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Contraceptive Mechanism of Action: *In the Womb Where it Happens*

Population Connection Fall Speaker Series

September 2020

Mark Hathaway along with Erica Chin, and Jacqueline Willie

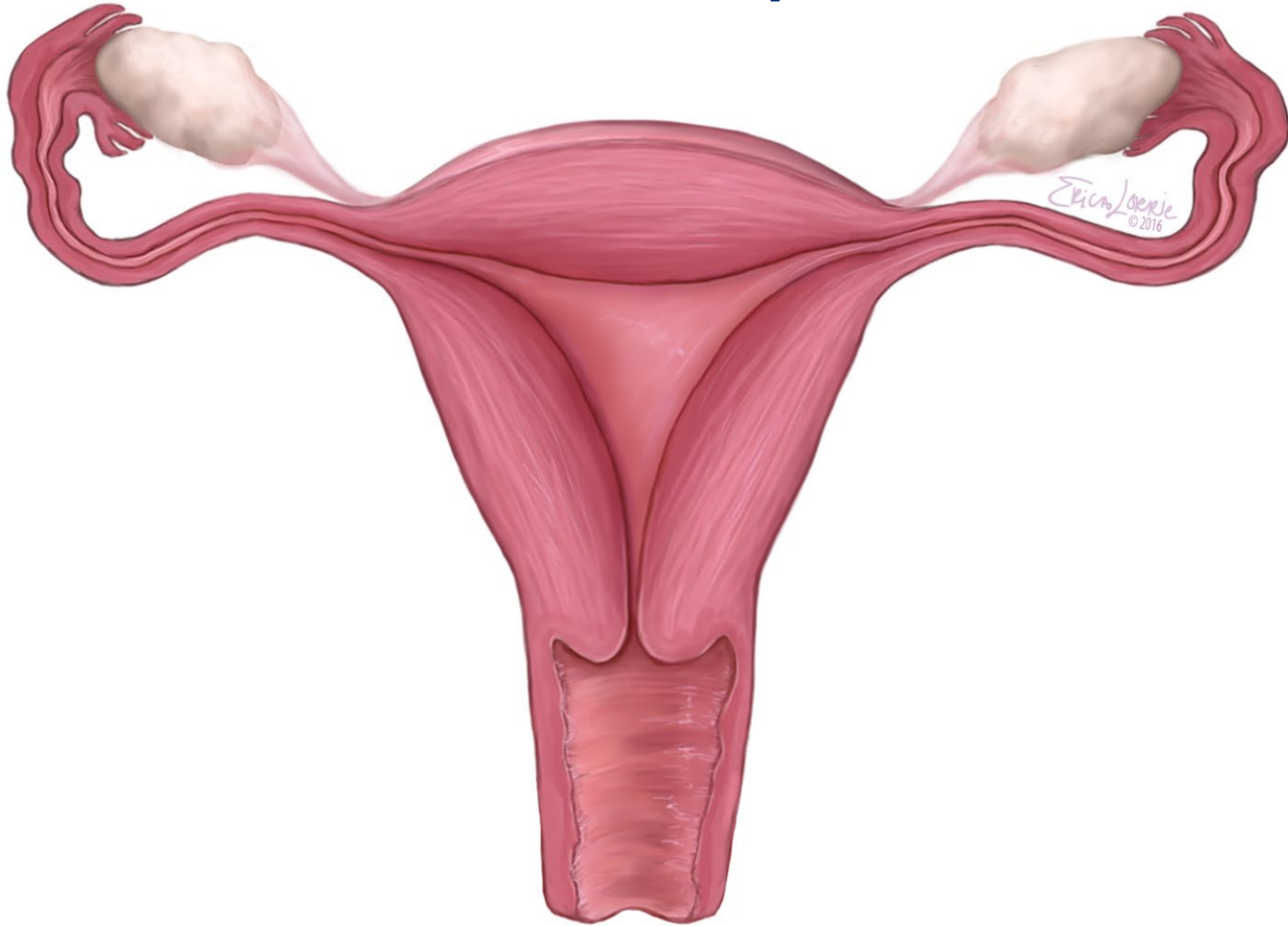
MCSP/Jhpiego

Objectives

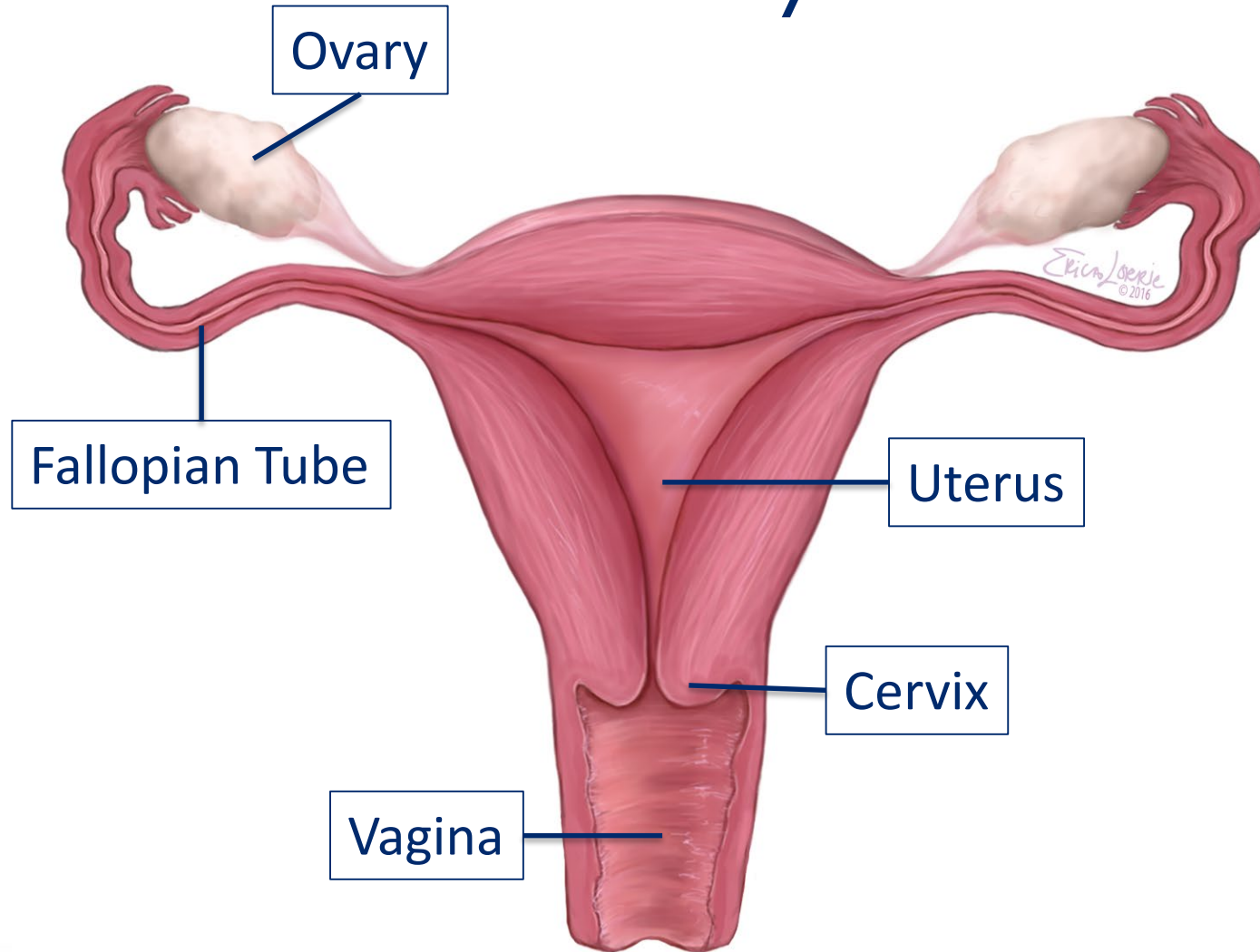
1. Understand the basics of female anatomy menstruation, ovulation, and fertilization.
2. Explain how to be “reasonably certain” that a woman is not pregnant.
3. Describe the mechanism of action (MOA) of 4 or 5 common contraceptive methods
4. Explain why *none* of these methods cause abortions.

