Disclosures

- No conflicts of interest
Overview

• Introduction
  o Background on recommendations
  o How to use the guidelines, caveats
  o How to be reasonably certain that a woman is not pregnant

• Methods
  o IUDs, Implants, Injectables, Combined Hormonal Contraceptives, Progestin-only Pills, Standard Days Method
  o Emergency contraception, Female and Male sterilization

• When can women stop using contraceptions

• Conclusion
INTRODUCTION
U.S. Selected Practice Recommendations for Contraceptive Use, 2013


- Adapted from the World Health Organization

- “contains recommendations for health-care providers for the safe and effective use of contraceptive methods and addresses provision of contraceptive methods and management of side effects and other problems with contraceptive method use.”
How to use this document

- **Recommendations on timing for initiation**
  - Medical Eligibility Criteria for contraceptive use (MEC)
    - 1 = no restrictions (method can be used)
    - 2 = advantages generally outweigh theoretical or proven risks
    - 3 = theoretical or proven risks usually outweigh the advantages
    - 4 = unacceptable health risks (method should not be used)

- **Recommendations for examinations and tests needed before initiation of the method**
  - *caveat*: known medical problems or other special conditions may need additional exams or tests
  - Class A = essential and mandatory in all cases
  - Class B = contribute substantially to safe and effective use
  - Class C = do not contribute to safe and effective use

- **Recommendations for follow-up**
Introduction

- Approximately 50% of pregnancies in US unintended
  - ½ of women not using contraception
  - ½ of women become pregnant despite use of contraception

How to be reasonably certain that a woman is not pregnant

- Criteria are highly accurate (99-100% NPV)

**BOX 1. How To Be Reasonably Certain that a Woman Is Not Pregnant**

A health-care provider can be reasonably certain that a woman is not pregnant if she has no symptoms or signs of pregnancy and meets any one of the following criteria:

- is ≤7 days after the start of normal menses
- has not had sexual intercourse since the start of last normal menses
- has been correctly and consistently using a reliable method of contraception
- is ≤7 days after spontaneous or induced abortion
- is within 4 weeks postpartum
- is fully or nearly fully breastfeeding (exclusively breastfeeding or the vast majority [≥85%] of feeds are breastfeeds),* amenorrheic, and <6 months postpartum

How to be reasonably certain that a woman is not pregnant

- Pregnancy tests
  - sensitivity of a pregnancy test is defined by the concentration of hCG at which 95% of tests are positive

- Most studies have shown no increased risk for adverse outcomes, including congenital anomalies or neonatal or infant death, among infants exposed in utero to COCs
  - studies have also shown no increased risk for neonatal or infant death or developmental abnormalities among infants exposed in utero to DMPA
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Contraception

METHODS
Intrauterine contraception

- Three IUDs available in US

- Copper-IUD
- 52 mg Levonorgestrel
- 13.5 mg Levonorgestrel
Intrauterine contraception

**Copper-IUD (Cu-IUD)**

- **Timing:** any time (Box 1)
  - can also be inserted within 5 days of unprotected sexual intercourse as an emergency contraceptive

- **No need for back-up contraception**

- **NOTE:** if not reasonably certain woman is not pregnant, the woman should be provided with another method until provider can be certain and insert Cu-IUD
Intrauterine contraception

**Levonorgestrel (LNG-IUD)**

- **Timing:** any time (Box 1)

- **Need for back-up contraception**
  - if inserted within first 7 days, no additional methods needed
  - if inserted > 7 days after LMP, the woman should abstain from intercourse or use additional protection for 7 days
Intrauterine contraception

- **Examinations and tests:**
  - bimanual examination and cervical inspection (*Class A*)
  - baseline weight and BMI might be useful
  - **STD tests per guidelines**
    - women with purulent cervicitis or current GC/Chlamydial infection should not undergo IUD insertion
    - women who have very high individual likelihood of STD exposure (currently infected partner) should not undergo IUD insertion
  - other labs/exams unnecessary
Intrauterine contraception

