



Contraception Conversations: Tools for General Pediatricians

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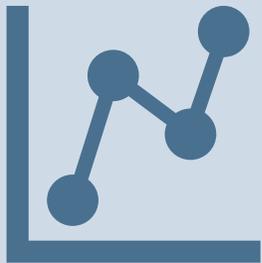
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Disclosures

- No disclosures, financial or otherwise, to make

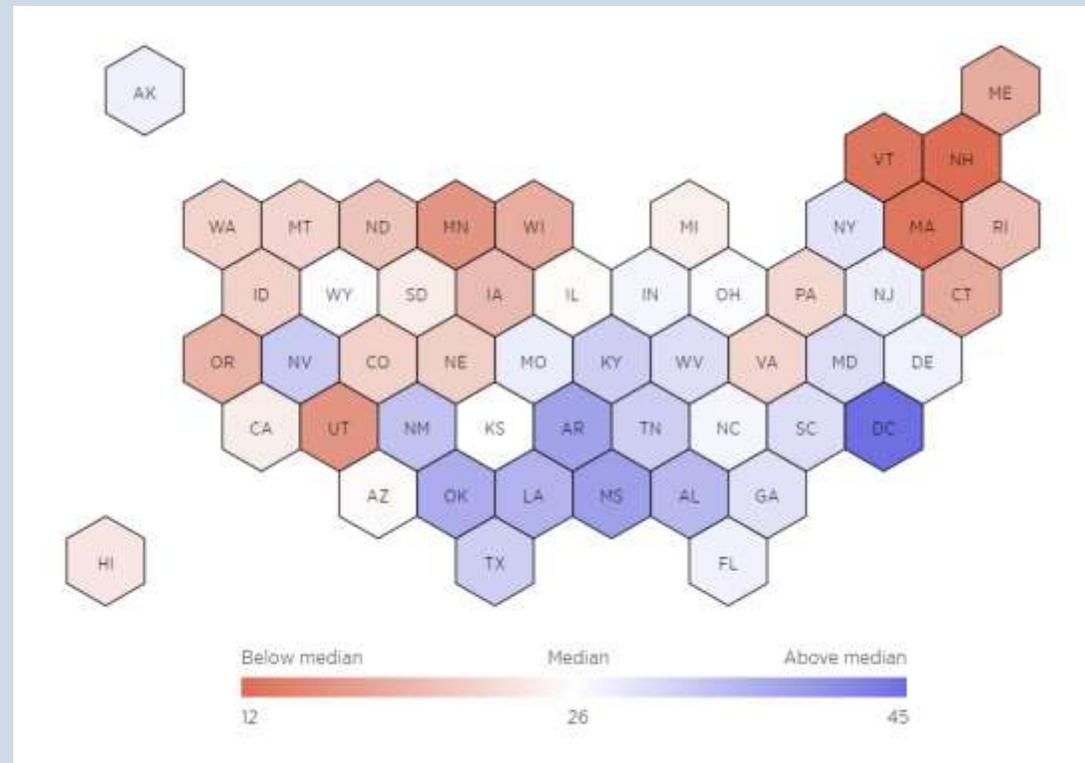
Session Goals



Overview

- US teen birth rate has declined from 78% from 1991 to 2021
- Teen birth rates have declined from 15 per 1,000 females in 2020 to 14 births per 1,000 in 2021
- US teen birth rate is higher than other high-income countries
- Rates vary highly among racial, ethnic, socioeconomic, and geographic groups

