What’s New in Contraception for Teens

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Disclosure

- I have no relevant financial relationships with the manufactures of any commercial products and/or provider of commercial services discussed in this CME activity
- I do not intend to discuss an unapproved/investigative use of a commercial product or device in my talk
The Initial Reproductive Health Visit

- Initial visit between 13-15
- Scope of visit depends on patient concerns, medical history and development
- Address confidentiality
- One on one time with teen
- Create an inclusive and adolescent-friendly office
- Rarely need a pelvic exam

Confidentiality and Patient Autonomy

- Confidentiality is important as it encourages access to care and increases discussions about sensitive topics and behaviors
- Need to discuss with teen and parent
  - Meaning and importance of confidentiality
  - Scope of confidentiality
  - Limits of confidentiality
Statutes on the rights of minors to consent to health care services vary by state

- Kansas-
  - Minors can consent to STI screening and treatment
  - “Mature” minors can consent to contraception and prenatal care.
  - Teens need parental consent for abortion services in Kansas

guttmacher.org/state-policy/explore/overview-minors-consent-law

“Mature Minor”

Mature minor: An adolescent younger than the age of majority who, even if living at home as a dependent, demonstrates the cognitive maturity to give informed consent. The capacity of an adolescent to consent for health care as a mature minor is influenced by the minor’s developmental maturity, previous experience with illness, the gravity of the current illness, and the risks of proposed therapy. The right of a mature minor to consent to medical care without previous parental or guardian consent has been recognized in many states.

Counseling Topics for Initial Visit

- Confidentiality
- Preventative gyn care
- Anatomy
- Pubertal development
- Menstruation
- Immunizations
- Sexual orientation and gender identity
- Healthy relationships and consent
- Eating disorders
- Physical Activity
- Tanning and Skin Issues
- Mental Health
- Sexuality
- Contraception and pregnancy Prevention
- STI


Contraception Options for Adolescents

SEXUAL INTERCOURSE AMONG YOUNG PEOPLE IN THE U.S.

Sex is a natural part of being human, and 65% of 18-year-olds and 93% of 25-year-olds have had sexual intercourse

% of individuals who have had sexual intercourse, by age

Lindberg LD and Mueller J. Guttmacher Institute, special tabulations of data from the 2015–2017 National Survey of Family Growth.
Teens and sex

- 40% of adolescents aged 15–19 reported ever having had penile-vaginal intercourse
- 45% had had oral sex with a different-sex partner
- 9% reported ever having had anal sex with a different-sex partner
- Decline in 2013–2017 in the proportion that had ever had sexual intercourse—from 47% to 40%


Condom and Other Contraceptives

- The condom is the contraceptive method most commonly used among adolescents
- In 2015–2017, 63% of females and 82% of males aged 15–19 reported having used a condom the first time they had sexual intercourse
- Older adolescents are more likely to use prescription methods of contraception
- Adolescents aged 14 or younger at first sex are less likely than older adolescents to use condoms or contraceptives at first sex

Contraceptive Options for Teens

LARC

- Due to safety and effectiveness of LARC, ACOG and the AAP endorse both IUDs and implants for contraception in teens
- Satisfaction and continuation rates are high among teens
- Continuation rates at 12 months - 81% for all LARC
  - 75% copper IUD, 80% Levonorgestrel IUD, 82% implant
- Continuation rates at 12 months - 44% for non-LARCs
  - 31% ring, 41% patch, 46% OCPs, 47% DMPA
- ACOG, CDC and AAP also recommend LARC discussion with pregnant teens
  - Offer immediately after delivery, pregnancy loss or abortion

The Choice Project

- The Choice Project - Washington University in St. Louis
- Prospective cohort study of 9,256 women in STL area
- Offered no-cost reversible contraception for 3 years
- Choice Project sought to reduce unintended pregnancy in STL
- Found non-LARC users more than 22 times as likely to have an unintended pregnancy
- Teens using pill, patch or ring were 2x as likely as older women using same methods to experience unintended pregnancy
- Overall abortion rate in participants was less than half the regional and national rates


The Choice Project - Continuation Rates

<table>
<thead>
<tr>
<th></th>
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<th>24 Month</th>
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<tbody>
<tr>
<td>Overall</td>
<td>78.7</td>
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### LARC- Which Type do Teens Choose?