- **Examinations and tests:**
  - bimanual examination and cervical inspection (*Class A*)
  - baseline weight and BMI might be useful
  - **STD tests per guidelines**
    - women with purulent cervicitis or current GC/Chlamydial infection should not undergo IUD insertion
    - women who have very high individual likelihood of STD exposure (currently infected partner) should not undergo IUD insertion
  - other labs/exams unnecessary

- **Prophylactic antibiotics:**
  - not recommended prior to insertion

- **Routine follow-up:**
  - advise women to return at any time to discuss side effects or problems, if she wants to change method, and when it is time to remove or replace the contraceptive method
  - no routine follow-up visit is required
Pelvic Inflammatory Disease and IUDs

- Systematic review from four studies:
  - incidence of PID did not differ between women using Cu-IUDs and those using DMPA, COCs, or LNG-IUDs (Level I to II-2)\(^1\)
  - although rate was generally low, rate of PID was significantly higher in the first 20 days after insertion (Level I to II-3)\(^2\)

Management of the IUD when user is found to have Pelvic Inflammatory Disease

- Treat PID.*
- Counsel about condom use.
- IUD does not need to be removed.

Woman wants to continue IUD.

- Reassess in 24–48 hours.

  - Clinical improvement
    - Continue IUD.
  - No clinical improvement
    - Continue antibiotics.
    - Consider removal of IUD.
    - Offer another contraceptive method.
    - Offer emergency contraception.

Woman wants to discontinue IUD.

- Remove IUD after beginning antibiotics.
  - Offer another contraceptive method.
  - Offer emergency contraception.
Management of the IUD when user is found to have Pelvic Inflammatory Disease

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Woman wants to discontinue IUD.

- Remove IUD after beginning antibiotics.
  - Offer another contraceptive method.
  - Offer emergency contraception.

Treatment outcomes did not differ between groups!
Intrauterine contraception

**Bleeding irregularities**

- **Cu-IUD**
  - Unscheduled spotting or light bleeding is common (3-6 months); not harmful and decreases with continued use
  - Treatment: NSAIDs for 5-7 days

- **LNG-IUD**
  - Unscheduled spotting or light bleeding, as well as heavy or prolonged bleeding, is common during first 3-6 months; decreases with continued use
  - Approximately ½ of users experience amenorrhea or oligomenorrhea by 2 years of use
Intrauterine contraception

- Management of IUD when user found to be pregnant
Intrauterine contraception

- Management of IUD when user found to be pregnant
  - evaluate for possible ectopic pregnancy
Intrauterine contraception

- **Management of IUD when user found to be pregnant**
  - evaluate for possible ectopic pregnancy
  - **advise woman that she is at increased risk for spontaneous abortion (including septic abortion) & preterm delivery if IUD is left in place**
    - removal reduces risks, but might not decrease the risk to the baseline level of pregnancy without IUD
    - counsel patient on options
Intrauterine contraception

• Management of IUD when user found to be pregnant
  ○ evaluate for possible ectopic pregnancy
  ○ advise woman that she is at increased risk for spontaneous abortion (including septic abortion) & preterm delivery if IUD is left in place
    ▪ removal reduces risks, but might not decrease the risk to the baseline level of pregnancy without IUD
    ▪ counsel patient on options
  ○ IUD strings visible or can be retrieved safely from cervical canal
    ▪ advise that should be removed and pull strings gently to remove (improves outcome)
    ▪ if patient chooses to keep IUD in place, advice for when to RTC
Intrauterine contraception

- **Management of IUD when user found to be pregnant**
  - evaluate for possible ectopic pregnancy
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  - IUD strings visible or can be retrieved safely from cervical canal
    - advise that should be removed and pull strings gently to remove (improves outcome)
    - if patient chooses to keep IUD in place, advice for when to RTC
  - **IUD strings are not visible and cannot be retrieved safely**
    - consider ultrasound to determine location
**etanogestrel implant**

