Contraception Options for Adolescents: Basics for Health Educators

Taylor Starr DO, MPH
Assistant Professor
Division of Adolescent Medicine
Department of Pediatrics
Golisano Children’s Hospital
The University of Rochester School of Medicine and Dentistry
August 2, 2017
Learning Objectives

• Review:
  • Relevant statistics in NY and the US
  • Female Reproductive Anatomy and Physiology
  • Confidentiality in NY State

• Categorize contraception methods based on efficacy

• Explain:
  • Mechanism of action of each method
  • How each method is used
  • Duration of method
  • Common side effects of each method
  • Ways to improve contraception initiation and use
U.S. teen pregnancy, birth and abortion rates reached historic lows in 2011

Rates per 1,000 women aged 15-19

©2016
U.S. Teen Pregnancy Rates in 2011
The highest teen pregnancy rates are found in the South and Southwest

SOURCE: GUTTMACHER INSTITUTE
©2016
Unintended pregnancy rates varied widely in 2010.

No. of unintended pregnancies per 1,000 women aged 15–44

- 32-40
- 41-47
- 48-54
- 55-62

## Sexual Activity: NY and the U.S.

<table>
<thead>
<tr>
<th>YRBS Question</th>
<th>NY</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>% students who ever had sex</td>
<td>30.4%</td>
<td>41.2%</td>
</tr>
<tr>
<td>% students who are currently sexually active (had sex with at least one person within past 3 months)</td>
<td>23.6%</td>
<td>30.1%</td>
</tr>
</tbody>
</table>
## Contraception Use at last sex:

<table>
<thead>
<tr>
<th>YRBS question</th>
<th>NY</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>% students who used a condom at last sex</td>
<td>58.1%</td>
<td>56.9%</td>
</tr>
<tr>
<td>% who used IUD, Implant, shot, ring, patch, or pills</td>
<td>30.1%</td>
<td>26.8%</td>
</tr>
<tr>
<td>% who used birth control pills</td>
<td>22.1%</td>
<td>18.2%</td>
</tr>
<tr>
<td>% who use IUD or Implant</td>
<td>4.1%</td>
<td>3.3%</td>
</tr>
<tr>
<td>% who used shot, ring, or patch</td>
<td>3.9%</td>
<td>5.3%</td>
</tr>
<tr>
<td>% who use both a condom and IUD, implant, shot, ring, patch or pill</td>
<td>11.9%</td>
<td>8.8%</td>
</tr>
<tr>
<td>% who did not use any method</td>
<td>15.1%</td>
<td>13.8%</td>
</tr>
</tbody>
</table>
Minor’s Rights to Confidential Reproductive Care in New York State

• A minor who understands the risks and benefits of proposed and alternative treatments can consent to reproductive health care including:

  • Pregnancy test
  • Contraception
  • Emergency contraception
  • Abortion
  • Pregnancy/prenatal care
  • Labor and delivery
  • STI testing and treatment
Female Reproductive Anatomy

- Fallopian tube
- Uterus
- Ovary
- Cervix
- Internal os
- External os
- Vagina
- Labium minus
Menstrual Cycle

Part One

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

Hormonal Activity

Egg sac grows

Part Two

Egg released

Egg sac breaks apart

Flow

Lining of uterus thickens

Lining continues to thicken

Lining starts to break down

Sequence of major changes in a menstrual cycle that is 28 days long.
## Contraceptive Options