Part I: Normal Anatomy, Menses, Ovulation and Fertilization

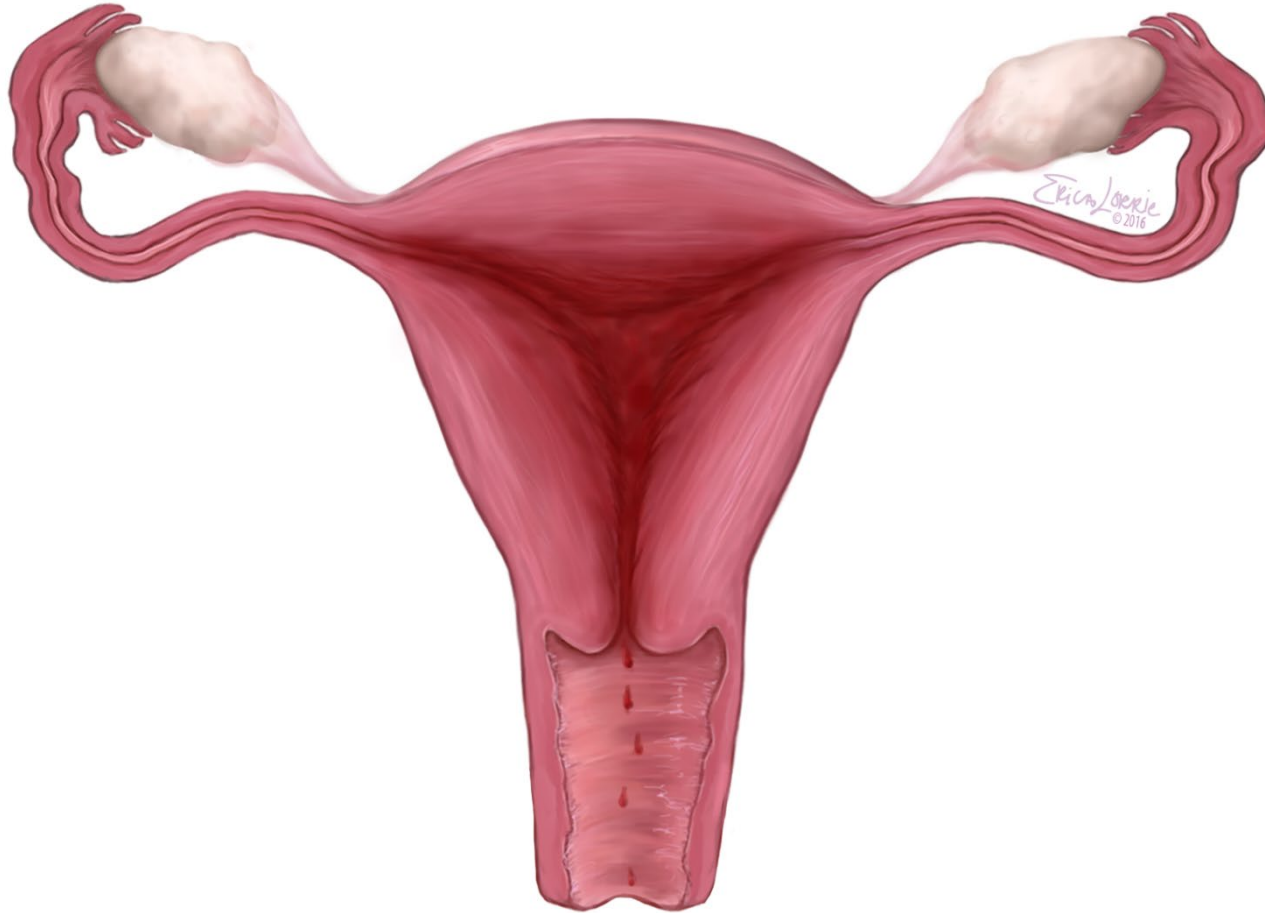
Anatomy



Anatomy



I: Normal Anatomy and Fertilization



Days

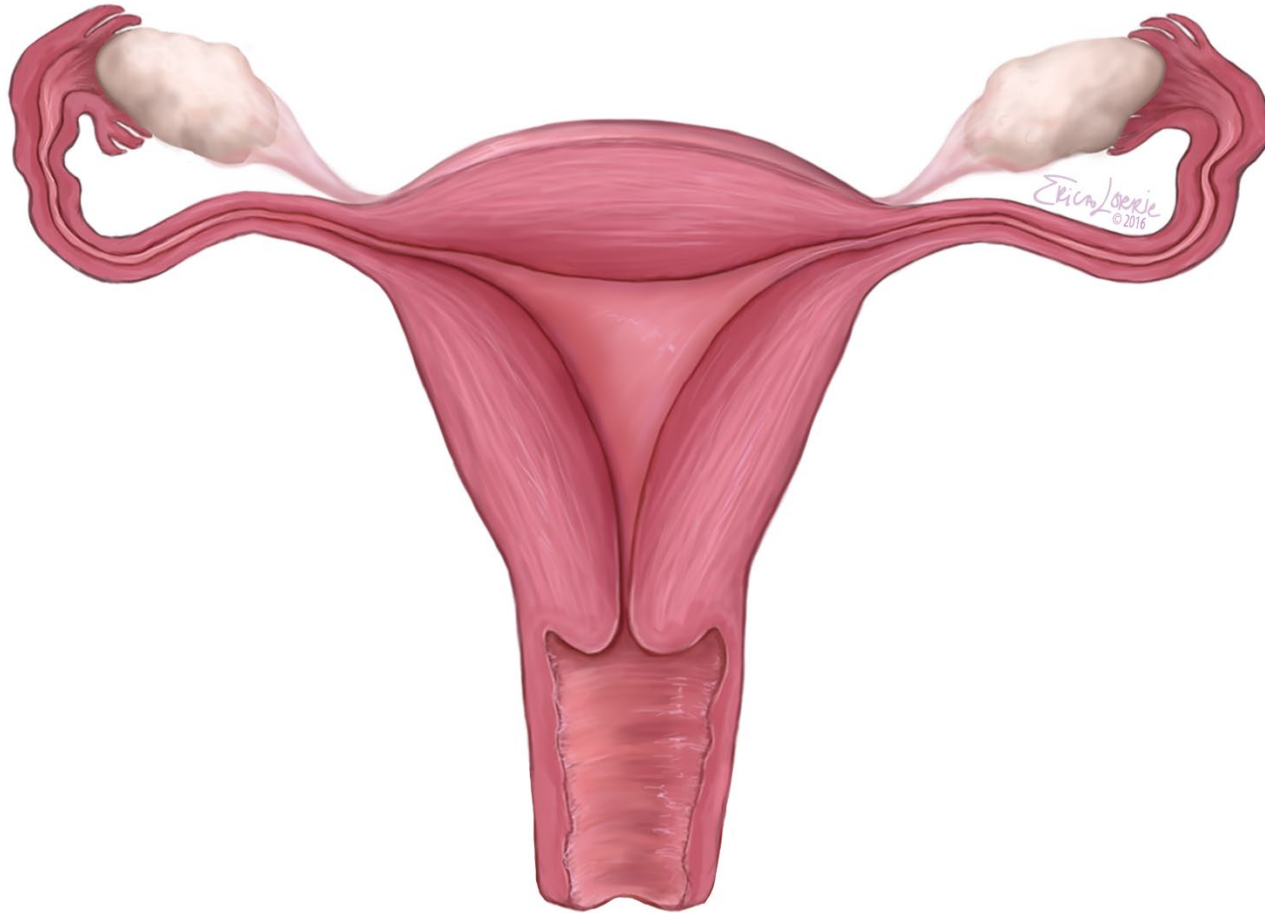
0

Start of Menses

28

End of Cycle

Part 1: Normal Anatomy and Fertilization



0

Start of
Menses

5

End of Menses

28

End of
Cycle

I: Normal Anatomy and Fertilization



0

Start of
Menses

5

End of
Menses

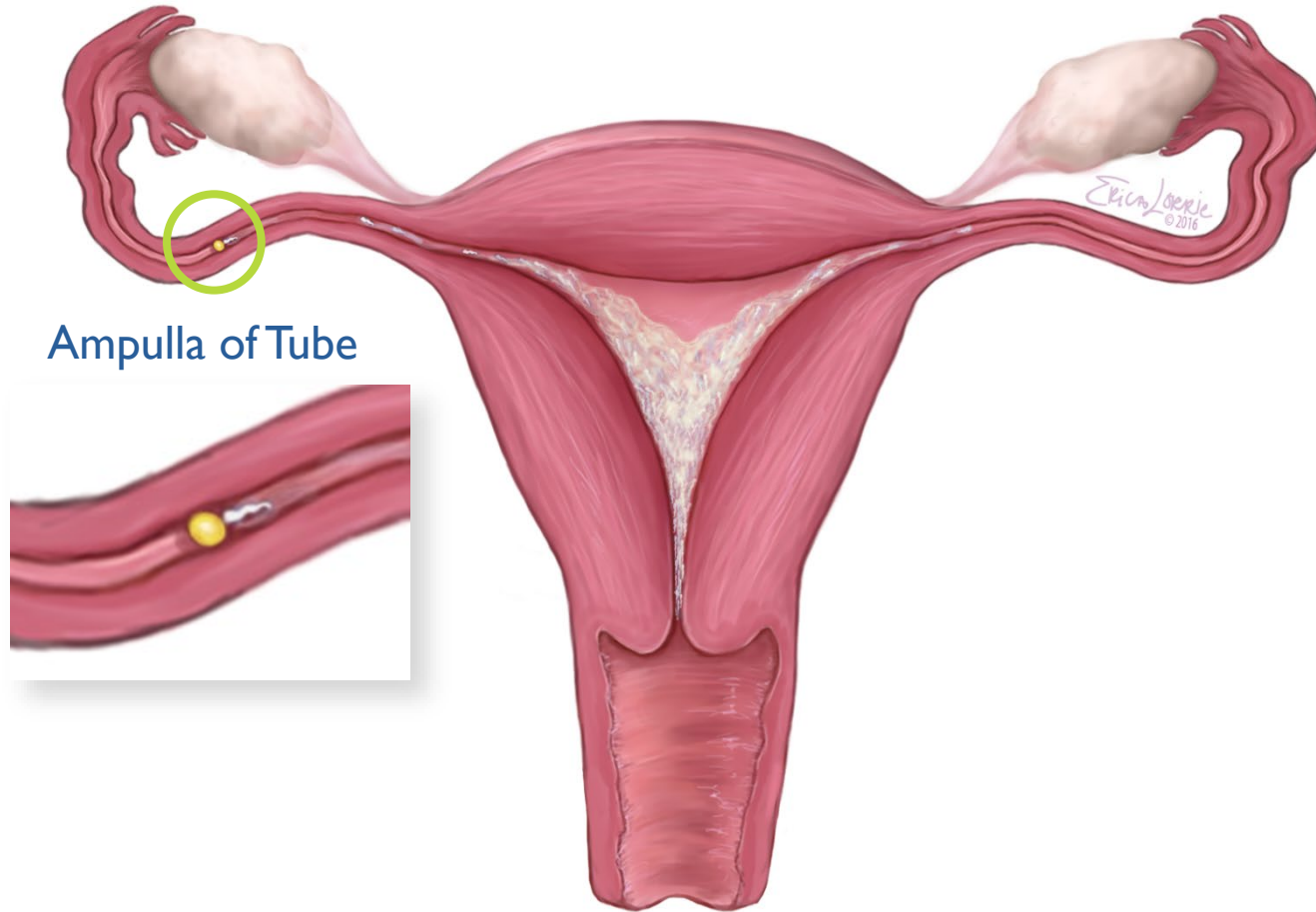
14

Ovulation

28

End of
Cycle

I: Normal Anatomy and Fertilization



Ampulla of Tube

0

Start of
Menses

5

End of
Menses

14

Ovulation

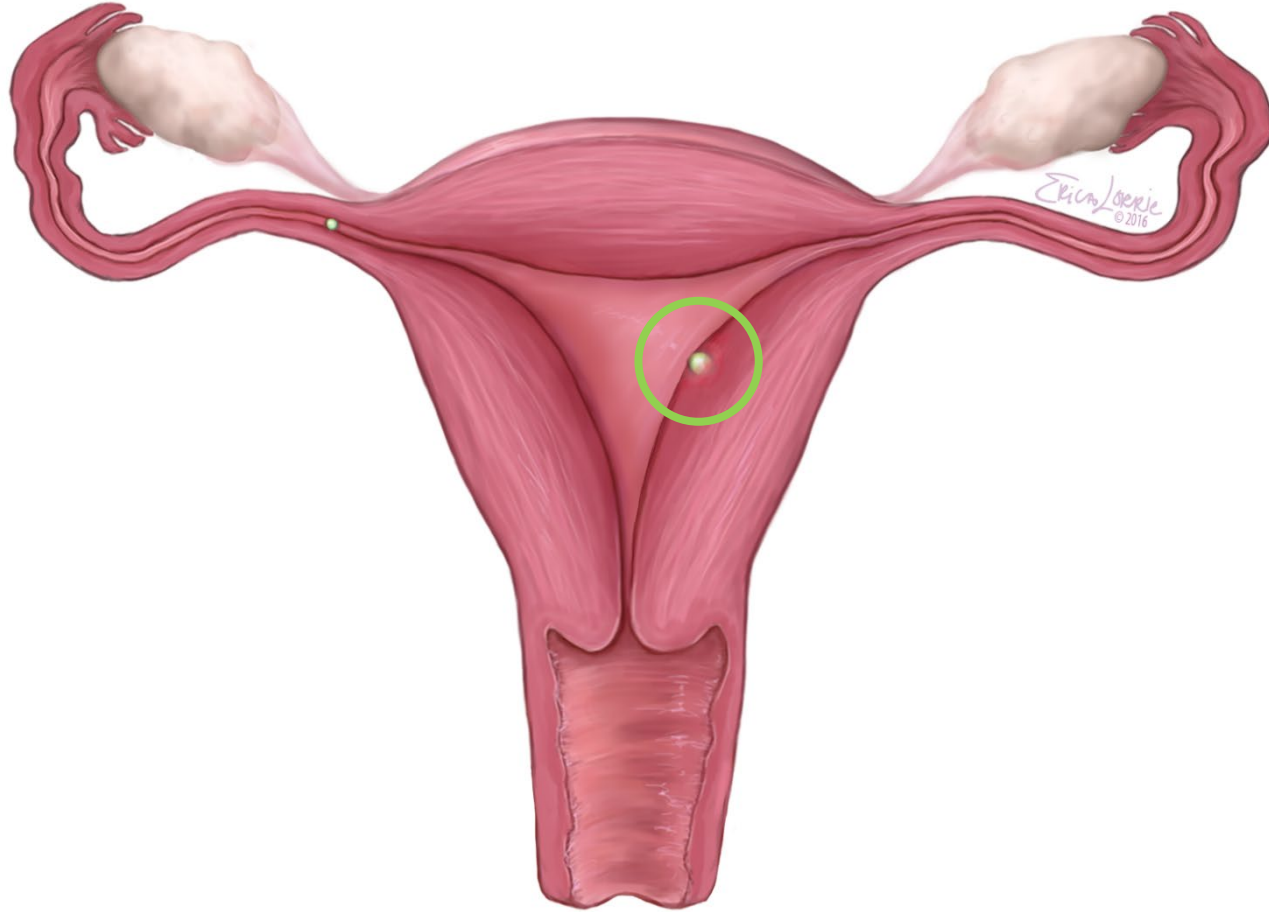
17

Fertilization

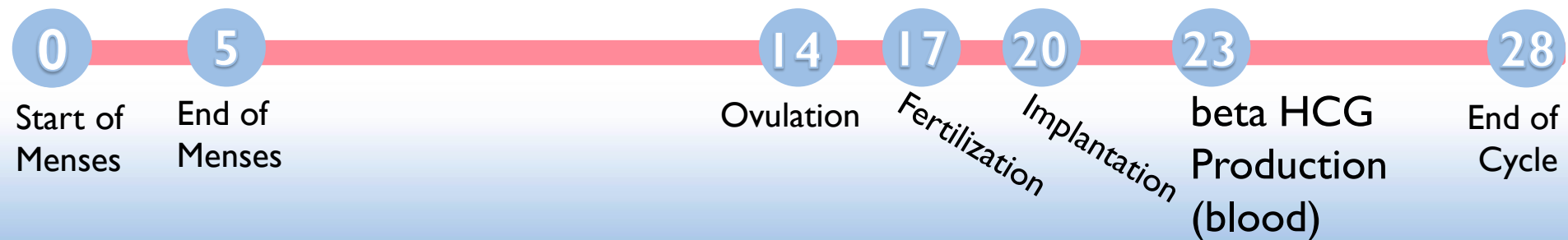
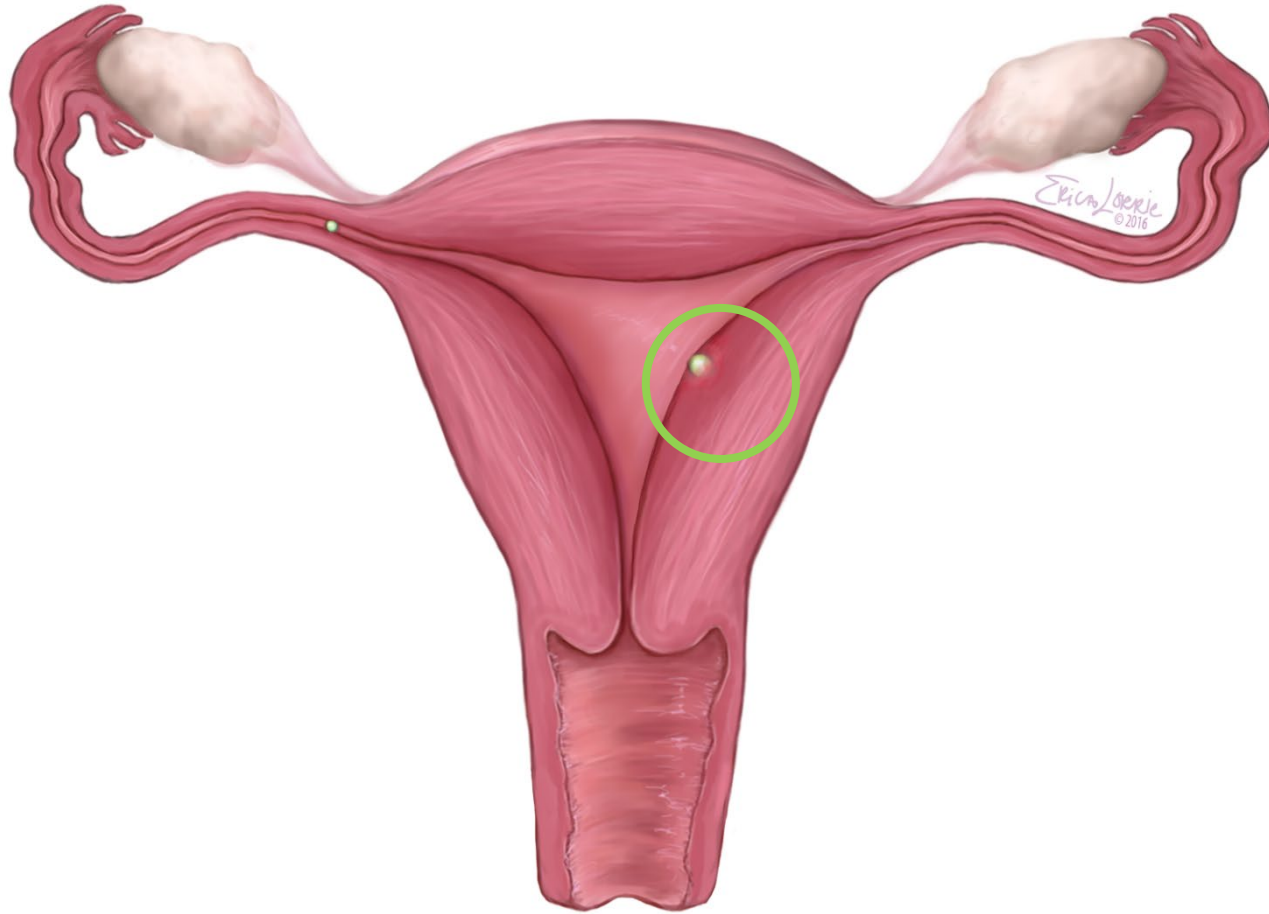
28

