



An Update on Emergency Contraception for the Pandemic and Beyond

David Turok, MD, MPH

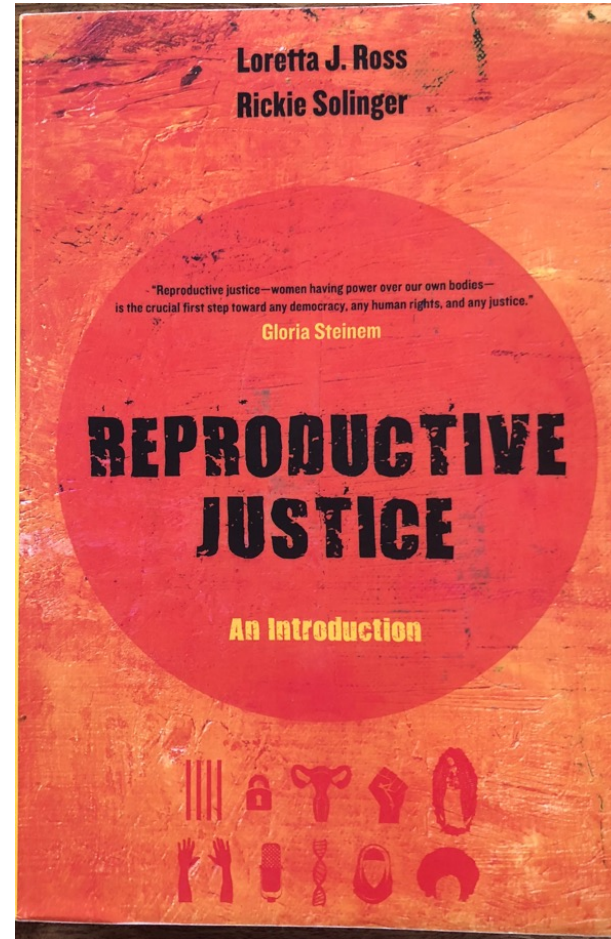




Objectives & Outline

1. Copper IUD is most effective
2. Ulipristal acetate (Ella) most effective oral
3. Access & weight matter (for oral methods)
4. Evidence - EC & quick start intersection

Reproductive Justice





Biological Facts & EC

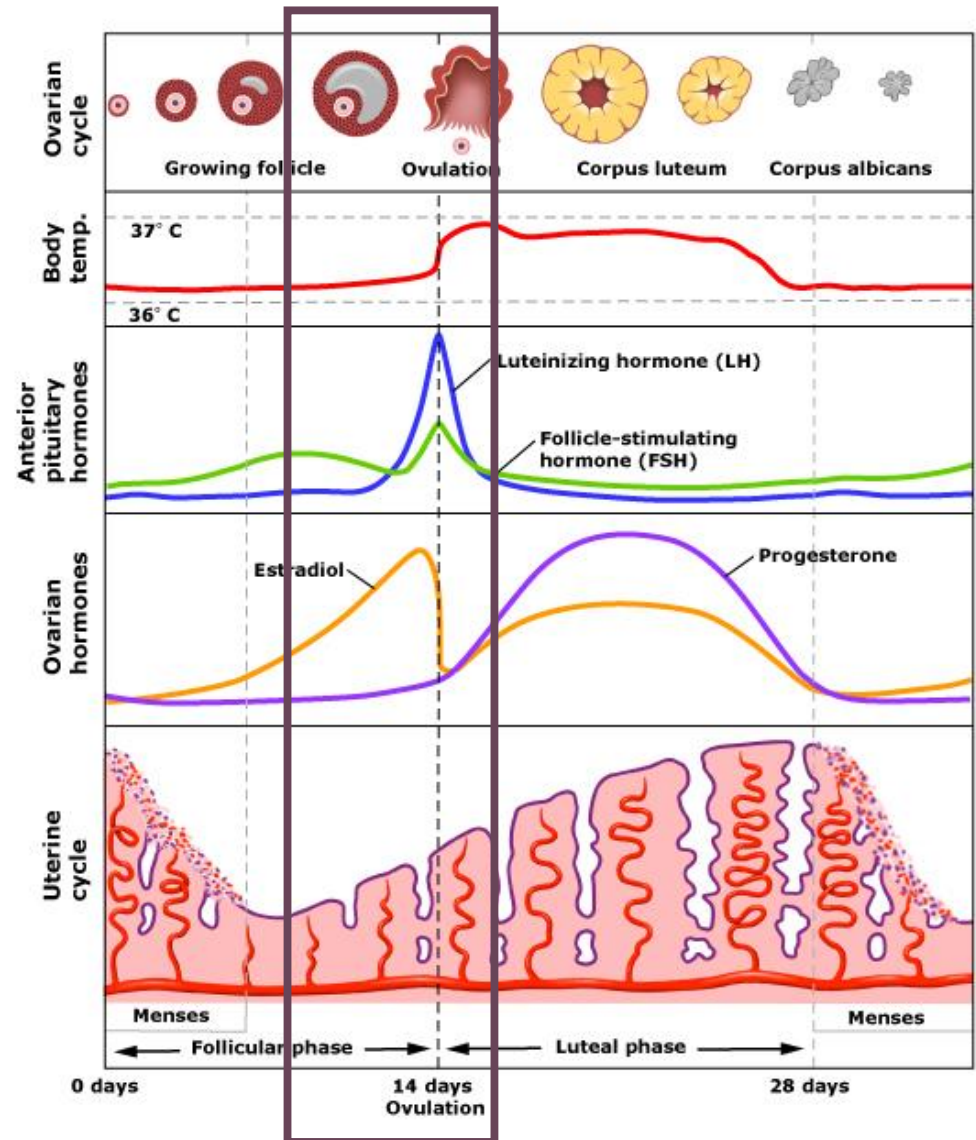
- People mostly have sex for fun
- Biology is imperfect
- Contraception is imperfect
- Rape & intimate partner violence happen
- Sperm-Egg union does not discriminate



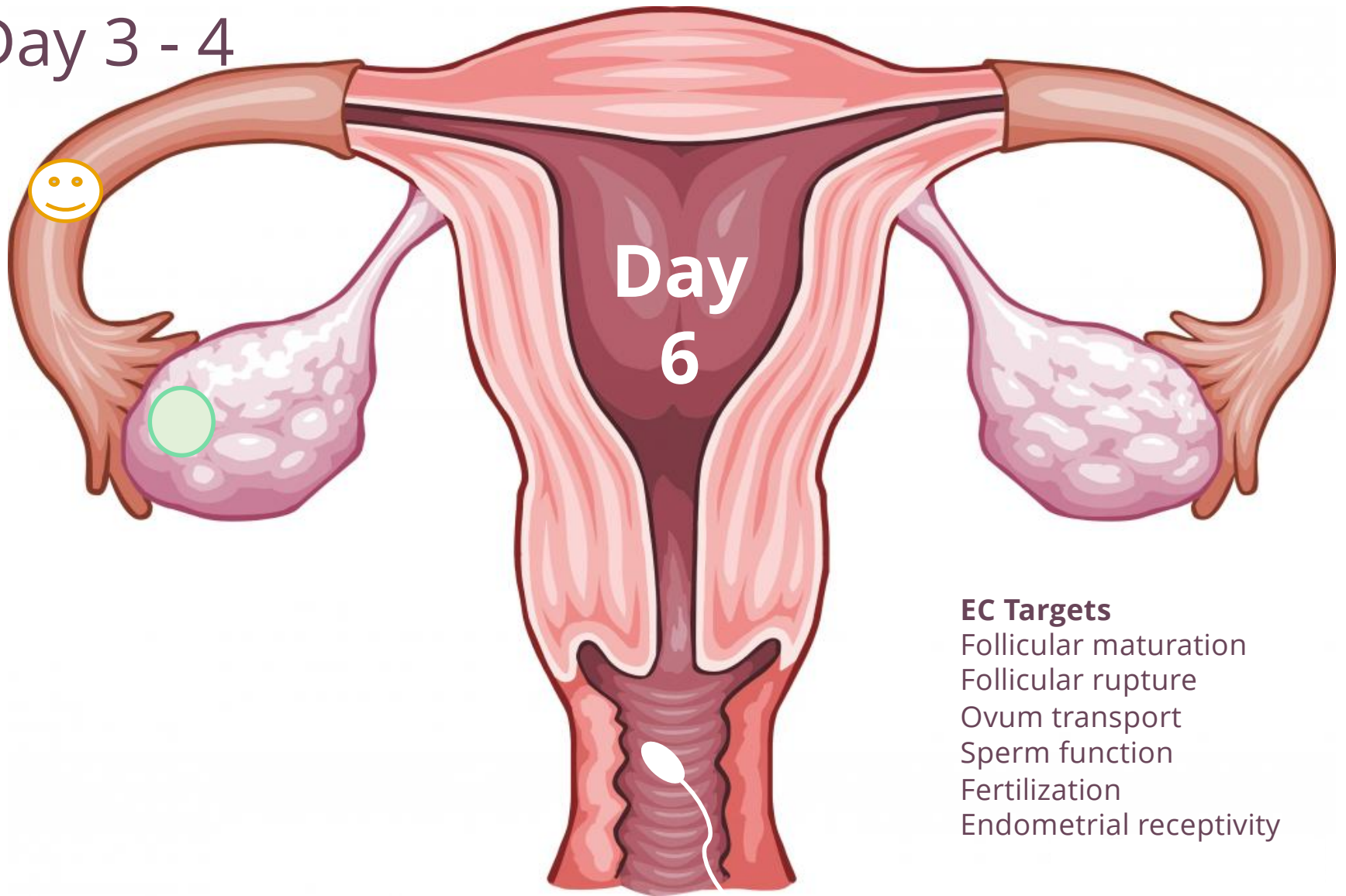
What is EC?

