Contraception Today

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Learning Objectives

As a result of this presentation, participants will be able to:

1) Define a variety of contraceptive methods, including their efficacy, advantages and disadvantages;
2) Examine strategies for providing highly effective long-acting reversible contraception (LARC) methods, including counseling, insertion, and side effects management;
3) Describe the QuickStart method for initiation of contraception;
4) Summarize the different types of emergency contraception (EC) available.
Overview of Available Contraceptive Methods
## Typical Effectiveness of Contraceptive Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Typical Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injectable</td>
<td>6−12 pregnancies/100 women in 1 year</td>
</tr>
<tr>
<td>Pills</td>
<td>6−12 pregnancies/100 women in 1 year</td>
</tr>
<tr>
<td>Male Condoms</td>
<td>&gt;17 pregnancies/100 women in 1 year</td>
</tr>
<tr>
<td>Female Condoms</td>
<td>&gt;17 pregnancies/100 women in 1 year</td>
</tr>
<tr>
<td>Spermicides</td>
<td>&gt;17 pregnancies/100 women in 1 year</td>
</tr>
<tr>
<td>Fertility Awareness-Based Methods</td>
<td>&gt;17 pregnancies/100 women in 1 year</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>&gt;17 pregnancies/100 women in 1 year</td>
</tr>
<tr>
<td>Implant</td>
<td>&lt; 1 pregnancy/100 women in 1 year</td>
</tr>
<tr>
<td>Vasectomy</td>
<td>&lt; 1 pregnancy/100 women in 1 year</td>
</tr>
<tr>
<td>Female Sterilization</td>
<td>&lt; 1 pregnancy/100 women in 1 year</td>
</tr>
<tr>
<td>IUC</td>
<td>&lt; 1 pregnancy/100 women in 1 year</td>
</tr>
</tbody>
</table>

Permanent Contraception
Male Sterilization

Standard of care = no-scalpel vasectomy

- Small (few mms) opening is made in the scrotal sac skin to deliver vas deferens
- Ligate/cauterize
- No scalpel
- No sutures

Female Sterilization: Surgical Tubal Occlusion

- Ligating
- Blocking (clips or rings)
- Cauterizing
Female Sterilization: Nonsurgical Tubal Occlusion

- Brand name: Essure®
- Micro-inserts placed into proximal fallopian tubes
- 99.83% effective

Risk Factors for Decision Regret

- Age <30
- Relationship conflict
- Shorter time interval from delivery
- Having less information about the procedure
- Less access to alternative methods
- Decision made due to pressure from a spouse or a medical indication

Appropriate Candidates

- Well-informed
- Desire permanent end to fertility
- Not under pressure to make decision
- ACOG policy: “In a well-informed woman, age and parity should not be a barrier to sterilization.”

LARC Methods
Terminology

- IUD: Intrauterine device
- IUC: Intrauterine contraception
- IUS: Intrauterine system
- LARC: long-acting reversible contraception (i.e., IUD and implant)
Intrauterine Contraception
Copper-T IUD

- Brand name: ParaGard®
- Copper ions
- Approved for 10 years of use
- Can be used as emergency contraceptive

www.youtube.com/watch?v=FuPFbgSm0QQ

Levonorgestrel Intrauterine System (LNG 52 IUS)

- Brand name: Mirena®
- 20 mcg levonorgestrel/day
- Approved for 5 years of use
- Amenorrhea in ~20% of users by 1 year

www.youtube.com/watch?v=hlfV8tKgw6E
Levonorgestrel Intrauterine System (LNG 19.5 IUS)

- Brand name Kyleena
- 17.5 mcg progesterone/day
- Approved for 5 years
- Smaller frame than similarly dosed IUS
- Metal ring at the top for radiograph identification
Levonorgestrel Intrauterine System (LNG 52 mcg IUS)

- Brand name: Liletta®
- New- 2015
- Very similar to Mirena, but smaller size
- Different inserter, designed for 1 handed use
- Approved for 3 years of use

Liletta Prescribing Information. 2016
Levonorgestrel Intrauterine System (LNG 13.5 IUS)

- Brand name: Skyla®
- 14 mcg levonorgestrel/day
- Approved for 3 years of use
- Amenorrhea in ~6% of users by 1 year
- Smallest frame available
- Metal ring at the top for radiographic identification

