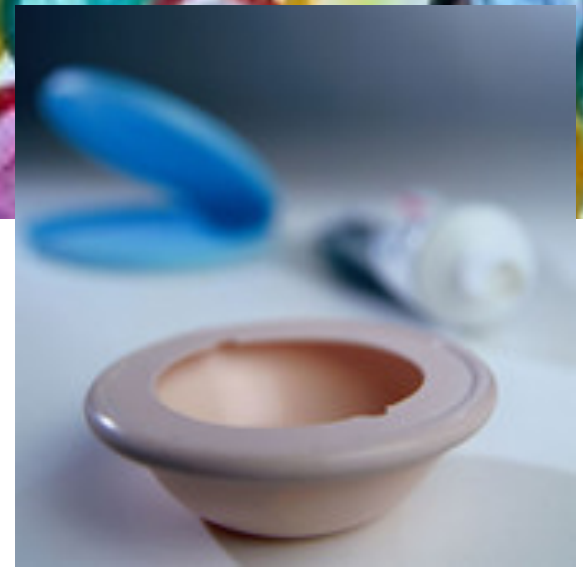


# Birth Control and STIs



Use birth control: <http://www.youtube.com/watch?v=Fitxofd7kOA>

# Contraceptive Strategies

- 1. Prevent follicle development and ovulation**
- 2. Prevent fertilization**
  - Sterilization
  - Physical or Chemical Barrier
- 3. Prevent implantation**

# Preventing Ovulation: Hormonal Methods

**\*Use estrogen and progesterone\*  
to prevent ovulation**

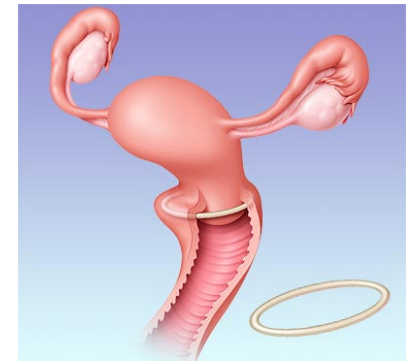
## 1. Birth Control Pill (8% failure)

- Synthetic **Estrogen and Progesterone**:
  - inhibits GnRH...
  - which inhibits FSH & LH...
  - which inhibits follicular growth and ovulation

**Others work similarly...**

## 2. The Patch

- Replaced weekly



## 3. The Nuvaring – several weeks

## 4. Depo Provera – “The Shot” –several months

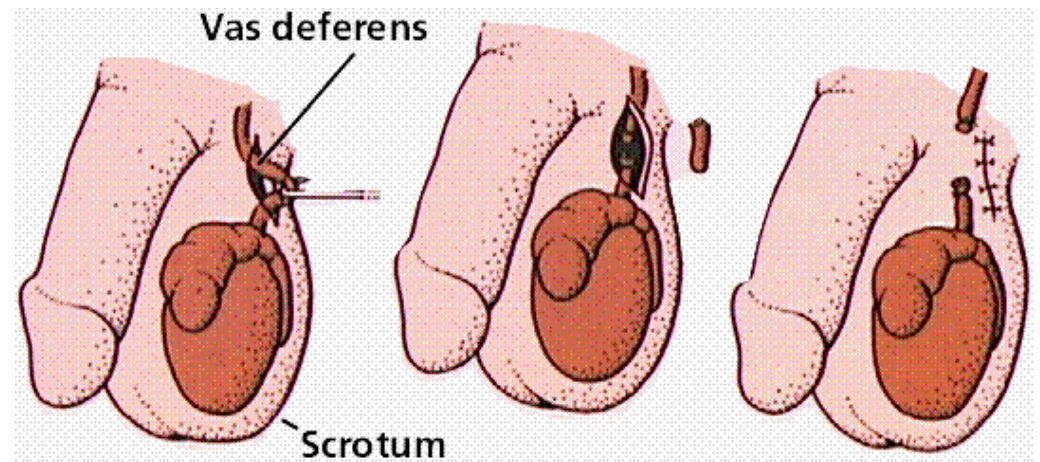
# What about a pill for men?



