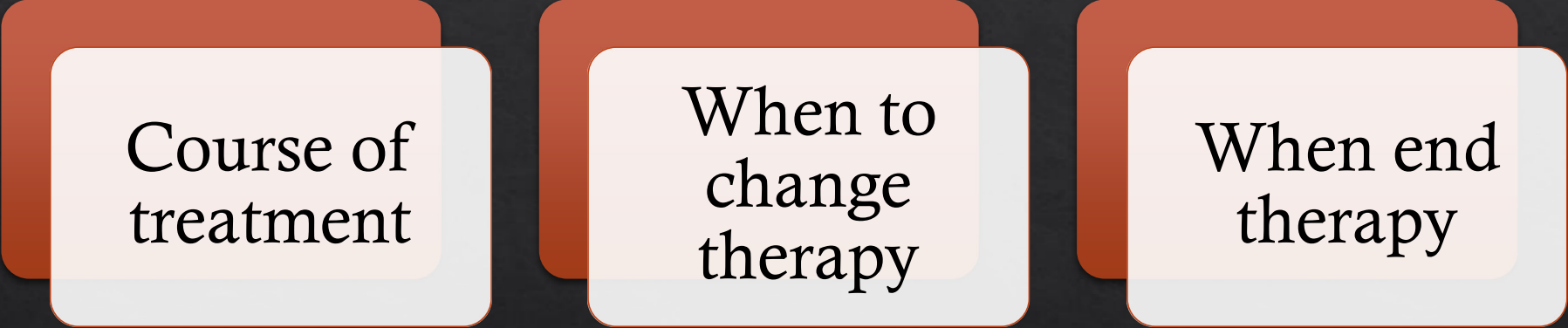
- ◆ Etonogestrel Implant 68mg
  - ◆ 2mm in diameter, 4cm in length
  - ◆ Hormone released at 60-70mcg/day at first down to 25-30mcg/day at the end of the 3<sup>rd</sup> year
  - ◆ Progestin only

# Intra Uterine Device (IUD)

- ◆ Levonorgestrel-releasing intrauterine system
  - ◆ Varying levels of LNG
    - ◆ 52 mg
    - ◆ 19.5 mg
    - ◆ 13.5 mg
    - ◆ 52 mg is approved for HMB
- ◆ Progestin only



## Other considerations for treating with contraception



Course of  
treatment

When to  
change  
therapy

When end  
therapy







# References

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