<table>
<thead>
<tr>
<th>Duration</th>
<th>Type</th>
<th>Hormone</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 years</td>
<td>Copper IUD</td>
<td>N</td>
</tr>
<tr>
<td>3-7</td>
<td>Progestin IUD</td>
<td>Y Progestin Only</td>
</tr>
<tr>
<td>4 Years</td>
<td>Implant</td>
<td>Y Progestin only</td>
</tr>
<tr>
<td>3 Months</td>
<td>Injection</td>
<td>Y Progestin only</td>
</tr>
<tr>
<td>Monthly</td>
<td>Ring</td>
<td>Y Estrogen and progestin</td>
</tr>
<tr>
<td>Weekly</td>
<td>Patch</td>
<td>Y Estrogen and progestin</td>
</tr>
<tr>
<td>Daily</td>
<td>Combined pills</td>
<td>Y Estrogen and progestin</td>
</tr>
<tr>
<td>Daily</td>
<td>Progestin only Pill</td>
<td>Y Progestin only</td>
</tr>
<tr>
<td>Each sex</td>
<td>M/F condom</td>
<td>N</td>
</tr>
<tr>
<td>Each sex</td>
<td>Emergency Contraception (EC)</td>
<td>Y Progestin/Ulipristal Acetate</td>
</tr>
</tbody>
</table>
Tiers of contraceptive effectiveness

**HOW WELL DOES BIRTH CONTROL WORK?**

- **Really, really well**
  - The Implant (Nesplanon)
  - IUD (Skyla)
  - IUD (Mirena)
  - IUD (ParaGard)
  - Sterilization, for men and women
  - Works, hassle-free, for up to...
  - 3 years
  - 3 years
  - 5 years
  - 12 years
  - Forever
  - Less than 1 in 100 women

- **Okay**
  - The Pill
  - The Patch
  - The Ring (Depo-Provera)
  - For it to work best, use it...
  - Every week
  - Every month
  - Every 3 months
  - 6-9 in 100 women, depending on method

- **Not so well**
  - Withdrawal
  - Diaphragm
  - Fertility Awareness
  - Condoms, for men and women
  - For each of these methods to work, you or your partner have to use it every single time you have sex.
  - 12-24 in 100 women, depending on method
  - FYI, without birth control, over 90 in 100 young women get pregnant in a year.

This work by the UCSF School of Medicine Bixby Center and Bedsider is licensed as a Creative Commons Attribution - NonCommercial - NoDeriv 3.0 Unported License.
LARC: Long Acting Reversible Contraception

• 2 Methods:
  • IUD
  • Implant

• Safe, highly effective, long-acting

• Cost effective

• Rapid return of fertility

• Increasing use among adolescents


IUDs

Long-acting, reversible, and user-independent

Progestin
- **What:** T-shaped plastic shaped rod
- **How to use:** Provider places in uterus
- **Duration:** 3-7 years
- **Mechanism:** Inhibits fertilization
- **Starts working:** in 7 days
- **Benefits:** Reduced cramping and bleeding
- **Common Side effects:** Amenorrhea

ParaGard: copper (no hormone)
- **What:** T-shaped plastic rod
- **How to use:** Provider places in uterus
- **Duration:** 12 years
- **Mechanism:** Inhibits fertilization
- **Starts working:** immediately
- **Benefits:** no hormone, can be used as emergency contraception
- **Common Side effects:** Increased cramping and bleeding
<table>
<thead>
<tr>
<th>IUD</th>
<th>Hormone</th>
<th>Length of use</th>
<th>benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mirena</td>
<td>52 mg Levonorgestrel</td>
<td>5 years (7 off label)</td>
<td>Approved to treat heavy painful periods</td>
</tr>
<tr>
<td>Lilletta</td>
<td>52 mg Levonorgestrel</td>
<td>3 years (5 off label)</td>
<td>Lower cost</td>
</tr>
<tr>
<td>Kyleena</td>
<td>19.5 mg Levonorgestrel</td>
<td>5 years</td>
<td>Slightly smaller</td>
</tr>
<tr>
<td>Skyla</td>
<td>13.5 mg Levonorgestrel</td>
<td>3 years</td>
<td>Slightly smaller</td>
</tr>
</tbody>
</table>
IUD placement: basic steps

- Exam: determine position of uterus
- Place speculum, clean and stabilize cervix
- Measure length of uterus
- Adjust IUD insertion tube to measurement of the uterus
- Place IUD using IUD insertion tube
- IUD strings are trimmed to 3 cm

