The Essentials of Contraception and Adolescents
Objectives

- Discuss the elements of a medical and sexual history.

- Describe the hormonal methods available to young women.

- Provide counseling addressing the advantages and disadvantages of each method.
Figure 1. Pregnancy, birth and abortion rates for teenagers 15-19 years: United States

## Youth Risk Behavior Survey, 2013

<table>
<thead>
<tr>
<th>YRBS Question</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>% students ever had sex</td>
<td>47%</td>
</tr>
<tr>
<td>% students who used a condom at last sex</td>
<td>59%</td>
</tr>
<tr>
<td>% students who used birth control pills at last sex</td>
<td>19%</td>
</tr>
<tr>
<td>% students who used Depo-Provera, Nuva Ring, Implanon or any IUD before last sex</td>
<td>5%</td>
</tr>
</tbody>
</table>
The average teen waits ? months after becoming sexually active to make her first family planning visit.

“The pregnancy test is an admission of unprotected sexual activity and an indication of the need for appropriate reproductive counseling.”*
2006 analysis concluded that for 15–19 year olds:

14% due to Decrease in Sexual Activity

86% due to Increase in Contraceptive Use
What Birth Control Are Teens Using?

- 96.40% Extremely effective
- 3.6% Very effective

U.S. teens 15-19 yrs-CDC NSFG 2006-2008
Women Frequently Miss Pills

Correct Use
- Month 1: 33%
- Month 2: 25%
- Month 3: 19%

1-2 Missed Pills
- Month 1: 37%
- Month 2: 41%
- Month 3: 30%

3+ Missed pills
- Month 1: 30%
- Month 2: 34%
- Month 3: 51%
What Birth Control Would Teens Choose?

Continuation Rates at 1 Year

- LARC: 86%
- Short-Acting: 55%
- Mirena IUD: 88%
- Paragard IUD: 84%
- Implanon: 83%
- DMPA: 57%
- OCPs: 55%
- Ring: 54%
- Patch: 49%

- Extremely effective (>99%)
- Very effective (91% typical use)

Piepert JF et al. Obstet Gynecol May 2011
Satisfaction with BC Method

- LARC: 82%
- Short acting: 52%
- Mirena IUD: 86%
- Paragard IUD: 80%
- Implanon: 78%
- DMPA: 54%
- OCPs: 54%
- Ring: 52%
- Patch: 42%

- Extremely effective (>99%)
- Very effective (91% typical use)

Piepert JF et al. Obstet Gynecol May 2011
Talking to Adolescents About Contraception
Case 1: Angela

- Angela is a 16-year-old young woman who makes an appointment to go on birth control.

- Her intake form indicates that she uses condoms “most of the time.”

- What additional information do you need from this patient?
Traditional
★ Complete medical and family history
★ Rule out absolute contraindications
★ Complete exam including speculum, bimanual & Pap
★ Blood pressure & weight
★ Provide condoms
★ Arrange for follow-up

Streamlined
★ Rule out absolute contraindications
★ Negative pregnancy test
★ Brief medical history, including date of last unprotected sex
★ Blood pressure and weight
★ Provide condoms & advance EC
★ Arrange for follow-up
Medical History

- Menstrual history
  - Age at menarche
  - Date of LMP
  - Duration of menses
  - Regularity/spotting
  - Cycle length
  - Cramps and impact on activities

- History of PE, DVT, MI, migraine with aura or focal neurologic deficit

- Personal or family history of blood clots
  - If affirmative, work-up for clotting disorder

- Prior experiences with contraception
Case: Angela

- Angela is a little unsure of her medical history.

- She does not think anyone in her family has a history of blood clots.
HEEADDSSSSS

- H: Home
- E: Education/Employment
- E: Eating
- A: Activities
- D: Depression/Suicidality
- D: Drugs
- **S: Sexuality**
- S: Safety
- S: Spirituality
- S: Strengths
Sexual Health History

- Sexual orientation and gender identity
- History of vaginal, oral, anal sex
- Age at coitarche
- Number and genders of partners
- Condom and contraception use
- Pregnancy history
- Childbearing plans
- History of STIs
- Sexual satisfaction
- History of survival, unwanted or coerced sex
Characteristics of a Healthy Relationship

- Non-violent conflict resolution
- Open and honest communication
- Right to autonomy for both people
- Shared decision-making
- Trust
- Mutual respect
- Individuality
- Empathy
Case: Angela

- Angela has had sex three times with her current boyfriend and used condoms during two of those three encounters.