- Fewer than 1 woman out of 100 become pregnant in first year

- Timing: any time (Box 1)

- No need for back-up contraception if inserted within first 5 days
  - if > 5 days, abstain from intercourse or use additional protection for 5 days
Examinations and tests

- Among healthy women, no examinations or tests are needed before initiation of implant
  - bimanual examination and cervical inspection, liver enzymes, CBE, other tests are not necessary

- Baseline weight and BMI might be useful
  - obese women can use implants
## Examinations and tests

- Among healthy women, no examinations or tests are needed before initiation of implant
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  - obese women can use implants

## Routine follow-up

- Advise women to return at any time to discuss side effects or problems, if she wants to change method, and when it is time to remove or replace the contraceptive method

- No routine follow-up visit is required
Implants: etonogestrel implant

**Bleeding irregularities**

- Set expectations

- Unscheduled spotting or light bleeding is common with implant use, and some women experience amenorrhea

- Heavy or prolonged bleeding is uncommon
  - consider underlying gynecological problem (polyp, fibroid)
  - if not found, and woman wants treatment
    - NSAIDS for 5-7 days
    - hormone treatment with low-dose COCs or estrogen for 10-20 days
Bleeding irregularities

- Set expectations

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- Pooled analysis of data from 11 clinical trials
  - significant proportion of users had relatively little bleeding
    - 22% had amenorrhea
    - 34% had infrequent spotting
    - 7% reported frequent spotting
    - 18% reported prolonged bleeding

---

**Depot medroxyprogesterone acetate (DMPA)**

- Progestin-only injectable contraceptives
  - approximately 6 out of 100 women will become pregnant in the first year of use of DMPA with typical use
  - given up to day 7 of menstrual cycle prevents ovulation
  - if given after day 7, ovulation occurred in some women
    - but cervical mucus was not favorable for sperm penetration in 90% of women within 24 hours of the injection
Injectables

**Depot medroxyprogesterone acetate (DMPA)**

- Timing: anytime if reasonably certain not pregnant (Box 1)

- No need for back-up contraception if given within first 7 days of menstrual bleeding
  - if > 7 days, abstain or use additional protection for 7 days
## Examinations and tests

- Among healthy women, no examinations or tests are needed before initiation of DMPA
- **Blood pressure**: women with HTN generally can use DMPA
  - exception is women with severe HTN or vascular disease
- **Glucose**: women with complicated DM generally should not use DMPA

## Routine follow-up

- Advise women to return at any time to discuss side effects or problems, if she wants to change method, and when it is time for reinjection
- No routine follow-up visit is required
Injectables: comments

**Weight gain**

- Monitoring weight or BMI change over time is important for DMPA users
  - limited body of evidence

- 2 studies identified significant differences in weight gain between:
  - *early weight gainers* (> 5% of baseline body weight within 6 months after initiation)
  - those who were not early weight gainers

- another study found early weight gainers gained more at 12 months
Injectables: comments

### Weight gain

- Monitoring weight or BMI change over time is important for DMPA users
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### Re-injections

- **Early injection:**
  - repeat DMPA injection can be given early when necessary

- **Late injection:**
  - can be given up to 2 weeks late (15 weeks from last injection)

**Wide variation in time to ovulation after the last DMPA injection (15-49 weeks)**
Injectables

**Bleeding irregularities**
- Provide counseling about potential changes in bleeding patterns
- Amenorrhea and unscheduled spotting or light bleeding is common with DMPA use, and heavy or prolonged bleeding can occur

- Unscheduled spotting or light bleeding
  - NSAIDS for 5-7 days

- Heavy or prolonged bleeding is uncommon
  - consider underlying gynecological problem (polyp, fibroid)
  - if not found, and woman wants treatment
    - NSAIDS for 5-7 days
    - hormone treatment with low-dose COCs or estrogen for 10-20 days
Combined Hormonal Contraceptives