Approximate length of insertion procedure: 5 minutes
IUD Removal

Place the speculum

Visualize and grab the strings

Remove IUD
Implant: NEXPLANON™
Long-acting, reversible, and user-independent

What: thin plastic rod; brand name: NEXPLANON

How to Use: Inserted under the skin of upper arm by a healthcare provider

Mechanism: Inhibits ovulation

Duration: 4 years

Starts working: Use back up method for 7 days after insertion

Common side effects: change in bleeding pattern
  • irregular bleeding/nuisance bleeding
  • amenorrhea
NEXPLANON™ Insertion

Position the arm
Measure arm for insertion site
Clean the insertion site
Numb the insertion site
Open implant insertion device
Place implant using insertion device
Palpate implant
Place pressure bandage

Approximate length of insertion procedure: 30 seconds
Nexplanon Removal

Satisfied: a new implant can be placed on day of removal
Unsatisfied: provider will remove implant at any time; can start any other method the day of removal

Approximate length of removal procedure: 3 minutes
Tiers of contraceptive effectiveness

**HOW WELL DOES BIRTH CONTROL WORK?**

- **Really, really well**
  - The Implant (Nesplanon)
  - IUD (Skyla)
  - IUD (Mirena)
  - IUD (ParaGard)
  - Sterilization, for men and women
  - Works, hassle-free, for up to...
    - 3 years
    - 3 years
    - 5 years
    - 12 years
    - Forever
  - Less than 1 in 100 women

- **Okay**
  - The Pill
  - The Patch
  - The Ring
  - The Shot (Depo-Provera)
  - For it to work best, use it...
    - Every week
    - Every month
    - Every 3 months
  - 6-9 in 100 women, depending on method

- **Not so well**
  - Withdrawal
  - Diaphragm
  - Fertility Awareness
  - Condoms, for men and women
  - For each of these methods to work, you or your partner have to use it every single time you have sex.
  - 12-24 in 100 women, depending on method

**What is your chance of getting pregnant?**

FYI, without birth control, over 90 in 100 young women get pregnant in a year.
Injection: Depo-Provera

Somewhat long-acting, reversible, and somewhat user dependent

What: intramuscular injection of progestin

How to use: provider gives injection in arm or buttock

Duration: 3 months (12 weeks)

Mechanism: inhibits ovulation

Starts working: use condom for 7 days after initial injection

Side Effects:

- Bleeding: irregular menses 3-6 months then amenorrhea
- Other: hair loss, weight gain, reversible decreased bone density

<table>
<thead>
<tr>
<th>Depo</th>
<th>If more than 4 weeks late:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• use condoms for next 7 days</td>
</tr>
<tr>
<td></td>
<td>• Use EC within 5 days of unprotected sex</td>
</tr>
</tbody>
</table>
Vaginal Ring: NuvaRing®

- **What:** small flexible unfitted ring with estrogen and progestin
- **How to use:** adolescent places in vagina once a month
- **Duration:** 3 weeks
- **Mechanism:** inhibits ovulation
- **Starts working:** depends on cycle; use back up for 7 days
- **Benefits:** more regular, lighter and shorter menses, lower risk of uterine and ovarian cancer
- **Common side effects:**
  - Estrogen related: breast tenderness, nausea, headaches
  - Progestin related: bloating, spotting

Placing and Removing Ring

Insertion

Removal

Vaginal Ring

Use back-up method for 7 days if:
- ring has been in >5 weeks
- falls out and is not reinserted within 3 hours
- ring has been out >7 days
**Transdermal Patch: OrthoEvra®**

**What:** beige-colored adhesive patch with estrogen and progestin

**How to use:** adolescent places a patch on clean dry skin weekly

**Duration:** 1 week (9 days of hormone in each patch); change weekly

**Mechanism:** inhibits ovulation

**Starts working:** depends on cycle; use back up for 7 days

**Benefits:** more regular, lighter and shorter menses, lower risk of uterine and ovarian cancer

**Common side effects:** first 2-3 months: skin irritation, nausea, spotting between periods, breast tenderness

Placing the Patch

Use back-up method for 1 week if:
- Patch falls off and is not reaffixed within 24 hours
- Patch has been on >9 days
- Off > 7 days
Combined Oral Contraceptives

