

CONTRACEPTION: THINKING OUTSIDE THE BOX...OF PILLS

TANYA M EVERS, MD, MED, FACOG

FACULTY-OBSTETRICS AND GYNECOLOGY

FAMILY MEDICINE RESIDENCY PROGRAM

TALLAHASSEE MEMORIAL HEALTHCARE

TALLAHASSEE, FL

DISCLOSURE STATEMENT

- I have no disclosures or conflicts of interest to report.

IN GENERAL TERMS

- Hormonal
- LARCs (Long Acting Reversible Contraception)
- Barrier
- Knowledge of fertility/menstrual cycle
- Emergency Contraception
- Permanent Sterilization

TYPES

- Hormonal
 - Combined Estrogen/Progestin
 - OCPs (monophasic and triphasic)
 - Patch
 - Vaginal ring (Nuva-ring)
 - Cyclofem or Mesigyna (monthly injectible)
 - Progestin only
 - “Mini-Pill” (Norethindrone)
 - Depo Provera (Medroxyprogesterone)



TYPES

- LARCs
 - IUDs
 - Mirena, Skyla (Progestin, Levonorgestrel)
 - Paragard (Copper T380A)
 - Implant
 - Nexplanon (Progestin, Etonorgestrel)
 - (old version: Implanon)



TYPES

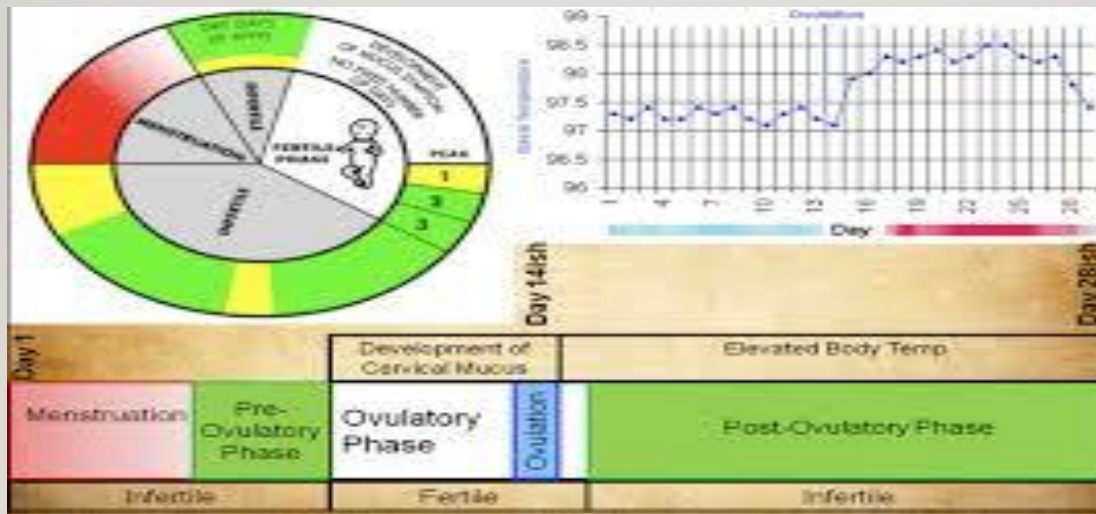


- Barrier methods
 - Condoms
 - Diaphragm
 - Sponge
 - Cervical Cap



TYPES

- Fertility Awareness
 - Ex “Natural Family Planning”