<https://www.youtube.com/watch?v=ZcePiKIbVyo>

# Preventing Fertilization: Sterilization

- a) Vasectomy: **vas deferens** is cut, sutured, cauterized, or clamped shut
- 1-2/1000 failures after 1 year



Males STILL have testosterone as it is produced in testes and moved through blood

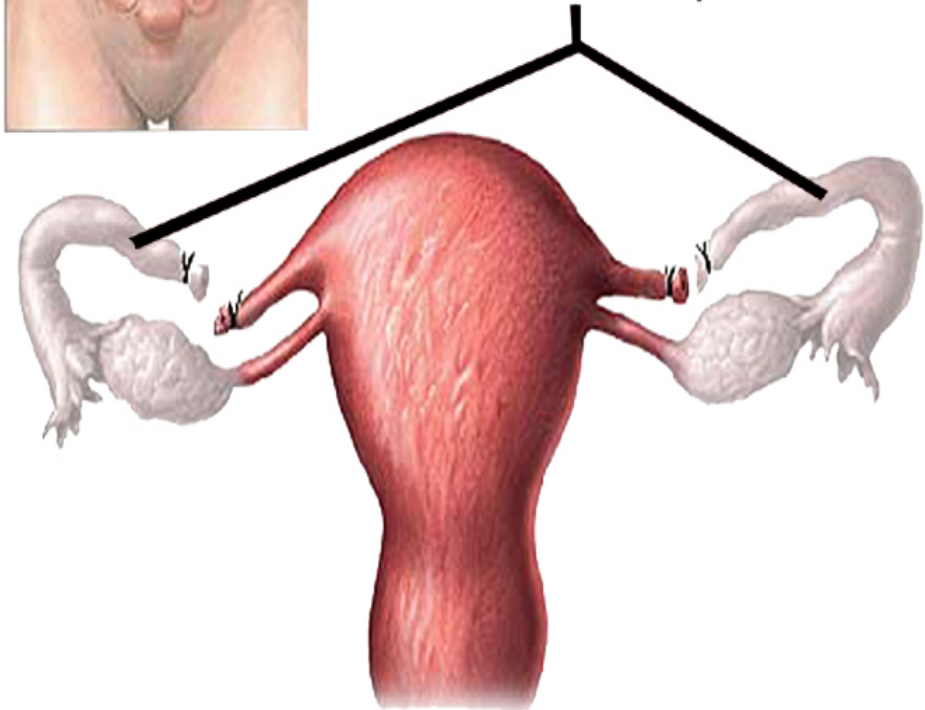
# Preventing Fertilization: Sterilization

b. **Tubal Ligation:** **oviducts** are cut, cauterized, or clamped shut

This has no effect on the menstrual cycle because the hormones move through the blood



The fallopian tubes are tied off and cut apart

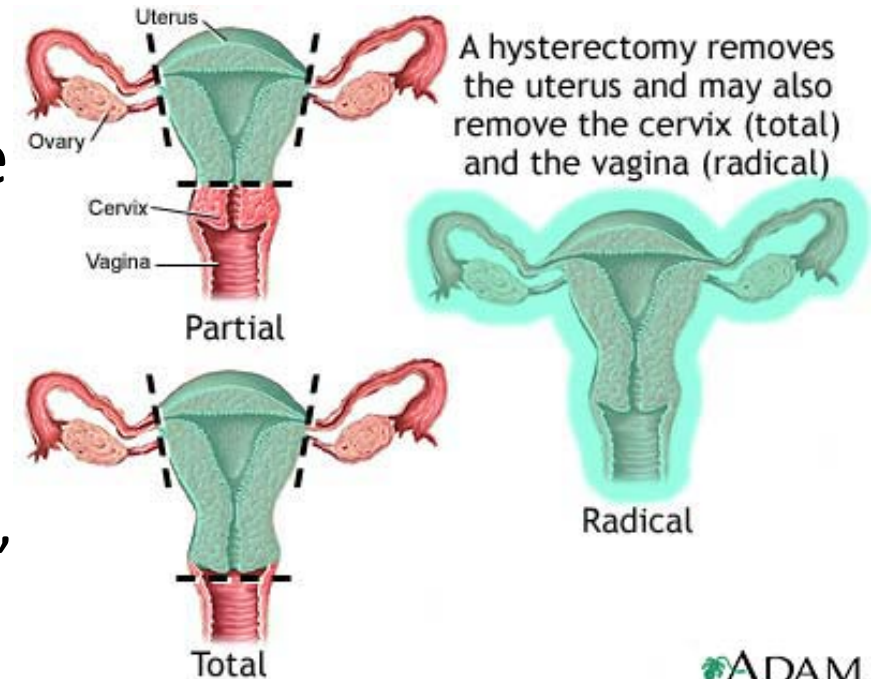


# Preventing Fertilization: Sterilization

c) **Castration/oophorectomy**: any surgical or chemical procedure where the male loses the **testes** or female loses the **ovaries**

d) **Hysterectomy**: surgical removal of the **uterus** partial or complete

Sometimes recommended in severe cases of **endometriosis**, particular cases of reproductive system (uterine, cervical, ovarian) **cancers**