Contraindications

- Contraindications include:
  - Pregnancy
  - Acute pelvic infection
  - Inappropriate uterine size
    - Genetic
    - Fibroids
    - Other
Intrauterine Contraceptives: Advantages

• Provide long-acting, reversible contraception
• Allow for spontaneity in sex life
• Most cost-effective method, over time
• Allow rapid return to fertility when desired
• Have high continuation and acceptability, even among adolescents
• Non-contraceptive benefits

Intrauterine Contraceptives: Disadvantages

- Device expulsion
  - 3-5% of all users

- Uterine perforation
  - 1/1000 insertions

- Ectopic pregnancy
  - 0.1% of all pregnancies

- Placement and removal require medical professional

- Placement may be easier in multiparous women

Can be used:
- in women with multiple partners
- in women with history of STDs or PID
- in nulliparous women
- in teens
- immediately postpartum
- immediately post-abortion
- in women with past ectopic pregnancy

ARE not abortifacients

IUC Use for Adolescents

• Most are appropriate candidates
• Follow-up and side-effect monitoring are important
• Encourage use of condoms with new partners

Contraceptive Implant
Implant

- NEXPLANON®
  - Contains 68 mg of etonogestrel and releases 30-40 mcg per day*
  - Approved for 3 years of use
  - Placed in upper arm
  - FDA mandated training

*For first 21 days releases 60-70 mcg per day

Implant Location

- Non dominant arm
- 8-10 cm from medial epicondyle
- Subdermal

Implants

Advantages

• High efficacy
• Long-term
• Rapid reversibility
• Rapid procedures
• Can use when lactating
• Several non-contraceptive benefits

Disadvantages

• Bleeding irregularities (34%)
• Weight gain (2%)
• Emotional liability (2%)
• Headache (2%)
• Acne (1%)
• Depression (1%)

# Implant Mechanism of Action

<table>
<thead>
<tr>
<th>Mechanism of Action</th>
<th>Implant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary</strong></td>
<td>• Suppression of ovulation</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>• Increased viscosity of the cervical mucus</td>
</tr>
<tr>
<td></td>
<td>• Alterations in the endometrium</td>
</tr>
</tbody>
</table>

Timing of IUD/IUS/Implant Insertion

Anytime during menstrual cycle when pregnancy can be excluded

Policy on LARC

“When choosing contraceptive methods, adolescents should be encouraged to consider LARC methods.”

ACOG

“LARC methods should be considered first-line contraceptive choices for adolescents.”

AAP
Typical Effectiveness of Contraceptive Methods

More effective
< 1 pregnancy/100 women in 1 year

6–12 pregnancies/100 women in 1 year

Less effective
>17 pregnancies/100 women in 1 year

* IUD and LNG-IUS also included.

Combined Oral Contraceptives

- Contain estrogen & progestin
- Most newer formulations contain 20 – 35 mcg of ethinyl estradiol & 1/8 available progestins

Progestin-Only Oral Contraceptives

• Called the “mini-pill”

• Two formulations: norethindrone & norgestrel

• No placebo week

• Timing of pill-taking is crucial

Transdermal Patch

- Brand name: OrthoEvra®
- Beige-colored patch applied once/week
- 3 weeks on, 1 week off
- 9 days of medication in each patch
- Weight restriction- 200lbs

Vaginal Ring

• Brand name: NuvaRing®

• Flexible, unfitted ring placed in vagina

• 3 weeks active, 1 week out/inactive

## Vaginal Ring: Advantages and Disadvantages

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Releases hormones slowly and steadily</td>
<td>• Requires patient to remember special insertion cycle</td>
</tr>
<tr>
<td>• Requires lower hormone doses than oral contraceptives</td>
<td>• Linked to side effects: vaginitis, leukorrhea, headaches, discomfort</td>
</tr>
<tr>
<td>• Allows patient to retain control over insertion and removal</td>
<td></td>
</tr>
</tbody>
</table>

Extended Hormonal Contraception

• Extended methods:
  • Continuous use of COCs, transdermal patch or vaginal ring
  • 1-4 menses/year
    ▪ Breakthrough bleeding individualized