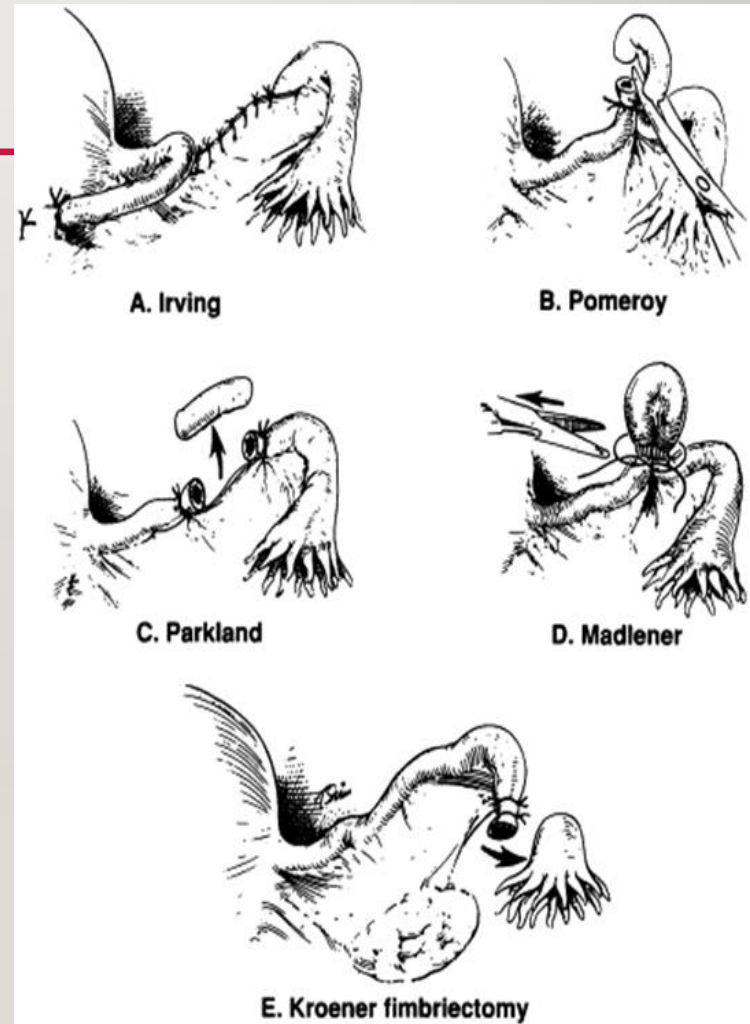
TYPES

- Emergency Contraception
 - Plan B
 - Ella
 - Paragard IUD



TYPES

- Permanent Sterilization
 - LTL
 - Essure
 - Vasectomy



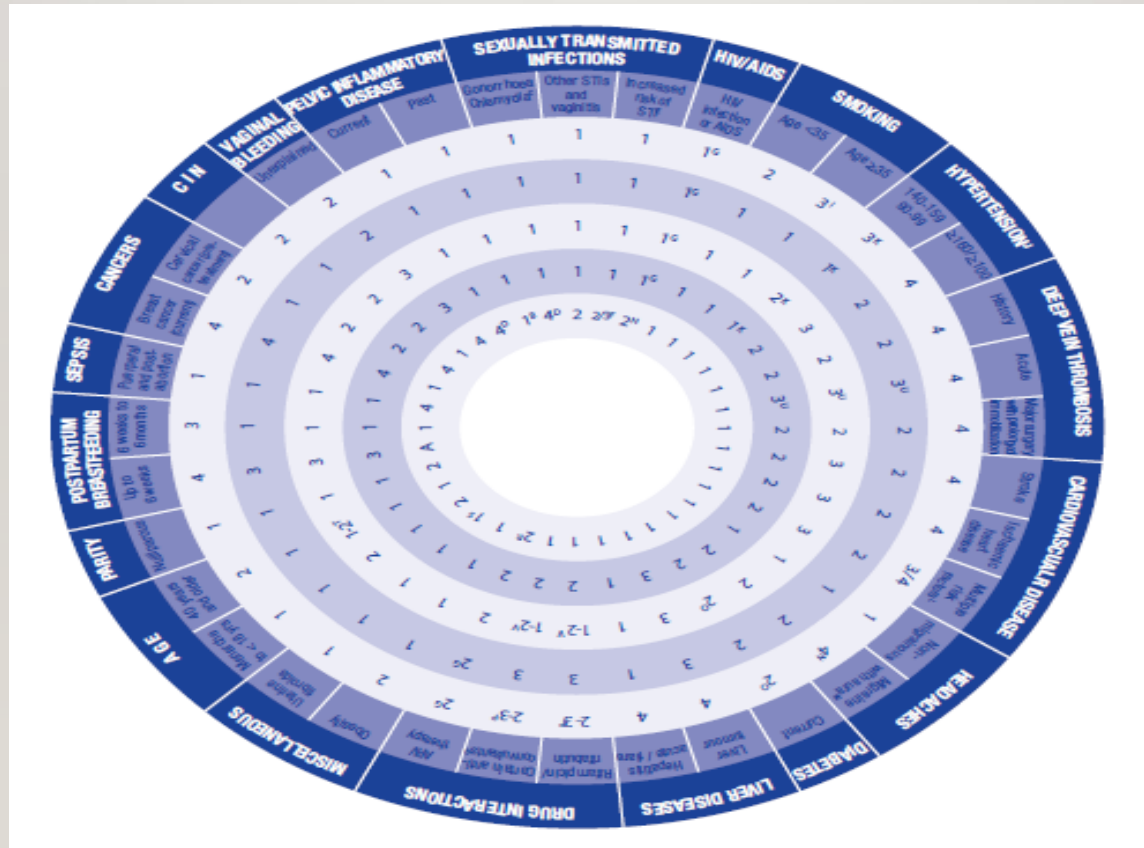
LET'S COMPARE

TABLE 1. Percentage of women experiencing an unintended pregnancy during the first year of typical use and the first year of perfect use of contraception and the percentage continuing use at the end of the first year — United States