- Prevents pregnancy after intercourse
- EC doesn't interrupt an existing pregnancy
- Must be initiated in a specific time frame
 - Copper IUD within 5-7 d of UPI
 - Ulipristal acetate 30 mg (UPA, Ella) within 5 d
 - Levonorgestrel 1.5 mg (LNG, Plan B) within 3 d
 - Mifepristone

The Fertile Window: -5 to +1 days from ovulation



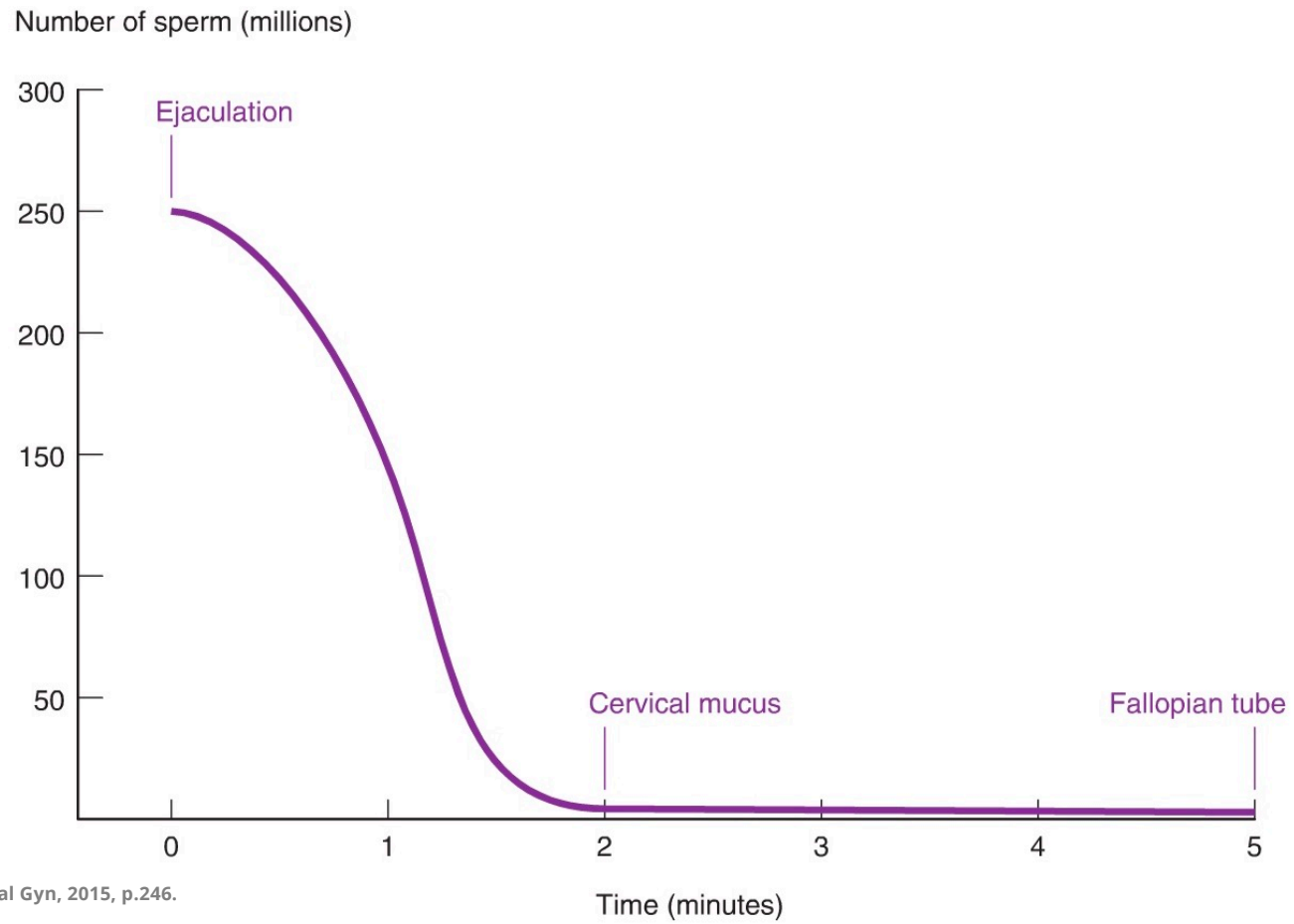
Day 3 - 4



EC Targets

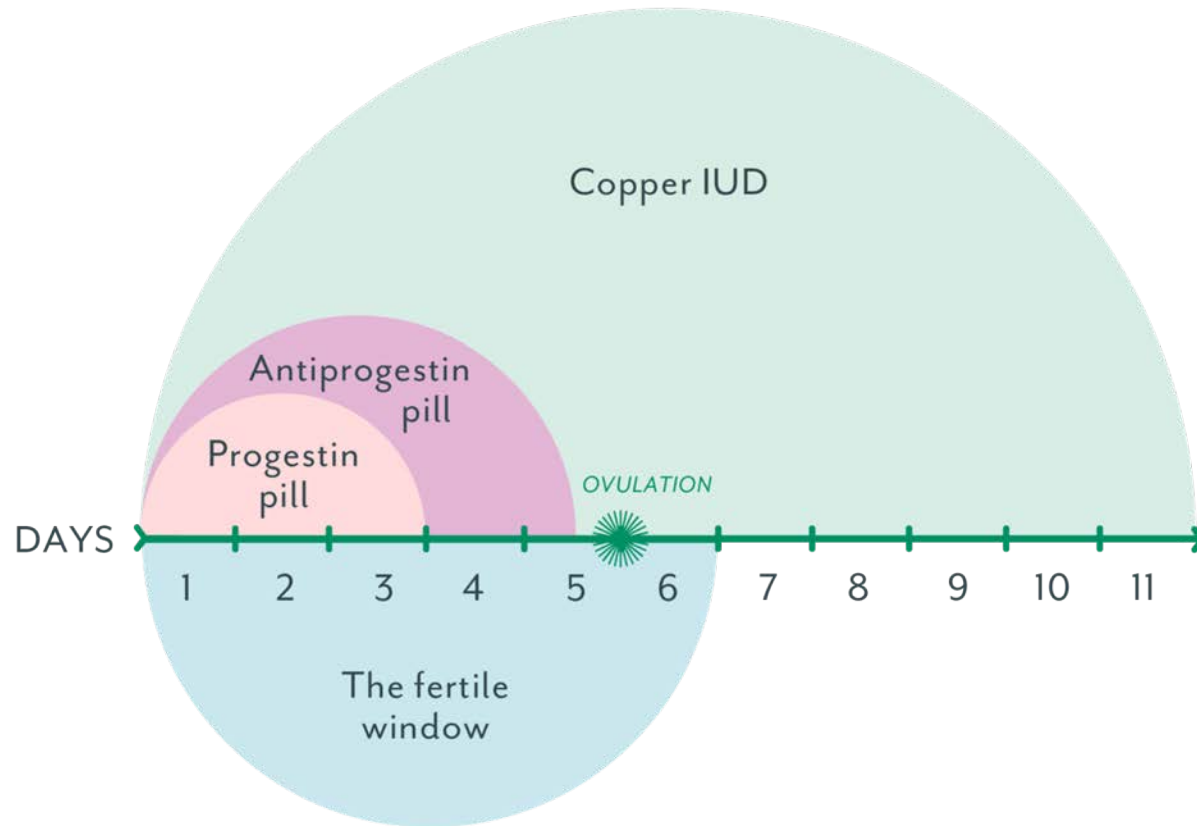
- Follicular maturation
- Follicular rupture
- Ovum transport
- Sperm function
- Fertilization
- Endometrial receptivity

Sperm Attrition



Fritz and Speroff, Clinical Gyn, 2015, p.246.

WHEN IS EMERGENCY CONTRACEPTION MOST LIKELY TO BE EFFECTIVE?





How Does it Work?

- Disrupts ovulation
 - **LNG** blocks LH surge
 - **UPA** blocks ovulation prior to the LH peak
- ? Disrupts fertilization +? But not pregnancy
 - Copper IUD

Brache et al. Contraception 2013;88:611.

Marions et al. Contraception 2004;69:373.

Gemzell-Danielsson et al Contraception 2013;87:300.

Noe et al. Contraception 2011;84:486.



When To Use It

- When giving a new contraception RX
- After unprotected intercourse
- New contraceptive start
- After sexual assault

How Well Does it Work? EC Efficacy

EC Method	Cycle Pregnancy Risk
Copper IUD	0.1%
UPA	1.2 – 1.8%
LNG	1.5 – 2.6%

Cleland, Hum Reprod 2012;27:1994.