- What questions do you ask before beginning contraception counseling?
What did she do right?

- Used condoms at least 2 of 3 times!
- Came in to discuss birth control methods
- Give positive reinforcement whenever possible

IDEAL = DUAL USE
CONDOMS + HORMONAL CONTRACEPTION / IUD
Unprotected Sex in the Past Five Days?

Offer emergency contraception in the office

No

Yes

Consider doing a urine pregnancy test if unprotected sex occurred more than 14 days prior
Emergency Contraception: Levonorgestrel, Ulipristal Acetate, or Paragard IUD
Starting Contraception After Taking EC

- COCs/Progestin-only Pills: Can start new pack day after EC
- Vaginal Ring/Patch: Can start method day after EC
- DMPA/Implants/IUC’s: Can start same day as EC

*With ALL methods: Abstain/Use Back-Up protection for first 7 days

Starting Contraception after taking Ella: Abstain/Use Back-Up protection for first 2 weeks
Case: Angela

- Angela informs you that she last had unprotected sex two weeks ago.
- You do a urine pregnancy test. The result is negative.
- Do you need to perform a pelvic exam?
When to Begin Pelvic and Pap smears

▶ Pelvic exam: Not necessary if she has no STI symptoms

▶ Pap smear: Not indicated until she is 21, regardless of age of sexual initiation.
## Summary Cervical Cytology Guidelines

<table>
<thead>
<tr>
<th>Organization</th>
<th>Initial Screening</th>
<th>Screening Interval for Under 30</th>
<th>Date Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Congress of Obstetricians and Gynecologists (ACOG)</td>
<td>Age 21, regardless of sexual initiation</td>
<td>Every two years</td>
<td>2009</td>
</tr>
<tr>
<td>United States Preventive Services Task Force (USPTF)</td>
<td>Age 21 or within three years of sexual initiation, whichever comes first</td>
<td>At least every three years</td>
<td>2003</td>
</tr>
<tr>
<td>American Cancer Society (ACS)</td>
<td>Approximately three years after initiation of vaginal intercourse, but no later than age 21</td>
<td>Annually; Every two years with liquid-based cytology</td>
<td>2002</td>
</tr>
</tbody>
</table>
Case: Angela

- You tell Angela that there are many contraceptive options available to her and you are confident that you can help her find one if she likes.

- What additional questions do you ask before beginning contraception counseling?
Factors affecting contraceptive use

- What have I heard about it?
- Will it hurt me?
- Will my parents or partner find out?
- Will I be able to afford it?
- How will it help me?
- Do I want to prevent pregnancy?
- Do any of my friends use it?
Case: Angela

Angela tells you that she wants to know which method works best and lasts the longest; as she definitely doesn’t want to have children for 5-10 years.
Current Contraceptive Options

**Extremely effective**
- Prevents pregnancy >99% of the time
  - Sterilization
    - LARC
    - IUDs
    - Implants

**Very effective**
- Prevents pregnancy ∼91-99% of the time
  - Pills
  - Patch
  - Ring
  - Injectables

**Moderately effective**
- Prevents pregnancy ∼81-90% of the time
  - Condom
  - Sponge
  - Diaphragm
  - Withdrawal

**Effective**
- Prevents pregnancy up to 80% of the time
  - Fertility awareness
  - Cervical cap
  - Spermicide
Long Acting Reversible Contraception (LARC = IUDs/Implants)

- Most effective methods: >99%
- Safest
  - No estrogen
  - Contraindications rare
- Long-term protection: lasts 3-12 years
- Rapid return of fertility
- Most cost effective

Levonorgestrel Intrauterine Device (IUD): Mirena

- 20 mcg levonorgestrel/day
  - Progestin only method
- 5-7 years use
- Cost: ~$300-700
- Amenorrhea in ~40% of users by 1 year
- Primary mechanism is fertilization inhibition
  - Cervical mucus thickening
  - Sperm inhibition (function/motility)