Method	Women experiencing an unintended pregnancy within the first year of use		Women continuing use at 1 year [§]
	Typical use*	Perfect use [†]	
No method [¶]	85%	85%	
Spermicides ^{**}	29%	18%	42%
Withdrawal	27%	4%	43%
Fertility awareness–based methods	25%		51%
Standard Days method ^{††}		5%	
TwoDay method ^{†††}		4%	
Ovulation method ^{††}		3%	
Sponge			
Parous women	32%	20%	46%
Nulliparous women	16%	9%	57%
Diaphragm ^{§§}	16%	6%	57%
Condom ^{¶¶}			
Female (Reality [®])	21%	5%	49%
Male	15%	2%	53%
Combined pill and progestin-only pill	8%	0.3%	68%
Evra patch [®]	8%	0.3%	68%
NuvaRing [®]	8%	0.3%	68%
Depo-Provera [®]	3%	0.3%	56%
Intrauterine device			
ParaGard [®] (copper T)	0.8%	0.6%	78%
Mirena [®] (LNG-IUS)	0.2%	0.2%	80%
Implanon [®]	0.05%	0.05%	84%
Female sterilization	0.5%	0.5%	100%
Male sterilization	0.15%	0.10%	100%
Emergency contraceptive pills ^{***}	Not applicable	Not applicable	Not applicable
Lactational amenorrhea methods ^{†††}	Not applicable	Not applicable	Not applicable

Adapted from Trussell J. Contraceptive efficacy. In Hatcher RA, Trussell J, Nelson AL, Cates W, Stewart FH, Kowal D. Contraceptive technology. 19th revised ed. New York, NY: Ardent Media; 2007.

WHO: MEDICAL ELIGIBILITY



USING THE WHO MEDICAL ELIGIBILITY CRITERIA FOR CONTRACEPTIVE USE

Condition	COC/P/ CVR	CIC	POP	DMPA NET-EN	LNG/ ETG implants	Cu-IUD	LNG-IUD
Breastfeeding							
a) < 6 weeks postpartum	4	4	2 ^a	3 ^a	2 ^a		
b) ≥ 6 weeks to < 6 months (primarily breastfeeding)	3	3	1	1	1		
c) ≥ 6 months postpartum	2	2	1	1	1		

CDC: MEDICAL ELIGIBILITY

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

Condition	Sub-Condition	COC		POP		Injection		Implant		LARC-539		Co-539	
		1	2	1	2	1	2	1	2	1	2	1	2
Age		Mean for the COC-1 and COC-2		Mean for the POP-1 and POP-2		Mean for the Injection-1 and Injection-2		Mean for the Implant-1 and Implant-2		Mean for the LARC-539-1 and LARC-539-2		Mean for the Co-539-1 and Co-539-2	
		18-24	25-29	18-24	25-29	18-24	25-29	18-24	25-29	18-24	25-29	18-24	25-29
Acute/chronic abnormality	a) Distorted uterine cavity							4	4				
	b) Other abnormalities							3	3				
Amenorrhea	a) Postmenopausal	1	1	1	1	1	1	1	1	2	2		
	b) Underweight/obese*	2	1	1	1	1	1	1	1	2	2		
	c) Iron-deficiency anemia	1	1	1	1	1	1	1	1	2	2		
Biopsy inconclusive	(including cyst)	1	1	1	1	1	1	1	1	1	1		
Bleeding disorder	a) Uncontrolled* ¹	2*	2*	2*	2*	2*	2*	2	2	1	1		
	b) Bleeding disorder	1	1	1	1	1	1	1	1	1	1		
	c) Family history of a serious bleeding disorder	1	1	1	1	1	1	1	1	1	1		
	d) Current and/or recent evidence of current (within last 3 years)	3	3	3	3	3	3	3	3	3	1		
Breastfeeding (see also Postpartum)	a) 12 months postpartum	2*	2*	2*	2*	2*	2*						
	b) 1 month postpartum	2*	1*	1*	1*	1*	1*						
Cervical cancer	Resecting treatment	2	1	2	2	2	2	4	3	4	2		
Cervical ectropion		1	1	1	1	1	1	1	1	1	1		
Cervical intraepithelial neoplasia		2	1	2	2	2	2	2	2	2	1		
Colitis	a) Mild (unoperated)	1	1	1	1	1	1	1	1	1	1		
	b) Severe/operated	4	3	3	3	3	3	3	3	3	1		
Congenital abnormality (CVA) Pulmonary embolism (PE)	a) History of CVA/PE and/or anticoagulant therapy												
	b) Higher risk for recurrent CVA/PE	4	3	3	3	3	3	3	3	3	1		
	c) Lower risk for recurrent CVA/PE	3	2	2	2	2	2	2	2	2	1		
	d) Risky CVA/PE	4	3	3	3	3	3	3	3	3	2		
	e) CVA/PE and established on anticoagulant (see also a) and b) events												
	f) Higher risk for recurrent CVA/PE	4*	3	3	3	3	3	3	3	3	2		
	g) Lower risk for recurrent CVA/PE	3*	2	2	2	2	2	2	2	2	1		
	h) Family history (see degree-related)	2	1	1	1	1	1	1	1	1	1		
	i) Menopausal												
	j) Birth postpartum immobilization	4	3	3	3	3	3	3	3	3	1		
	k) Unilateral lower-limb immobilization	2	1	1	1	1	1	1	1	1	1		
	l) Minor surgery without immobilization	1	1	1	1	1	1	1	1	1	1		
Depressive disorder		1*	1*	1*	1*	1*	1*	1*	1*	1*	1*		
Duchenne's myofasciitis (DM)	a) History of operational DM only	1	1	1	1	1	1	1	1	1	1		
	b) Non-operational DM												
	c) Non-tumor dependent	2	2	2	2	2	2	2	2	2	1		
	d) Tumor dependent	2	2	2	2	2	2	2	2	2	1		
	e) High-probability/intermediate-probability	3/4*	3	3	3	3	3	3	3	3	1		
	f) Low-probability/very low-probability or diagnosis of CVA/PE/embolism	3/4*	3	3	3	3	3	3	3	3	1		