Preventing Fertilization:

# Physical & Chemical Barrier Methods

## a) Condoms

- placed on penis
- blocks sperm from entering female



## b) Diaphragm

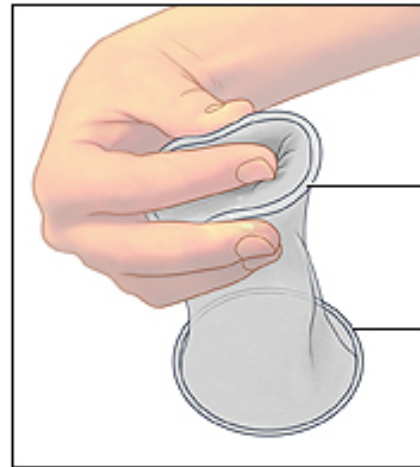
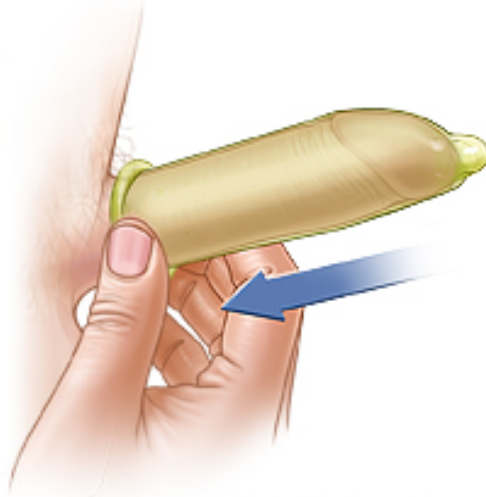
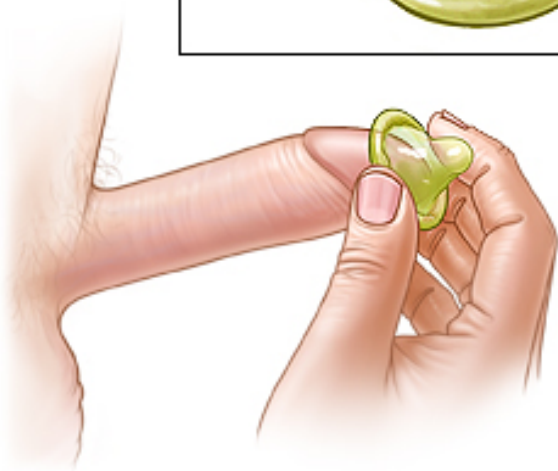
- small cup placed around cervix
- blocks sperm from getting past cervix



Barrier method:  
The diaphragm fits over the cervical opening, preventing sperm from entering the uterus