- Contain both estrogen and a progestin, and include:
  
  **COCs** (various formulations)
  
  **Transdermal patch** releases 150 μg of norelgestromin and 20 μg ethinyl estradiol daily
  
  **Vaginal ring** releases 120 μg etonogestrel and 15 μg ethinyl estradiol daily

Approximately 9 out of 100 women become pregnant in first year of typical use
Combined Hormonal Contraceptives

- **Timing:** any time (Box 1)

- No need for back-up contraception if started within first 5 days since menstrual bleeding started
  - if > 5 days, abstain from intercourse or use additional protection for next 7 days
Examinations and tests

- Among healthy women, **few examinations or tests** are needed before initiation of combined hormonal contraceptives
  - *Blood pressure*
  - *Baseline weight*: might be useful
- Bimanual examination and cervical inspection, other tests not necessary
# Combined Hormonal Contraceptives

## Examinations and tests

- Among healthy women, **few examinations or tests** are needed before initiation of combined hormonal contraceptives
  - Blood pressure
  - Baseline weight: might be useful
- Bimanual examination and cervical inspection, other tests not necessary

## Should not use CHCs

- Current breast cancer
- Severe HTN or vascular disease
- Heart disease
- Complicated DM
- Migraine headaches with aura
- ≥35 years who smoke ≥15 cigarettes per day
- Thrombogenic mutations
Blood pressure comments:
- Women with severe HTN (≥160 / ≥100) or vascular disease should not use combined hormonal contraceptives (*MEC 4*).
- Women with 140-159 / 90-99 generally should not use combined hormonal contraceptives (*MEC 3*).
- Three studies reported worse cardiovascular outcomes (MI, stroke) among women who did not have blood pressure measurements prior to initiating COCs compared to women who did.¹⁻³

Combined Hormonal Contraceptives

**Number of pill packs**

- Provide or prescribe up to 1-year supply of COCs (13 28-day pill packs)
  - Higher continuation rates
  - Associated with fewer pregnancy tests, fewer pregnancies, and lower cost per client
## Combined Hormonal Contraceptives

### Number of pill packs
- Provide or prescribe up to 1-year supply of COCs (13 28-day pill packs)
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### Routine follow-up
- Advise women to return at any time to discuss side effects or problems, and if she wants to change method
- No routine follow-up visit is required
**Oral contraceptives pills: missed doses**

<table>
<thead>
<tr>
<th>Late or missed doses</th>
<th>If <strong>two</strong> or more consecutive pills missed (&gt;48 hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Late</strong> is defined by &lt; 24 hrs (11:00 am instead of 9:00 am)</td>
<td>- take most recent missed pill ASAP (discard others)</td>
</tr>
<tr>
<td>- <strong>Missed</strong> is &gt; 24 hrs</td>
<td>- continue taking remaining pills</td>
</tr>
<tr>
<td>- If <strong>one pill</strong> is late or missed (24 to &lt; 48 hrs)</td>
<td>- abstain or use back-up method for 7 days</td>
</tr>
<tr>
<td>- take the late or missed pill ASAP and continue with remaining</td>
<td></td>
</tr>
<tr>
<td>- no additional protection needed</td>
<td></td>
</tr>
<tr>
<td>- may consider emergency contraception if earlier doses were missed</td>
<td></td>
</tr>
<tr>
<td>If missed pills in last week (days 15-21)</td>
<td></td>
</tr>
<tr>
<td>- omit the hormone-free interval by finishing pack and starting new</td>
<td></td>
</tr>
<tr>
<td></td>
<td>emergency contraception should be considered if missed in first week and unprotected intercourse within last 5 days</td>
</tr>
</tbody>
</table>
Combined Hormonal Contraceptives

**Combined hormonal patch: missed applications**

Delayed or detached for <48 hrs

- apply new patch ASAP
- keep same patch change day
- no additional protection needed
Combined Hormonal Contraceptives