Condition	Sub-Condition	COC		POP		Injection		Implant		LARC-539		Co-539	
		1	2	1	2	1	2	1	2	1	2	1	2
Endometrial cancer ¹		1	1	1	1	1	1	1	1	1	1	1	1
Endometrial hyperplasia		1	1	1	1	1	1	1	1	1	1	1	1
Endometriosis		1	1	1	1	1	1	1	1	1	1	1	1
Epilepsy ²	See also Drug Interactions	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*
Cardiovascular disease	a) Hypertension	2	2	2	2	2	2	2	2	2	2	2	2
	b) Coronary artery disease	2	2	2	2	2	2	2	2	2	2	2	2
	c) MI	2	2	2	2	2	2	2	2	2	2	2	2
	d) Atherosclerosis	2	2	2	2	2	2	2	2	2	2	2	2
Genitourinary/renal/bladder disease	a) De novo or pre-existing BPH/BCU levels	1	1	1	1	1	1	1	1	1	1	1	1
	b) Necessarily obstructed BPH/BCU levels or multiple sclerosis ³	2	1	1	1	1	1	1	1	1	1	1	1
Hemophilia	a) Hemophilia A	1/2*	2*	1/2*	2*	1/2*	2*	1/2*	2*	1/2*	2*	1/2*	2*
	b) Hemophilia B	2/2*	2*	1/1	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*
	c) without acute, severe ICH	1/2*	2*	1/1	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*
	d) without acute, severe ICH	1/2*	2*	1/1	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*
	e) with acute, severe ICH	4/4*	4*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*	2/2*
History of hysterectomy	a) Restorative procedures			1	1	1	1	1	1	1	1	1	1
	b) Metastatic procedures	COCs 2		3	1	1	1	1	1	1	1	1	1
	c) Total COC-related	2		1	1	1	1	1	1	1	1	1	1
History of high blood pressure during pregnancy	a) Total COC-related	2		2	2	2	2	2	2	2	2	2	2
History of pelvic surgery		1	1	1	1	1	1	1	1	1	1	1	1
Human immunodeficiency virus (HIV)	At-risk	1	1	1	1	1	1	1	1	1	1	1	1
	Not infected (see also Drug Interactions)	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*
	At-risk (see also Drug Interactions)	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*	1*
	Clinically well on therapy	When involved, see Drug Interactions											
Hypertension		2/2*	2*	2*	2*	2*	2*	2*	2*	2*	2*	2*	2*
Hypothyroidism	a) Adequately controlled/operational	2*		2*		2*		2*		2*		2*	
	b) Uncontrolled/poorly controlled (see also Drug Interactions)												
	c) Synthetic LHC/COC use (see also Drug Interactions)	3	1	2	1	2	1	2	1	2	1	2	1
	d) Synthetic LHC or diaphragm + IUD	4	3	3	3	3	3	3	3	3	3	3	3
	e) Menstrual disease	4	3	3	3	3	3	3	3	3	3	3	3
Inflammatory bowel disease	a) Crohn's colitis, Crohn's disease	2/3*	3	2	2	2	2	2	2	2	2	2	2

Abbreviations: Contraception of method; COC combined hormonal contraceptive pill; patch, and single COC combined oral contraceptive; CO-539 copper-containing intrauterine device; IUD; LARC-539 levonorgestrel-releasing intrauterine device; IUD; and applicable POP (progestin-only pill) PPA, patch only.