Shen, Cochrane Database Syst Rev 2019; 1:CD001324

Glasier Lancet 2010; 375:555



IUD EC Efficacy: A Systematic Review of 35 Years of Experience

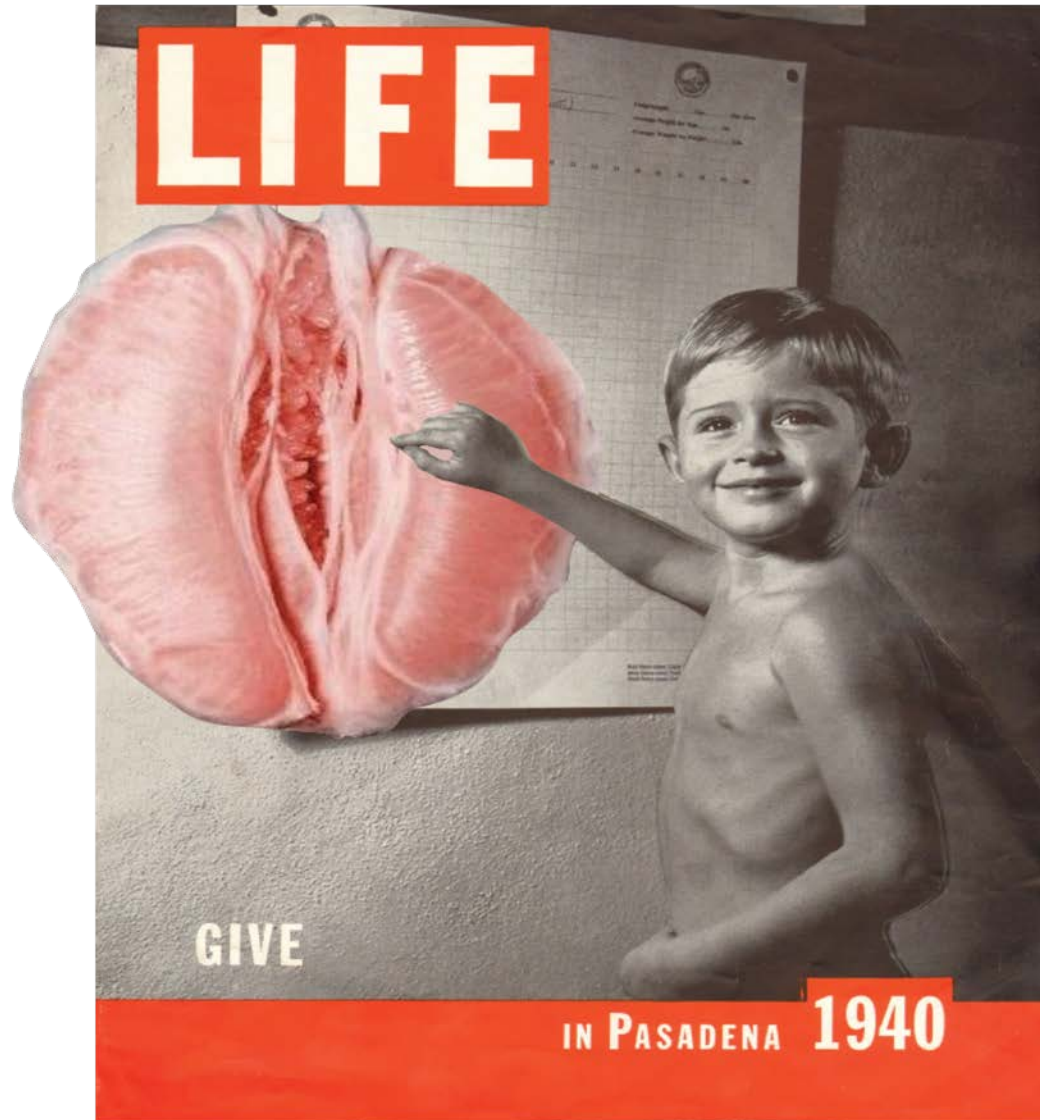
- 42 of 274 studies identified in English or Chinese
- 8 types of IUD
- 7034 women
- Pregnancy rate = 0.09%



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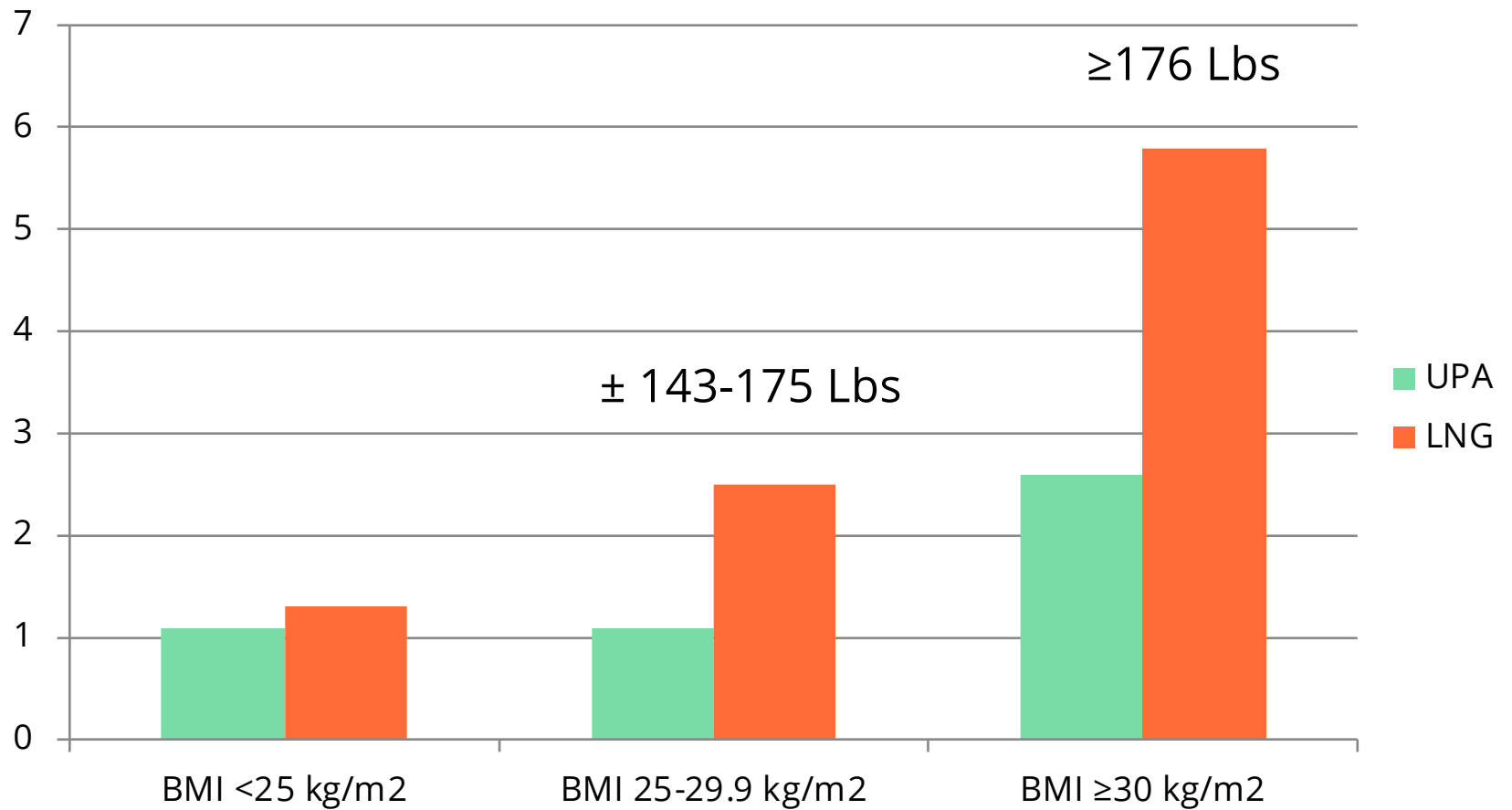


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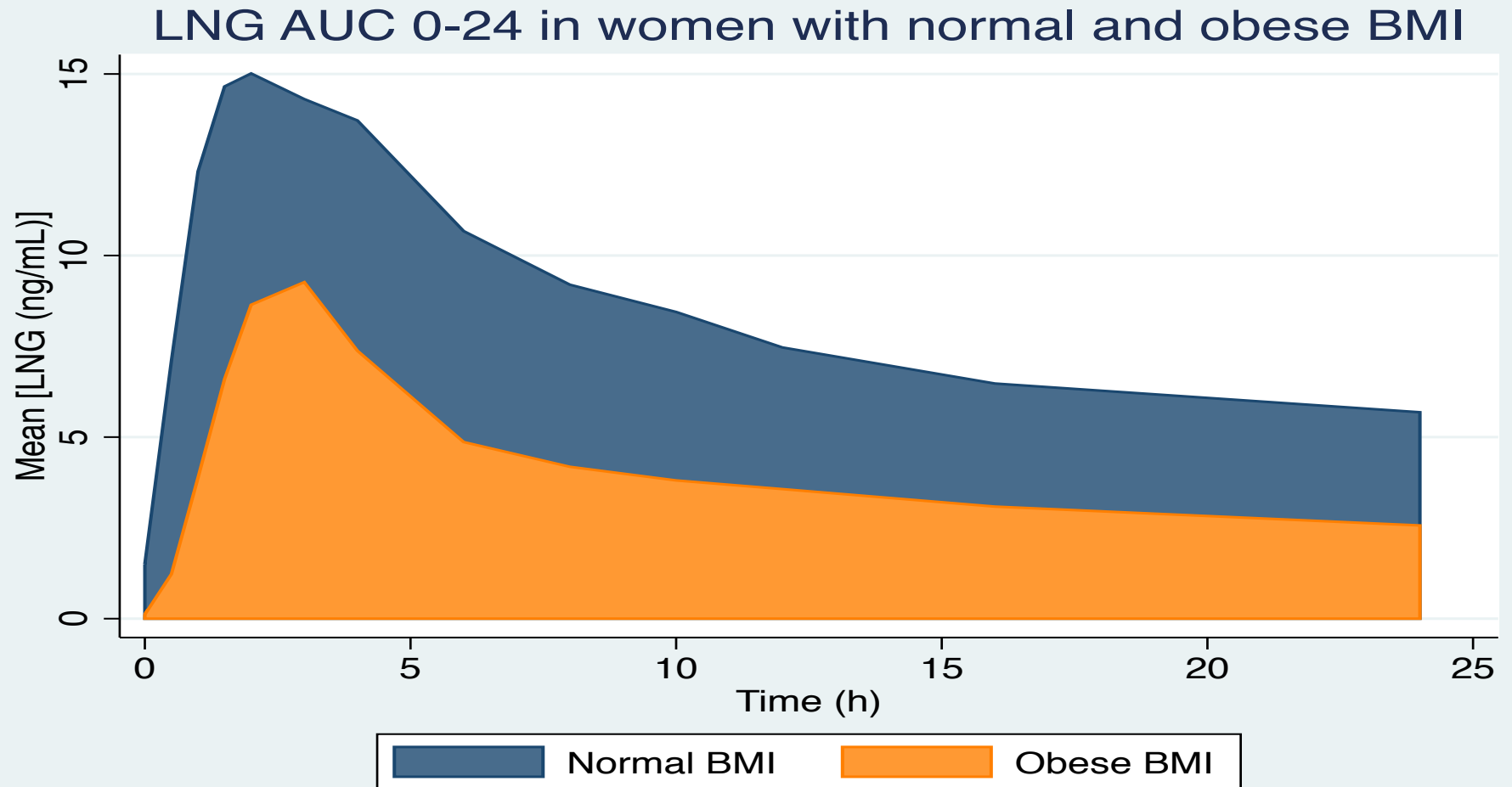