Combined hormonal patch: missed applications

**Delayed or detached for <48 hrs**
- apply new patch ASAP
- keep same patch change day
- no additional protection needed

**Delayed or detached for >48 hrs**
- apply new patch ASAP
- keep same patch change day
- abstain or use back-up methods for 7 days
- if occurred in third patch week
  - omit hormone-free week

*emergency contraception should be considered if missed in first week and unprotected intercourse within last 5 days*
Combined Hormonal Contraceptives

**Combined hormonal ring: missed applications**

**Delayed for <48 hrs**
- insert ring ASAP
- keep ring in until scheduled ring removal day
- no additional protection needed
Combined Hormonal Contraceptives

Combined hormonal ring: missed applications

**Delayed for <48 hrs**
- insert ring ASAP
- keep ring in until scheduled ring removal day
- no additional protection needed

**Delayed for > 48 hrs**
- insert ring ASAP
- keep ring in until scheduled ring removal day
- abstain or use back-up methods for 7 days
- if occurred in third week of ring use
  - omit hormone-free week

*emergency contraception should be considered if missed in first week and unprotected intercourse within last 5 days*
Combined Hormonal Contraceptives

- **Continuous use of CHCs**
  - uninterrupted use of hormonal contraception without a hormone-free interval
  - provide counseling about potential changes in bleeding patterns
  - unscheduled spotting or light bleeding is common during first 3-6 months; generally decreases with continued use
    - if wants treatment, discontinue use for 3-4 days
Norethindrone

- approximately 9 out of 100 women become pregnant in the first year of typical use

- Timing: any time (Box 1)

- No need for back-up contraception if started within first 5 days since menstrual bleeding started
  - if > 5 days, abstain from intercourse or use additional protection for next 2 days
Progestin-Only Pills

- Unlike COCs, POPs inhibit ovulation in about half of the cycles
  - peak serum steroid levels are reached about 2 hours after administration, followed by rapid distribution and elimination
  - 24 hrs after administration, serum steroid levels are near baseline
  - important to take POPs at approximately the same time
  - contraceptive effect is from cervical mucous (48 hrs)
Examinations and tests

- Among healthy women, no examinations or tests are necessary

Women with HTN, DM, hyperlipidemia, anemia, thrombogenic mutations, cervical cancer, STDs or HIV can use or generally can use POPs (MEC 2)
<table>
<thead>
<tr>
<th>Examinations and tests</th>
<th>Routine follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Among healthy women, no examinations or tests are necessary</td>
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</tr>
</tbody>
</table>

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Provide or prescribe up to 1-year supply of POPs (13 28-day pill packs)
Progestin-Only Pills

Missed doses

- Missed if it has been > 3 hours since should have been taken
  - take one pill ASAP
  - continue taking pills daily, one each day, at same time each day
  - abstain or use back-up contraception for 2 days
  - emergency contraception should be considered if the woman has had unprotected intercourse
Based on fertility awareness

- users must avoid unprotected sexual intercourse on days 8-19

- approximately 5 out of 100 women become pregnant in first year with perfect use (typical use evidence not available)

- menstrual cycles 26-32 days
Emergency Contraception

Used by women after intercourse to prevent pregnancy

Intrauterine device: Copper-IUD

Emergency contraceptive pills (ECPs)
Emergency Contraception

**ECPs**

- Ulipristal acetate (UPA) in single dose (30 mg)

- Levonorgestrel in a single dose (1.5 mg) or as split dose (1 dose of 0.75 mg followed by second dose of 0.75 mg 12 hrs later)

- Combined estrogen and progestin in 2 doses
  - Yuzpe regimen: 1 dose of 100 μg of ethinyl estradiol plus 0.5 mg of levonorgestrel followed by a second dose 12 hrs later

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**ella**
Emergency Contraception