End of
Cycle

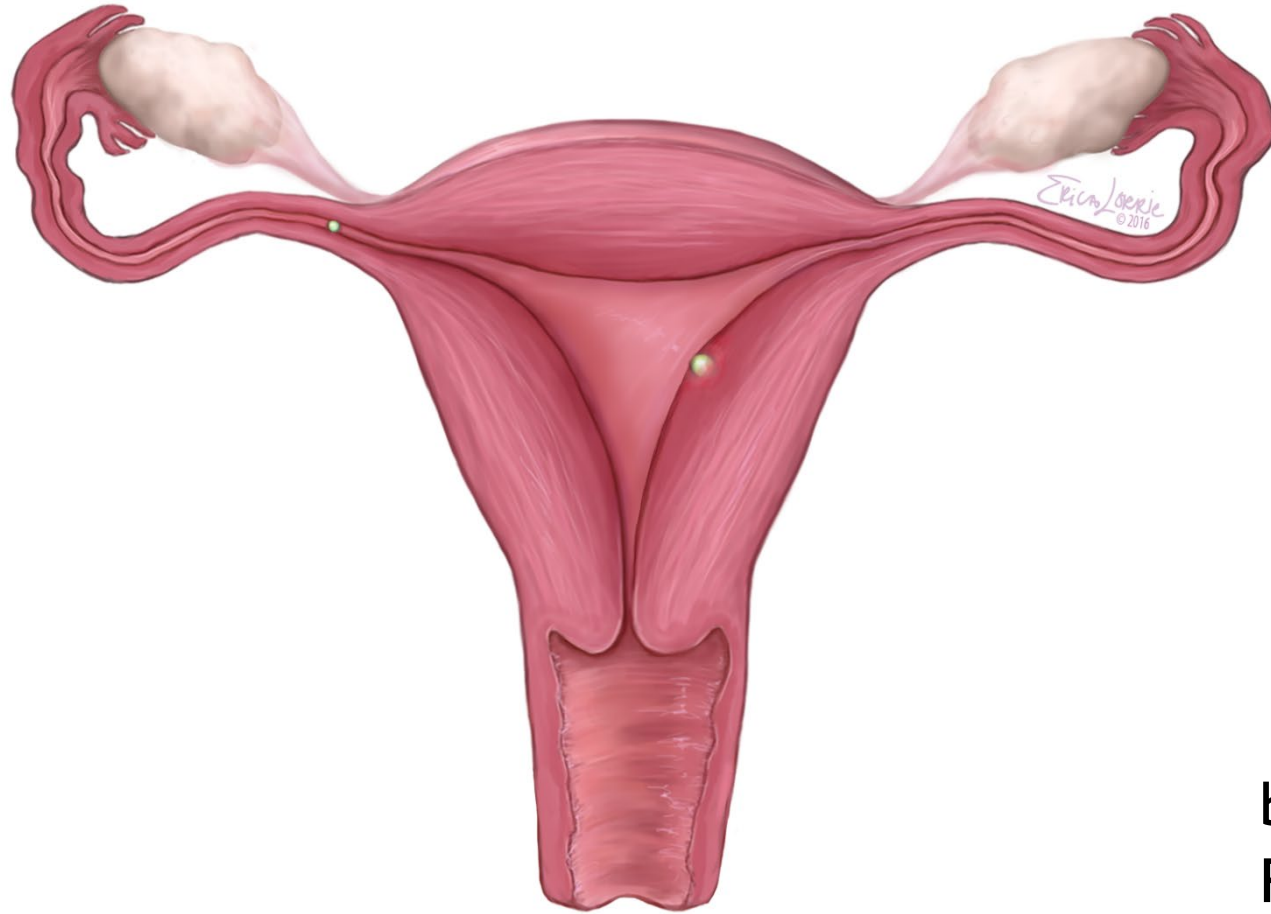
I: Normal Anatomy and Fertilization



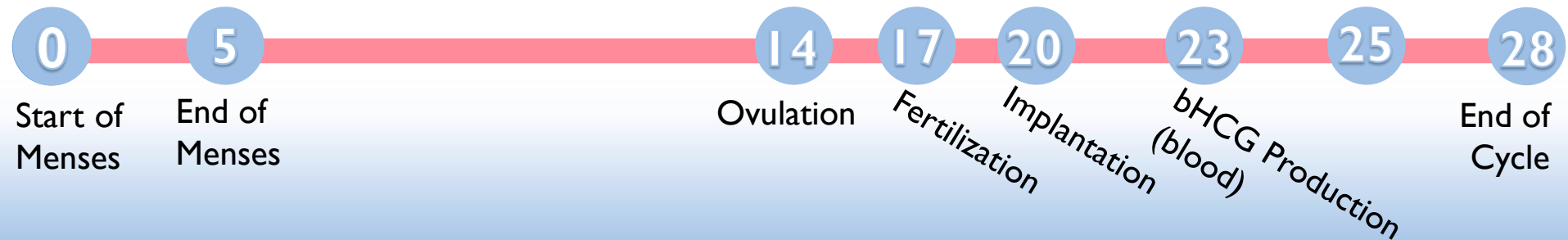
I: Normal Anatomy and Fertilization



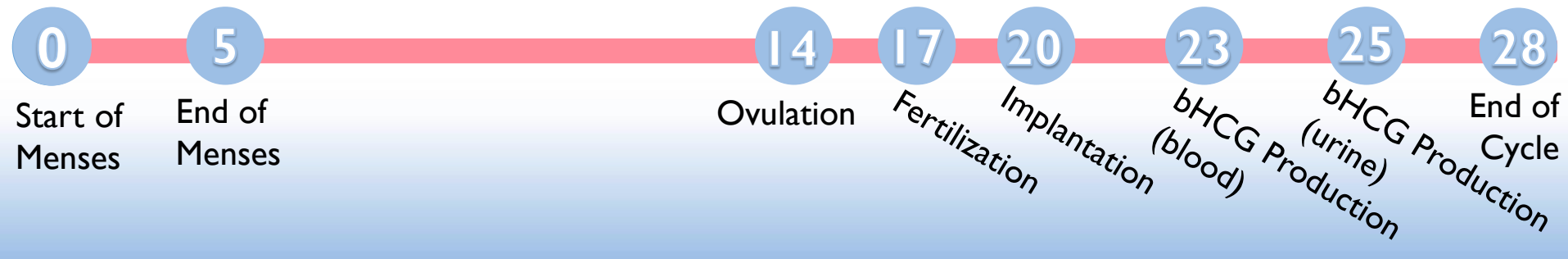
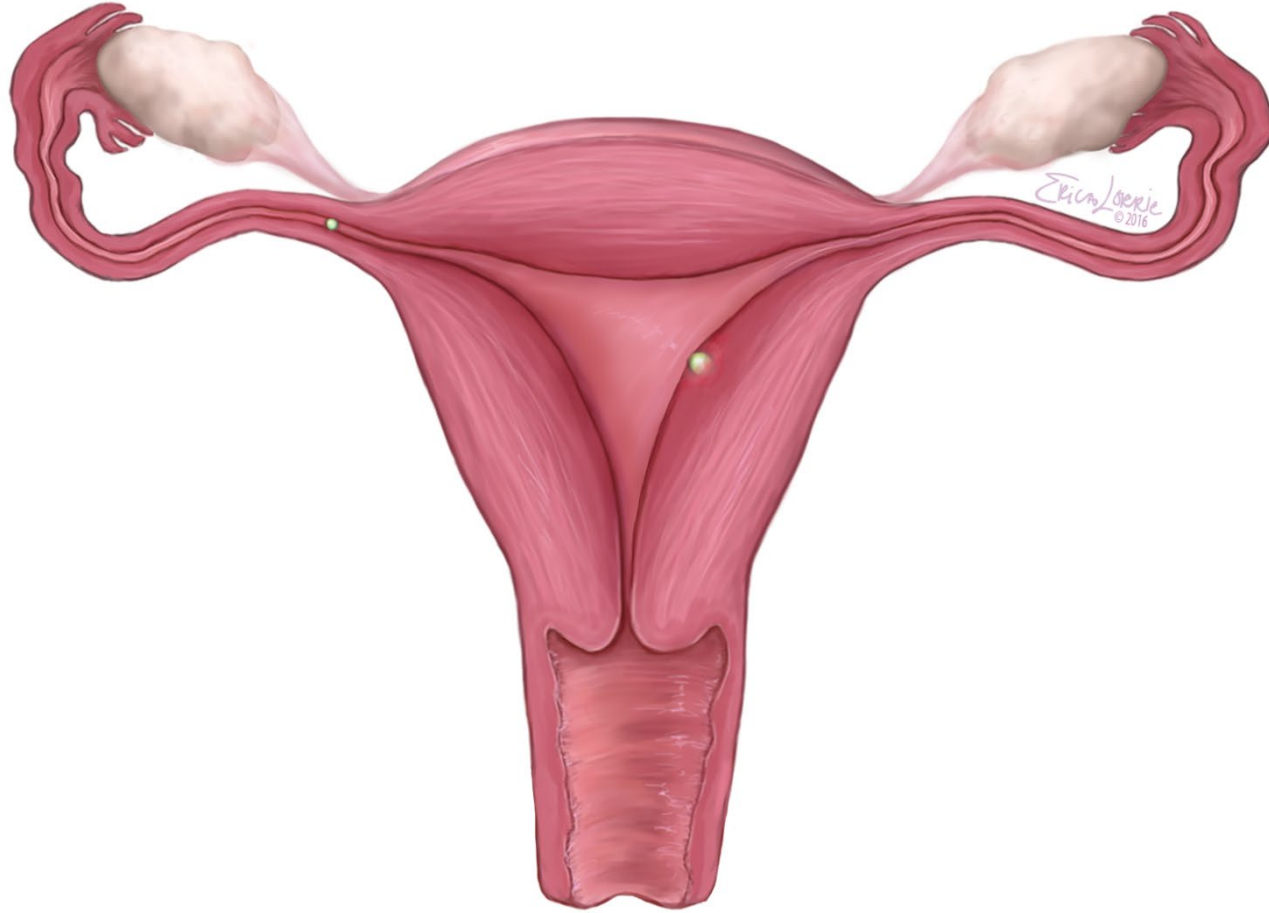
I: Normal Anatomy and Fertilization



bHCG
Production
(Urine)



I: Normal Anatomy and Fertilization



PART 2:
How to be “Be Reasonably Sure a Woman is
Not Pregnant”

2: How to be Reasonably Sure a Woman is Not Pregnant

How to be Reasonably Sure a Client is Not Pregnant

Ask the client questions 1–6. As soon as the client answers **YES** to *any question*, stop, and follow the instructions.

NO	1. Did your last menstrual period start within the past 7 days? *	YES
NO	2. Have you abstained from sexual intercourse since your last menstrual period or delivery?	YES
NO	3. Have you been using a reliable contraceptive method consistently and correctly since your last menstrual period or delivery?	YES
NO	4. Have you had a baby in the last 4 weeks?	YES
NO	5. Did you have a baby less than 6 months ago, are you fully or nearly-fully breastfeeding, and have you had no menstrual period since then?	YES
NO	6. Have you had a miscarriage or abortion in the past 7 days? *	YES

* If the client is planning to use an IUD, the 7 day window is expanded to 12 days.

If the client answered **NO** to *all of the questions*, pregnancy cannot be ruled out using the checklist.[†]
Rule out pregnancy by other means. Give her condoms to use until pregnancy can be ruled out.

If the client answered **YES** to *at least one of the questions* and she is free of signs or symptoms of pregnancy, you can be reasonably sure she is not pregnant.

[†] If the client is concerned about an unintended pregnancy, offer emergency contraception if every unprotected sex act since last menses occurred within the last 5 days.

2: How to be Reasonably Sure a Woman is Not Pregnant

Job Aid for Ruling Out Pregnancy Prior to Contraceptive Initiation

Match your client's menstrual status and chosen method with one of the options below and follow the instructions.

Client with amenorrhea (postpartum or other type)

Implants, pills, ring,
injectables, or patch

IUDs
Copper or LNG

Use pregnancy checklist.¹

Pregnancy ruled out: provide method.

Pregnancy not ruled out: use a pregnancy test.

Pregnancy test is negative (or test is not immediately available): provide the method now.²

Schedule a follow-up pregnancy test in 3-4 weeks.

Pregnancy test is negative (or test is not immediately available): advise woman to use COCs, DMPA, or condoms or abstain for 3-4 weeks, then repeat the pregnancy test.

Second pregnancy test is negative: provide an IUD.

¹ See page 2 (reverse) for pregnancy checklist.

² For implants, counsel about the need to remove the implant if pregnancy is confirmed and she wishes to carry the pregnancy to term.

In cases where pregnancy cannot be ruled out, offer emergency contraception if every act of unprotected sex since menses occurred within the last 5 days.

Counsel all women to come back any time they have a reason to suspect pregnancy (e.g., miss a period).

Client between two regular menses (monthly bleeding)*

Implants, pills, ring,
injectables, or patch

IUDs
Copper or LNG

Use pregnancy checklist.¹

Pregnancy ruled out: provide method.

Do not use a pregnancy test (in most cases, it is too early for it to be effective).

Pregnancy not ruled out: provide the method now.²

Return for a pregnancy test if next menses are delayed.

Pregnancy not ruled out: do not provide method.

Advise woman to return for LNG IUD insertion within 7 days of onset of her next menses or within 12 days for a copper IUD; but in the interim, use COCs, DMPA, or condoms or abstain.

Return for a pregnancy test if next menses are delayed.

* If client presents with a late/missed menses, use a pregnancy test to rule out pregnancy. If using a highly sensitive pregnancy test (e.g., 25 mIU/ml) and it is negative, provide desired method.

If using a test with lower sensitivity (e.g., 50 mIU/ml) and it is negative during the time of her missed period, wait until at least 10 days after expected date of menses and repeat the test. Advise woman to use condoms or abstain in the interim. If the test is still negative, provide desired method.

If test sensitivity is not specified, assume lower sensitivity.

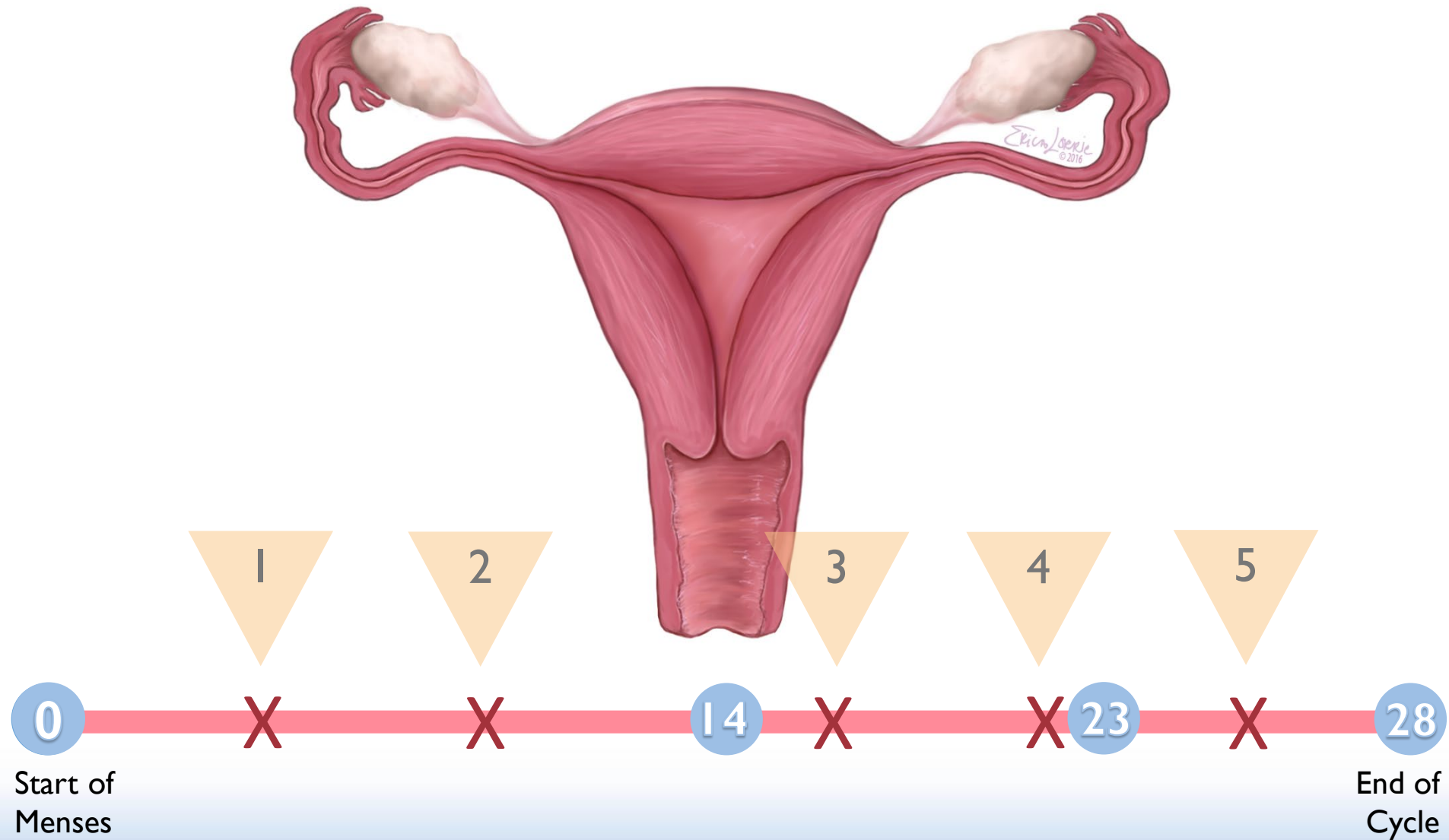
How can one be reasonably sure a woman is not pregnant?