Copper-T IUD: Paragard

• Copper ions
• No hormones
• 10-12 years of use
• Cost: ~$150-475
• Can be used as EC
• Primary mechanism is prevention of fertilization
  • Reduce motility and viability of sperm

FDA approves a new IUD: Skyla

- FDA approved on January 9, 2013

- Small, flexible plastic T-shaped device containing 13.5 mg of LNg (vs. 52mg of LNg with Mirena)

- Narrower and smaller than other IUDs

- Designed to prevent pregnancy for up to 3 years

Intrauterine Device & Intrauterine System

**Duration**
- **TCu 380**: Approved 10 yrs
  - Data: effective up to 12 years
- **LNG-IUS**: Approved 5 yrs
  - Data: effective up to 7 years

**Efficacy**
- **TCu 380**: Cumulative 12-year failure rate between 0.7–2.2 pregnancies per 100 women
- **LNG-IUS**: Cumulative 7-year failure rate between 0.5–1.1 pregnancies per 100 women

*PHYSICIANS FOR REPRODUCTIVE HEALTH*
IUDs and Adolescents

WHO criteria do not contraindicate IUD during adolescence (TCu 380 indicated for ≥16 yrs up)

Nulliparous women have increased risk of expulsion

IUD is not recommended if patient has:
- Current diagnosis of an STI or PID in past three months
- Purulent cervicitis
- Uterine anomaly
- Wilson’s disease (for TCu 380 IUD)
Dispelling Common Myths About IUDs

The truth about IUDs:

- *Can* be used by nulliparous women
- *Can* be used by women who have had an ectopic pregnancy
- *Can* be used by women with multiple partners
- *Can* be used by women with h/o STI/PID
- *Can* be used by teens
- *Do not* need to be removed for PID treatment

IUD: Additional Concerns

**Perforation risk:**

- Very low—1 per 1000 insertions or less

**Expulsion:**

- <5% of IUD users spontaneously expel in the first year
### Which IUD is the BEST Choice?

<table>
<thead>
<tr>
<th>Copper T IUD (Paragard)</th>
<th>LNG IUD (Mirena/Skyla)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>bleeding</strong></td>
<td>• Want regular periods</td>
</tr>
<tr>
<td>▶ OK w/amenorrhea</td>
<td>• Want no hormones</td>
</tr>
<tr>
<td>▶ H/O dysmenorrhea</td>
<td>• No h/o dysmenorrhea</td>
</tr>
<tr>
<td>▶ H/O menorrhagia</td>
<td>• No h/o menorrhagia</td>
</tr>
</tbody>
</table>

- LNG IUD (Mirena/Skyla) is recommended for:
  - Want regular periods
  - Want no hormones
  - No h/o dysmenorrhea
  - No h/o menorrhagia
Counseling Issues and Facilitating Use

Counsel regarding myths and misconceptions

To reduce risk

Remove and replace only when necessary

Counsel regarding symptoms of PID and expulsion

Give each woman an ID card with IUD name, a picture of the IUD, as well as insertion and recommended removal dates
Implant: Implanon/Nexplanon

- Contains etonogestrel
- Progestin only method
- Effective for 3 years
- Cost: ~$300-600
- Mechanism: Inhibits ovulation
- Side effects: amenorrhea or irregular bleeding

Implantable Contraception

- A single 4 cm long implant with time-released etonogestrel
- FDA approved in 2006
- Implanted in the upper arm
- Inserted and removed by a clinician
- Provides up to three years of protection against pregnancy
Benefits of Implanon®

- Highly effective
  - Perfect and typical failure rate 0.1%
- Cost effective over time
  - $350–$600
- Insurance coverage may affect ability to choose this method
- Discreet (concerns exist about visibility)
- May improve acne in current sufferers
Concerns for Teens

- Small weight gain
  - 2.8 lbs in year one, and 3.7 lbs. in year two
- Irregular bleeding patterns
- Insertion and removal requires office visits
- Initial expense
Combined Hormonal Contraception (CHC)