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Emergency Contraception

• Timing:
  o Cu-IUD: inserted within 5 days of first act of unprotected intercourse
  o ECPs: should be taken ASAP within 5 days of unprotected intercourse
  o UPA and levonorgestrel ECPs have similar effectiveness when taken within 3 days after intercourse
    ▪ UPA more effective 3-5 days after intercourse
  o The combined estrogen and progestin regimen is less effective than UPA or levonorgestrel & associated with more side effects
Female Sterilization

Multiple methods

- Laparoscopic, abdominal, and hysteroscopic
- Fewer than 1 in 100 women become pregnant in first year after sterilization
- Irreversible
Female Sterilization

Hysteroscopic sterilization:

- Reliable only after HSG is performed 3 months later confirming bilateral tubal occlusion

  - Laparoscopic and abdominal methods need no additional contraceptive protection
Male Sterilization

Vasectomy

- Fewer than 1 out of 100 women become pregnant in first year after partner undergoes vasectomy
  - semen analysis 6-18 weeks following procedure
  - use back-up methods until confirmation

- Risk of pregnancy after a man has achieved postvasectomy azoospermia is ~ 1 in 2,000
When Women Can Stop Contraceptives

- ACOG recommends continue until menopause or 50-55 years old
  - On basis of age alone, women aged > 45 can use:
    - POPs, implants, LNG-IUD, or the Cu-IUD
    - can ‘generally use’ COCs and DMPA

- Collaborative Group on Hormonal Factors and Breast Cancer
  - small increased RR for breast cancer among women aged >45
    - last use of COCs was < 5 years previously
    - last use of COCs was 5-9 years previously

Contraception

CONCLUSIONS
## When to Start Using Contraceptive Methods

<table>
<thead>
<tr>
<th>Contraceptive method</th>
<th>When to start (if the provider is reasonably certain that the woman is not pregnant)</th>
<th>Additional contraception (i.e., back-up) needed</th>
<th>Examinations or tests needed before initiation*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper-containing IUD</td>
<td>Anytime</td>
<td>Not needed</td>
<td>Bimanual examination and cervical inspection²</td>
</tr>
<tr>
<td>Levonorgestrel-releasing IUD</td>
<td>Anytime</td>
<td>If &gt;7 days after menses started, use back-up method or abstain for 7 days.</td>
<td>Bimanual examination and cervical inspection²</td>
</tr>
<tr>
<td>Implant</td>
<td>Anytime</td>
<td>If &gt;5 days after menses started, use back-up method or abstain for 7 days.</td>
<td>None</td>
</tr>
<tr>
<td>Injectable</td>
<td>Anytime</td>
<td>If &gt;7 days after menses started, use back-up method or abstain for 7 days.</td>
<td>None</td>
</tr>
<tr>
<td>Combined hormonal contraceptive</td>
<td>Anytime</td>
<td>If &gt;5 days after menses started, use back-up method or abstain for 7 days.</td>
<td>Blood pressure measurement</td>
</tr>
<tr>
<td>Progestin-only pill</td>
<td>Anytime</td>
<td>If &gt;5 days after menses started, use back-up method or abstain for 2 days.</td>
<td>None</td>
</tr>
</tbody>
</table>
Conclusions

- High rate of unintended pregnancy in U.S.
- Most contraceptive methods can be initiated safely at any time without examinations or tests if reasonably certain not pregnant (Box 1), or even uncertain if not pregnant (EXCEPT IUDs)

IUDs
- Don’t have to remove if PID
- Remove if pregnant if can do so safely
Conclusions

- Injectables
  - Early weight gainers
- Combined hormonal contraceptives
  - Medical conditions may restrict use (HTN, migraine, ect)
- Progestin-only Pills
  - Important to take POPs at approximately the same time
- Barriers to patient access
  - Unnecessary screening exams and tests
  - Inability to receive the contraceptive on same day (awaiting results or next menstrual period)
  - Difficulty obtaining continued contraceptive supplies
References


5. Trussell J. Contraceptive failure in the United States. Contraception 2011; 83:397-404c