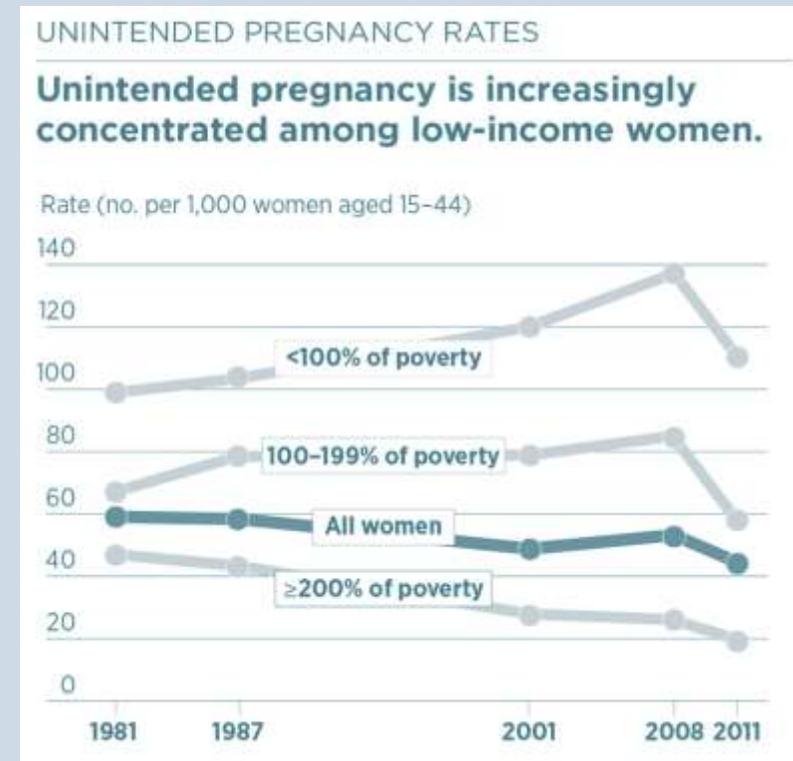
Pregnancy rate by state among 15-19 year olds, 2020



Chiu DW, Maddow-Zimet I and Kost K, *Pregnancies, Births and Abortions in the United States, 1973–2020: National and State Trends by Age*, New York: Guttmacher Institute, 2024.

Unintended pregnancy: US

- 49% of all pregnancies are unintended
- 48% of unintended pregnancies occur in women who use contraception
- Annual medical costs of unintended pregnancies ~\$4.6 billion
- Unintended pregnancy is associated with negative maternal and neonatal outcomes



Unintended pregnancy: risk factors

Among females ages 15-24, the probability of having a birth before age 20 is higher for those:

- A) Whose mother gave birth as a teen
- B) Whose mother has a lower levels of education
- C) Who live in an environment exposed to substance abuse or violence
- D) Who experience food insecurity
- E) All of the above

Unintended pregnancy: AL

- 48 per 1,000 pregnancies, higher than national average
- 1 of 11 states that does not mandate sexual education
- Requires voluntary sex education to stress abstinence
- Title X programs offer contraception on a sliding fee scale in health departments
- Medicaid coverage for family planning services through Family Planning Waiver for women up to 146% of the federal poverty level

Contraceptive Use Patterns among Women of Reproductive Age in Two Southeastern States

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Table 2
Contraception Use by State and Characteristics of the Study Population (2017; N = 3,775)

	Alabama (n = 1,887) [*]				
	Nonuse (27.1%)	Barrier/Other (7.1%)	Short-Acting Hormonal (26.5%)	LARC (14.0%)	Permanent (25.3%)
Predisposing factors					
Age years ^{*,†}					
18–24	36.6%	4.6%	42.1%	15.7%	0.9%
25–35	24.4%	9.4%	28.4%	18.4%	19.4%
36–44	22.3%	6.5%	11.4% [†]	7.5%	52.4% [‡]
Race/ethnicity [†]					
Non-Hispanic White	23.9%	8.0%	28.7%	13.2%	26.2%
Non-Hispanic Black	33.8%	4.7%	21.7%	17.0%	22.9%
Non-Hispanic other	23.2%	13.9%	36.4% [†]	10.2%	16.4%
Hispanic/Latina	28.5%	7.7%	19.7%	15.3%	28.8%
Education ^{*,†}					
Bachelors degree or (+)	19.9%	10.3%	32.2%	14.1%	23.6% [‡]
Some college/associates degree	29.4%	6.2% [‡]	25.8%	14.8%	23.8%
High school diploma/equivalent or less	30.5%	5.2%	22.5%	12.3%	29.4%