- **Estrogen**
  - Inhibits FSH and LH
  - Inhibits ovulation

- **Progesterone**
  - Thickens cervical mucus to prevent sperm penetration
  - Inhibits capacitation of sperm

Very Effective
CHCs: Safe for majority of adolescents

- Conditions that contraindicate the use of CHC are not common, especially among adolescents

- It is always important to advise women on the relative safety and effectiveness of CHC
Determining safety of contraception methods

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. Medical Eligibility Criteria (MEC) for CHC Use

Category 4=Absolute Contraindications

- Current breast cancer
- Severe cirrhosis, Hepatocellular adenoma, Malignant liver tumor, Acute/flare viral hepatitis
- Acute DVT/PE, History of DVT/PE with high risk for recurrence, Major surgery with prolonged immobilization
- Documented thrombogenic mutations
- Migraine headaches with auras
- Diabetes > 20 years or with end organ damage
- Hypertension: Sys ≥ 160, Dias ≥ 100 or with vascular disease
- Current or history of ischemic heart disease, Complicated valvular heart disease, Peripartum Cardiomyopathy
- Postpartum <21 days
- Age > 35 and >15 cigarettes/day
- Complicated solid organ transplant
- History of Stroke
- Lupus with positive or unknown antiphospholipid antibody
U.S. Medical Eligibility Criteria (MEC) for CHC Use

Category 3=Relative Contraindications

- Past Breast Cancer (>5 years)
- Breastfeeding <1m postpartum
- History of DVT/PE with low risk for recurrence
- Symptomatic gallbladder disease
- Migraine without aura >35
- Postpartum 21-42d with VTE risk
- Malabsorptive bariatric surgery (COC’s)
- Past OCP related cholestasis
- IBD with increased risk for VTE
- HTN: systolic<140-159, diastolic <90-99, Controlled
- Age >35 and <15 cigarettes/day
- Drugs: Rifampin, Rifabutin, Certain Anticonvulsants, Lamotrigine, Protease inhibitors
### Use Tools: Risk Comparisons

**Annual risk of death (per 100,000)**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Risk (per 100,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skydiving</td>
<td>100</td>
</tr>
<tr>
<td>Driving</td>
<td>20</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>12</td>
</tr>
<tr>
<td>Riding a bicycle</td>
<td>0.8</td>
</tr>
<tr>
<td>Airplane crash</td>
<td>0.4</td>
</tr>
<tr>
<td>Using OCs*</td>
<td>0.06</td>
</tr>
</tbody>
</table>

*Nonsmoker, age 15–34*

References:
Estrogen-Related Side Effects

- Rare but serious health risks, including blood clots, heart attack, and stroke
- Patients should contact their medical provider immediately if they experience ACHES:
  - Abdominal pain
  - Chest pain
  - Headaches
  - Eye or visual changes
  - Severe leg pain or swelling
Progestin-Related Side Effects

- Edema
- Abdominal bloating
- Anxiety
- Irritability
- Depression
- Myalgia
- Menstrual irregularities
Oral Contraceptive Pills

- Safe
- Effective
- Limited Side Effects
- Many Choices
- Moderate Cost
- Health Benefits
Menstrual-Related Benefits

- Menstrual-related health benefits:
  - Decreased dysmenorrhea
  - Decreased menstrual blood loss
  - May reduce menstrual-related PMS symptoms
  - Decreased anemia
Menstrual-Related Benefits

- Reduces
  - Ectopic pregnancies
  - Endometrial and ovarian cancer risk
  - Benign breast conditions
  - PID
- Improves acne and hirsutism
Effectiveness

- Perfect use: 0.3%
- Typical adult use: 8%
- Typical adolescent use: 5%–25%—mainly due to poor adherence
COCs contain:

» 20–50 mcg ethinyl estradiol—newer formulations rarely contain >35 mcg

» 0.1–1.5 mg progestin

Eight types of progestins classified by pharmacology and generation

Estrogen Dosage

- Ethinyl estradiol in most OCP’s
- Mestranol is pro-drug converted to ethinyl estradiol, rarely used
- 50 mcg. Unacceptably high
- 30-35 mcg is “low dose”
- 20 mcg – ultralow
- 25 mcg – Ortho Tri-Cyclen® Lo
- 10 mcg – Lo Loestrin®Fe
20 vs. 30-35 mcg