Almost always, you simply need **two questions**:

1. When was the woman's last menstrual period (LMP)?
2. When was the last time the woman engaged in intercourse? Was it protected?

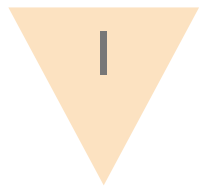
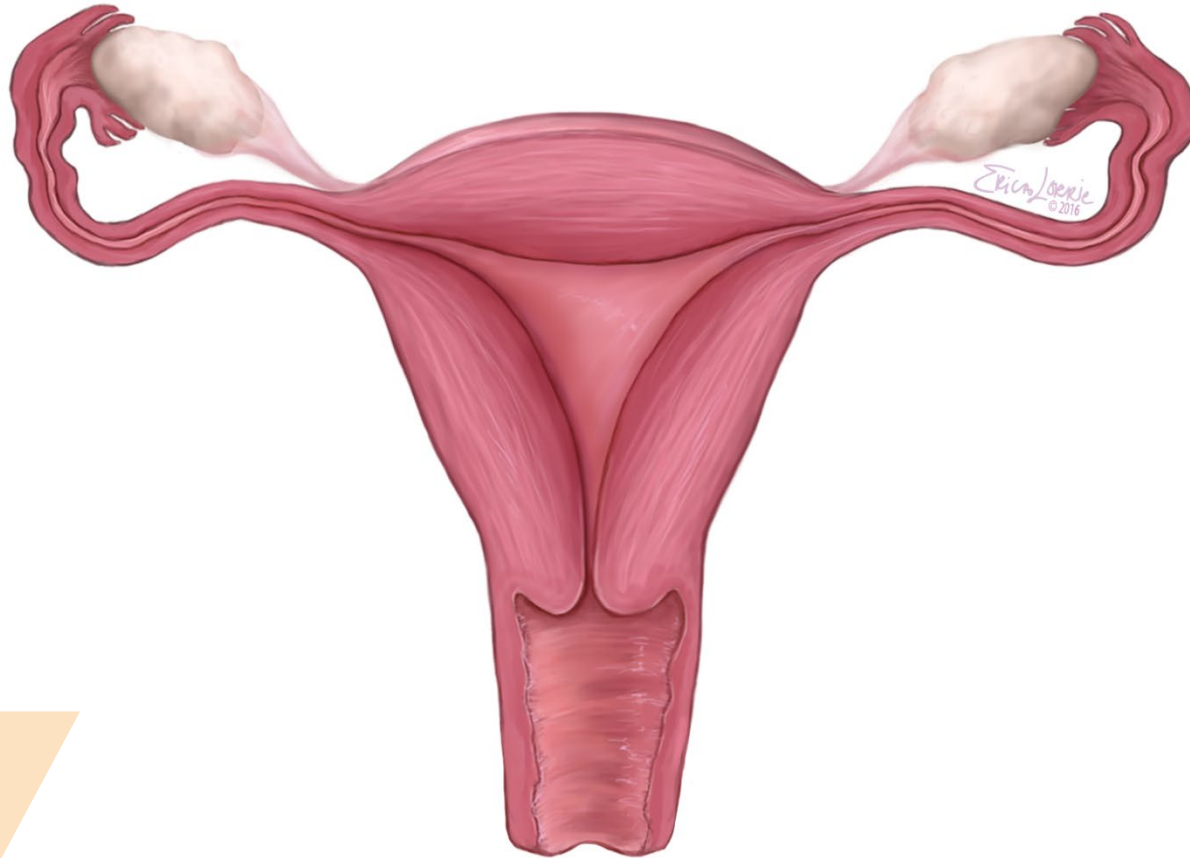
2: How to be Reasonably Sure a Woman is Not Pregnant

5 Scenarios (Xs) of Women Wanting a Family Planning Method Today:



2: How to be Reasonably Sure a Woman is Not Pregnant

Scenario I: Maria with LMP 7 days ago



X

0

Start of
Menses

14

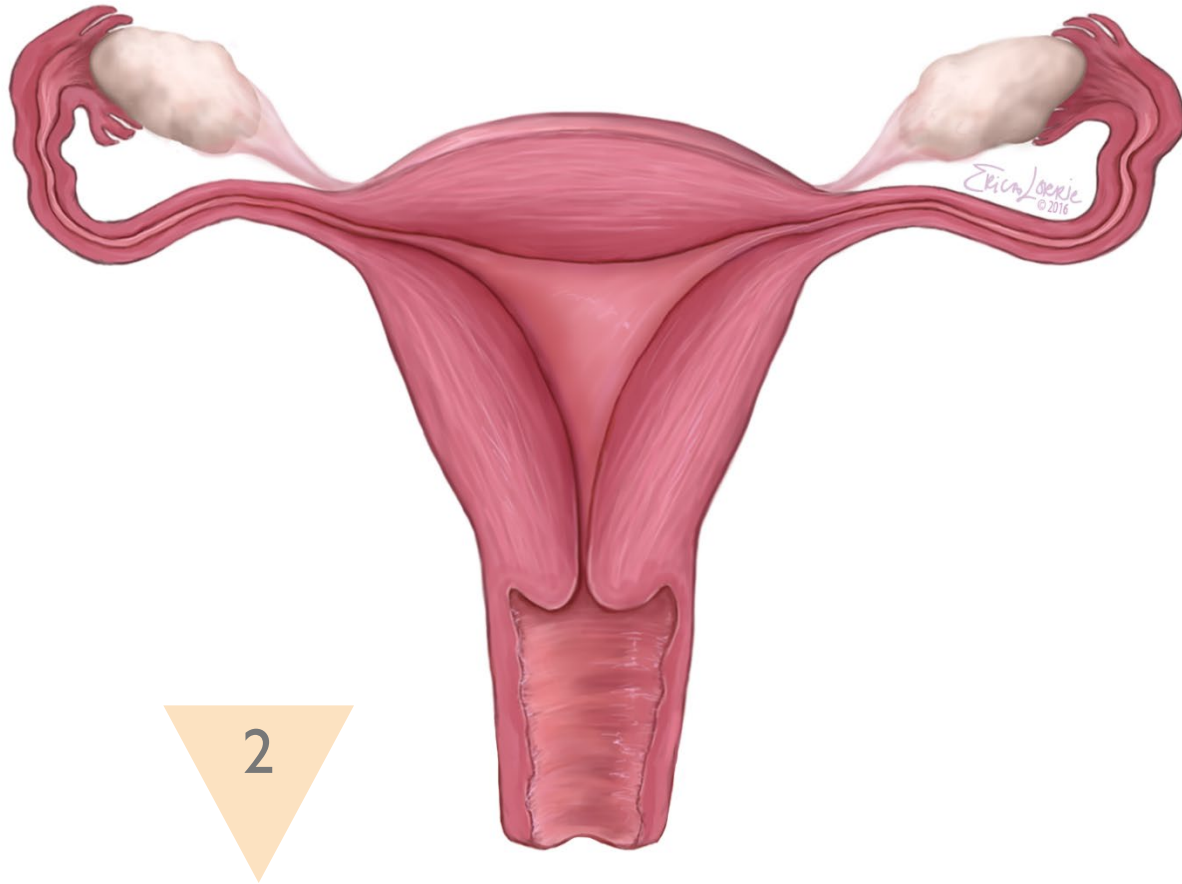
23

28

End of
Cycle

2: How to be Reasonably Sure a Woman is Not Pregnant

Scenario 2: Jalala with LMP 10 days ago



X

14

23

28

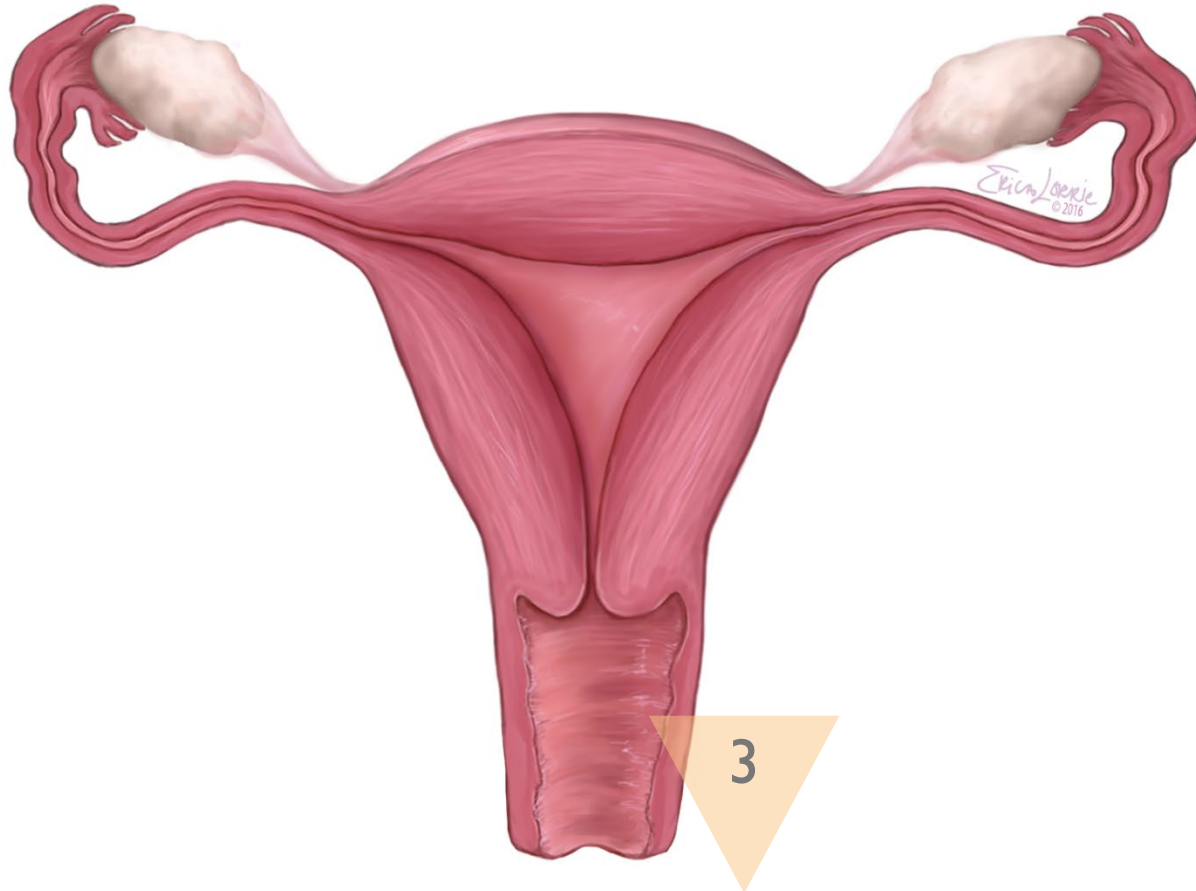
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Start of
Menses