Starting these conversations

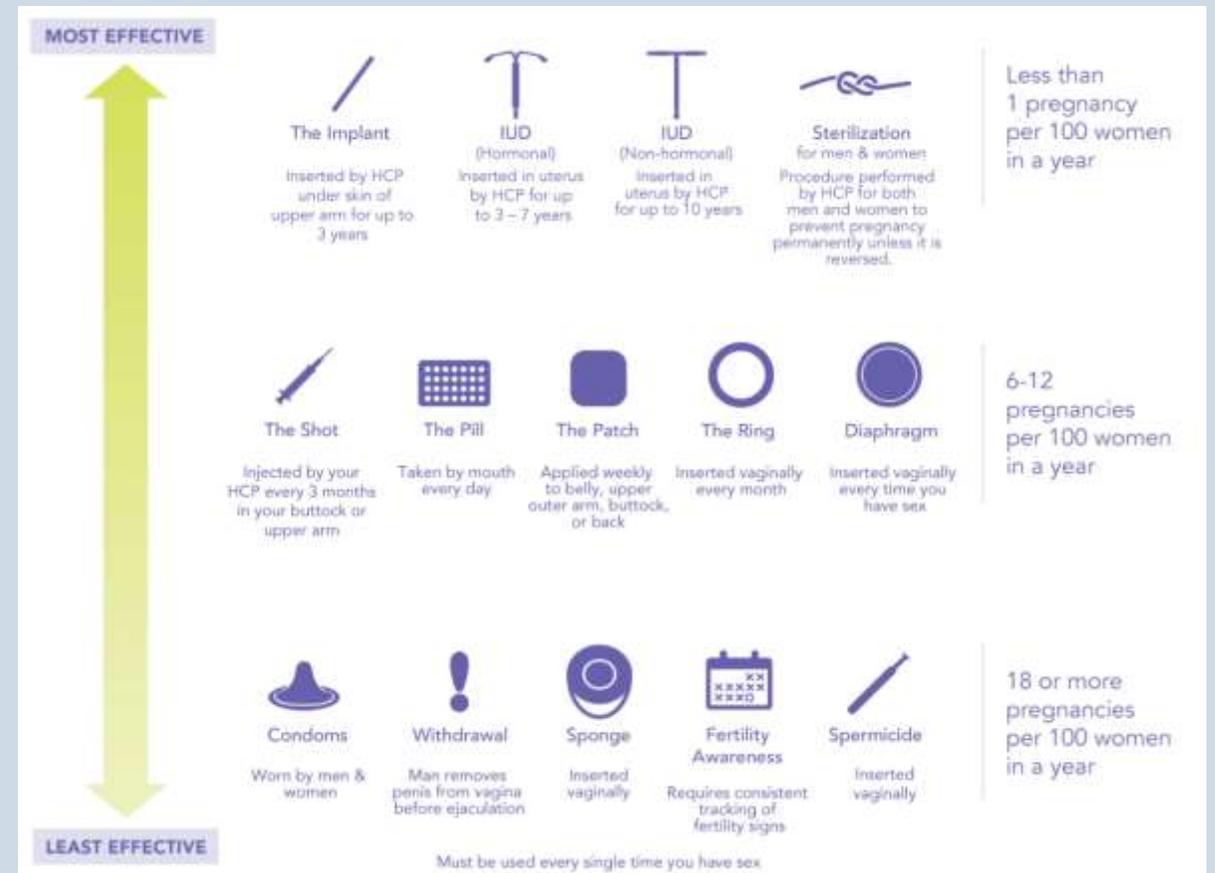
- ACOG: “The College supports access for adolescents and young adults to all contraceptive methods approved by the U.S. FDA.”
- Patient choice is principal factor in contraception decision making
- Discussions should:
 - ✓ Be held regardless of age or sexual activity
 - ✓ Begin with most effective methods
 - ✓ Include emergency contraception
 - ✓ Stress importance of dual method use

