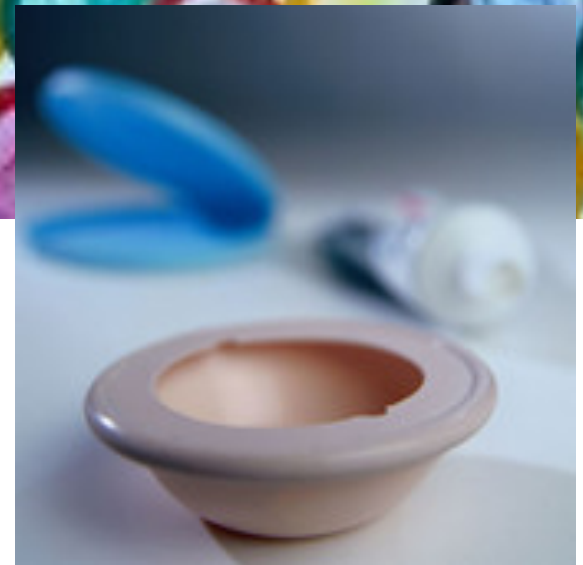


# Birth Control and STIs



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

Uses estrogen and progesterone.

## 1. Birth Control Pill

- Synthetic **Estrogen and Progesterone**:
  - inhibits GnRH...
  - which inhibits FSH & LH...
  - which inhibits follicular growth and ovulation
- Must take at the same time every day

**8% Failure Rate**

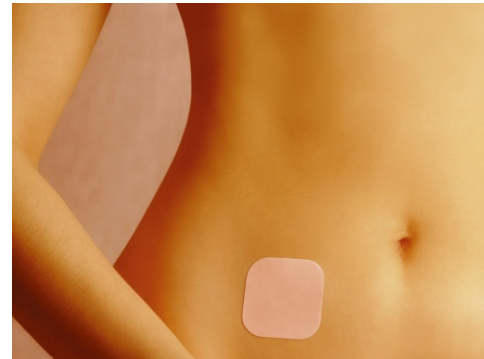


# Preventing Ovulation: Hormonal Methods

**All use estrogen and progesterone.**

## 2. The Patch

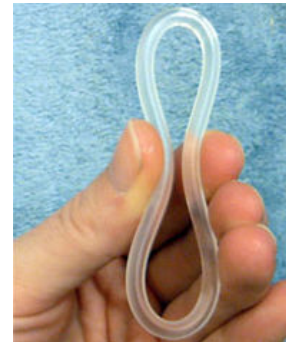
- Replaced weekly



## 3. The Nuvaring

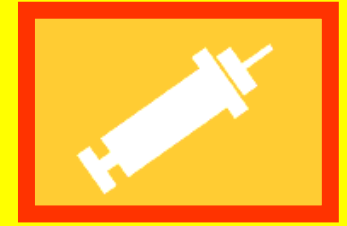
- a silicone ring worn inside the vagina that secretes hormones
- can take it out for up to 1 hour without losing effectiveness
- Replaced monthly

**8% Failure Rate**



Nuvaring: <http://www.plannedparenthood.org/health-topics/birth-control/birth-control-vaginal-ring-nuvaring-4241.htm>

# Preventing Ovulation: Hormonal Methods



## 4. Depo Provera – “The Shot”

- a shot of hormones (high in **progesterone**) every 12 weeks (3 months)



**3% Failure Rate**



# Preventing Ovulation: Hormonal Methods

## 5. Emergency Contraception Pill – ECP

- also known as “Plan B” and “morning after pill”
- can be taken up to 5 days after ‘exposure’ to sperm
- essentially, it is a high dose of **estrogen and progesterone** that:
  - prevents ovulation
  - prevents implantation
  - blocks fertilization
- average 75% effective - the sooner it is taken, the more effective it will be
- **The ECP is NOT the abortion pill** – it does not remove an implanted embryo from the uterus.



[The morning after pill](#)

# Preventing Ovulation: Hormonal Methods



## 6. Lactational amenorrhea method

is the use of **breastfeeding** as a contraceptive method. It is based on the physiologic effect of suckling to suppress ovulation by inhibiting menstrual hormones.