Legend:

- 1: No restriction (medical use allowed)
- 2: Contraceptive system safe usually outweighs the advantages
- 3: Advantages generally outweigh the disadvantages
- 4: Contraceptive method is not recommended for use



ADOLESCENTS AND CONTRACEPTION

- LARCs most effective, reversible option
- Okay for Adolescents and Nulliparous
- Can be placed essentially any time

(must r/o pregnancy)

- Menstrual cycle
 - Back-up (depends)
- Postpartum
 - Increased expulsion rates
 - Infection (3 mths)

EX. GYNECOLOGIST'S VALENTINE'S CARD



LARCS-IUDS

- All work pre-implantation
- Copper (“proposed mechanisms”)
 - Inhibit sperm
 - Change in ovum movement and viability (Pre and post-fertilization)
- Progestin
 - Similar to Copper +
 - Changes to Endometrium and Cervical mucus
 - >50% continue to ovulate

IMPLANT VIDEOS

- Mirena interactive video
 - <http://www.mirena-us.com/about-mirena/see-mirena-up-close.php>
- Mirena animation
 - <https://www.youtube.com/watch?v=hlvV8tKgw6E>
- Paragard animation
 - <https://www.youtube.com/watch?v=FuPFbgSm0QQ>
- Implanon insertion (similar to Nexplanon)
 - https://www.youtube.com/watch?v=ug7q_IRUMio
- Nexplanon insertion
 - <https://www.youtube.com/watch?v=2ymC4cjgonl>