Side Effects: Hormonal Contraception

**Progestin-Related**
- Bloating
- Anxiety
- Irritability
- Depression
- Menstrual irregularities
- Reduced libido

**Estrogen-Related**
- Breast tenderness
- Nausea
- Vomiting
- Headaches
- Elevated blood pressure (rare)
Menstrual-related health benefits:
- Decreased dysmenorrhea
- Decreased menstrual blood loss and anemia
- May reduce PMS symptoms

Decreased risk of:
- Ectopic pregnancies
- Endometrial and ovarian cancer
- Benign breast conditions
- PID

Contraindications include:
• History of cardiovascular events or thromboembolism/DVT/PE
• Advanced hypertension or diabetes, liver disease, headaches w/ neurological manifestations
• Smokers over age 35
• Women with known or suspected breast, endometrial, vaginal, or cervical cancer or undiagnosed abnormal vaginal bleeding
Injectable

- Depot Medroxyprogesterone Acetate (DMPA)
- Brand name: Depo-Provera®
- Intramuscular or subcutaneous injection every 3 months

Case Study: Mikayla

- Age 19
- Used DMPA for 2 years
- Physician told her to stop injections
- Is not using contraception now

What would you recommend?
Case Study: Mikayla  (continued)

Key Points About DMPA:

• No evidence it causes fracture increase
• Bone mineral density returns to baseline after cessation of DMPA
• Bone health largely dependent on nutrition and exercise
• ACOG and WHO support long term use

Typical Effectiveness of Contraceptive Methods

More effective
< 1 pregnancy/100 women in 1 year

6–12 pregnancies/100 women in 1 year

Less effective
>17 pregnancies/100 women in 1 year

* IUD and LNG-IUS also included.

Male Condom

Withdrawal

Effectiveness preventing pregnancy is similar to male condom

<table>
<thead>
<tr>
<th></th>
<th>Perfect Use</th>
<th>Typical Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawal</td>
<td>96%</td>
<td>82%</td>
</tr>
<tr>
<td>Male condom</td>
<td>98%</td>
<td>83%</td>
</tr>
</tbody>
</table>

US Medical Eligibility Criteria. 2010.
Female Condom

- FC® and FC2®
- Should not be used in conjunction with male condom
- Reports of “crinkling” during intercourse

Sponge

Diaphragm

- A flexible rubber cup that is inserted into the vagina and fits over the cervix
- Used with a spermicide

# Diaphragm: Advantages and Disadvantages

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Barrier method; no hormones</td>
<td>• Requires fitting and periodic refitting</td>
</tr>
<tr>
<td>• Use is controlled by patient</td>
<td>• Requires use with spermicide</td>
</tr>
<tr>
<td></td>
<td>• Requires periodic insertion of additional spermicide</td>
</tr>
<tr>
<td></td>
<td>• Carries risk of toxic shock if left in place &gt; 24 hours</td>
</tr>
</tbody>
</table>

Spermicide

- Available as creams, gels, film, foam, and suppositories containing nonoxynol-9
- Used alone or with a barrier method

Vaginal Options- Advantages

Selected advantages:

- Woman controls use
- Less expensive options
- No fitting or office visits are required for most
- Female condom offers protection against STIs, HIV/AIDS
- Sponge is effective for up to 24 hours, regardless of the number of times intercourse occurs

Vaginal Options- Disadvantages

Selected disadvantages:

- Less effective than other methods
- Female condom
  - May cause vaginal discomfort, penile irritation
- Films and suppositories
  - Require 10–15 minutes for activation, which may interfere with spontaneity
- Sponge:
  - As with other absorbent products, if left in place for longer than 24–30 hours, the risk of vaginal yeast infection increases
- Recurrent bacterial vaginosis

Fertility Awareness

- Rhythm method
- Standard days method
- Brand name: CycleBeads™
- LAM
- Billings ovulation method
- Symptothermal method

US Medical Eligibility Criteria for Contraceptive Use

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

• CDC published criteria in 2016
• Adapted for US women by panel of experts and CDC
• Recommendations for the use of specific contraceptives by women who have particular characteristics/medical conditions

http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/USMEC.htm
US Medical Eligibility Criteria: Organization

• Criteria are organized according to:
  – Contraceptive method
  – Patient characteristics (age, smoking status, etc.)
  – Preexisting conditions (hypertension, epilepsy, etc.)