Initiating contraception: creating space

- Minor may consent for contraceptive services at age 14
- When confidentiality is breached, adolescents are less likely to:
 - Seek care
 - Be honest with providers
 - Use family planning services for prescription contraception and have STI screening/treatment

Initiating contraception

- Elicit patient preference
- Identify possible contraindications
- Address misperceptions
- Benefits beyond contraception
- Side effects



Contraception selection

- What are the patient's goals?
- 50% women want flexibility when menstruation would start, 36% want to not bleed at all or only once every 2-3 months, 44% regular bleeding was important
- Other surveys show 30-50% prefer amenorrhea, 40% prefer to bleed 2-4 times/year, 40% want monthly menses
- Most women cite side effects as “extremely important” factors in contraception decisions
- Anticipatory counseling about side effects associated with higher adherence and satisfaction

Patient scenario

AB, 15-year-old with a history of menstrual migraines, wants to start a birth control pill. She is otherwise healthy, she is a non-smoker, her BMI is 40. Her mother was diagnosed with breast cancer at age 55.

- A) Her migraines are a contraindication to starting a combined oral contraceptive.
- B) Her BMI is a contraindication to starting a combined oral contraceptive.
- C) Her family history is a contraindication to starting a combined oral contraceptive.
- D) She can use any pill.

Prescribing tools

- U.S. Medical Eligibility Criteria for Contraceptive Use (US MEC)
- Four tier system to stratify level of risk of each disease/contraceptive method combination
- Addresses common drug interactions with hormonal contraceptives

- U.S. Selected Practice Recommendations for Contraceptive Use (US SPR)
- Organized by contraceptive method
- Includes method-specific, up-to-date guidelines
- How to initiate method, how to manage bleeding irregularities, recommended follow-up



[US MEC & US SPR App](#)

New app released in May 2021! Includes new features that allow for the selection of multiple conditions and methods. The US MEC and US SPR app is an easy to use reference for CDC's contraception guidance for healthcare providers. The app is available for iOS and Android operating systems.

-
- Category 1: no restrictions exist for the use of the contraceptive method
 - Category 2: method can generally be used, although careful follow-up might be required
 - Category 3: use of the method usually not recommended unless other more appropriate methods are not available or acceptable; careful follow-up required
 - Category 4: unacceptable health risk if the method is used

Contraindications to estrogen

- Migraine with aura
- Uncontrolled hypertension
- Personal history of stroke
- History of DVT, acute DVT
- Known thrombogenic mutation
- Lupus with positive or unknown antiphospholipid antibody
- Complicated valvular heart disease
- Hepatocellular adenoma
- Major surgery with prolonged hospitalization
- Postpartum < 21 days