- **What:** small pill containing estrogen and progestin
- **How to use:** take one pill at the same time daily
- **Duration:** 1 day
- **Mechanism:** inhibits ovulation
- **Starts working:** depends on cycle; use back up for 7 days
- **Benefits:** more regular, lighter and shorter menses, lower risk of uterine and ovarian cancer
- **Common side effects:** first 2-3 months: nausea, spotting between periods, breast tenderness

# Combined Oral Contraceptive Pills

<table>
<thead>
<tr>
<th>Oral Contraceptive Pills</th>
<th>Forgot 1 pill: take missed pill ASAP, continue pack as directed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Forgot 2 or more pills:</td>
</tr>
<tr>
<td></td>
<td>• take last missed pill ASAP, continue pack as directed</td>
</tr>
<tr>
<td></td>
<td>• Use back up for 7 days</td>
</tr>
</tbody>
</table>
Progestin-Only Oral Contraceptives

- **What:** small pill containing progestin
- **How to use:** take one pill at the **same time daily; no placebo week**
- **Duration:** 1 day
- **Mechanism:** inhibits ovulation
- **Starts working:** depends on cycle; use back up for 7 days
- **Benefits:** more regular, lighter and shorter menses, lower risk of uterine and ovarian cancer
- **Common side effects:** first 2-3 months: spotting between periods

<table>
<thead>
<tr>
<th>Progestin Only Pill</th>
<th>Forgot one pill: take ASAP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If &gt;3 hours late: use condoms for 7 days</td>
</tr>
<tr>
<td></td>
<td>Forgot 2 pills: take ASAP, continue pack as directed and use condoms for 7 days</td>
</tr>
</tbody>
</table>

Tiers of contraceptive effectiveness

**How well does birth control work?**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Method</th>
<th>Works, hassle-free, for up to...</th>
<th>What is your chance of getting pregnant?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3</strong>*</td>
<td>Sterilization, for men and women</td>
<td>Forever</td>
<td>Less than 1 in 100 women</td>
</tr>
<tr>
<td><strong>2</strong>*</td>
<td>IUD (Mirena)</td>
<td>5 years</td>
<td>6-9 in 100 women, depending on method</td>
</tr>
<tr>
<td><strong>1</strong>*</td>
<td>IUD (ParaGard)</td>
<td>12 years</td>
<td>12-24 in 100 women, depending on method</td>
</tr>
<tr>
<td>*</td>
<td>IUD (Skyla)</td>
<td>3 years</td>
<td>FVI, without birth control, over 90 in 100 women get pregnant in a year</td>
</tr>
<tr>
<td>*</td>
<td>The Implant (Nesplanon)</td>
<td>3 years</td>
<td>FYI, without birth control, over 90 in 100 women get pregnant in a year</td>
</tr>
</tbody>
</table>

**Really, really well**
- The Implant (Nesplanon)
- IUD (Skyla)
- IUD (Mirena)
- Sterilization, for men and women

**Okay**
- The Pill
- The Patch
- The Ring (Depo-Provera)

**Not so well**
- Withdrawal
- Diaphragm
- Fertility Awareness
- Condoms, for men and women

For each of these methods to work, you or your partner have to use it every single time you have sex.
Dual Method Use

• What: Use of a condom plus another contraceptive

• Goal: May dramatically reduce the risk of both pregnancy and STIs
Male Condom

• **What:** single-use protective sheath placed over the penis

• **Mechanism:** barrier method; blocks sperm form reaching the egg

• **Benefits:** one of 2 methods that protects against STIs

Internal Condom/Female Condom

• **What**: single use loose thin tube with:
  - closed end with inner ring that covers the cervix
  - open end with outer ring that stays outside the vagina

• **Mechanism**: barrier method; blocks sperm from reaching the egg

• **Benefits**: one of 2 methods that protects against STIs

Inserting and Removing Female Condom
Emergency Contraception

• **What:** used after unprotected sex to prevent pregnancy

• **How to use:**
  - Have copper IUD placed within 5 days of unprotected sex (99.9% effective)
  - take medication within 3-5 days of unprotected sex