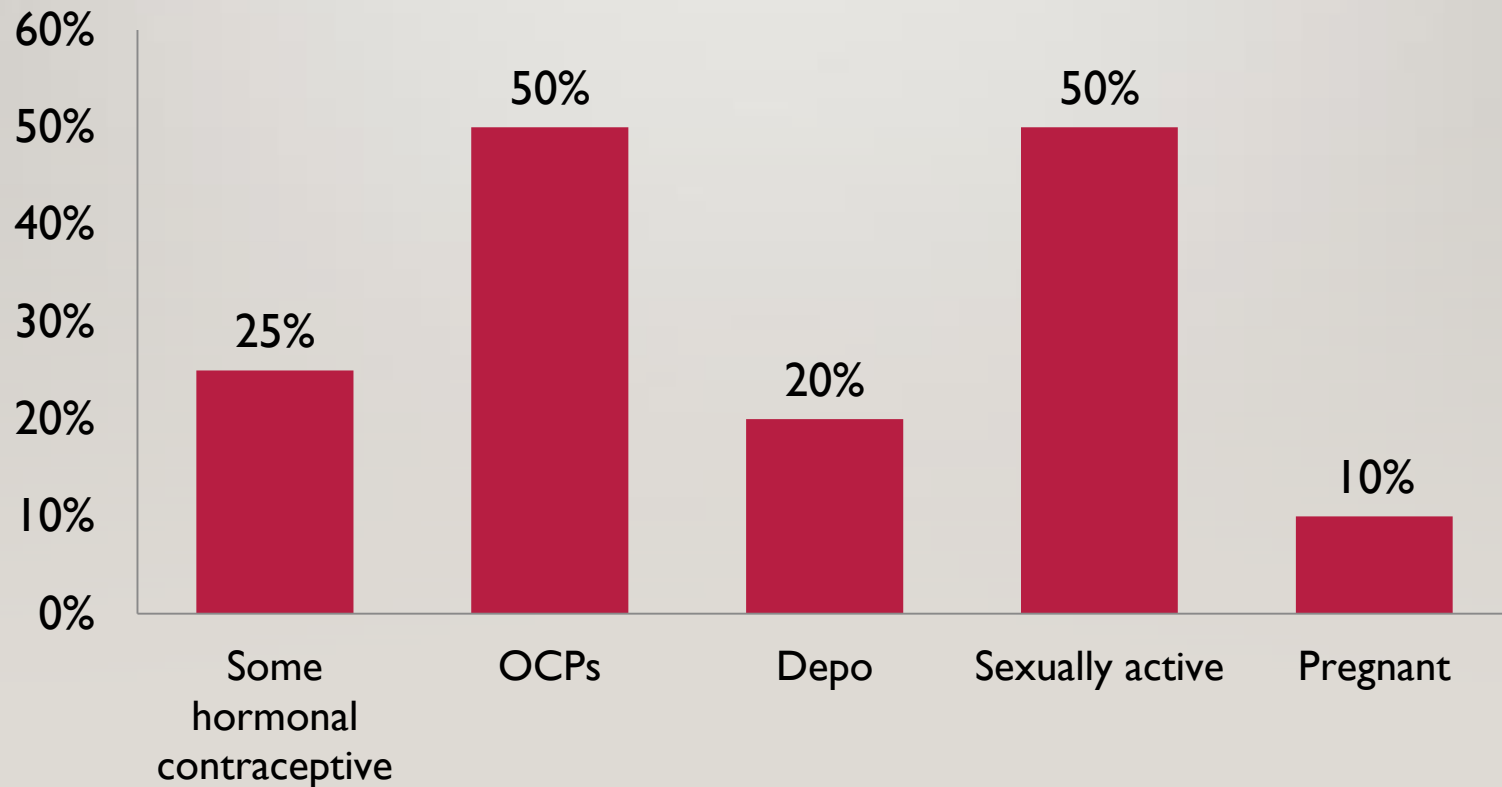
LARCS-IUDS

- Infection
 - Low vs High Risk for STI
 - Pre-placement testing
 - Most likely first 20 days post-insertion (PID)
 - Likely insertion, not STI

LARCS-IMPLANTS

- Most effective of the LARCs
- Nexplanon
 - Works at HPO→no ovulation
 - Also, possibly
 - Changes to Endometrium and Cervical mucus

ADOLESCENTS AND CONTRACEPTION



ADOLESCENTS AND CONTRACEPTION

- Benefits—assists with:
 - Menstrual flow
 - Pain
 - Acne
 - Ovarian cysts
 - PMS symptoms

ADOLESCENTS AND CONTRACEPTION

- American Academy of Pediatrics states that LARCs should be first line
- American College of Obstetricians and Gynecologists states that LARC usage should be supported
- American Academy of Family Physicians supports LARC use, but barriers noted

WHO: TEEN REPRODUCTIVE HEALTH

- Pregnancy and its Complications
 - 2nd cause of death worldwide for 15-19 yo globally
 - ~3 million unsafe abortions annually for girls age 15-19 resulting in maternal morbidity/mortality
- Babies born to mothers <20yo
 - 50% higher risk of stillbirth and neonatal death
 - Higher incidence of low birth weight babies and long term effects

BARRIERS TO LARC USAGE

- Cost (~\$1000 for some)
- Skill level
- Fear
- Misinformation

**Father's gift to the daughter. He calls it the
"birth control blanket."**



BARRIER MANAGEMENT: SYSTEM

- Cost
 - Advocacy with patients, payers, donors
- Know the flow of the office
 - Who handles what portion of the process (insurance, counseling)
- Postpartum
 - Managing visits
 - Immediate placement postpartum