20 mcg:
- less estrogenic side effects
- more breakthrough bleeding
- more pill discontinuation

30-35 mcg:
- better for bone density
- higher estrogen dose
Monophasic vs. Multiphasic

- **Monophasic** – same progestin dose for all active pills
- **Multiphasic** – usually triphasic, increasing progestin dose weeks 1-3
  
  Mimics luteal phase
  
  No clinical advantage
  
  Less total hormone per cycle
## COCs Formulations

<table>
<thead>
<tr>
<th>Monophasic</th>
<th>Biphasic</th>
<th>Triphasic</th>
<th>Four-Phasic</th>
</tr>
</thead>
</table>
| • Hormone levels remain constant  
  • Ortho-Novum 1/35, Demulen 1/35, Lo-Ovral, Ortho-Cyclen, Loestrin, Alesse, Ortho-cept | • Change hormone levels once during cycle  
  • Ortho-Novum 10/11, Mircette, and Necon 10/11 | • 3 different doses of hormones changing every 7 days in 1st 3 weeks  
  • Ortho-Novum 7/7/7, Ortho Tri-Cyclen, Ortho-Tri Cyclen Lo, Triphasil, Tri-Level, Tri-Norinyl | • 4 different doses of hormones changing throughout 28 day cycle  
  • Natazia (approved Sep 2010) |
Formulations

Monthly cycling 21/7
Three weeks active seven days placebo

Shortened Pill-Free Interval
Pill free interval from seven to four days—shorter bleed

Extended Use
Bicycling, Tricycling, Continuous
## Generations of Progestins

<table>
<thead>
<tr>
<th>First</th>
<th>Norethindrone/those that metabolize norethindrone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second</td>
<td>Levonorgestrel &amp; norgestrel  Estrogen properties vary</td>
</tr>
<tr>
<td>Third</td>
<td>Desogestrel &amp; norgestimate  Least androgenic effects</td>
</tr>
<tr>
<td>Fourth</td>
<td>Dropirenone  Derived from 17α-spirolactone</td>
</tr>
</tbody>
</table>
Fourth Generation Progestins

May 2001 FDA approved Yasmin 28®

Monophasic
Contains 30 mcg EE and 3 mg Fourth generation progestin drospirenone

May 2006 FDA approved Yaz®

Contains 20 mcg EE and 3 mg drospirenone
24 active pills and 4 placebo
FDA approved to treat PMDD and acne
Newer Progestins

- Less androgenic side effects
- Anti-androgenic effects
  - Treat acne
  - Prevent hirsutism
  - Useful for polycystic ovary syndrome
- Difference in thrombo-embolic phenomena controversial
Extended Cycling

- Decrease hormonal shifts and no. menses
- Convenience, treat dysmenorrhea, other cyclic symptoms
- Seasonale® – levonorgestrel, 30 mcg EE for 84 days, 7 placebos
- Seasonique® – added 10 mcg EE to placebos
- LoSeasonique® - 20 mcg EE for 84 days
- Lybrel® - 28 days 20 mcg EE, no placebos
<table>
<thead>
<tr>
<th>Name</th>
<th>FDA approved</th>
<th>EE</th>
<th>Progestin</th>
<th>Regimen</th>
<th># of periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonale</td>
<td>2003</td>
<td>30 mcg</td>
<td>0.15 mg levonorgestrel</td>
<td>84 active 7 placebo</td>
<td>4</td>
</tr>
<tr>
<td>Seasonique</td>
<td>2006</td>
<td>30 mcg</td>
<td>0.15 mg levonorgestrel</td>
<td>84 active 7 days of 10 mcg EE</td>
<td>4</td>
</tr>
<tr>
<td>Lybrel</td>
<td>2007</td>
<td>20 mcg</td>
<td>0.09 mg levonorgestrel</td>
<td>365 active</td>
<td>0</td>
</tr>
</tbody>
</table>
Issues with Extended Cycling

- Insurance plans cover 30 day supply
- Any monophasic pill can be used.
- Can take active pills until breakthrough bleeding occurs, then stop pills for 7 days.
- Can extend duration of active pills from 6 weeks up to 12 weeks and beyond.
- Be specific in prescribing:
  
  Disp: 2 packs
  Sig: Take 6 weeks active pills, one week placebos
Counseling Issues and Facilitating Use

Adherence
- Establish a time each day to take the pill (when brushing teeth, etc.)