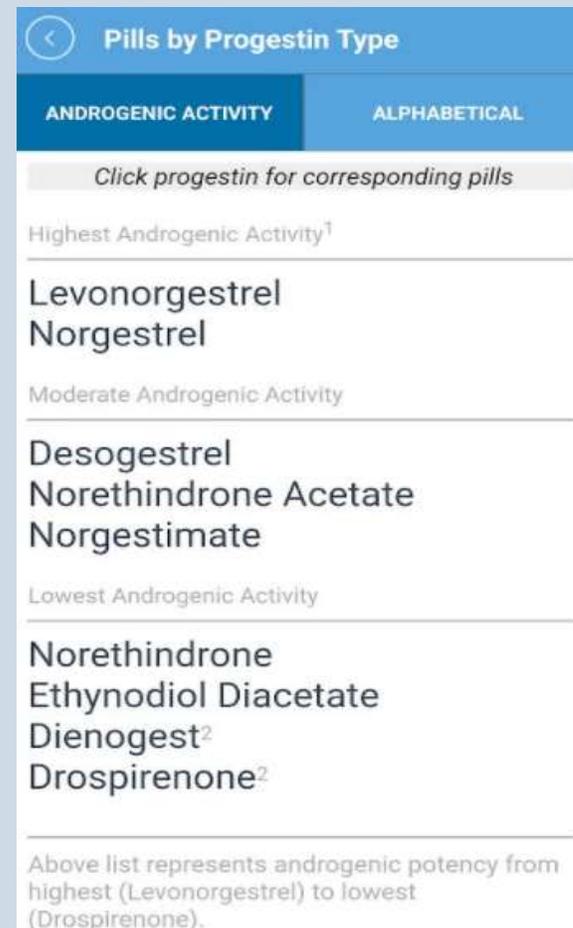
Combined hormonal contraception

- Vaginal contraceptive ring (Nuvaring/Annovera)
 - ✓ Combined etonogestrel/ethinyl estradiol or segesterone/ethinyl estradiol
 - ✓ Monthly dosing or annual dosing
- Contraceptive patch (OrthoEvra/Xulane)
 - ✓ Combined norelgestromin/ethinyl estradiol
 - ✓ Weekly dosing
 - ✓ Decreased efficacy in higher BMI classes
- Oral contraceptive pill
 - ✓ Daily dosing, may be used continuously
 - ✓ Combined ethinyl estradiol/progestin pill

Pill selection

- No comparative effective studies identifying superior pill
- Monophasic preferable to bi- and tri-phasic pills
- No studies saying 10-20mcg ethinyl estradiol is safer than 35mcg
- Starting with 30-35mcg greatest likelihood of regular bleeding pattern
- Decrease estradiol if adverse effects, nausea or breast tenderness
- Traditionally, progestins were classified into “generations” by parent compound

Prescribing tools



Patient scenario

You start AB on Aviane. She presents for scheduled follow-up three months later and reports breakthrough bleeding. UPT and STI testing are negative. Options for management include:

- A) Continued expectant management
- B) Increasing the hormone dose of the pill
- C) Switching contraception method
- D) Adding an NSAID
- E) All of the above

Trouble shooting: breakthrough bleeding

- Unscheduled bleeding = any bleeding requiring the use of a sanitary product
- Etiology poorly understood
 - On initiation: secondary to rapid endometrial thinning effects of progestin
 - Sustained exposure: endometrial angiogenesis disruption, fragile venous network
- Contraceptive Choice Project evaluated reasons for discontinuation, bleeding changes were main reason for discontinuation
 - 19% IUD
 - 46% implant
 - 26% Depo

BTB: what to do?

- Anticipatory counseling
- Reassurance that unscheduled bleeding is not reflective of decreased efficacy*
- Elicit detailed description of bleeding
 - Bleeding before and after contraception
 - How many days/month
 - Heavy/light
 - Timing
- Correct use of contraceptive
 - Dosing/adherence
- Other medications
- Additional symptoms
- Distinguish between bleeding that is bothersome vs tolerable
- Exam/imaging as needed



will the pill



- will the pill **make me gain weight**
- will the pill **stop my period**
- will the pill **regulate my periods**
- will the pill **affect my fertility**
- will the pill **help with pms**
- will the pill **make me infertile**
- will the pill **make my breasts bigger**
- will the pill **help my acne**
- will the pill **replace the vaccine**
- will the pill **make you gain weight**

Google Search

I'm Feeling Lucky

[Report inappropriate predictions](#)

Combined hormonal contraception myths

The pill/patch/ring...

- Causes/worsens depression
- Decreases libido
- Increases risk of breast cancer
- Is not effective when
- Using antibiotics
- Using antiepileptics
- When there's breakthrough bleeding
- BMI > 40

Combined hormonal contraception myths

The pill/patch/ring...