Percent of EC Pregnancies Among Ulipristal Acetate & LNG EC Users by BMI

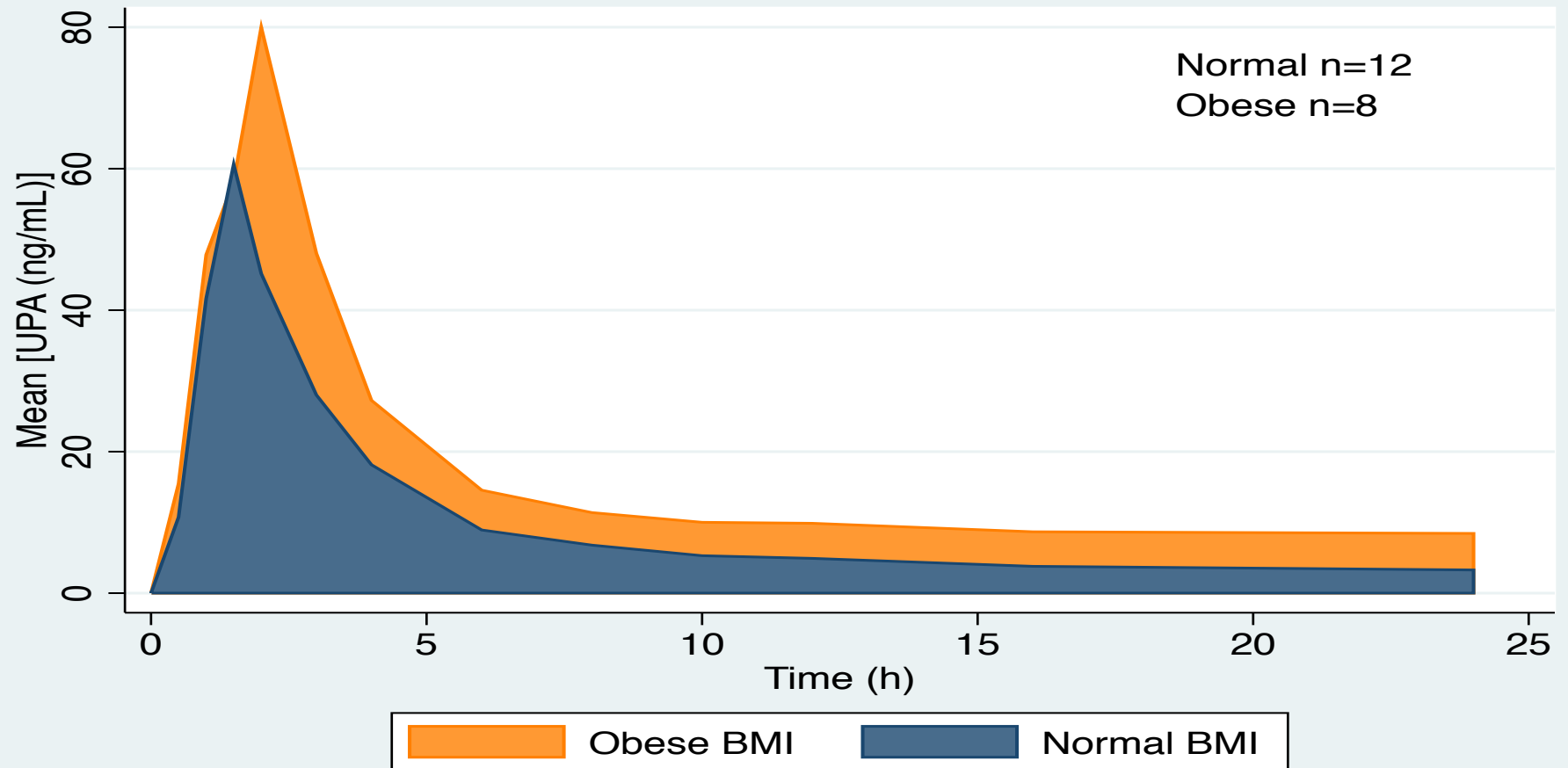


Results – Total LNG AUC₀₋₂₄

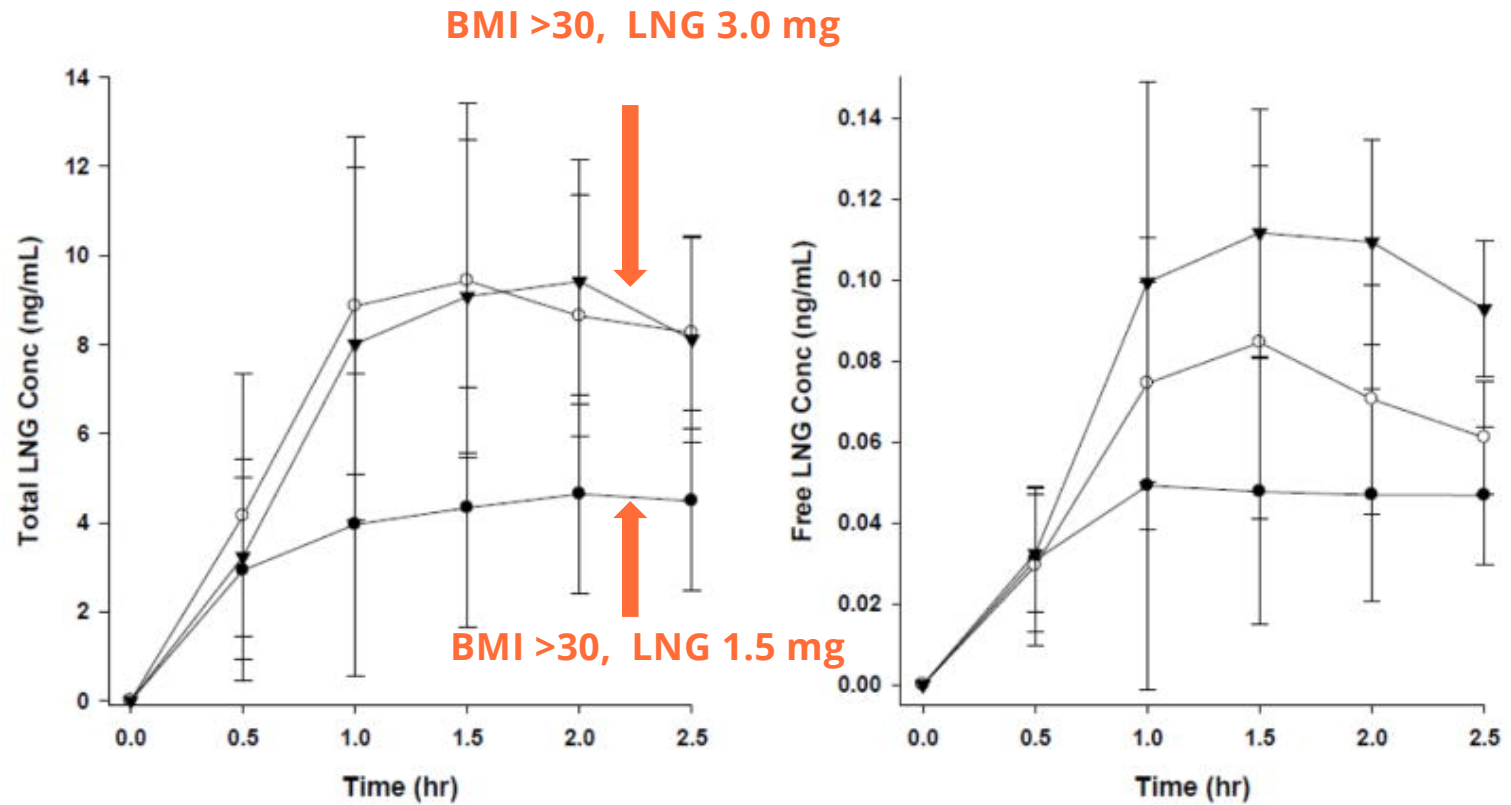


Results – Total UPA AUC₀₋₂₄

UPA AUC 0-24 in women with normal and obese BMI



Doubling Oral LNG for Obese Women





Trial record **11 of 13** for: [ulipristal acetate | emergency contraception | United States](#)

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Study Comparing Emergency Contraception Effectiveness in Women Who Weight ≥ 80 kg

The safety and scientific validity of this study is the responsibility of the study sponsor and investigators. Listing a study does not mean it has been evaluated by the U.S. Federal Government. [Know the risks and potential benefits](#) of clinical studies and talk to your health care provider before participating. Read our [disclaimer](#) for details.