• Criteria use a numeric scheme to provide the recommendations for contraceptives being used for contraceptive purposes only, *not* for treatment of medical conditions

**US Medical Eligibility Criteria: Categories**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No restriction for the use of the contraceptive method for a woman with that medical condition</td>
</tr>
<tr>
<td>2</td>
<td>Advantages of using the method generally outweigh the theoretical or proven risks</td>
</tr>
<tr>
<td>3</td>
<td>Theoretical or proven risks of the method usually outweigh the advantages – or that there are no other methods that are available or acceptable to the women with that medical condition</td>
</tr>
<tr>
<td>4</td>
<td>Unacceptable health risk if the contraceptive method is used by a woman with that medical condition</td>
</tr>
</tbody>
</table>

## Summary Chart of U.S. Medical Eligibility Criteria for Contraceptive Use

<table>
<thead>
<tr>
<th>Condition</th>
<th>Sub-Condition</th>
<th>Cu-IUD</th>
<th>LNG-IUD</th>
<th>Implant</th>
<th>DMPA</th>
<th>POP</th>
<th>CHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Menarche to &lt;20 yrs</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>Anatomical abnormalities</td>
<td>a) Distorted uterine cavity</td>
<td>4 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anemias</td>
<td>a) Thalassemia</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td></td>
<td>b) Sickle cell disease</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td></td>
<td>c) Iron-deficiency anemia</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>Benign ovarian tumors</td>
<td>(including cysts)</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>Breast disease</td>
<td>a) Undiagnosed mass</td>
<td>1 1 1 1</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td></td>
<td>b) Benign breast disease</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td></td>
<td>c) Family history of cancer</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td></td>
<td>d) Breast cancer</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td></td>
<td>i) Current</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Past and no evidence of current disease for 5 years</td>
<td>1 1 1 1</td>
<td>4 4 4 4</td>
<td>4 4 4 4</td>
<td>4 4 4 4</td>
<td>4 4 4 4</td>
<td>4 4 4 4</td>
</tr>
<tr>
<td>Breastfeeding</td>
<td>a) &lt;21 days postpartum</td>
<td>1 1 1 1</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td></td>
<td>b) 21 to &lt;30 days postpartum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) With other risk factors for VTE</td>
<td>1 1 1 1</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td></td>
<td>ii) Without other risk factors for VTE</td>
<td>1 1 1 1</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td></td>
<td>c) 30-42 days postpartum</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td></td>
<td>i) With other risk factors for VTE</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td></td>
<td>ii) Without other risk factors for VTE</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td></td>
<td>d) &gt;42 days postpartum</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>Cervical cancer</td>
<td>Awaiting treatment</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td>Cervical ectropion</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td></td>
</tr>
<tr>
<td>Cervical intraepithelial neoplasia</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td></td>
</tr>
<tr>
<td>Cirrhosis</td>
<td>a) Mild (compensated)</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
</tr>
<tr>
<td></td>
<td>b) Severe (decompensated)</td>
<td>1 1 1 1</td>
<td>3 3 3 3</td>
<td>3 3 3 3</td>
<td>3 3 3 3</td>
<td>3 3 3 3</td>
<td>3 3 3 3</td>
</tr>
<tr>
<td>Cystic fibrosis</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td>1 1 1 1</td>
<td></td>
</tr>
<tr>
<td>Deep venous thrombosis (DVT)/Pulmonary embolism (PE)</td>
<td>a) History of DVT/PE, not receiving anticoagulant therapy</td>
<td>1 1 1 1</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td></td>
<td>i) Higher risk for recurrent DVT/PE</td>
<td>1 1 1 1</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td></td>
<td>ii) Lower risk for recurrent DVT/PE</td>
<td>1 1 1 1</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
</tr>
<tr>
<td></td>
<td>b) Acute DVT/PE</td>
<td>1 1 1 1</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
<td>2 2 2 2</td>
</tr>
</tbody>
</table>
### US Medical Eligibility Criteria: ↑ Risk for Adverse Health Events