- **Causes/worsens depression**
- Decreases libido
- Increases risk of breast cancer
- Is not effective when
- Using antibiotics
- Using antiepileptics
- When there's breakthrough bleeding
- BMI > 40

- Clinical trials and RCTs generally shown similar or improved depression symptoms with hormonal contraception users
- Causal contribution of hormone and onset of depression not established

ACOG: women with depressive disorders can use all methods of hormonal contraception, including Depo

Combined hormonal contraception myths

The pill/patch/ring...

- Causes/worsens depression
- **Decreases libido**
- Increases risk of breast cancer
- Is not effective when
 - Using antibiotics
 - Using antiepileptics
 - When there's breakthrough bleeding
 - BMI > 40
- Mixed effects: small percentage experience and increase or decrease in libido
- Majority of women are unaffected

Combined hormonal contraception myths

The pill/patch/ring...

- Causes/worsens depression
 - Decreases libido
 - **Increases risk of breast cancer**
 - Is not effective when
 - Using antibiotics
 - Using antiepileptics
 - When there's breakthrough bleeding
 - BMI > 40
- Current oral contraceptive use associated with higher risk for invasive breast cancer compared to never users
 - No association seen with after 5 years contraceptive cessation
 - < 1 year use risk 1.09 to 1.38 with >10 years of use
 - 1 additional breast cancer case for every 7690 women using hormonal contraception for one year

ACOG: no restrictions on hormonal contraceptive method based on family history of breast cancer or women with identified mutations

Combined hormonal contraception myths

The pill/patch/ring...

- Causes/worsens depression
- Decreases libido
- Increases risk of breast cancer
- **Is not effective when :**
- **Using antibiotics**
- Using antiepileptics
- When there's breakthrough bleeding
- BMI > 40
- Rifampin, rifabutin the only antibiotics known to decrease serum levels

Combined hormonal contraception myths

The pill/patch/ring...

- Causes/worsens depression
- Decreases libido
- Increases risk of breast cancer
- **Is not effective when :**
- Using antibiotics
- **Using antiepileptics**
- When there's breakthrough bleeding
- BMI > 40
- P450 inducers: carbamazepine, felbamate, oxcarbazepine, phenobarb, phenytoin, primidone, rufinamide
- COC decreases Lamictal concentration by 50%

ACOG says: COC or progesterone-only pills generally not recommended, US MEC 3

Combined hormonal contraception myths

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- Causes/worsens depression
- Decreases libido
- Increases risk of breast cancer
- **Is not effective when**
- Using antibiotics
- Using antiepileptics
- **When there's breakthrough bleeding**
- BMI > 40
- Not when used as directed

Combined hormonal contraception myths

The pill/patch/ring...

- Causes/worsens depression
 - Decreases libido
 - Increases risk of breast cancer
 - **Is not effective when**
 - Using antibiotics
 - Using antiepileptics
 - When there's breakthrough bleeding
 - **BMI > 40**
- No methods contraindicated
 - More research needed in BMI \geq 40, possible that higher dose estrogen or continuous use is more effective, absolute risk of VTE on COC is less than pregnancy
 - Post Roux-en-Y avoid oral methods

ACOG: Women with obesity can be offered all contraceptive methods and reassurance that efficacy is not affected by weight.

Trouble shooting: missed pill

Table 8 Simplified management of missed pills			
	Catch-up Dosing	Emergency Contraception (EC)?	Back-up Contraception?
Missed 1 pill, <12 h late	<ul style="list-style-type: none"> • Take missed pill ASAP • Resume usual dosing 	Not needed	Not needed
Missed 1 pill, >12 h late	<ul style="list-style-type: none"> • Take missed pill ASAP • Resume usual dosing 	Not needed	Yes, condoms or abstinence × 7 d
Missed 2 or more pills, has at least 7 active pills remaining in pill pack	<ul style="list-style-type: none"> • Take forgotten pill and today's pill (2 pills on same day) • Resume usual dosing 	Take EC if unprotected intercourse in past 7 d	Yes, condoms or abstinence × 7 d
Missed 2 or more pills, has 7 or fewer active pills remaining in pack: OPTION 1	<ul style="list-style-type: none"> • Take forgotten pill and today's pill (2 pills on same day) • Resume usual dosing 	Take EC if unprotected intercourse in past 7 d	Yes, condoms or abstinence until she has taken 7 active pills in the NEXT PACK
Missed 2 or more pills, has 7 or fewer active pills remaining in pack: OPTION 2	<ul style="list-style-type: none"> • Take forgotten pill and today's pill (2 pills on same day) • Take the rest of the active pills in the pack • Skip placebo pills and proceed directly to next pack 	Take EC if unprotected intercourse in past 7 d	Yes, condoms or abstinence × 7 d