ClinicalTrials.gov Identifier: NCT03537768

[Recruitment Status](#) ⓘ : Recruiting
[First Posted](#) ⓘ : May 25, 2018
[Last Update Posted](#) ⓘ : October 8, 2019
See [Contacts and Locations](#)

Sponsor:

Health Decisions

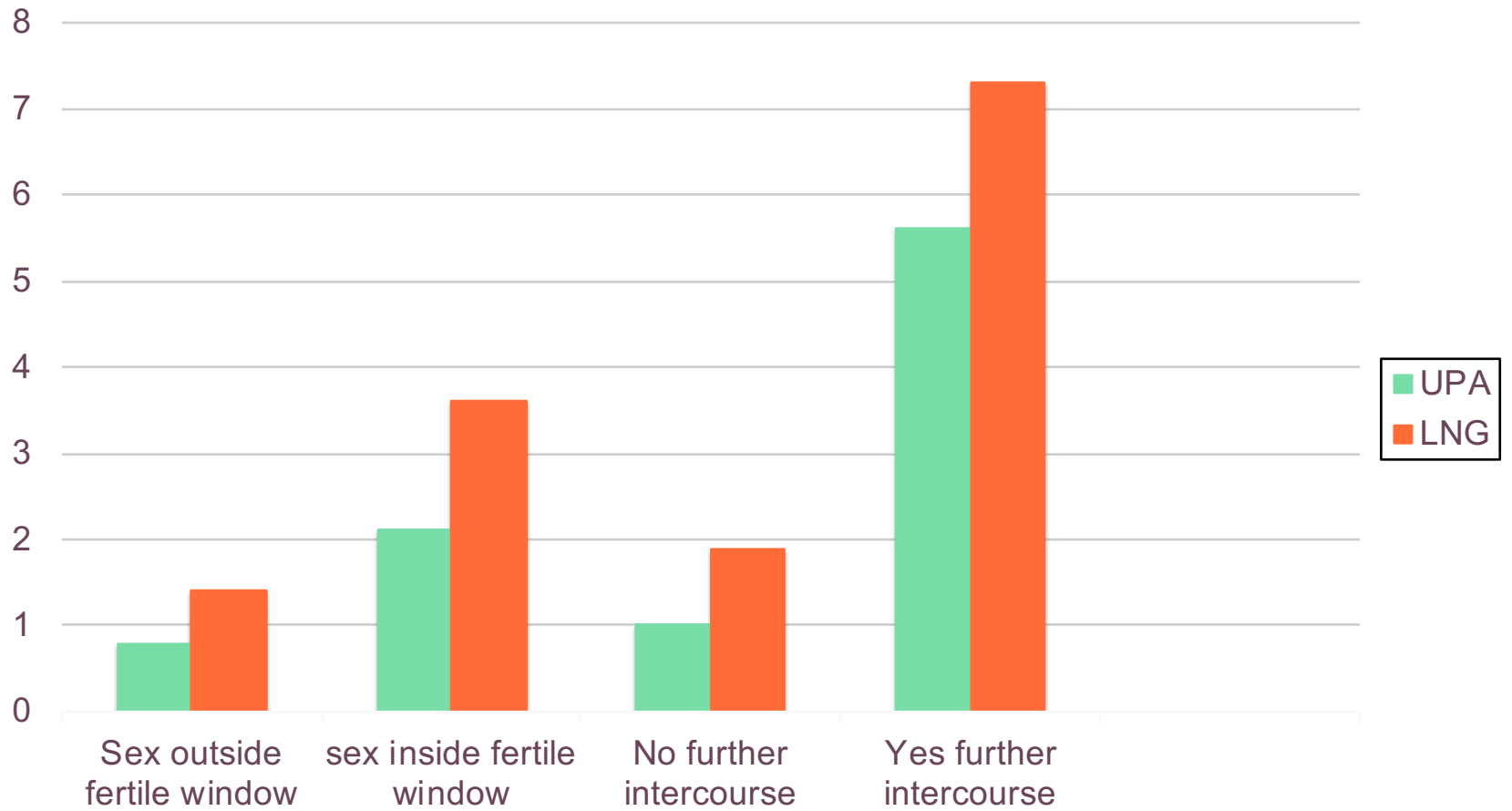
Collaborator:

Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)

Information provided by (Responsible Party):

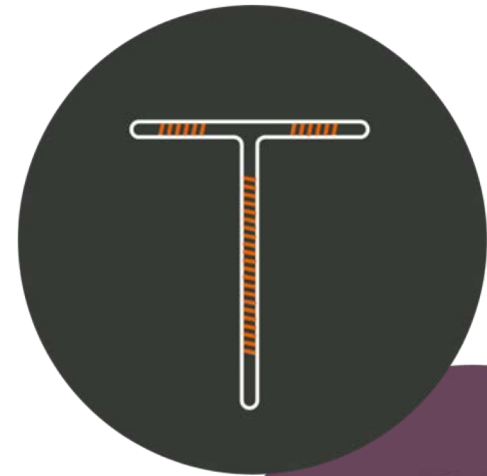
Health Decisions

Percent of Pregnancies Among UPA & LNG EC Users



The Copper (& LNG) IUD for EC Works Exceptionally for All Women

- Elevated BMI = 0-**0.1%**
- Intercourse in the fertile window = 0-0.1%
- Further intercourse in the cycle = 0-0.1%





Can you use Levonorgestrel EC as Regular Contraception?

- 22 trials, 12,400 participants
- 5.0 pregs/100 woman-yrs (95% CI 4.4 to 5.6)
- Safe to use oral LNG EC multiple times/cycle

**Repeated use of pre- and postcoital hormonal
contraception for prevention of pregnancy**
Cochrane Systematic Review 2014



EC and Ongoing Contraception ASEC



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THE AMERICAN SOCIETY FOR EMERGENCY CONTRACEPTION

The American Society for Emergency Contraception (ASEC) works to improve access to and knowledge about EC throughout the United States. Read more about our mission statement [here](#).

****ASEC is working to provide EC to college students who need help during the COVID-19 crisis. Click [here](#) to donate and support**



http://americansocietyforec.org/uploads/3/4/5/6/34568220/asec_fact_sheet-hormonal_contraception_after_ec.pdf



The Interaction Between UPA & Progestogens

1. Does UPA alter the onset of ovarian quiescence when COCs are started after EC -**NO**
2. Do Progestogens when started with UPA affect preventing/delaying ovulation - **YES**
3. Should you delay restarting COCs if you miss pills and take UPA- **NO**

RCT of UPA vs Placebo at Mid-Cycle Then all started CHC (30mcg EE/ 150mcg LNG) N=76

47 (62%) ovarian quiescence

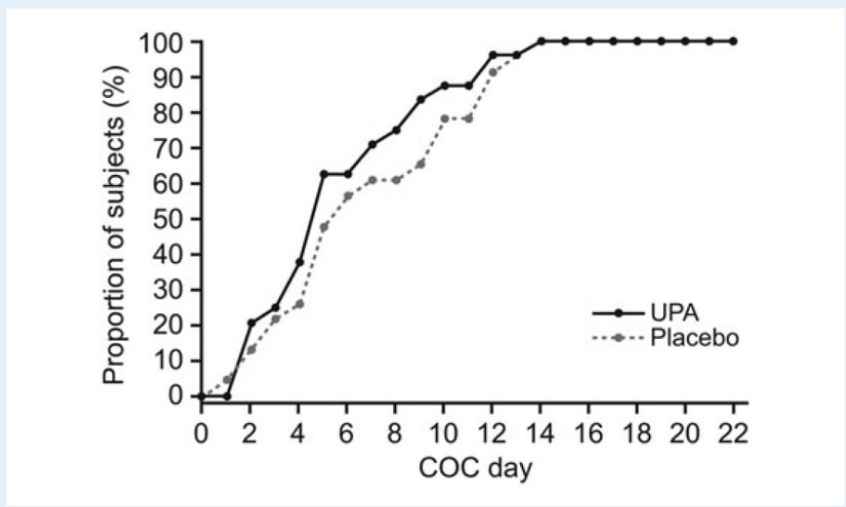


Figure 2 Cumulative proportions of subjects having reached quiescence in the 21 days of COC.