Side Effects
- Usually transient
- If persist, many other brands available

Missed Pills
- If > two pills missed, use other method
- Recommend/Prescribe EC
Are COCs the right choice?

**Advantages**
- Effective
- Safe
- Quick return to fertility
- Health benefits

**Disadvantages**
- Requires daily adherence
- Semi-private
- Estrogen-related risks and side effects
- Meds that induce cytochrome P450 may decrease effectiveness
Recent studies indicate that providing more than one cycle of birth control at initial visit increases contraceptive continuation.  

Greatest effect: teens less than 18 years old.

White, Roca, & Westhoff (2010).
Progestin-Only Oral Contraceptives

Called the “mini-pill”

- Two formulations: norethindrone & norgestrel
- No placebo week
- Mechanism of action: Thickens cervical mucous

Case: Angela

- Angela says she is concerned she will not remember to take the pill every day.

- What other contraceptive options do you discuss with her?
**Vaginal Ring: Nuva Ring**

- Progestin
- Flexible, unfitted ring placed in vagina
- In 3 weeks/out 1 week
- 4 weeks of medication in ring
- Continuous use: change first of each month
- Mechanism: Inhibits ovulation

---

Very Effective

The Vaginal Ring

15 mcg EE
1.2 mg etonogestrel

Low Dose

Low Maintenance

Safe And Effective

Private

Ring in three weeks and out for one week (or for four weeks with no ring-free week)

Only evident to patients and sometimes sexual partners

Same safety/efficacy profile as COCs
### Counseling Issues and Facilitating Use

#### Insertion
- Provider can place the ring in patient’s vagina in the office/clinic and have patient remove it and practice inserting it again herself.

#### Reinsertion
- Advise patients to reinsert ring on the same day every month to increase compliance.

#### If Ring Falls Out
- During week one & two, reinsert ring.
- During week three, insert NEW ring OR have withdrawal bleed and insert NEW ring after seven days.
- In all cases, use back up method for seven days.

---

Ring can be removed safely for up to three hrs/day.
Is the Ring the Right Choice?

**Advantages**
- Safe & effective
- Low dose
- Monthly adherence
- Same health benefits as COCs?
- May decrease BV risk

**Disadvantages**
- Estrogen-related risks & side effects
- Discomfort with self insertion and removal?
- Increased vaginal wetness and discharge (advantage?)
- Patients and partners may feel it during sex
Case: Angela

- Angela likes the idea of the ring but she is a little put off by the idea of touching her own vagina.

- What other contraceptive options do you discuss with her?
The Transdermal Patch

Very Effective

Safe

Health Benefits

Effective

Moderate Cost

Limited Side Effects
Transdermal Patch: Ortho Evra

- Estrogen + Progestin
- Beige-colored patch changed once per week
- 3 weeks on/1 week off
- 9 days of medication in each patch
- Mechanism: Inhibits ovulation

Failure rates similar to COCs
Forgiving of delayed reapplication
Improved adolescent compliance
Higher detachment rate with teens (up to 35%)
Higher failure rate among women who weigh 198 lbs
Similar estrogen-related side effects and risks as COCs

Increased amount of estrogen may increase clot risk, but risk still very low
Ethinyl Estradiol OCs and Patch

Mean Serum Concentration/Time Profiles EE: OCs and Patch

OC: Cycle 2, days 15–21
Patch: Cycle 2, week 3
September 20, 2006: FDA included more information on the risk of nonfatal blood clots with the patch

Clot risk is not new

Warning about risk was not strengthened
Two studies by Jick et al. found:

- VTE risk for patch similar to 35 mcg OCs (53.8 per 100,000 vs. 41.8 per 100,000)
- No increased risk for stroke or heart attack

Cole et al. found:

- Patch users > than double the risk of VTE (40.8 per 100,000 vs. 18.3 per 100,000)
- No increased risk for stroke or heart attack