End of
Cycle

2: How to be Reasonably Sure a Woman is Not Pregnant

Scenario 3: Annie with LMP 17 days ago



0

Start of
Menses

14

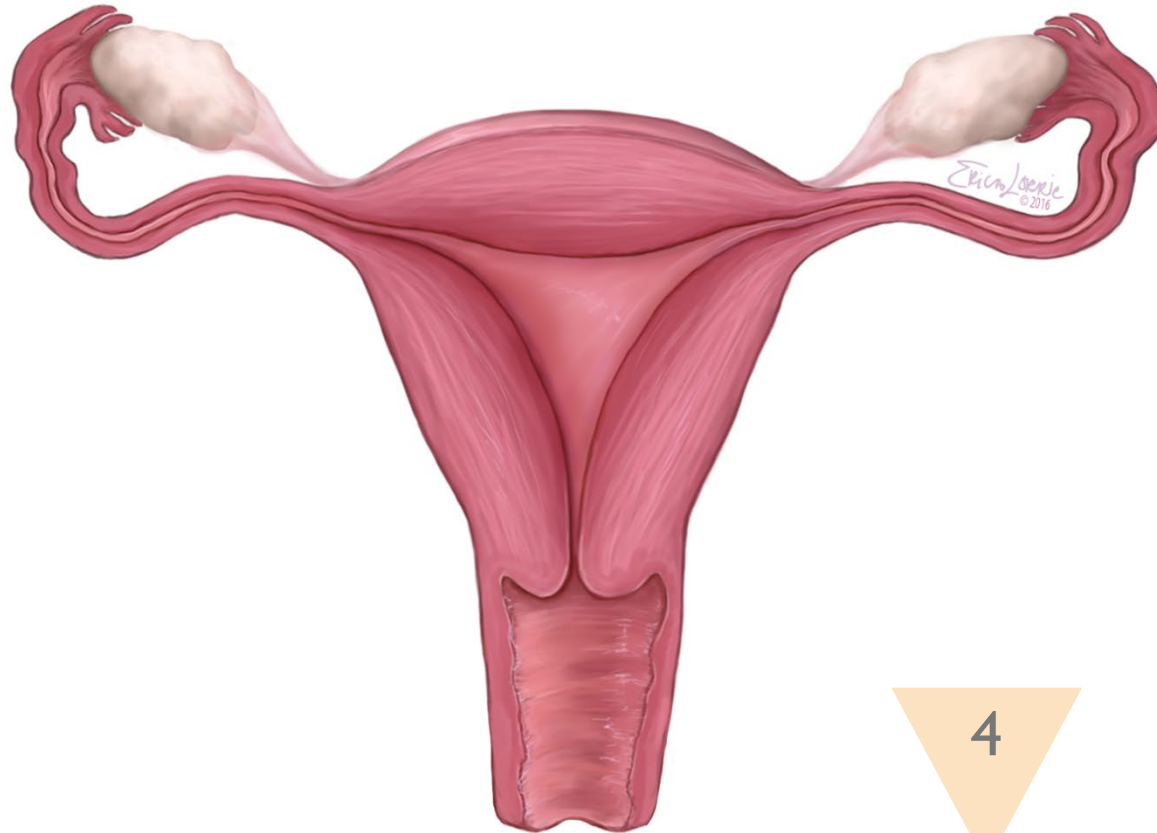
X

23

28

End of
Cycle

Scenario 4: Davina with LMP 22 days ago



0

14

X

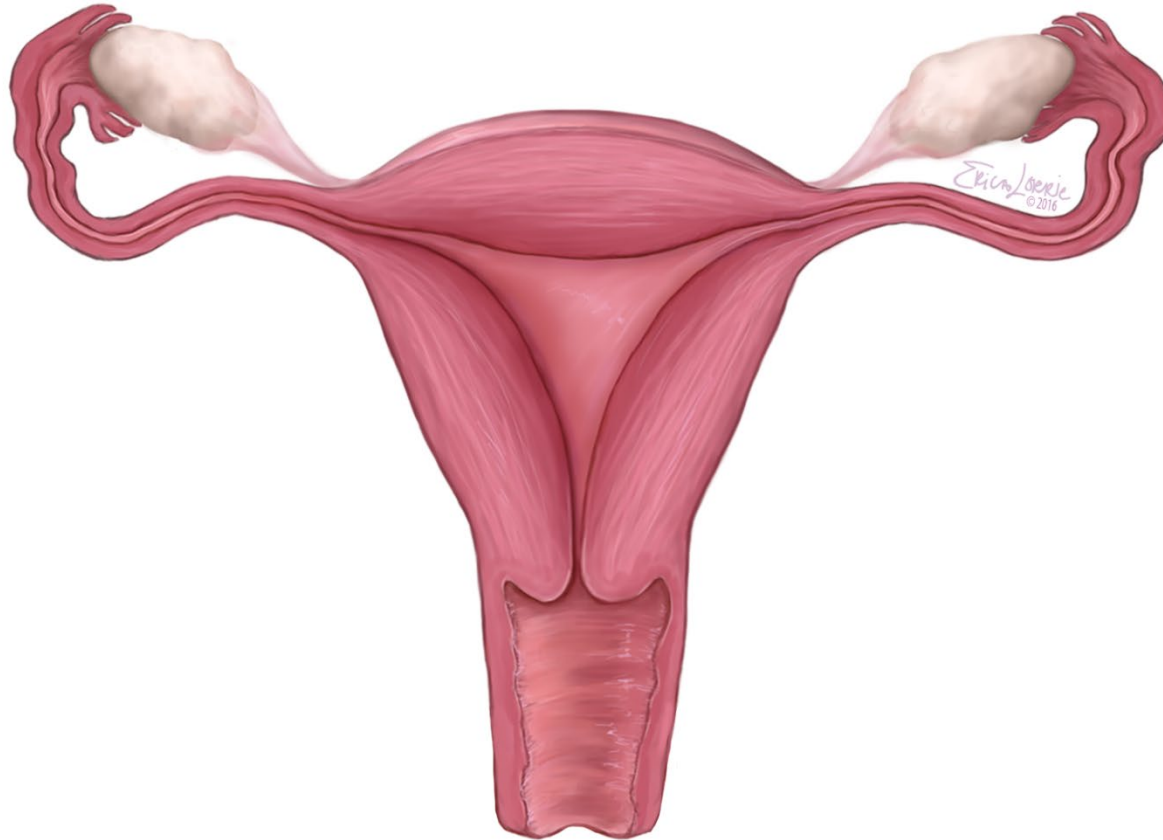
23

28

Start of
Menses

End of
Cycle

Scenario 5: Julie with LMP 26 days ago



PART 3:

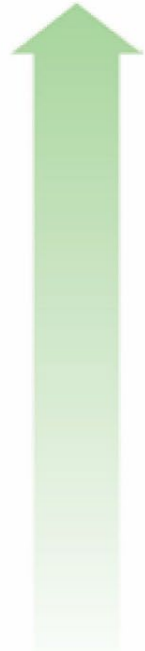
Mechanisms of Action (MOA):

*How and Where It Happens...”in the womb
where it happens”*

Comparing Effectiveness of Family Planning Methods

More effective

Less than 1 pregnancy per
100 women in 1 year



Tier 1



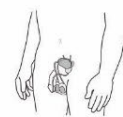
Implants



IUD



Female
sterilization



Vasectomy

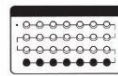
Tier 2



Injectables



LAM



Pills



Patch



Vaginal ring

Tier 3



Male condoms



Diaphragm



Female condoms



Fertility awareness
methods



Withdrawal



Spermicides

Less effective

About 30 pregnancies per
100 women in 1 year

How to make your method more effective

Implants, IUD, female sterilization: After procedure, little or nothing to do or remember

Vasectomy: Use another method for first 3 months

Injectables: Get repeat injections on time

Lactational amenorrhea method, LAM (for 6 months): Breastfeed often, day and night

Pills: Take a pill each day

Patch, ring: Keep in place, change on time

Condoms, diaphragm: Use correctly every time you have sex

Fertility awareness methods: Abstain or use condoms on fertile days. Newest methods (Standard Days Method and TwoDay Method) may be easier to use.

Withdrawal, spermicides: Use correctly every time you have sex

HOW WELL DOES BIRTH CONTROL WORK?

What is your chance of getting pregnant?



Really, really well



The Implant
(Nexplanon)



IUD
(Skyla)



IUD
(Mirena)



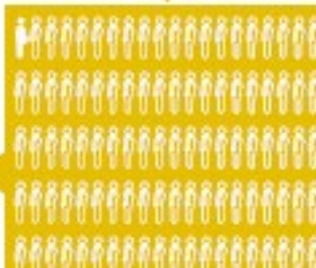
IUD
(ParaGard)

No
hormones



Sterilization,
for men and women

Work, hassle-free, without needing to remember to do anything.



Less than 1 in 100 women



O.K.



The Pill



The Patch



The Ring



The Shot
(Depo-Provera)

For it to work best, use it...

Every. Single. Day.

Every week

Every month

Every 3 months



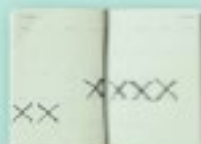
6-9 in 100 women,
depending on method



Not as well



Withdrawal



Fertility
Awareness



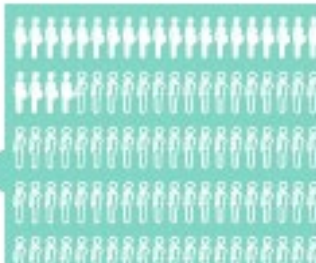
Diaphragm

Needed
for STD
protection!