- 14-17 year-old LARC users favored the contraceptive implant (63%)
- 18-20 year-old LARC users favored the IUD (71%)

LARC options

- Levonorgestrel IUD
  - 2 different doses available: 52mg (6 year), 19.5mg (5 year)
  - 13.5mg (3 year) option is getting pulled from the market
- Copper IUD
- Etonogestrel implant

Levonorgestrel IUD

- Levonorgestrel IUD
  - 2 different doses available: 52mg (6 year), 19.5mg (5 year)
  - 13.5mg (3 year) option is getting pulled from the market
- Mechanism of Action
  - Thickens cervical mucus
  - Inhibits sperm movement
  - Thins lining of endometrium
  - 80% reduction in bleeding at 3 months, >90% reduction in 6 months (52mg)
Levonorgestrel IUD

- **52mg IUD**
  - 1.26 inches
  - Bleeding: can be irregular and even heavier for first 3 months, then tapers
  - Amenorrhea at 12 months: 20%
  - FDA approved treatment for HMB
  - 6 years
  - Cost: $999, $892
  - Effectiveness: 99.4%/99.2%
  - Contraindication: active PID

- **19.5mg**
  - 1.18 inches
  - Bleeding: can be irregular and even heavier for first 3 months, then tapers
  - Amenorrhea at 12 months: 12%
  - 5 years
  - Cost: $999
  - Effectiveness: 99.4%/99.2%
  - Contraindication: active PID

Copper IUD

- Non-hormonal, only ingredient is copper
- Prevents sperm from reaching and fertilizing egg
- 1.46 inches
- Bleeding: no change or can be heavier and longer than typical cycles
- 10 years
- Cost: $1500
- Effectiveness: 99%
- Contraindication: copper allergy, Wilson’s disease, active PID
Etonogestrel Implant

- 68mg etonogestrel, radiopaque
- 1.6 inches
- Mechanism of action
  - Inhibits ovulation
  - Thickens cervical mucus
  - Thins lining of endometrium
- Bleeding - can be irregular or heavier for first 3 months
- Amenorrhea - 22% at 24 months
- 3-4 years (remove at end of 3rd year)
- Cost - $848
- Effectiveness - 99.9%

Other Progestin-only Options

- Depot Medroxyprogesterone acetate IM
  - DMPA
- Progestin only pills
  - Norethindrone
  - Drospirenone
The Shot

- Depot Medroxyprogesterone acetate (DMPA) 150mg IM Q 12 wks or 104mg SQ
- Mechanism of action:
  - Inhibits GnRH pulsatility and gonadotropin-releasing hormone
  - Inhibits follicular maturation and ovulation
  - Thickens cervical mucus
  - Thins the endometrial lining
- Bleeding: can have irregular bleeding or heavy bleeding
- Amenorrhea: 55% at 12 months, 68% at 24 months
- Cost: $150 per 3 month injection
- Effectiveness: 99.8%/96%
- Only recommended for 2 years unless other options not available

The Shot

- Side effects:
  - **Loss of Bone mineral density**: mean BMD loss at the total hip and femoral neck did not fully recover by 5 years (60 months) post-treatment in the sub-group of adolescents who were treated for more than 2 years
  - Black box warning
  - **Weight Gain**: average gain 1/2/6 years of use: 5/8/16 pounds

POPs

- Norethindrone only pill (0.35mg)
  - One pill same time daily- no placebo week
  - Mechanism of action:
    - Thickens cervical mucus
    - Thins endometrial lining
    - Inconsistently suppresses ovulation
  - Bleeding- irregular and light bleeding first 4 months
  - Amenorrhea- common with lactation
  - Cost $10/month
  - Effectiveness 99%/91%

- Drospirenone only pill (4mg)
  - One pill with 24 hour window, four days off for menses
  - Mechanism of action:
    - Thickens cervical mucus
    - Thins endometrial lining
    - Suppresses ovulation
  - Bleeding- irregular and light bleeding 60% 1st cycle and decreasing to 40% at 12 months
  - Amenorrhea- 75% at 12 months
  - Cost- $200/month
  - Effectiveness- 98.2%/92%
  - Do not Rx if adrenal insufficiency or kidney disease


POPs

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<tr>
<th></th>
<th>Anti-Estrogenic</th>
<th>Estrogenic</th>
<th>Androgenic</th>
<th>Anti-Androgenic</th>
<th>Anti-Mineralocorticoid</th>
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<tr>
<td>Levonorgestrel</td>
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<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Norgestimate</td>
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<td>+</td>
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<tr>
<td>Norethindrone</td>
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<tr>
<td>Drospirenone</td>
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Contraception with Estrogen and Progestin

- Combined Oral Contraception Pills
- Ring - 3 week or new annual ring
- Patch - Norelgestromin/EE and Levonorgestrel/EE