VTE Risk in Context

Risk in General Population
0.8 per 10,000 women per year

Risk in COC Users
Three to four per 10,000 women per year

Pregnancy and Postpartum Period
Six to twelve per 10,000 women per year
Counseling Issues and Facilitating Use

**Application**
- Place on clean, dry skin on arm, torso, buttocks, or stomach, NOT the breast
- Must stick directly to skin

**Reapplication**
- No patch during the 4th week
- Apply a new patch after day 7 even if still bleeding

**Missed or Late Patch**
Use back-up method when:
- On for >9 days
- Off for >7 days
- Falls off >24 hrs
Is the Patch the Right Choice?

Advantages

- Effective
- Safe
- Weekly (not daily) adherence
- Possible same health benefits as COCs

Disadvantages

- 60% more estrogen than COCs
- Semi-private
- Estrogen-related risks and side effects
- Hyperpigmentation, irritation, and adhesive residue
- Cost
Extended Hormonal Contraception

- Delays or eliminates menstruation

- Menstrual and nonmenstrual benefits

- Extended methods:
  - Continuous use of COCs, transdermal patch & vaginal ring
  - Seasonale®, Seasonique® & Lybrel® - dedicated extended OC regimen

Case: Angela

- Angela tells you that she has heard about the patch but is worried that someone at school might see it.

- What other contraceptive options do you discuss with her?
Injectable: Depo Provera (DMPA)

- Progestin only
- IM or SQ injection every 3 months (14 weeks)
  - Mechanism: Inhibits ovulation

Injectable Contraception

- Perfect Use: 0.3%
- Typical Use: 3%
- Highly Effective
- Injected in deltoid or gluteus muscle every three months
- Health Benefits
- Low Maintenance & Long-Acting
- Private
- No Estrogen
Few contraindications for DMPA use

- CDC/WHO Category 4: current breast cancer
- CDC/WHO Category 3: current cardiovascular disease, abnormal liver function or liver tumors, diabetes-related complications, women with a history of breast cancer or unexplained bleeding
- Migraines with aura at any age is Category 2 to initiate and Category 3 to continue
Non-Contraceptive Benefits

- Decreases ovulation pain, mood changes, headaches, breast tenderness, and nausea
- Decreases risk of PID
- Decrease frequency of grand mal seizures
- Reduces frequency of sickle cell crises
Side Effects

- First several months: unpredictable or prolonged spotting
- After one year: 40%–50% have amenorrhea
- 20%–25% of women discontinue use because of menstrual issues
DMPA and Bone Loss

Women lose 1%-3% of BMD/year of use

In 2004: FDA added a black box warning to address DMPA and BMD

Loss appears to be transient.

2008 Review:

- BMD consistently returned to baseline after discontinuation
- Reversal began as early as 24 weeks after discontinuation
- Duration of use did not affect reversal of BMD decline

Bone loss reversal in adolescents

- 2010 study of adolescent DMPA users
  - Mean BMD loss
    - 2.7% lumbar spine
    - 4.1% total hip
    - 3.9% femoral neck
  - BMD recovered after DMPA discontinuation
    - returned to baseline within 60 weeks
    - 4.7% above baseline at lumbar spine at 240 weeks
    - Return at slower pace for total hip, femoral neck
18% of adolescents report discontinuing for this reason.

Two retrospective analyses: DMPA associated with an increase of nine lbs.

Only randomized trial: DMPA had no effect on weight over a three month period.
DMPA and weight gain

Depo-Provera package insert states that average weight gain is:

- 5.4 pounds in year one of use
- 8.1 pounds after year two of use
- 13.8 pounds after year four of use
DMPA: Counseling Issues

- Discuss side effects
  - Irregular bleeding and weight gain: most common side effects and reasons for discontinuing use
- Patients should be encouraged to:
  - Get adequate calcium and vitamin D daily
  - Participate in regular weight bearing activity
Is DMPA the Right Choice?