25 (33%) ovulated

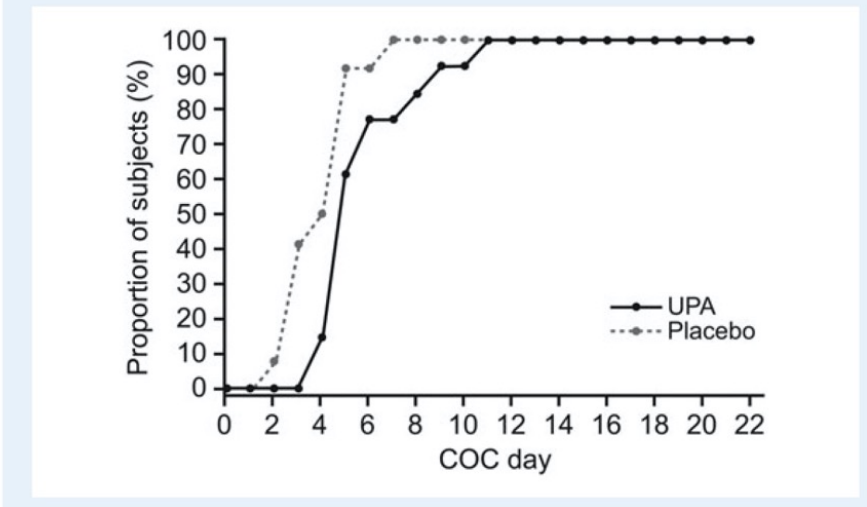


Figure 3 Cumulative proportions of subjects having ovulated in the 21 days of COC.

OR 0.97 (95% CI: 0.39–2.46)

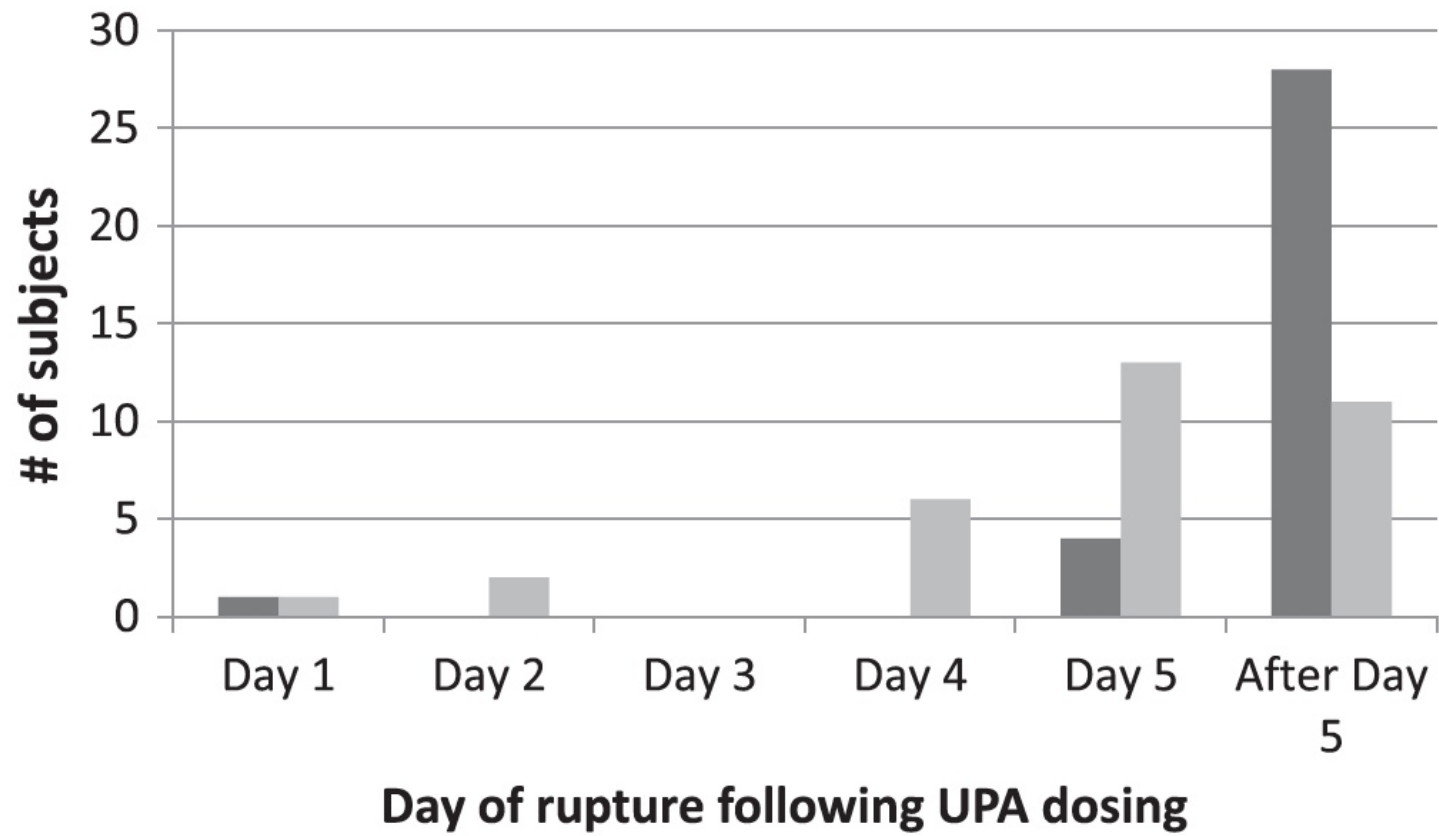


Do Progestogens Mess with UPA? Implications for Ongoing Contraception After UPA

- 3 arm RCT of 71 people
- Primary outcome: ovulation < 6 days
 - UPA & desogestrel – 13/29 (45%)
 - UPA & placebo – 1/29 (3%)
 - Placebo & desogestrel 11/29 (38%)



UPA & CHCs





Missing 3 Pills and Taking UPA

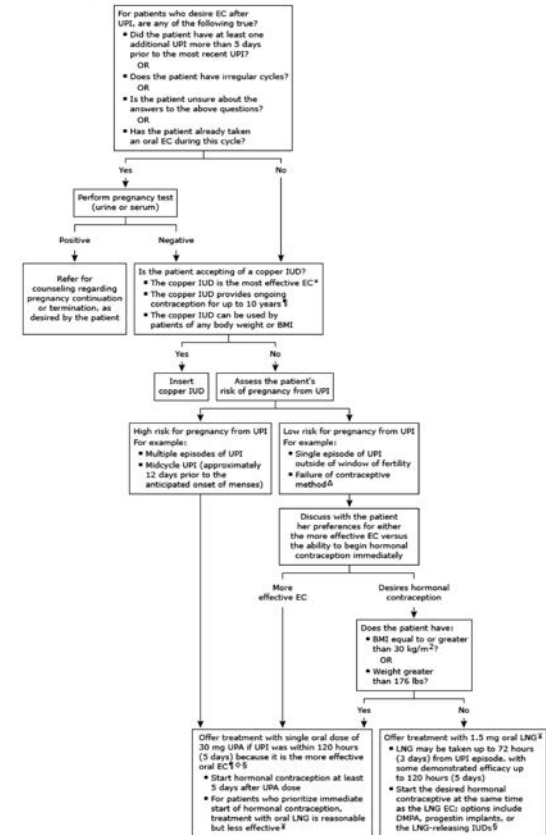
- CHC users in cycle 2 missed pill on D5,6,&7
- Day 8 took UPA 30 mg
- RCT of **immediate vs. delayed start (5 days)** of CHCs
- Hoogland score to assess ovulation
- No one ovulated within 5 days of UPA
- In **immediate restart 0/26 ovulated** in the cycle
- In **delayed start 4/23 (17%) ovulated** in the cycle
- **p=0.04**



Ongoing Contraception

EC Method	Ongoing Contraception
Copper IUD	Easy, ready to go
Oral LNG	Start, Abstain or backup x 1 week
LNG	Hold hormones for 5 days

Approach to selection of emergency contraception after unprotected intercourse



UPI includes instances in which no contraception was used, a method was used imperfectly, or intercourse was forced without use of contraception.

UPI: unprotected intercourse; EC: emergency contraception; IUD: intrauterine device; BMI: body mass index; LNG: levonorgestrel; DMPA: depot medroxyprogesterone acetate; UPA: ulipristal acetate.

* Pregnancy rates are 0.1% for the copper IUD, up to 1.8% for UPA, and up to 2.6% for LNG.