<table>
<thead>
<tr>
<th>Conditions Associated w/ ↑ Risk for Adverse Health Events as a Result of Unintended Pregnancy</th>
<th>Conditions/Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast cancer</td>
<td>Malignant liver tumors (hepatoma) and hepatocellular carcinoma of the liver</td>
</tr>
<tr>
<td>Complicated valvular heart disease</td>
<td>Peripartum cardiomyopathy</td>
</tr>
<tr>
<td>Diabetes: insulin dependent; with nephropathy/retinopathy/neuropathy or other vascular disease; or of &gt;20 years’ duration</td>
<td>Schistosomiasis with fibrosis of the liver</td>
</tr>
<tr>
<td>Endometrial or ovarian cancer</td>
<td>Severe (decompensated) cirrhosis</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>Sickle cell disease</td>
</tr>
<tr>
<td>Hypertension (systolic &gt; 160 mm Hg or diastolic &gt; 100 mm Hg)</td>
<td>Solid organ transplantation within the past 2 years</td>
</tr>
<tr>
<td>History of bariatric surgery within past 2 years</td>
<td>Stroke</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>Systemic lupus erythematosus</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>Thrombogenic mutations</td>
</tr>
<tr>
<td>Malignant gestational trophoblastic disease</td>
<td>Tuberculosis</td>
</tr>
</tbody>
</table>

### Conditions Associated with ↑ Risk for Adverse Health Events as a Result of Unintended Pregnancy

<table>
<thead>
<tr>
<th>Conditions</th>
<th>US Medical Eligibility Criteria: ↑ Risk for Adverse Health Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast cancer</td>
<td>Malignant liver tumors (hepatoma) and hepatocellular carcinoma of the liver</td>
</tr>
<tr>
<td>Complicated valvular heart disease</td>
<td></td>
</tr>
<tr>
<td>Peripartum cardiomyopathy</td>
<td></td>
</tr>
<tr>
<td>Diabetes: insulin dependent; with nephropathy, retinopathy, neuropathy, or other vascular disease; or of &gt;20 years' duration</td>
<td>Should consider long-acting, highly-effective contraception for these patients</td>
</tr>
<tr>
<td>Schistosomiasis with fibrosis of the liver</td>
<td></td>
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<tr>
<td>Endometrial or ovarian cancer</td>
<td></td>
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<tr>
<td>Severe (decompensated) cirrhosis</td>
<td></td>
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<tr>
<td>Epilepsy</td>
<td></td>
</tr>
<tr>
<td>Hypertension (systolic &gt; 160 mm Hg or diastolic &gt; 100 mm Hg)</td>
<td></td>
</tr>
<tr>
<td>Solid organ transplantation within the past 2 years</td>
<td></td>
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<tr>
<td>History of bariatric surgery within past 2 years</td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td></td>
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<tr>
<td>HIV/AIDS</td>
<td></td>
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<tr>
<td>Systemic lupus erythematosus</td>
<td></td>
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<tr>
<td>Ischemic heart disease</td>
<td></td>
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<tr>
<td>Thrombogenic mutations</td>
<td></td>
</tr>
<tr>
<td>Malignant gestational trophoblastic disease</td>
<td></td>
</tr>
<tr>
<td>Tuberculosis</td>
<td></td>
</tr>
</tbody>
</table>

Case: Tisha

- 30-year-old
- History of bariatric surgery 6 months ago
- Was using COCs before surgery & wants to restart

- What do you need to know before deciding whether to recommend this method?
  A. How much weight has she lost?
  B. What type of surgery did she have?
  C. What pill formulation did she use previously?
Case: Tisha

- 30-year-old
- History of bariatric surgery 6 months ago
- Was using COCs before surgery & wants to restart

- What do you need to know before deciding whether to recommend this method?
  A. How much weight has she lost?
  B. What type of surgery did she have?
  C. What pill formulation did she use previously?
Case: Johanna

What would you recommend?