Combined Oral Contraceptives

- 88 different brands all containing an estrogen and a progestin
- Mechanism of action - inhibition of GnRH
  - Inhibits ovulation
  - Thickens cervical mucus
  - Thins lining of endometrium
- Bleeding - 30-50% in first 3 months, then 10%
- Amenorrhea - common with continuous use
- Monthly packs
- Cost - $20/3 month supply
- Efficacy - 99.7%/93%
Pills for many problems

- Straight Contraception - low dose estrogen
- Heavy, Painful bleeding - mid dose estrogen, continuous/skip placebo
- Acne/PCOS - drospirenone/EE
- PMDD - drospirenone/EE is FDA approved
- Low sex drive - desogestrel/EE
- Skip Periods or control timing of periods - monophasic pill/skip placebo

Contraindications for COCs

- History of DVT/PE
- Inherited or acquired thrombophilia
- Migraines with aura
- Uncontrolled HTN
### Rings

#### Monthly
- Etonogestrel 11.7mg/EE 2.7mg in ring
- Daily release: 0.12mg/0.015mg
- Size: outer diameter 54mm, cross sectional diameter 4mm
- Mechanism of action:
  - Inhibits ovulation
  - Thickens cervical mucus
- Bleeding: can be irregular or heavier for first 3 months
- Amenorrhea: common if used continuously
- Replace Q 3-4 wks
- Cost: $50/ring
- Effectiveness: 99.7%/93%

#### Annual
- Segesterone acetate 103mg/EE 17.4mg in ring
- Daily release: 0.15mg/EE 0.013mg
- Size: outer diameter 56mm, cross sectional diameter 8.4mm (no wider than a tampon)
- Mechanism of action:
  - Inhibits ovulation
  - Thickens cervical mucus
- Bleeding: can be irregular or heavier for first 3 months
- Amenorrhea: common if used continuously
- Remove after 3 weeks, leave out for a week
- Cost: $2000/ring
- Effectiveness: 99.7%/93%
- No androgenic or glucocorticoid activity

### Patches

#### Norelgestromin/EE
- Norelgestromin 150mcg/day and EE 20mcg/day
- Size: 2cm x 2cm, 14cm²
- Mechanism of action:
  - Inhibits ovulation
  - Thickens cervical mucus
- Bleeding: can be irregular or heavier for first 3 months
- Amenorrhea: common if used continuously
- Replace weekly
- Cost: $50 for 3 patches
- Effectiveness: 91%

#### Levonorgestrel/EE
- LNG 120mcg/day and EE 30mcg/day
- Size: round 28cm²
- Mechanism of action:
  - Inhibits ovulation
  - Thickens cervical mucus
- Bleeding: can be irregular or heavier for first 3 months
- Amenorrhea: common if used continuously
- Replace weekly
- Cost: $180 for 3 patches
- Effectiveness: 93%
Likelihood of Developing a Blood Clot


Weight and Contraceptive options

- OCPs- Less effective at BMI >30
- Patch- Less effective 198lbs/90kg or BMI >25, 30
- Ring- Less effective at 198lbs
- Not affected by weight- shot, implant and IUDs
**Less Effective Options**

- Condoms - failure rate 13-21%
- Diaphragms/Cervical caps 17%
- Gel 14%
- Spermicide 21%
- Withdrawal 20%
- NFP 2-23%

**Contraceptive Vaginal Gel**

- Lactic acid, citric acid and potassium bitartrate vaginal gel (1.8%, 1%, 0.4%)
- Non hormonal **prescription** contraceptive vaginal gel
- Bio-adhesive gel that maintains the acidic pH of the vagina
- One dose is immediately effective for one hour and one act of vaginal intercourse
- Efficacy - 93%/86%
- SE - burning and pruritis most common
- Cost= $270 per box of 12 applicators
## Emergency Contraception

<table>
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<tr>
<th>Copper IUD</th>
<th>Ulipristal Acetate 30mg</th>
<th>Levonorgestrel 1.5mg</th>
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<tbody>
<tr>
<td></td>
<td>Use within 120 hours (5 days)</td>
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<tr>
<td></td>
<td>Most effective option</td>
<td>Most effective pill</td>
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<td></td>
<td>Day 5 as good as day 1</td>
<td>Best to take as soon as possible</td>
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<td></td>
<td>No weight limit</td>
<td>Less effective if weigh &gt;195lbs</td>
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<td>Continues as LARC</td>
<td>Will need contraception</td>
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<td>Needs appointment</td>
<td>Prescription (online service)</td>
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<td></td>
<td>Inhibits sperm motility</td>
<td>Delays ovulation</td>
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<td></td>
<td>$0-1,300</td>
<td>$50</td>
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<tr>
<td></td>
<td>Failure rate &lt;0.1%</td>
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### Questions?
References

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