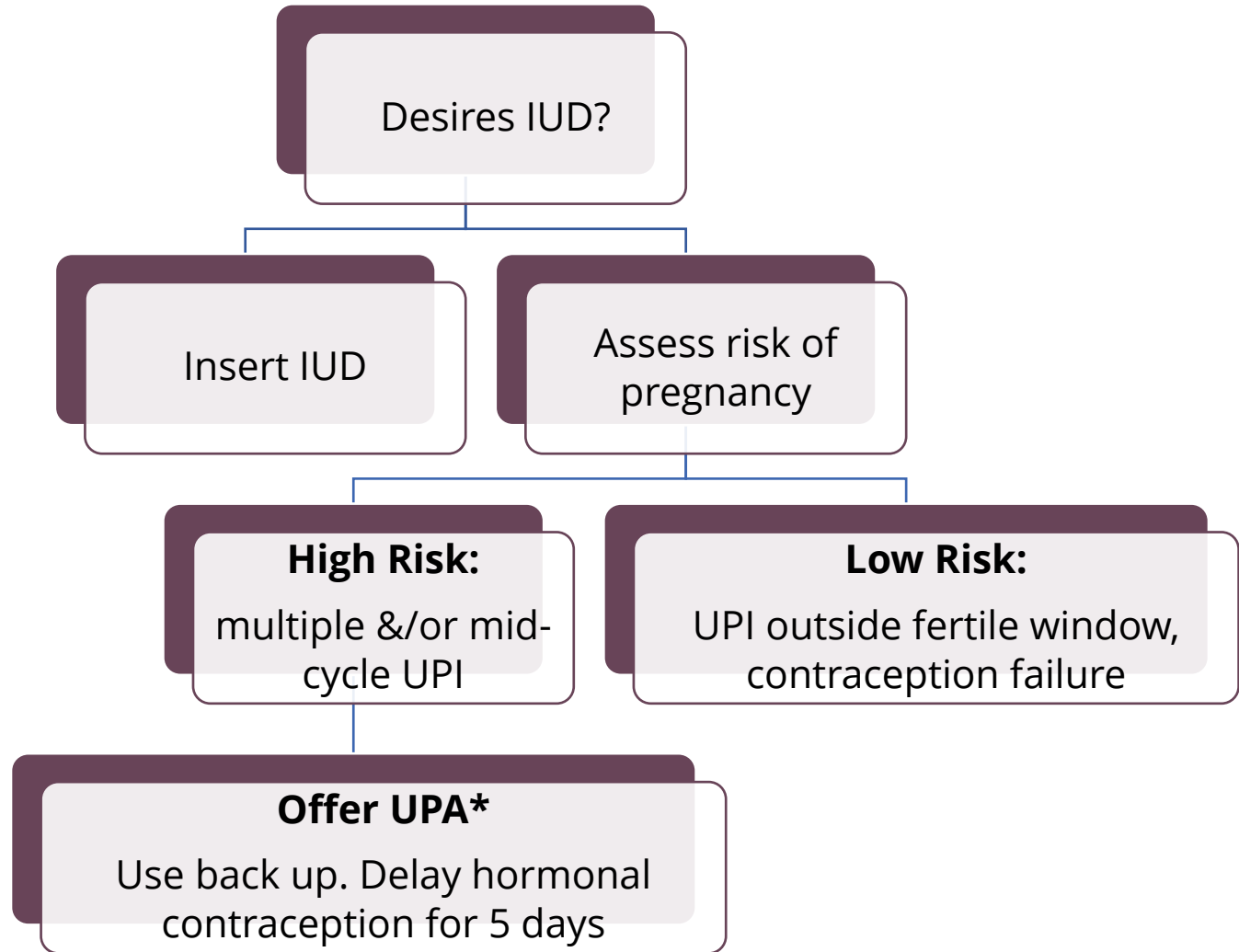
¶ Information on IUD device types, candidates, and device selection can be found in related UpToDate content.
§ Contraceptive failure can include missing more than one dose of oral contraceptive pills; failure to resume the DMPA injection, patch, or vaginal ring at the correct time; having a diaphragm, cervical cap, or contraceptive sponge slip; or having a condom break.

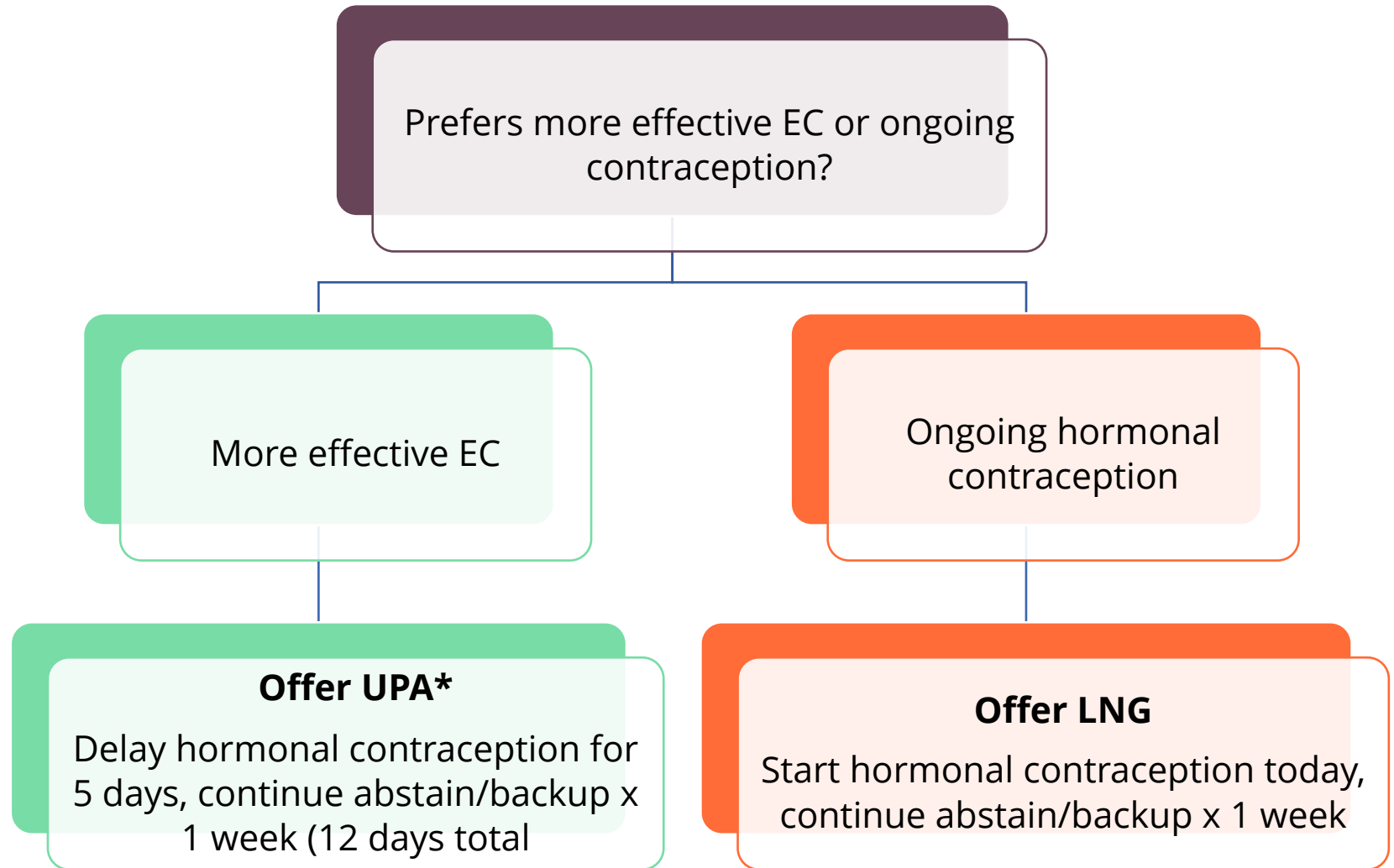
⊙ Treatment with UPA requires a prescription.

§ After receiving EC, the patient can expect her period within three weeks. Patients who do not have a period after three weeks should perform a pregnancy test.

¶ For United States patients, oral LNG is available over-the-counter for individuals ages 17 and older. Individuals younger than age 17 may require a prescription, which varies by state.

Courtesy of David Turok, MD.







Stuff We've Learned About IUDs and EC

- Fewer pregnancies with CuT380 than oral LNG x 1 year
- CuT380 IUD anytime with a negative pregnancy test
- AND what about the LNG IUD for EC?????????





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

*Except for pill, patch, ring,
injectable, and implant users.



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Pregnancy Checklist*

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 [$\geq 85\%$] of feeds are breastfeeds),* amenorrheic, and < 6 months postpartum

* **Source:** Lobbok M, Perez A, Valdez V, et al. The Lactational Amenorrhea Method (LAM): a postpartum introductory family planning method with policy and program implications. *Adv Contracept* 1994;10:93–109.



Are There Limits on When a Copper IUD Can be Placed for EC?

The copper IUD can be placed for EC:

IF... within 5 days of UPI

BUT...if the day of ovulation can be estimated

THEN...it can be inserted after 5 days after UPI

IF...it's not more than 5 days after ovulation



COULD THIS BE SIMPLER?





1,963 Copper T380 IUD EC Users

- **No pregnancies**
- 1840 participants (93.7%) had usual cycle lengths of 25-35 days
- 850 (46.2%) UPI in the fertile window
- 84 (4.6%) had IUD insertion > 5 days after ovulation
- 52 (2.7%) had insertion > 5 days after UPI



Risk of Pregnancy with **Copper T380 IUD** Placement **6-14 days** after UPI

134 People

0 Pregnancies

(97.5% CI 0– 2.7%)

+52 (WU) + 64 (Goldstuck)

= 250 (0%, 97.5% CI 0 – 1.5%)

Thompson, Contraception 2019; 100(3):219-221

Hum Reprod 2013;28:2672–6. Goldstuck ND. Delayed postcoital IUD insertion. Contracept Deliv Syst 1983;4:293–6.





