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Family Planning

Objectives:

- Describe the mechanism of action and effectiveness of contraceptive methods.
- Counsel the patient regarding the benefits, risks and use for each contraceptive method including emergency contraception.
- Describe barriers to effective contraceptive use and to reduction of unintended pregnancy.
- Describe the methods of male and female surgical sterilization.
- Explain the risks and benefits of female surgical sterilization procedures.

References: team 433 and kaplan lecture note 2018

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Introduction

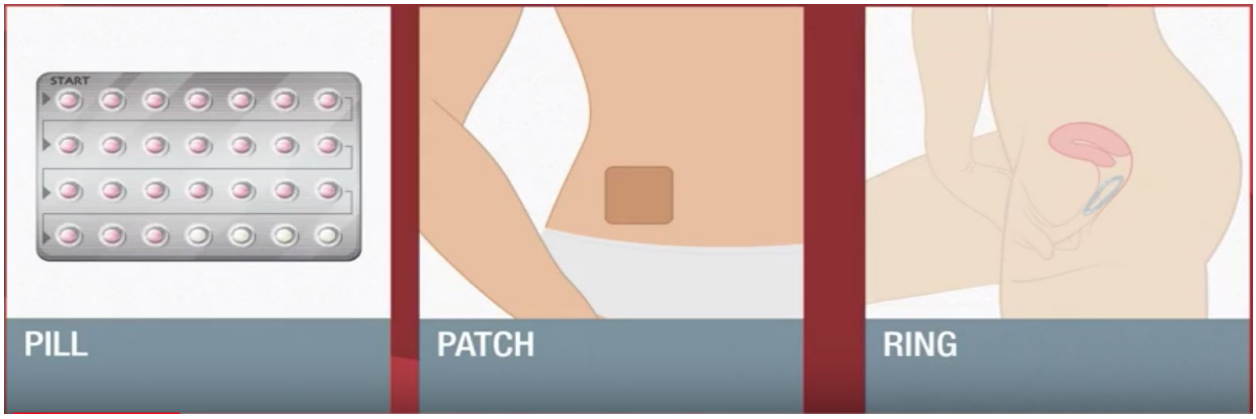
Definition according to WHO:

Family planning is allowing the individuals to anticipate the desire number of children they want, spacing and timing of birth between them.

- This is achieved through the use of **contraceptive methods** or **treatment of involuntary infertility**.

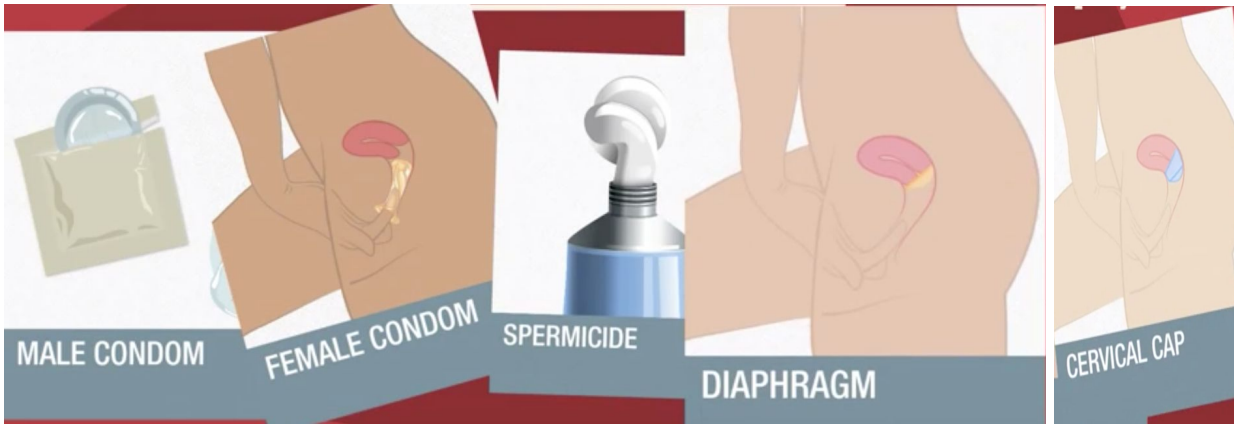
Mechanisms of contraception

- Inhibiting the development and release of an egg from ovaries through:

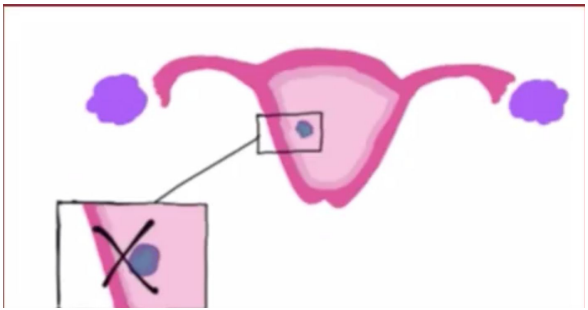


All are working by inhibiting ovulation

- Blocking the sperm and egg from uniting by mechanical, chemical or physical barriers through:



- Prevention of a fertilized egg from implanting in the uterine wall through: Intrauterine devices.