- Age: 35
- Smoker (half pack/day)
- Recently divorced and dating
- Uses OCs successfully
- OCs help her headaches
## Smoking

<table>
<thead>
<tr>
<th>Condition</th>
<th>Sub-Condition</th>
<th>CHC</th>
<th>POP</th>
<th>Injection</th>
<th>Implant</th>
<th>LNG-IUD</th>
<th>Cu-IUD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>a) Age &lt; 35</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>b) Age ≥ 35, &lt; 15 cigarettes/day</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>c) Age ≥ 35, ≥ 15 cigarettes/day</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Quick Start Method
When Protection Begins
What To Do For Missed Pills
Quick Start: Improving Contraceptive Initiation

- Start contraceptive method (OCs, implant, patch, ring, injection) in presence of clinician or on day of visit
- Menstrual cycle timing not a factor
- Use back-up method for 1st 7 days

Initiation of Hormonal Contraceptives

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

Leeman L. Obstet Gynecol Clin N Am. 2007
‘Quick Start’ Method

• Inserted at any time during menstrual cycle
• Use of back-up barrier contraception for 7 days
• If inserted when emergency contraception is used, do urine pregnancy test in 3 weeks
Protection from Pregnancy

Immediately:
- Copper T IUD

After 7 Days:
- LNG 52 IUS, LNG 13.5 IUS*
- Implant
- Pills
- Patch
- Ring
- Injectable

*Backup contraception is not needed when either LNG IUS is inserted as directed
### Missed or Late Hormonal Contraception

<table>
<thead>
<tr>
<th>Method</th>
<th>Instructions</th>
</tr>
</thead>
</table>
| **Combined Oral Contraceptive Pills** | • Take missed pill ASAP  
• Take next pill at regular time  
• Use back-up method for 1 week if missed 1-2 pills at the start of pack or 3 or more pills in the first 3 weeks of pack |
| **Progestin Only Pills**       | • Take missed pill ASAP  
• Take next pill at regular time  
• Use back-up method for 2 days if pill is taken >3 hours past regular time |
| **Transdermal Patch**          | • Use back-up method for 1 week if patch has been on >9 days, off > 7 days or falls off and is not reaffixed within 24 hours |
| **Vaginal Ring**               | • Use back-up method for 1 week if ring has been in >5 weeks, out >7 days or falls out and is not reinserted within 3 hours |
# Emergency Contraception

## LNG Pills (Brand)
- **Plan B® One Step**: One 1.5mg LNG pill

## LNG Pills (Generic)
- **Next Choice One Dose™**: One 1.5mg LNG pill
- **My Way™**: One 1.5mg LNG pill
- **LNG tablets**: two 0.75mg LNG pills

## Ulipristal acetate
- **ella®**: One 30 mg ulipristal acetate pill

## Copper T IUD
- Highly effective method of EC
- Can be used as an ongoing contraception for 12 years

---

ParaGard® (Copper-T IUD)

- Off label use
- Placed within 5 days after intercourse
- Effectiveness does not decline with delay
- Placed by a trained clinician
- Cost may be $500

*Was reliably free without copay thanks to ACA, new restrictions in place.*
EC Pills Available in the US

Dedicated products
• 30mg ulipristal acetate (one pill)
• Label: Take within 120 hours after intercourse
• Cost has been coming down
  online prescription + shipping now = $59
  www.ella-kwikmed.com

Glasier et al, Contraception 2011; Moreau, Trussell, Contraception, 2011;
Plan B® One-Step

- One 1.5mg levonorgestrel pill
- Label: Take within 72 hours after intercourse
- Effective up to 120 hours after intercourse
  - Most effective as soon as possible
- Cost: OTC: $35-$60 ($20 on eBay)
  - Rx: $30+ (coupons may be useful)

Next Choice One Dose™
My Way™ (generic)

• 1.5mg levonorgestrel (one pill)
• Label: Take within 72 hours after intercourse
• Recommended: up to 120 hours after sex if needed
• Cost: $35 ($24-$42)
  ▪ 10-20% cheaper than Plan B One-Step

Levonorgestrel (2 pill generic)

- 0.75mg levonorgestrel (two pills)
- Label: Take 1 pill immediately, 2\textsuperscript{nd} pill 12 hours later
- Recommended: Both pills immediately
- Label: Take within 72 hours after intercourse
- Recommended: up to 120 hours after sex if needed
- Cost: as low as $19, generally about $30
  - 10-20\% cheaper than Plan B One-Step