Adapted from Hatcher RA. Contraceptive technology. New York: Ardent Media; 2011.

Progestin only pill

- Norethindrone 0.35mg (vs 1000mcg in combined pill)
- Short duration of action and short half-life
- Peak serum concentration 2 hours after ingestion
- Less consistent ovulation suppression
- More potential for breakthrough bleeding
 - 40% women have irregular cycles
 - 50% regular cycles
 - 10% amenorrhea
- Benefits: ease of initiation and discontinuation, fertility returns within 1 cycle, safety profile

Patient scenario

AB acknowledges that she is forgetting to take her pill and she would like to switch to something else. She is interested in Depo. But she's heard a lot about Depo and weight gain. What statistics can you offer her?

- A) Weight gain is highly variable and mean weight gain over the first year varies from 0.05kg to 4.44kg.
- B) Weight gain on Depo is reported in up to 54% of adolescents.
- C) Adolescents who gain >5% of baseline body weight in the first 6 months are at increased risk of continued excessive weight gain.
- D) Weight gain is cited as a primary reason for discontinuation by 41% of adolescents.
- E) All of the above.

Depo medroxyprogesterone acetate (DMPA)

- 150mg per 1mL IM every 10-16 weeks
- Primary mechanism of action: suppresses ovulation
- Efficacy 4-7 pregnancies per 100 women in a year; ie, <1% failure rate
- BTB >7 days common in months after 1st to 2nd injection, frequency and duration decrease with continued use
- 46% amenorrheic by one year and 70% with longer use

Depo myths

Will Depo cause...

- Bone loss?
- Depression?
- Infertility?
- Weight gain?
- Meningioma?

Depo myths

Will Depo cause...

- **Bone loss?**
 - Depression?
 - Infertility?
 - Weight gain?
 - Meningioma?
- Reversible loss, recovered with discontinuation of Depo
 - No clear correlation between Depo and higher fracture risk
 - BMD concerns not a contraindication to starting Depo or discontinuation

Depo myths

Will Depo cause...

- Bone loss?
 - **Depression?**
 - Infertility?
 - Weight gain?
 - Meningioma?
- Depo package said “women with depression should be observed carefully”
 - Based on data 1.5% of 4200 users reported depression
 - These concerns unfounded
 - Adolescents not prone to worsening symptoms

Depo myths

Will Depo cause...

- Bone loss?
- Depression?
- **Infertility?**
- Weight gain?
- Meningioma?
- Only contraceptive method that can delay return to fertility
- Contraceptive effect and cycle irregularity can persist up to 12 months after the last dose

Depo myths

Will Depo cause...

- Bone loss?
- Depression?
- Infertility?
- **Weight gain?** • Very possible
- Meningioma?

Depo myths

Will Depo cause...

- Bone loss?
 - Depression?
 - Infertility?
 - Weight gain?
 - **Meningioma?**
- Case control report showed a small increase in meningioma incidence
 - Risk 5 in 10,000 from 1 in 10,000 at baseline
 - Mean age was 57.6 years
 - Meningioma rare <35 years

LARC: The CHOICE Project

- Prospective cohort study of >9,000 women aged 14-45
- Goal: reduce unintended pregnancies in St. Louis area
- Method: remove barriers to LARC methods
- Participants provided with contraception at no cost for 2-3 years
- 75% chose one of three LARC methods
- Outcomes:
 - LARC users had greater continuation rates at 1 and 2 years than non-LARC methods
 - Unintended pregnancy rates declined in the region
 - Abortion rates in the study population decreased

Patient scenario

AB decides against starting Depo and would like an IUD instead. Which of the following will likely improve with a levonorgestrel IUD?