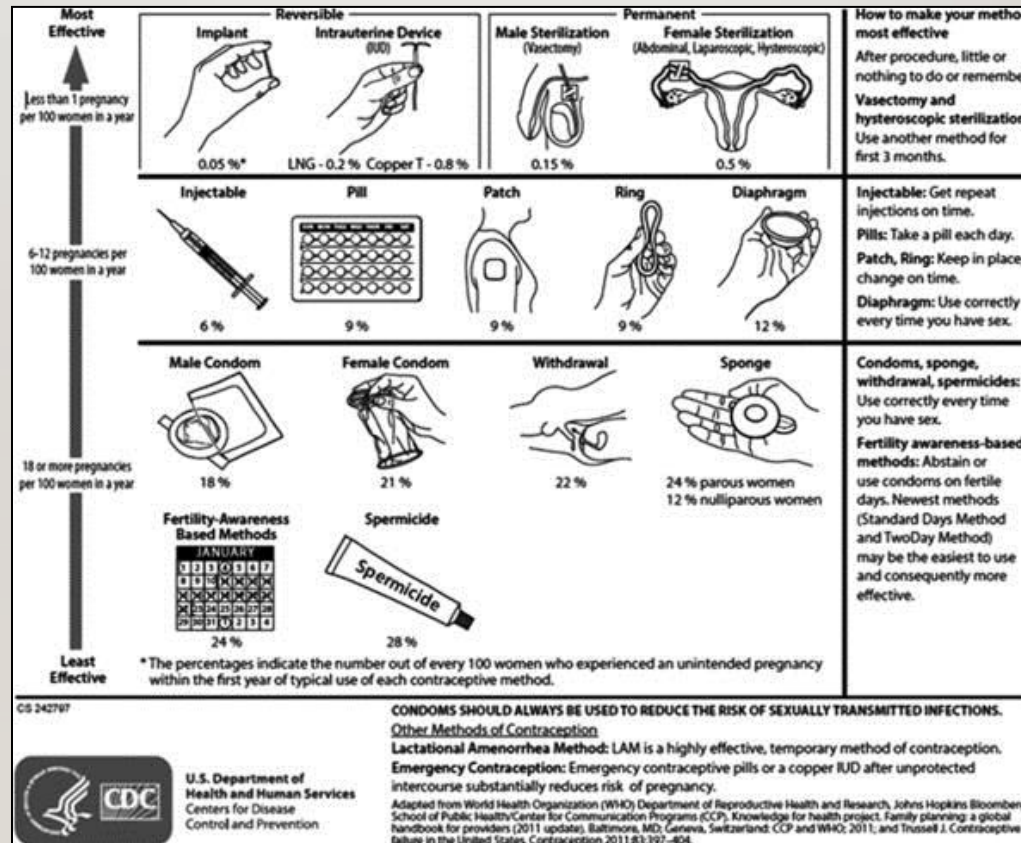
BARRIER MANAGEMENT: PROVIDERS

- Training
- Counseling
 - Tiered method-focused, less confusing
 - Consider communication style
 - Realistic patient expectations
 - May take several visits of discussion

BARRIER MANAGEMENT: PATIENTS

- Clarify misconceptions
- Create an environment conducive for patient learning (ex. Adolescent friendly)

COUNSELING: TIERED METHOD



COUNSELING: COMMUNICATION STYLE

	Do's	Dont's
Relational communication	<p>Develop appropriate level of closeness with patients in order to foster therapeutic relationship</p> <p>Build trust, including respectfully addressing patients' concerns about contraceptive methods</p> <p>Work to optimize decision-making dynamic, including incorporating aspects of shared decision making such as focusing on patient preferences for features of contraceptive methods</p>	<p>Dismiss patients' concerns</p> <p>Pressure women to use a specific method</p> <p>Assume that efficacy is the only, or most important, contraceptive feature that should be factored into choice of a method for all women</p>
Task-oriented communication	<p>Offer adequate, evidence-based counseling about side effects</p> <p>Anticipate and address barriers to consistent and correct contraceptive use</p> <p>Ensure advance provision of emergency contraception to all sexually active women</p> <p>Address (mis)perceptions of low susceptibility to pregnancy</p> <p>Counsel about dual protection for women at risk for STIs, including addressing self-efficacy for negotiating condom use</p> <p>Consider screening for reproductive coercion and offer harm reduction strategies</p>	<p>Use self-disclosure as a means to direct patients to a specific method</p> <p>Encourage women to be concerned about the potential for side effects for which there is no evidence of an association with a given method</p> <p>Neglect to consider role of limited health literacy and numeracy on understanding of contraceptive efficacy</p> <p>Neglect to consider role of limited health literacy and numeracy on understanding of contraceptive efficacy</p> <p>Use abstract concepts to switching methods if a patient is dissatisfied</p> <p>Use abstract concepts such as percent or relative risk when communicating about risks and contraceptive effectiveness</p>
Address disparities in contraceptive counseling	<p>Foster awareness of one's own biases and work to consciously overcome their impact on behavior</p>	<p>Assume that a lack of conscious stereotyping eliminates the potential effect of bias on health communication</p>

COMMUNICATING WITH PATIENTS

- Partner with the patient
- Quality, not just Quantity
- Build trust
- Share the decision making process
- Ensure patient understands side effects
- Care with Risk/Benefit discussion
- Anticipate problems (continuation, “trouble shooting)
- Ask about coercion/abuse