• **Mechanism:**
  - **Ulipristal Acetate:** progesterone receptor modulator (97.9% effective)
  - **Levonorgestrel (LNG):** high dose progestin that delays ovulation (up to 89% effective)

• **Common side effects:** delayed menses, spotting
Emergency Contraception Pill Options

Progesterone receptor antagonist: Ullipristal Acetate

- Current brand name is Ella
- **Maintains efficacy over 120 hours (5 days)**
- By prescription only
- More effective for women 155-194 pounds

Oral Progestin: Levonorgestrel

- Plan B One-Step: 1 pill by mouth
- Plan B: 2 pills by mouth
- Other brands: Next choice, Econtra, EZ, My Way, After Pill, Levonorgestrel
- Effective for 5 days, but most effective within 72 hours
- Over the counter or by prescription
- Less effective if BMI >30
Improving Contraceptive Management: Advanced EC Prescription

Key Points:

• Recommended for all sexually active females not on LARC
• Does not increase risk taking behaviors
• Increases EC use and decreases time to EC use after unprotected sex
• No limit to number of times a patient can use EC
• Not as effective as preventive (before sex) contraception


Contraceptive Options Counseling: Assessing Medical Contraindications

The CDC developed the U.S. Medical Eligibility Criteria (MEC) for Contraceptive Use based on the World Health Organization Guidelines for Contraceptive Use

There are 4 Categories:
1. No restriction (method can be used)
2. Advantages generally outweigh theoretical or proven risks
3. Theoretical or proven risks usually outweigh the advantages
4. Unacceptable health risk (method not to be used)
## U.S. MEC: Categories

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>No restriction for the use of the contraceptive method for a woman with that condition</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>Advantages of using the method generally outweigh the theoretical or proven risks</strong></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>Theoretical or proven risks of the method usually outweigh the advantages – not usually recommended unless more appropriate methods are not available or acceptable</strong></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td><strong>Unacceptable health risk if the contraceptive method is used by a woman with that condition</strong></td>
</tr>
</tbody>
</table>
CDC Contraceptive Guidance for Health Care Providers

U.S. Medical Eligibility Criteria for Contraceptive Use, 2016 (US MEC)

The 2016 U.S. Medical Eligibility Criteria for Contraceptive Use (U.S. MEC) comprises recommendations for the use of specific contraceptive methods by women and men who have certain characteristics or medical conditions. The recommendations in this report are intended to assist health care providers when they counsel women, men, and couples about contraceptive method choice.

U.S. Selected Practice Recommendations for Contraceptive Use, 2016 (US SPR)

The 2016 U.S. Selected Practice Recommendations for Contraceptive Use (U.S. SPR) addresses a select group of common, yet sometimes controversial or complex, issues regarding initiation and use of specific contraceptive methods. The recommendations in this report are intended to serve as a source of clinical guidance for health care providers and provide evidence-based guidance to reduce medical barriers to contraception access and use.

Quality Family Planning

Providing Quality Family Planning Services (QFP) recommends how to provide family planning services so that individuals can achieve their desired number and spacing of children, increase the chances that a baby will be born healthy, and improve their health even if they choose to not have children.
Improving Contraceptive Initiation: Quick start

• Starting contraception immediately regardless of LMP or recent sex
• Opportunity to provide contraception at times of high motivation
• Provider will:
  • confirm negative pregnancy test
  • prescribed EC if needed
  • advise to use condoms as back up for 7 days
  • advise continue condom use to prevent pregnancy and STIs
Decreasing Barriers to Contraception

- Pregnancy test
- Pelvic exam
- Pap smear
- STI screening

Source: Leeman L. Obstet Gynecol Clin N Am. 2007
Resources

• bedsider.org

• guttmacher.org

• reproductiveaccess.org

• www.plannedparenthood.org

• cdc.gov

• .youngwomenshealth.org

• youngmenshealth.org