March 3, 2014

- FDA expands access to generic PlanB® One-Step, MyWay™ & Next Choice One Dose™
  - Now available on shelf without prescription
    - Women and men
    - Labeled for use if 17+
- Two-pill generic still behind the counter
  - e.g. levonorgestrel tablets
  - without prescription if 17+
  - need a prescription if <17
ECPs “Over-the-Counter” in the US

Plan B® One-Step
- Over the counter for all ages

Next Choice One Dose™
- Over the counter for all ages

My Way™
- Over the counter for all, but labeled for use ages >17yo

Levonorgestrel
- Behind counter for >17 yo
  - Rx needed < 17

US Food and Drug Administration, 2009
Do it yourself EC: Combined Pills

Yuzpe method

*Less effective, more nausea*

EC dosing chart for combined pills available at http://ec.princeton.edu/questions/dose.html#dose
Emergency Contraception Effectiveness
## Pregnancies per 1000 Women after Unprotected Intercourse

<table>
<thead>
<tr>
<th></th>
<th>ParaGard</th>
<th>ella</th>
<th>Plan B/Next Choice</th>
<th>Yuzpe</th>
<th>Nothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Ulipristal *versus* Levonorgestrel

- Meta-analysis of two randomized studies found ulipristal superior to levonorgestrel

- 0-24 h: OR=0.35 (95% CI, 0.11-0.93)
- 0-72 h: OR=0.58 (95% CI, 0.33-0.99)
- 0-120 h: OR=0.55 (95% CI, 0.32-0.93)
  - Adjusted for BMI, repeated sex, etc

Glasier AF et al, *Lancet* 2010
ECPs and Obesity

ECP failure among obese vs. non-obese women

- LNg: OR = 4.41, 95%CI 2.05-9.44
- Ulipristal: OR = 2.62, 95%CI 0.89-7.00

Glasier Contraception 2011.
The limits of efficacy of EC pills

- For LNG: Weight = 70 kg (154 lbs)
- For UPA: Weight = 88 kg (194 lbs)

On average: American women weigh 166 lbs

Glasier et al, Contraception 2011
European label for Norlevo updated:

• Efficacy is reduced in women weighing more than 165 lbs
• Ineffective for women weighing more than 176 lbs.

“Pharmacists should consider counseling all women who contact them for EC that current evidence indicates LNG EC may be less effective in women who weigh more than 165 lbs, but higher doses of LNG EC have not been studied for effectiveness in women who weigh more than 165.”
Take-Away Points on Effectiveness

- IUD is most effective EC option
- Especially with repeated unprotected intercourse
- and especially if she weighs more than 195 lbs
Safety and Side Effects
Is same-day IUD placement safe?

Risk of PID equivalent for

• Nonscreening vs. any screening

• Same-day screening vs. prescreening
  ▪ Equivalence persisted adjusted for age and race

EC IUD Safety

- Benefits outweigh risks for most situations
- If worried about STI, test
- Can treat STI/PID with IUD in place

Safe

CDC Selective Practice Recommendations 2013
IUDs in Adolescents

• IUDs are recommended by ACOG as 1st choice for teens, and can be easily placed for nulliparous women

• IUDs do NOT increase risk of STI or PID and have no adverse effect on future fertility

EC Pills Safety

Safe

- No increased risk of birth defects
- No increased risk of ectopic pregnancy
- Breastfeeding women may safely use EC pills or IUD
- Short duration of exposure and low total hormone content of pills

Trussell J, Raymond EG. 2011; Trussell J, Schwarz EB. Contraceptive Technology 2011; CDC MMWR 2010.
Possible Side Effects of EC Pills

- Nausea and vomiting
- Abdominal pain
- Breast tenderness
- Headache
- Dizziness
- Fatigue
- Short-term cycle changes

Levy et al. *Contraception* 2014; Glasier et al. *Lancet* 2010
Recommendations for Providers

1. Provide ongoing support for contraceptive use
2. Improve women’s knowledge of contraceptive risk and benefits
3. Anticipate and manage side effects
4. Recognize fluidity in reproductive goals
5. Offer the widest range of contraceptive options
6. Address logistical and cost barriers
7. Enhance professional education and offer mutual support