REFERENCES

- ACOG Committee Opinion. Access to Emergency Contraception. #542, Nov 2012
- ACOG FAQ024. Fertility Awareness: Rhythm method, basal body temperature method, and more. Retrieved 2/24/15
- ACOG Practice Bulletin. Benefits and risks of sterilization. #133, Feb 2013
- ACOG Practice Bulletin. Long-Acting Reversible Contraception: Implants and Intrauterine Devices. #121, July 2011
- CDC's Morbidity and Mortality Weekly Report. Vol 59, May 28, 2010. <http://www.cdc.gov/mmwr/pdf/rr/rr59e0528.pdf>. Retrieved 2/24/15
- CDC's US Medical Eligibility Criteria for Contraceptive Use, 2010. <http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/USMEC.htm>. Retrieved 2/24/15
- Dickey, RP. Managing contraceptive pill/drug patients. 14 Ed. 2011.
- Micromedex 2.0. Retrieved 2013
- Peterson HB, Xia Z, Hughes JM, et al: Risk of pregnancy after tubal sterilization: Findings from the US Collaborative Review of Sterilization. Am J Obstet Gynecol 174:1161, 1996 (CREST study)
- Ryder, RM, Vaughn, MC. Laparoscopic tubal sterilization methods, effectiveness, and sequelae. Obstetrics and Gynecology Clinics-Vol 26 (1). March 1999
- U.S. Selected Practice Recommendations for Contraceptive Use, 2013: Adapted from the World Health Organization Selected Practice Recommendations for Contraceptive Use, 2nd Edition. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6205a1.htm?s_cid=rr6205a1_w. Retrieved 2/24/15
- WHO Medical eligibility criteria wheel for contraceptive use 2008 update . http://www.who.int/reproductivehealth/publications/family_planning/9789241547710/en/. Retrieved 2/24/15
- WHO Medical Eligibility Criteria for contraceptive use. http://www.who.int/reproductivehealth/publications/family_planning/MECguidelinePart-2.pdf?ua=1. Retrieved 11.18.16.

ADOLESCENT REFERENCES

- Bonny et al. Hormonal Contraceptive Agents: A Need for Pediatric-Specific Studies. *Pediatrics* Vol. 135 No. 1 January 1, 2015, 4 -6
- AAP Updates Recommendations on Teen Pregnancy Prevention (9/29/2014) . <https://www.aap.org/en-us/about-the-aap/aap-press-room/Pages/AAP-Updates-Recommendations-on-Teen-Pregnancy-Prevention.aspx>. Retrieved 3/13/15
- ACOG committee opinion, Adolescents and Long-Acting Reversible Contraception: Implants and Intrauterine Devices. #539, Oct 2012, Reaffirmed 2014. Retrieved 3/13/15
- Bosworth et al. An Update on Emergency Contraception. *AAFP*.<http://www.aafp.org/afp/2014/0401/p545.html#afp20140401p545-t1>. Retrieved 3/13/15
- As-Sanie, et al. Pregnancy Prevention in Adolescents. *Am Fam Physician*. 2004 Oct 15;70(8):1517-1524. Retrieved [AAFP.org](http://www.aafp.org) 3/13/15
- Monaco, J, Zolotor, A. Optimal Use of IUDs: Why Aren't We There Yet? *Am Fam Physician*. 2014 Mar 15;89(6):434.
- Hardeman, J, Weiss, BD. Intrauterine Devices: an update. *Am Fam Physician*. 2014 Mar 15;89(6): 445-450.
- Hathway, et al. Increasing LARC Utilization: Any Woman, Any Place, Any Time. *Clinical Obstetrics and Gynecology*. 2014 Dec; 57 (4): 718-730.
- Dehlendorf, et al. Contraceptive Counseling: Best Practices to Ensure Quality Communication and Enable Effective Contraceptive Use. *Clinical Obstetrics and Gynecology*. 2014 Dec; 57 (4): 659-673
- WHO Fact sheet on Adolescent Pregnancy. <http://www.who.int/mediacentre/factsheets/fs364/en/>. Retrieved 11.18.16.

REFERENCES: MEDIA

1. Barrier, <http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/Contraception.htm#5>, Retrieved 2013
2. Birth control blanket, http://www.dailyhaha.com/_pics/birth-control-blanket.jpg. Retrieved 3/23/15
3. BTLs, [Sciencedirect.com](http://www.sciencedirect.com), Retrieved 2013
4. Condom minivan joke, [etsy.com](http://www.etsy.com), Retrieved 2/24/15
5. Implanon insertion (similar to Nexplanon), https://www.youtube.com/watch?v=ug7q_IRUMio, Retrieved 2/24/15
6. IUD, <http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/Contraception.htm#5>, Retrieved 2013
7. IUD love, www.pinterest.com, Retrieved 2/24/15
8. Mirena animation, <https://www.youtube.com/watch?v=hlFv8tKgw6E>, Retrieved 2/24/15
9. Mirena interactive video, <http://www.mirena-us.com/about-mirena/see-mirena-up-close.php>, Retrieved 2/24/15
10. Nexplanon insertion, <https://www.youtube.com/watch?v=2ymC4cjgnI>. Retrieved 11/18/16
11. NFP, stpatrbelfastfillmore.org, Retrieved 2/24/15
12. OCP wheel, <http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/Contraception.htm#5>, Retrieved 2013
13. Paragard animation, <https://www.youtube.com/watch?v=FuPFbgSm0QQ>, Retrieved 2/24/15
14. Plan B, Ec.princeton.edu, Retrieved 2/24/15