- A) Ovarian cysts
- B) Premenstrual mood changes
- C) Dysmenorrhea
- D) Heavy menstrual bleeding
- E) C and D

IUDs

- Reversible – rapid return fertility on removal
- Low risk of complications
- Expulsion rate 2-10% during the first year
- Perforation roughly 1 per 1000 insertions
- Appropriate for use in nulliparous and adolescent women
- May be inserted:
 - At any time in menstrual cycle*
 - Post-abortion
 - Post-placental
- Contraindications: pregnancy, undiagnosed AUB, uterine anomaly, active pelvic infection

IUDs: Paragard

- Primary mechanism of action – spermicidal (inhibition of sperm migration and viability)
- **Not** an abortifacient
- 10-year failure rate: 1.9 per 100 women
- Adverse effects: heavy menstrual bleeding, dysmenorrhea
- 11.9% removal rate for bleeding and pain
- Most effective form of emergency contraception, with stable efficacy for 5 days (120 hours) after unprotected intercourse and unaffected in obesity
- Contraindication: Wilson's disease
- Relative contraindication: anemia
- Otherwise overwhelmingly USMEC category 1

Levonorgestrel IUDs

- Primary mechanism of action – increased production and viscosity of cervical mucus
- Not an abortifacient
- Failure rate: 0.2-0.8% in first year typical use
- Hormonal effects: amenorrhea, headache, nausea, breast tenderness
- Diminished but continued ovulation
 - Study showed ovulation in 63% amenorrheic group and 58% of regularly menstruating group
- Expulsion: 2-10% during the first year
- Perforation: 1.4 per 1,000 insertions
- Contraindication: receptor-positive breast cancer, SLE with APLS

Nexplanon

- 68mg etonogestrel, ethylene vinyl acetate copolymer core and skin
- FDA approved for 3 years, data shows efficacy with extended use to 5 years
- Primary mechanism of action: ovulation suppression; secondarily, cervical mucus and tubal motility changes
- Most effective method of reversible contraception
- Unpredictable bleeding patterns due to atrophy and disruption in endometrial angiogenesis
- If favorable bleeding pattern during first 3 months, will likely continue to be favorable
- 30% amenorrheic by 1 year
- Up to 11% remove it in the first year due to irregular bleeding

Contraception checklist

- No method protects against STIs except condoms – always encourage safe sex
- No hormonal method provides contraceptive benefit until seven days after initiation
- Initiation of any contraceptive method is safe in the setting of unrecognized pregnancy EXCEPT sterilization and intrauterine contraception / IUDs
- Emergency contraception is USMEC category 1 across ALL medical co-morbidities and should be offered at every health encounter

Emergency contraception

- What EC *is*: EC is an intervention intended to prevent pregnancy after an act of unprotected intercourse
- What EC is *not*:
 - An abortifacient
 - Teratogenic
 - Harmful to an established pregnancy
 - “The abortion pill”

EC, continued

- Emergency contraceptive pills
- Levonorgestrel in single 1.5 mg dose or split 0.75 mg dose repeated at 12 hours, tradename *Plan B*
- Ulipristal acetate (UPA) 30 mg, tradename *Ella*
- Combined estrogen and progestin OCPs in 100 mcg EE + 0.50 mg PG with repeat dose at 12 hours; various OCPs – Ovral, Lo Ovral, Levora, Alesse, Nordette, Levlen, Triphasil, etc
- Copper IUD

Toolkit



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 Washington University School of Medicine in St. Louis

Contraceptive Choice Center



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Questions?