Risk of Pregnancy with **LNG 52 MG IUD** Placement **6-14 days after UPI**

187 People

1 Pregnancy

(95% CI 0.01 – 2.9%)



Next Up: **RAPID** EC

- **RCT Assessing Pregnancy with IuDs (RAPID)** for EC
- Women interested in an IUD for EC
- Randomly assigned to copper or LNG IUD
- Primary outcome: non-inferiority pregnancy at 4 weeks
- Secondary outcome: IUD continuation continuation
- Recruitment goal = 706





Making EC More Available Today

- Offer EC every time you address contraception
- Give samples of UPA or LNG EC (FPE covers!)
- Don't withhold copper or LNG IUD if recent UPI
- Remind people oral LNG EC is OTC
- Provide UPA Rx ahead of time



Conclusion

1. Copper IUD is most effective
2. Ulipristal acetate (Ella) most effective oral
3. Access & weight matter (for oral methods)
4. Evidence - EC & quick start intersection

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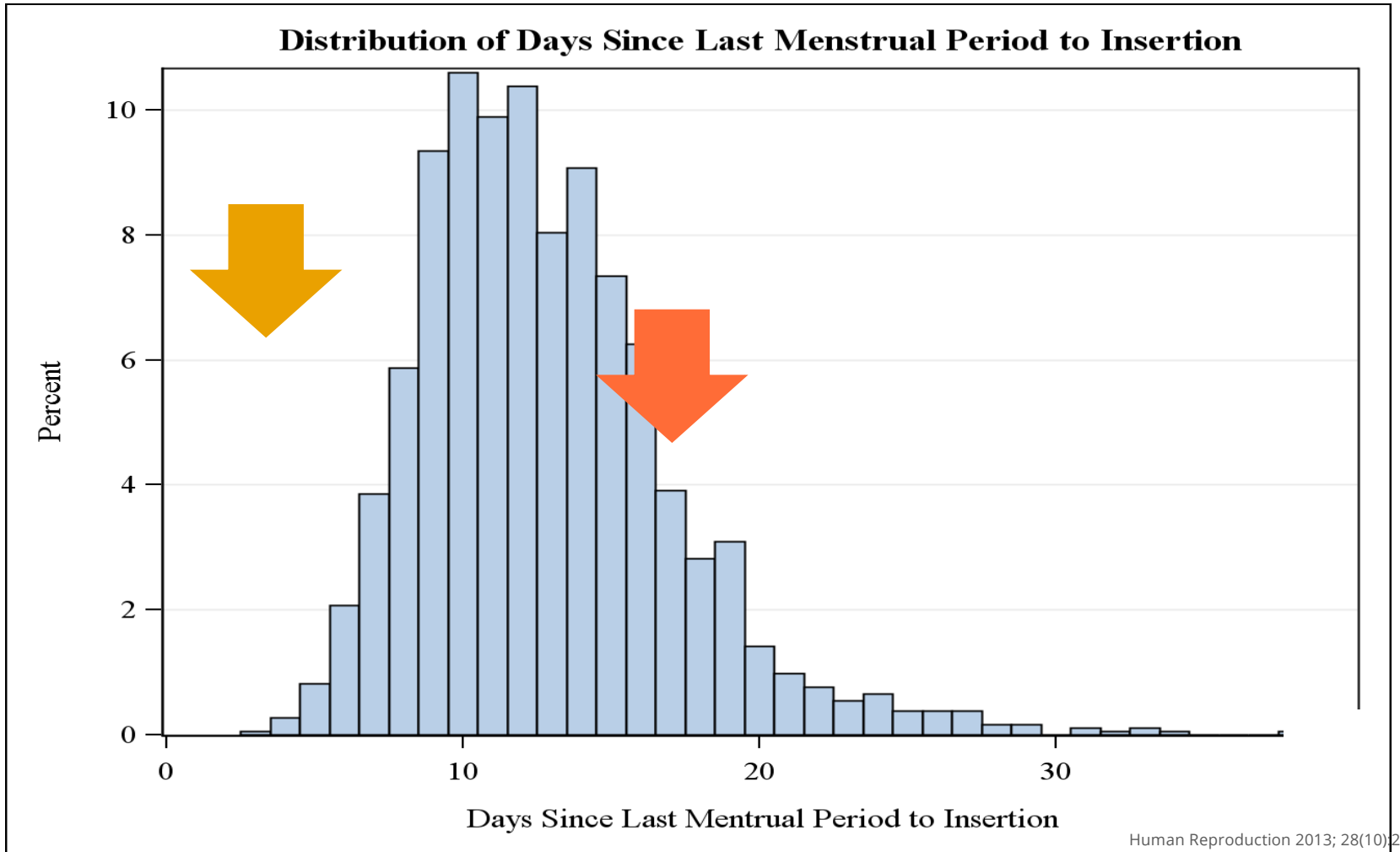




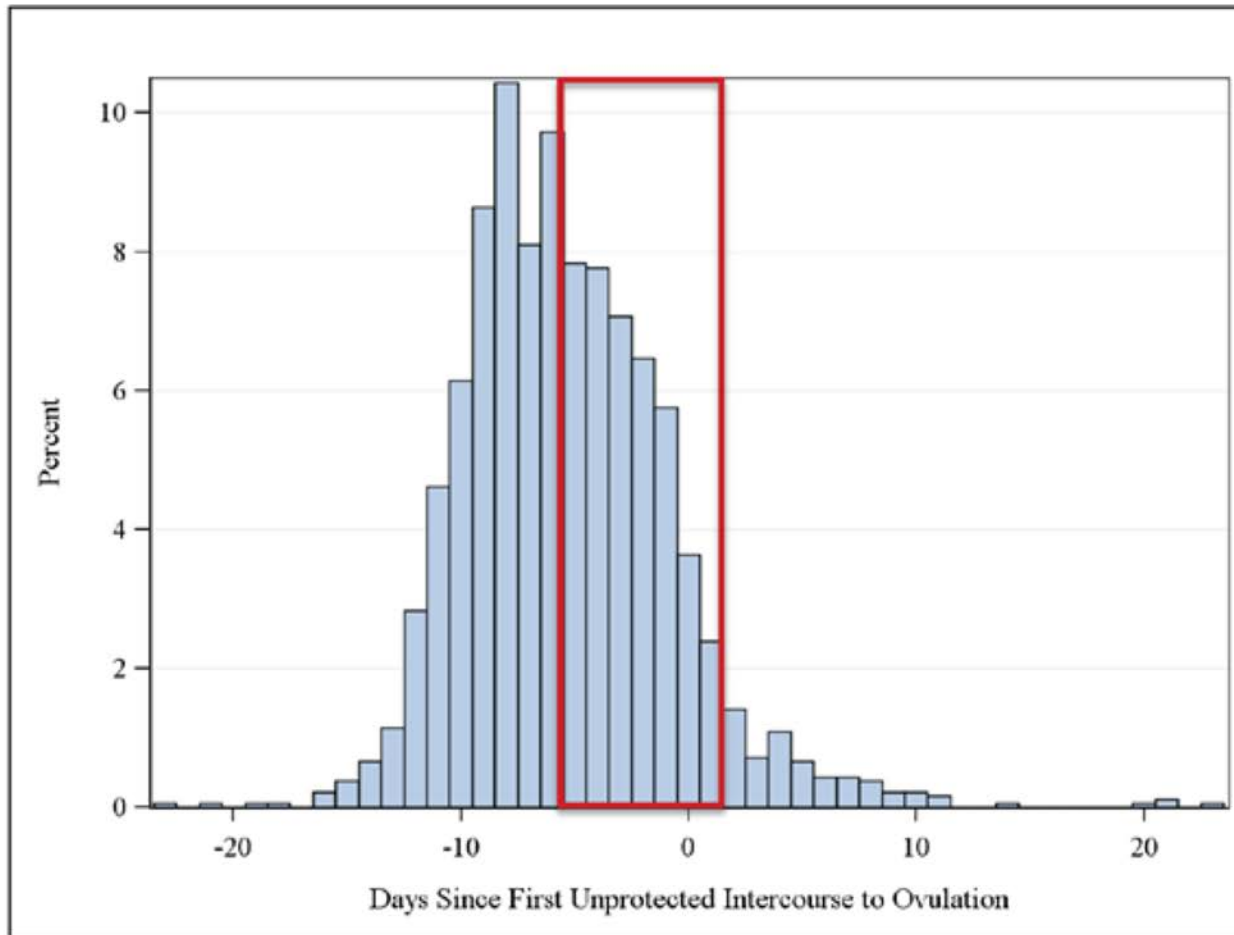
Methods: Original Inclusion Criteria

- Secondary analysis of a prospective trial of copper T380 IUD EC users in China (n=1,963)
- Age 18-44
- Regular cycles between 24-42 days
- Known last menstrual period (LMP)
- Within 5 days (120 hours) of UPI
- All participants had a negative urine pregnancy test (hcg 25 IU/L)

IUD EC Insertion by Days Since LMP




Day of UPI Relative to Ovulation



Turok et al. Human Reproduction 2103

How Do I Share With My Patients?

OOPS! EMERGENCY CONTRACEPTION: BIRTH CONTROL THAT WORKS *AFTER* SEX

Types of emergency contraception	How well does it work?	How soon do I have to use it?	How do I use it?	Where can I get it?
 ParaGard IUD	Almost 100% effective 	Within 5 days 	It's placed in the uterus by a doctor or nurse  Keeps working as super effective birth control.	From a doctor, nurse, or at a clinic  Say it's for EC so you are scheduled quickly.
 Ella	  Less effective if over 195 pounds. Try an IUD.	ASAP  Works better the sooner you take it, up to 5 days.	Take the pill as soon as you get it  Remember to use it every time you have unprotected sex.	From a doctor, nurse, or at a clinic  Get an extra pack for future emergencies.
 Plan B One-Step or a generic	  Less effective if over 165 pounds. Try ella or an IUD.	ASAP  Works better the sooner you take it, up to 3 days.	Take the pill as soon as you get it  Remember to use it every time you have unprotected sex.	At a pharmacy, no prescription needed  Get an extra pack for future emergencies.