Male  
condom



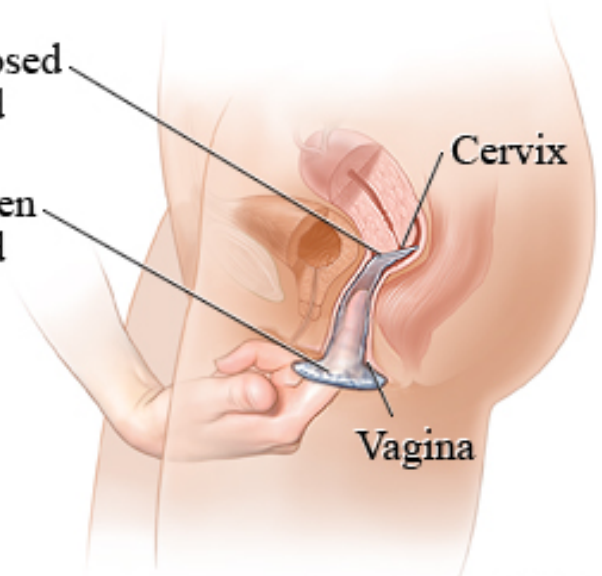
Female condom

Closed  
end

Open  
end

Cervix

Vagina



# Killing Sperm

## a. Spermicides

-chemical kills sperm

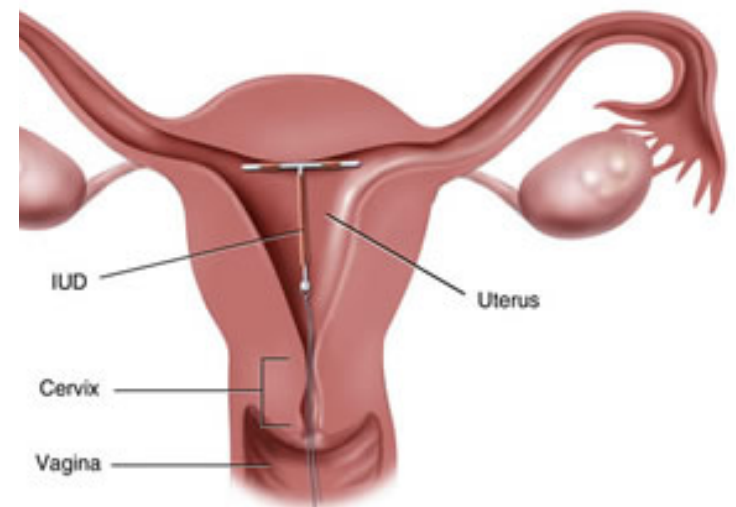
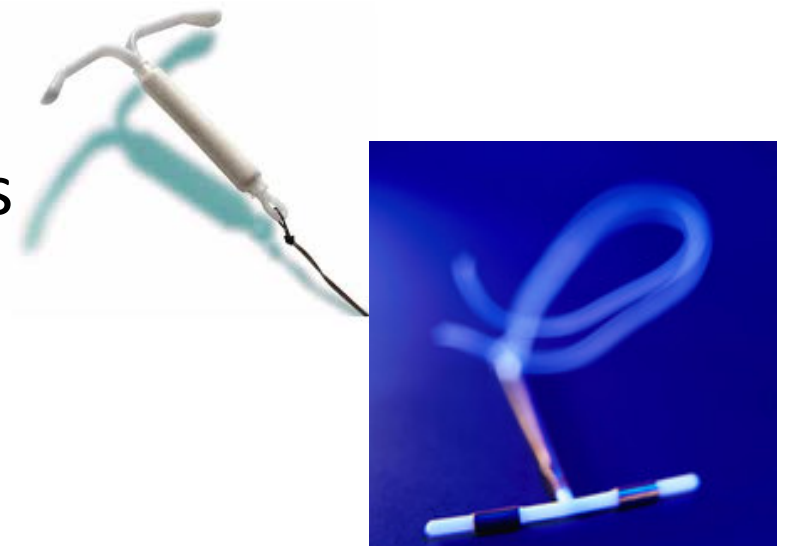
## b. Intra-Uterine Device – IUD

- Small device placed in the uterus

--kills sperm

--prevents implantation

- Must be put in/removed by a doctor
- Can be worn for:
  - 5 years (hormonal) to
  - 12 years (copper)



# Preventing Everything

- ABSTINENCE – No sex or sexual contact.



**0% Failure Rate**

# Sexually Transmitted Infections

**Sexually transmitted infections are transmitted from one person to another primarily by contact of the genital organs during sexual activity.**

**~25% of people over 18 will contract an STI**

# Sexually Transmitted Infections

Can other animals get STI's? You Bet!



Atlantic bottlenose dolphins can get genital warts.



Baboons can suffer from herpes.



Syphilis is common in rabbits.



HIV is similar in both humans and chimpanzees.

# A. Bacterial Infections

## 1. Chlamydia & Gonorrhea (**top 2 in your age group!**)

- **Untreated:** causes pelvic inflammatory disease in women, or infertility (women & men)

Causes scar tissue in fallopian tubes or vas deferens and blockage affects fertility

- 80% females, 50-60% males have no symptoms
- Itching, discharge, burning during urination
- Treatment: antibiotics

# A. Bacterial Infections

## 2. Syphilis

- Can spread across the placenta: brain damage, seizures & possibly death to the fetus
- Treatment: antibiotics

## B. Viral Infections

- **No cure** but many of the symptoms can be alleviated by medication
- Symptoms vary between viruses, but **most have no symptoms**
- If used consistently & correctly, condoms can be highly effective in preventing most viral STIs



# B. Viral Infections

1. **HPV – human papilloma virus – genital warts**
  - Spread by skin-to-skin contact
  - Warts can appear on genitals (**look like cauliflower**); many have no symptoms
  - **Linked with throat cancer, cervical cancer in women, penile cancer in men**
  - HPV vaccine available for girls and boys. Can be given up to age 26. Almost 100% effective.