The only 100% effective method is Abstinence, other methods have different rates of efficacy.

- **Method failure rate VS Typical failure rate:**

Method failure rate	Typical failure rate
Inherent chance of failure when the method is used correctly 100% of the time.	It is usually higher than method failure rate. The failure rate when the method is used by actual women factoring in human error and compliance.

- **Factors affecting the decision of using contraception methods:**
  - Cost
  - Medical history
  - Typical bleeding pattern
  - Availability
  - Side effects
  - Partner participation

* psychosocial and medical aspects should be considered when planning to use contraception methods

Methods of contraception

Long acting reversible contraception (LARCs)
 	
99% effective
	Intrauterine devices:
	- **Most commonly used contraception method.**
	- Progesterone IUD:
	  - works by increasing the thickness of cervical mucus to prevent sperm from entering the uterus.
	  - Lasts for 3-5 years.
	  - Side effects include lighter menstrual cycle or amenorrhea.
	- Copper IUD:
	  - Works by creating an unfavorable environment for the sperm to fertilize the egg.
	  - Lasts for 10 years
	  - Side effects include heavier and crampier periods.
	Implants:
	- They contain the progesterone "Etonogestrel"
	- The implant is placed in the subcutaneous tissue of inner aspect of the women's upper non-dominant arm.
	- They work by inhibiting ovulation.
	- Lasts up to 3 years.
	- Side effects include irregular bleeding spotting for the duration of insertion.
		Typical rate failure=method rate failure
		
		All LARCs can be removed prior to the official end date and there will rapid return to fertility after removal.
		
		Suitable for women who want optimal protection against pregnancy but may or may not desire future fertility.
		
		The only contraindications to all IUD use are **pelvic infection**, **cancer of the uterus**, or distortion or inappropriate **size of the uterine cavity**.

Sterilization
 	
99% effective
	Permanent procedures to prevent pregnancy.
	
	Male Sterilization:
	- It's an outpatient procedure whether right or left vas deferens is ligated to prevent sperm from entering the rest of the seminal fluid.
	- Semen analysis is collected 4-3 months with 20 ejaculates to make sure no viable sperm is present
	Female Sterilization:
	- <u>Tube Ligation:</u>
	  - Ligation of fallopian tube by clips, rings or removal of a small segment of the fallopian tube.
	  - It can be done laparoscopically or during the immediate postpartum time, it can be done through a small laparotomy incision.
	- <u>Hysteroscopy tube occlusion:</u>
	  - Procedure performed vaginally either in the operating room or clinic.
	  - Metal coils are inserted into the fallopian tubes and scar tissue develops, effectively blocking the tube.
	  - To make sure that the tube is fully occluded, hysterosalpingogram is done 3 months after the procedure.
		Cons of female sterilization:
		- Ectopic pregnancy (7.3/1000)
		- Regret (increased risk of regret with low parity, performed at time of C-section, age>25 or done under pressure)
		Pros of female sterilization:
		- Decrease lifetime risk of ovarian cancer
		- Protection from pelvic inflammatory diseases.

Estrogen-progesterone contraceptives 92% effective	- They can be in the form of pills, patches or vaginal rings. - All these contraceptives require daily, weekly or monthly action from the patient. **Contraindications:** - Migraine with aura - History of blood clots - Personal history of breast cancer - Personal history of liver disease **For women over 35 the list also include:** Smoking, HTN or migraine.	Mini pills (progesterone-only pills) only work efficiently with regular and frequent breastfeeding. You should wait for 2-3 weeks after delivery before giving combined pills as it increases the risk of DVT (which is already high)
Depo Provera injections 97% effective	- It's a progesterone injection. - Lasts for 12-14 weeks. - Patients return to the clinic every 3 months to receive a shot. - Side effects include Amenorrhea and an average of 10 pounds weight gain. - It takes several months after terminating this method for fertility to return.	
Barriers 71-84 % effective	- **Male and female condoms** - Only abstinence + female and male condoms are protected against sexual transmitted infections. - **Spermicide** - **Diaphragm**	Efficacy vary from one patient to another due to the potential of user error.