Condoms,
for men or women

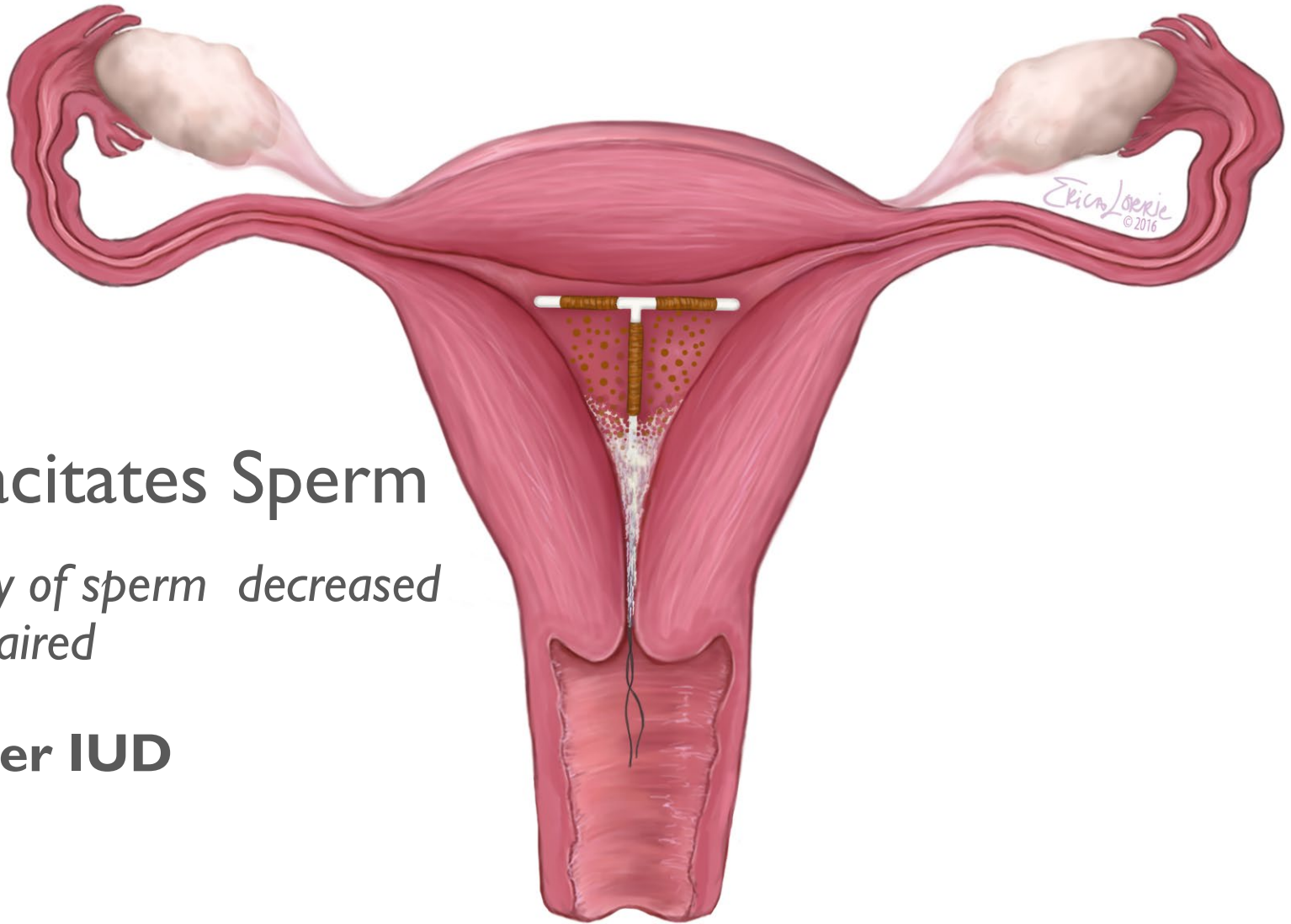
For these methods to work, you or your partner have to use it every single time you have sex.



12-24 in 100 women,
depending on method

FYI, without birth control,
over 90 in 100 young women
get pregnant in a year.