**Advantages**
- Highly effective
- Safe and private
- Injection every 12 weeks
- Health benefits

**Disadvantages**
- Menstrual irregularities
- Possible effects on weight and bones
- Irreversible for three months
- Office visit every three months
- Delayed return to fertility
- Alopecia
Case: Angela

- Even after hearing about other contraceptive options, Angela decides she wants to start DMPA.

- When do you give her the first injection?
Improving Contraception Initiation with QUICK START for Hormonal Methods

She starts the method THE DAY she fills the prescription for OCP, Ring, Patch, DMPA, Implant

Ensure that she:

• Has a negative pregnancy test that day
• Uses a condoms for first week
• Understands risks and benefits of method and when protected
• Also gets EC if needed

Quick Start Algorithm

Woman requests a new birth control method:

1. Pill, Patch, Ring, Injection

First day of last menstrual period (LMP) is:

- ≤ 5 days ago
  - Start method today
- > 5 days ago
  - Urine pregnancy test: negative**

Unprotected sex since LMP:

- ≤ 5 days ago
  - Offer hormonal EC today*
  - Advise that negative pregnancy test is not conclusive, but hormones will not harm fetus
- > 5 days ago
  - Offer hormonal EC today*
- Both < and > 5 days ago
  - Start pill/patch/ring/injection today, use back-up method 1st week
- None

Patient wants to start new method now?

- yes
  - Start pill/patch/ring/injection, use back-up method 1st week
  - Timing: start new method TODAY even if taking EC today
  - Two weeks later, urine pregnancy test is negative;** continue pill/patch/ring/injection

- no
  - Give prescription for chosen method; advise patient to use barrier method until next menses

* Because hormonal EC is not 100% effective, check urine pregnancy test 2 weeks after EC use.
** If pregnancy test is positive, provide options counseling.

www.reproductiveaccess.org 2014
Improving Contraception Initiation with Quick Start for Hormonal Methods

- Patients are more likely to start method
- Improves continuation rates
- Offers earlier protection from pregnancy
- No significant difference in the bleeding patterns compared with menses start
What is the timing of insertion???

That pregnancy can be excluded

When is she protected from pregnancy?

**Immediately:**
Copper-T IUD

**After 7 Days:**
- LNG IUS
- Implant
- Pills
- Patch
- Ring
- Injectable
Case: Angela

- Angela’s pregnancy test is negative. She tells you she will return in a month for a follow-up test.

- You give her the DMPA injection and also write her an advanced prescription for EC with refills.
Wrap Up

- Take a full medical and sexual history
- Explore personal circumstances affecting method choice and compliance
- Discuss side effects candidly and validate concerns
- Encourage dual condom/contraception use
- Write an advanced prescription of EC or instruct on OTC access
Please Complete Your Evaluations Now

Adolescent Reproductive & Sexual Health Education Program
Provider Resources

- [www.prh.org](http://www.prh.org) — Physicians for Reproductive Health
- [www.aap.org](http://www.aap.org) — The American Academy of Pediatrics
- [www.acog.org](http://www.acog.org) — The American College of Obstetricians and Gynecologists
- [www.adolescenthealth.org](http://www.adolescenthealth.org) — The Society for Adolescent Health and Medicine
- [www.aclu.org/reproductiverights](http://www.aclu.org/reproductiverights) — The Reproductive Freedom Project of the American Civil Liberties Union
- [www.advocatesforyouth.org](http://www.advocatesforyouth.org) — Advocates for Youth
- [www.guttmacher.org](http://www.guttmacher.org) — Guttmacher Institute
- [www.cahl.org](http://www.cahl.org) — Center for Adolescent Health and the Law
- [http://www.gynob.emory.edu/centers/jfc.html](http://www.gynob.emory.edu/centers/jfc.html) — The Jane Fonda Center of Emory University
- [www.siecus.org](http://www.siecus.org) — The Sexuality Information and Education Council of the United States
- [www.arhp.org](http://www.arhp.org) — The Association of Reproductive Health Professionals
Provider Resources: Contraception

- Physician’s Emergency Contraception: A Practitioner’s Guide
- ARHP Reproductive Health Model Curriculum
- For information on EC and a director of providers women can visit [www.not-2-late.com](http://www.not-2-late.com)
- Managing Contraception: [www.managingcontraception.com](http://www.managingcontraception.com)