**Oral sex and throat cancer: Michael Douglas  
HPV report spotlights "epidemic"**

<http://www.cbsnews.com/news/oral-sex-and-throat-cancer-michael-douglas-hpv-report-spotlights-epidemic/>



# B. Viral Infections

## Herpes

- Spread by skin-to-skin contact; often no symptoms; sores on genitals & groin area
  - Women who acquire genital herpes during pregnancy can transmit the virus to their babies.
  - Untreated HSV infection in newborns **can result in learning disabilities and death.**
  - **Can ONLY be TREATED NOT CURED.**

## Birth Control Methods

1. Which birth control methods protect against STIs? **Abstinence, condoms**
2. What is an IUD and how is it effective?  
**Intrauterine device. Placed in uterus. Copper-based prevents implantation and hormonal IUDs prevents egg formation and ovulation. Can kill sperm as well.**
3. How is a diaphragm similar to a condom **They both block sperm.**
4. State one difference AND one similarity between a female condom and a male condom.  
**Female condom placed in vagina. Male condom placed on penis. AND both block sperm**
5. What is the difference between castration and hysterectomy?  
**Castration is removal of ovaries or testes and hysterectomy is removal of the uterus.**
6. State how the effectiveness of a condom or diaphragm can be improved and why.  
**Use of spermicide which kills sperm**

# **Assistive Reproductive Technology**

# Assisted Reproductive Technology

**Sterile:** unable to have children



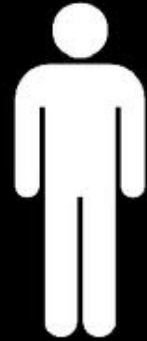
**Infertile:** difficulty conceiving

Average time to conceive = 6 months (longer if individuals are older than 25)

After 1 year of regular unprotected sex, if a couple hasn't conceived, they are considered infertile

# Possible Causes of Sterility/Infertility

## Men



### **Blocked epididymus or vas deferens**

- risk factors: STIs

### **Low sperm count**

- risk factors: overheated testicles, smoking, alcohol

### **High proportion of abnormal/non-viable sperm**

- risk factors: overheated testicles, exposure to toxins or radiation, infections such as STIs

### **Impotence**

- risk factors: vascular disease, nervous system injury, stress, hormonal imbalance, medication, smoking, alcohol

# LETS REVIEW

- Draw the area in the Male reproductive system that can be blocked by an STI preventing sperm from leaving the male.

# Possible Causes of Sterility/Infertility

## Women



### **Blocked fallopian tubes**

- risk factors: STIs

### **Failure to ovulate**

- risk factors: hormonal imbalances for many reasons, including malnourishment, stress

### **Damaged eggs**

- risk factors: exposure to toxins or radiation

### **Endometriosis**

- condition where endometrial tissue grows outside uterus (can be painful)
- risk factors: genetics, hormone imbalance, immune factors toxins (lots of debate)



# Key Assisted Reproduction Technologies

## 1. Intrauterine Insemination (IUI)

- Sperm are collected and concentrated  
→ placed in uterus
- Sperm may be from woman's partner, or from another donor (sperm bank)
- **Useful if:** blocked vas deferens, low sperm count, or high proportion of non-viable sperm



# Key Assisted Reproduction Technologies

## 2. In Vitro Fertilization (IVF) “in glass fertilization”

- Eggs close to ovulation are removed from follicles
  - sperm and egg are combined in Petri dish
  - **morula** is **placed** in uterus
- **Useful if:** oviducts are blocked, or in combination with other technologies

[WATCH IVF](#)



# Key Assisted Reproduction Technologies

## 3. Surrogacy

- Through IUI or IVF or both, infertile couple contribute gametes → baby is carried by another woman (surrogate mother)
- **Useful if: pregnancy is impossible or dangerous to the health of a woman**

# Key Assisted Reproduction Technologies

## 4. Superovulation (Fertility Drugs)

- Hormone treatment stimulates production and ovulation of multiple eggs
- Often used in combination with other reproductive technologies
- Useful if: **women rarely or never ovulates**



# LETS REVIEW

- Draw the area in the female reproductive system that can be blocked by an STI preventing sperm and egg from uniting

WORKBOOK PAGE 25, 26