Part 3: The Four Principle Mechanisms of Action

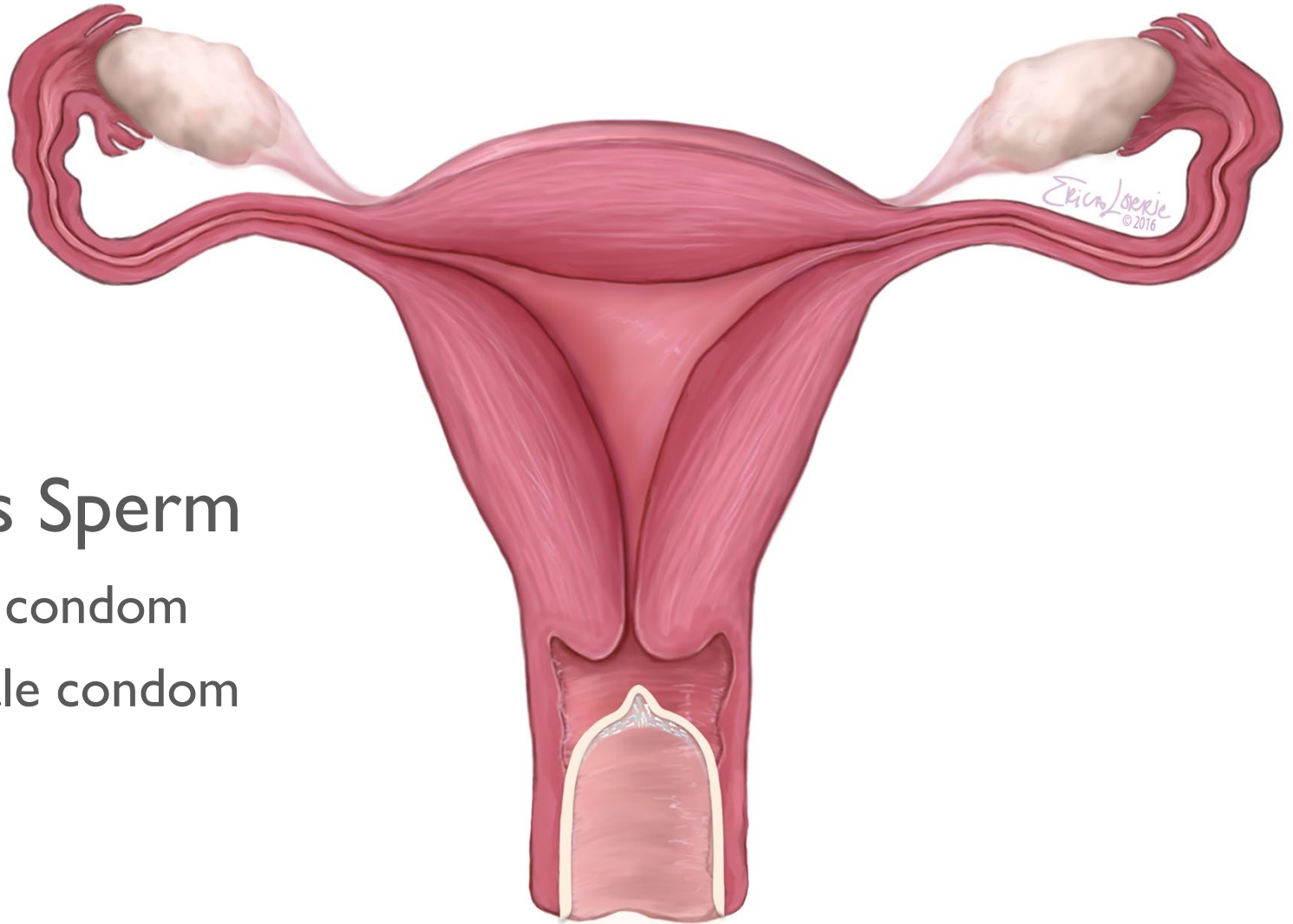


I. Incapacitates Sperm

➤ *Motility of sperm decreased or impaired*

- **Copper IUD**

3: Mechanism of Action



2. Blocks Sperm

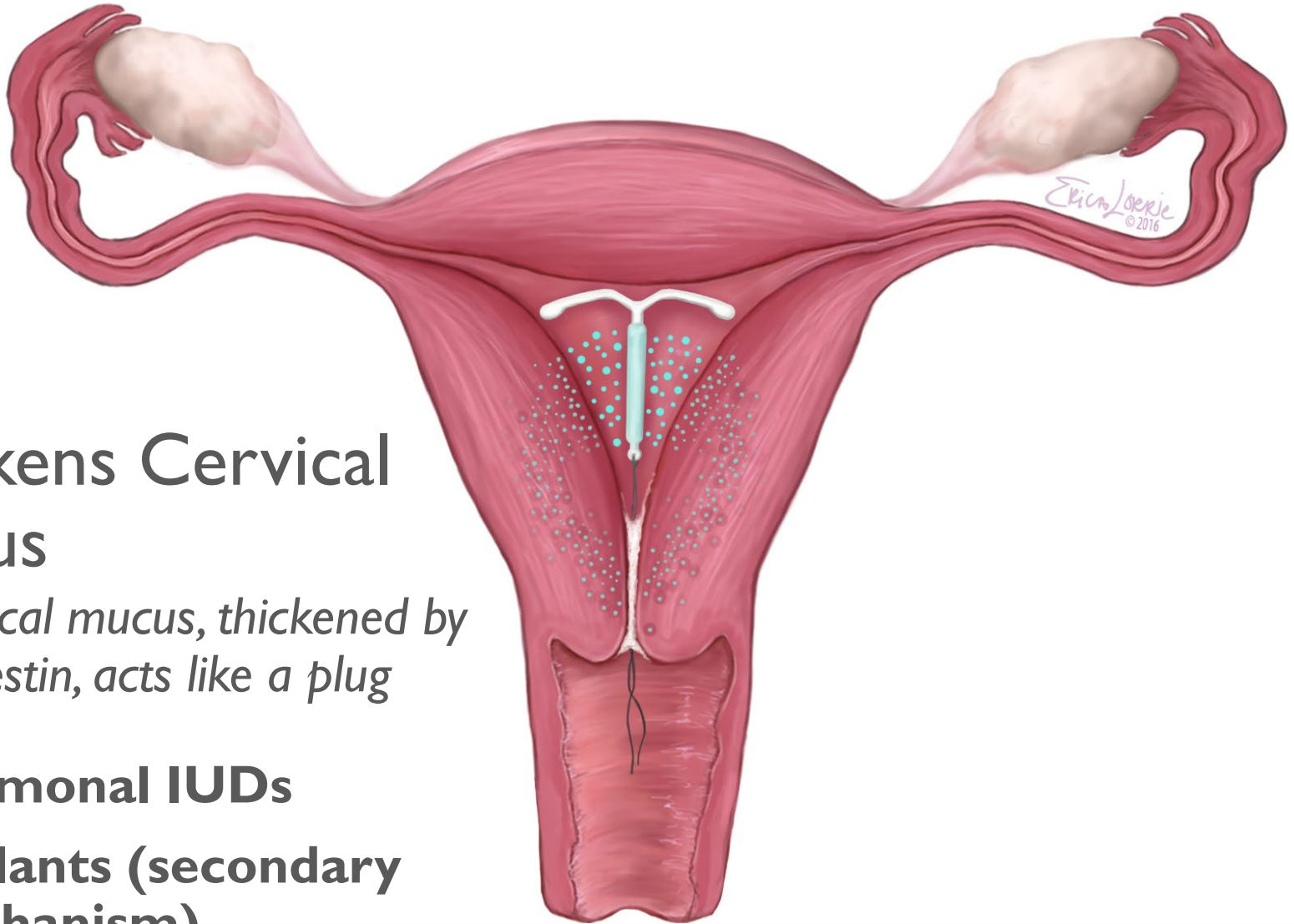
- Male condom
- Female condom

3: Mechanism of Action

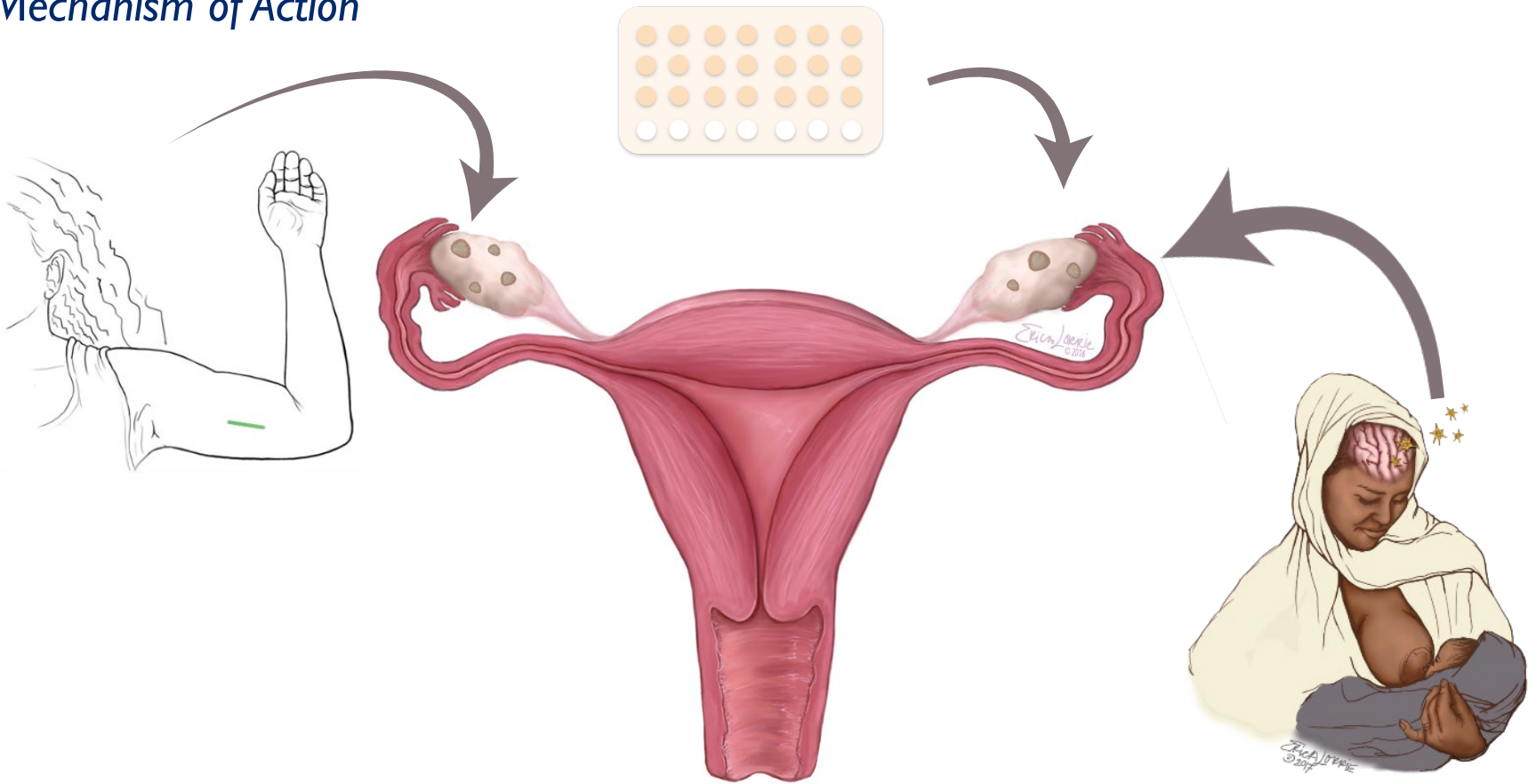
3. Thickens Cervical Mucus

➤ *Cervical mucus, thickened by progestin, acts like a plug*

- **Hormonal IUDs**
- **Implants (secondary mechanism)**



3: Mechanism of Action

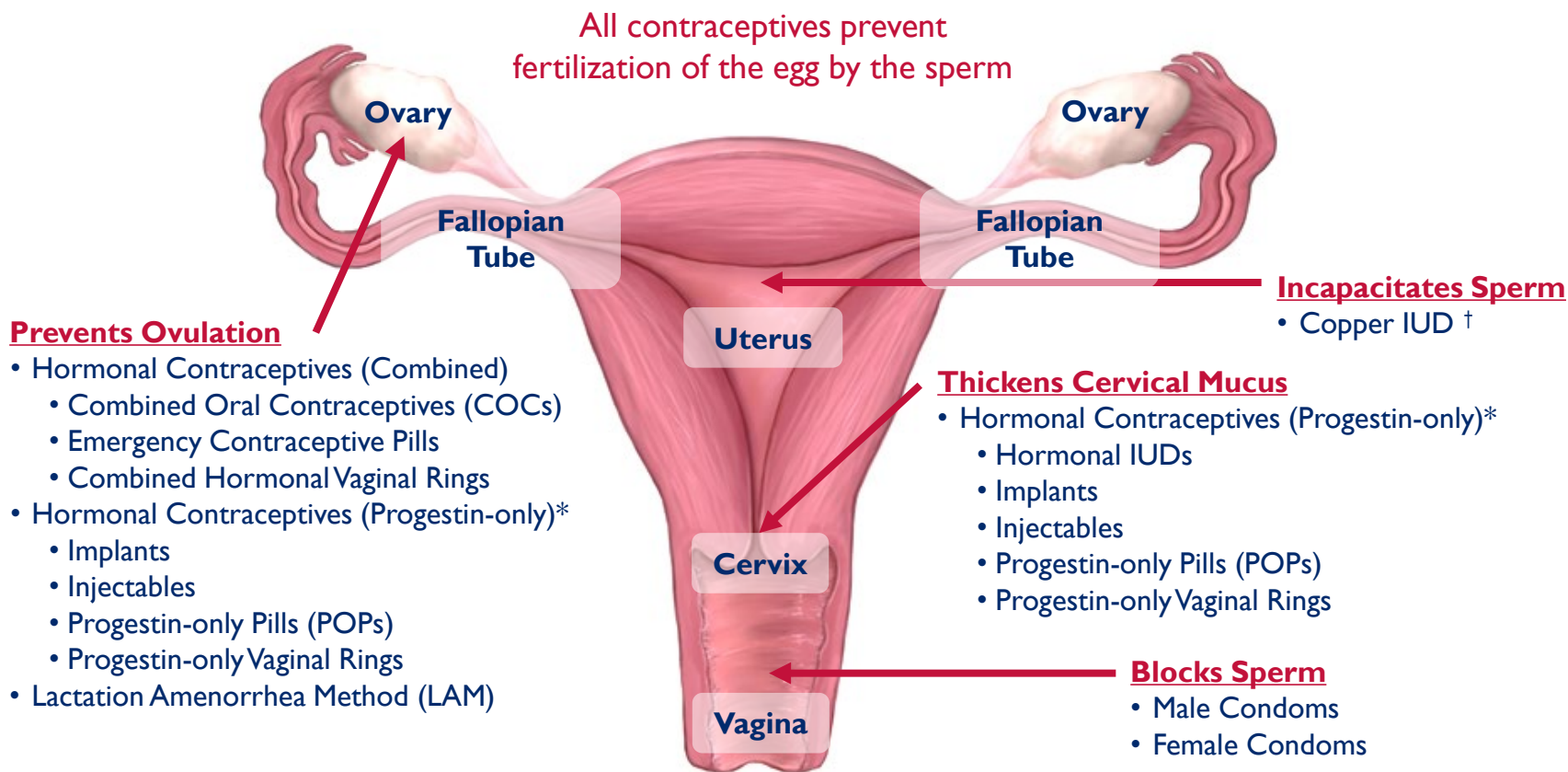


4. Prevents and Inhibits Ovulation

- Injectables
- Pills (combined and progestin-only)
- Implants (primary mechanism)
- Emergency Contraceptive Pills
- Lactation Amenorrhea



How Contraception Works: Mechanisms of Action



* Progestin-only hormonal methods have more than one mechanism of action.

† The Copper IUD works by preventing fertilization but in very rare instances, if used as Emergency Contraception, it may prevent implantation of a fertilized egg.

www.mcsprogram.org