Other	**Natural family planning:** - This method involves selective abstinence during the time in a woman cycle when she's most fertile. - Ovulation is measured by a calender or symptoms such as temperature or cervical mucus. - Effective for highly motivated patients with equally motivated partners. **Breastfeeding:** - To have an effective inhibition of ovulation, women should breastfeed every 3 hours and remain in lactational amenorrhea. - Progesterone is the only safe contraceptive form during breastfeeding.	
Emergency Contraception	It is done after an unprotected sexual intercourse. **Plan B** → two pills 0.75 mg of levonorgestrel **Plan B step 1** → one pill 1.5 mg levonorgestrel **Ella** → ulipristal acetate 30 mg and it can be used up to 120 hours after the intercourse. Ulipristal acetate is a selective progesterone modulator **Copper IUD** can be used as well. It has a 0.1% failure rate.	- Plan B ideally should be taken within 72 hours of the intercourse but can be taken up to 120 hours after the intercourse. - Failure rate of plan B : 1.1%

Case

A 17 year old G0 female presents to clinic desiring information about contraceptive methods. She reports that she is sexually active with her boyfriend, using condoms occasionally, when she "needs them." She has never used any other methods. She has had 2 lifetime partners. She became sexually active at age 15 and had sex with her first partner 3-4 times but didn't use contraception. She has been sexually active with her current partner for the last year. She came today because she last had unprotected intercourse 3 days ago and is worried she might get pregnant. She has decided it's time for a more reliable method of contraception. She has never had a pelvic exam. She has history of well controlled seizure disorder and had appendicitis at age 11. She is taking valproic acid. She smokes one-half pack of cigarettes per day, drinks alcohol socially, and uses occasional marijuana. Her blood pressure is 100/60 and pulse is 68.

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1. What pertinent historical information should you obtain from any patient prior to presenting recommendations for appropriate contraception?

• Sexual history
-Onset of sexual activity
-Number of partners since onset
-History of STIs
• Medical history – contraindications to estrogen-containing hormonal contraceptives
-Migraines with aura
-DVT
-Uncontrolled hypertension

-Smoking age>35
• Menstrual history
-LMP(pregnancy)
-Irregular menses
• Future fertility plans

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2. What physical exam and studies are required prior to prescribing hormonal contraceptives?

Pap and pelvic exam have typically been "bundled services," i.e., these exams are required to prescribe contraceptives. There is no rationale for this bundling.
In general, Pap smears should be initiated at the age of 21. So, this patient would not require one at this time.
STI screening for a sexually active teenager should include chlamydia and gonorrhea which may be tested from a urine sample. Screening for other STIs should be done based on individual risk assessment.
A blood pressure should be obtained in patients who desire estrogen-containing contraceptives to rule out hypertension. Hypertension is rare in this age group, but blood pressure is easy to obtain, non-sensitive and low cost.
Coagulation profile.

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3. Which contraceptive agents are most suitable for this patient?

Combination hormonal methods: Pills, patch, ring

- Advantages:
    1. Very effective
    2. Non contraceptive benefits include cycle control, decreased risk of anemia, ovarian cysts they may ask you in MCQs or OSCE about non-contraceptive purposes in using oral contraceptive pills: e.g. ovarian cyst, anemia, irregular cycle..etc
- Disadvantages:
    1. "Nuisance"side effects–bloating, headache, breast tenderness and nausea.
    2. No STI protection.
    3. Need to remember daily, weekly ,monthly.
    4. Seizure medications may decrease effectiveness.
    5. Small risk of significant complication:DVT,PE,CVA,MI.

Condoms

- Advantages:
1. STI protection.
2. Only use when needed.

- Disadvantages:
1. Need to use every time.
2. Less effective.

Depo-medroxyprogesterone acetate injection

- Advantages:
    1. 4 shots per year.
    2. Highly effective.
- Disadvantages:
    1. Irregular bleeding.
    2. Weight gain.

3. No STI protection.

Etonogestrel subdermal implant

- Advantages:
    1. Single subdermal insertion of implant lasts for 3 years.
    2. Highly effective.
- Disadvantages:
    1. Irregular bleeding.
    2. Weight gain.
    3. No STI protection.

Copper IUD

- Advantages:
    1. Long-term contraception.
    2. Highly effective.
    3. High continuation rate.
    4. Maybe used for post-coital contraception.
- Disadvantages:
    1. No STI protection.
    2. Possible increased bleeding and/or cramps.

Levonorgestrel IUD

- Advantages:
    1. Long-term contraception.
    2. Many experience diminished bleeding which makes this an option for treatment of menorrhagia.
- Disadvantages:
    1. Some experience hormone-related side effects.
    2. Possible irregular bleeding.
    3. No STI protection.

Plan B

- Advantages:
    1. Backs up regular birth control.
    2. Useful for accidents–condom breaking , discontinued methods.
- Disadvantages:
    1. Less effective.
    2. Maybe difficult to obtain.

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4. When/how to start the contraceptive method?

Consider contraception as an “emergency”
Best if patient leaves with a method
Advance prescriptions of Plan B to all patients (except those with an IUD)
Best if method begins that day if negative pregnancy test

1. Combination methods – Quick start: First pill on day of visit regardless of cycle, preferably in clinic.
2. Depo-provera–Same day shot.
3. Sub dermal implant–Same day insertion.

4. IUD–Same day insertion.