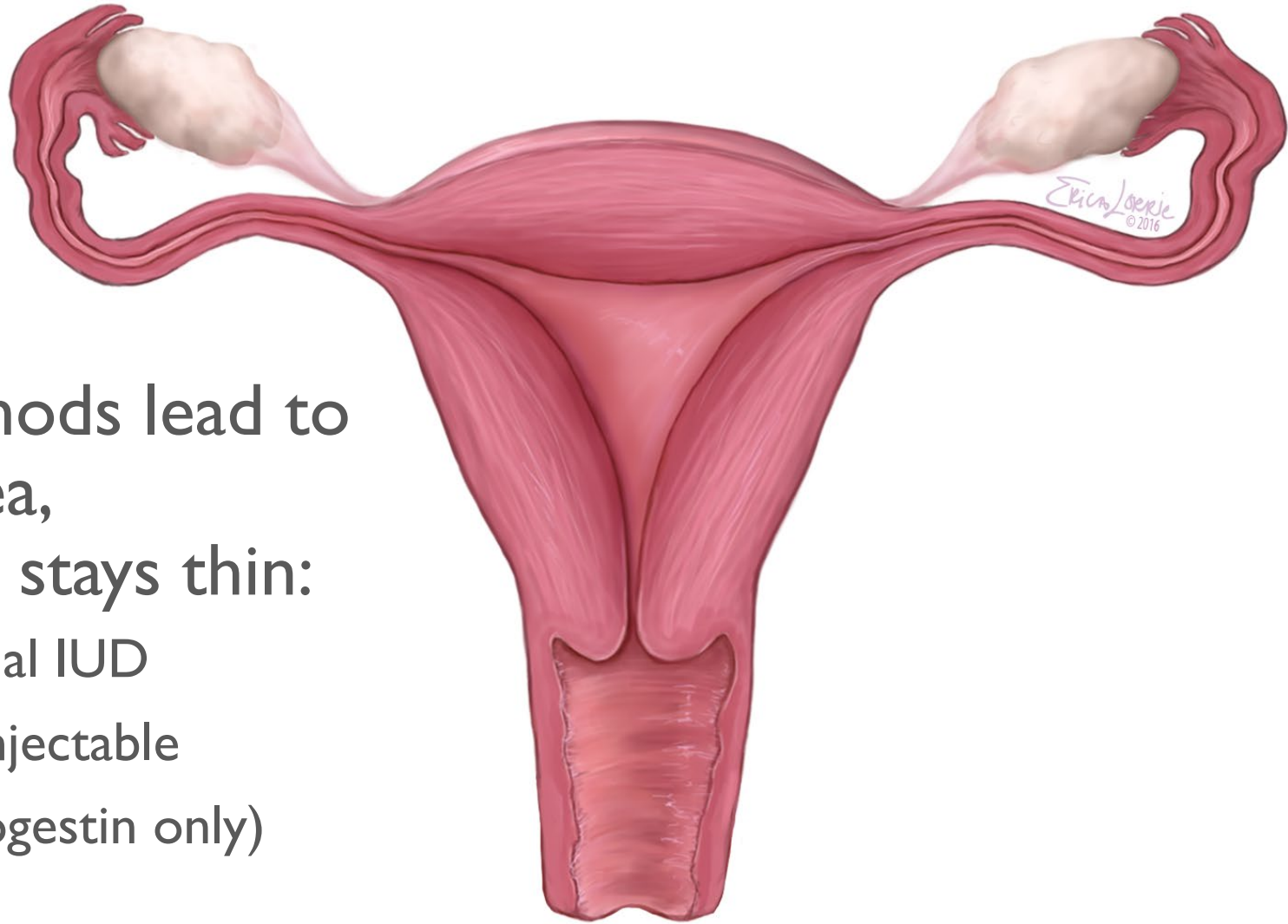
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3: Mechanism of Action

Also...

Some methods lead to amenorrhea, since lining stays thin:

- Hormonal IUD
- DEPO injectable
- Pills (progestin only)
- Implants
- LAM



Definition of Pregnancy:

...When implantation occurs!!

- All scientific organizations (including FDA, CDC & WHO) use this definition.
- Using the scientific definition we can dispel myths and misperceptions, demonstrating that **none of these family planning methods cause an abortion.**

*** All contraceptive methods prevent fertilization of the egg by the sperm. ***

Main Points

- One can be “reasonably sure” a woman is not pregnant with these two questions:
 1. When was the woman’s last menstrual period (LMP)?
 2. When was the last time the woman engaged in intercourse? Was it protected?
- All contraceptive methods prevent fertilization (egg and sperm don’t get together)
- No method causes an abortion

For more information, please visit
www.mcspprogram.org

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