Many variables – therefore is not a reliable means of birth control

# Preventing Fertilization: Sterilization

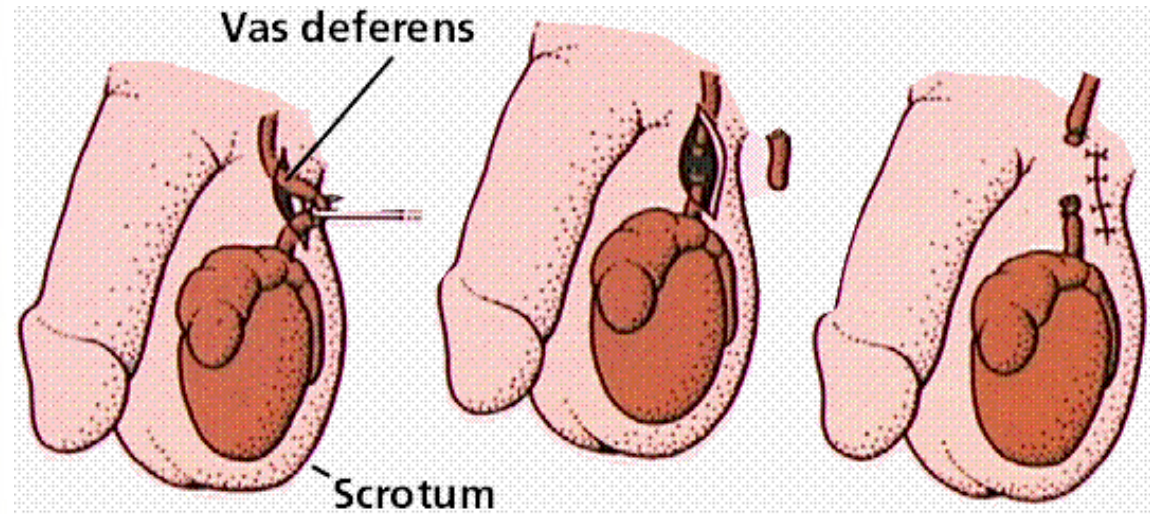
- a) Vasectomy: **vas deferens** is cut, sutured, cauterized, or clamped shut
- difficult to reverse
  - can take 10-20 ejaculations to clear all remaining sperm
  - 1-2/1000 failures after 1 year





# Vasectomy

- [Vasectomy Link](#)

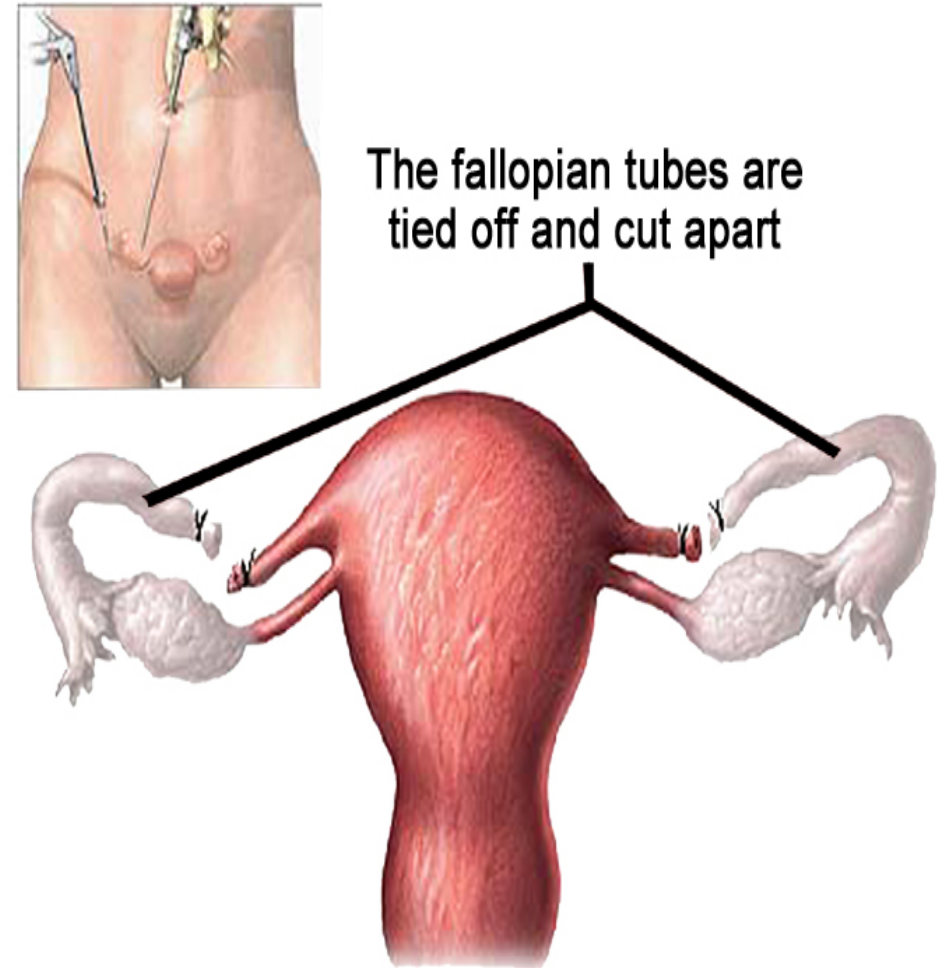


# Preventing Fertilization: Sterilization

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

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

- difficult to reverse
- failure rates: 5/1000 women after 1 year, 18/1000 women after 10 years



# Preventing Fertilization: Sterilization

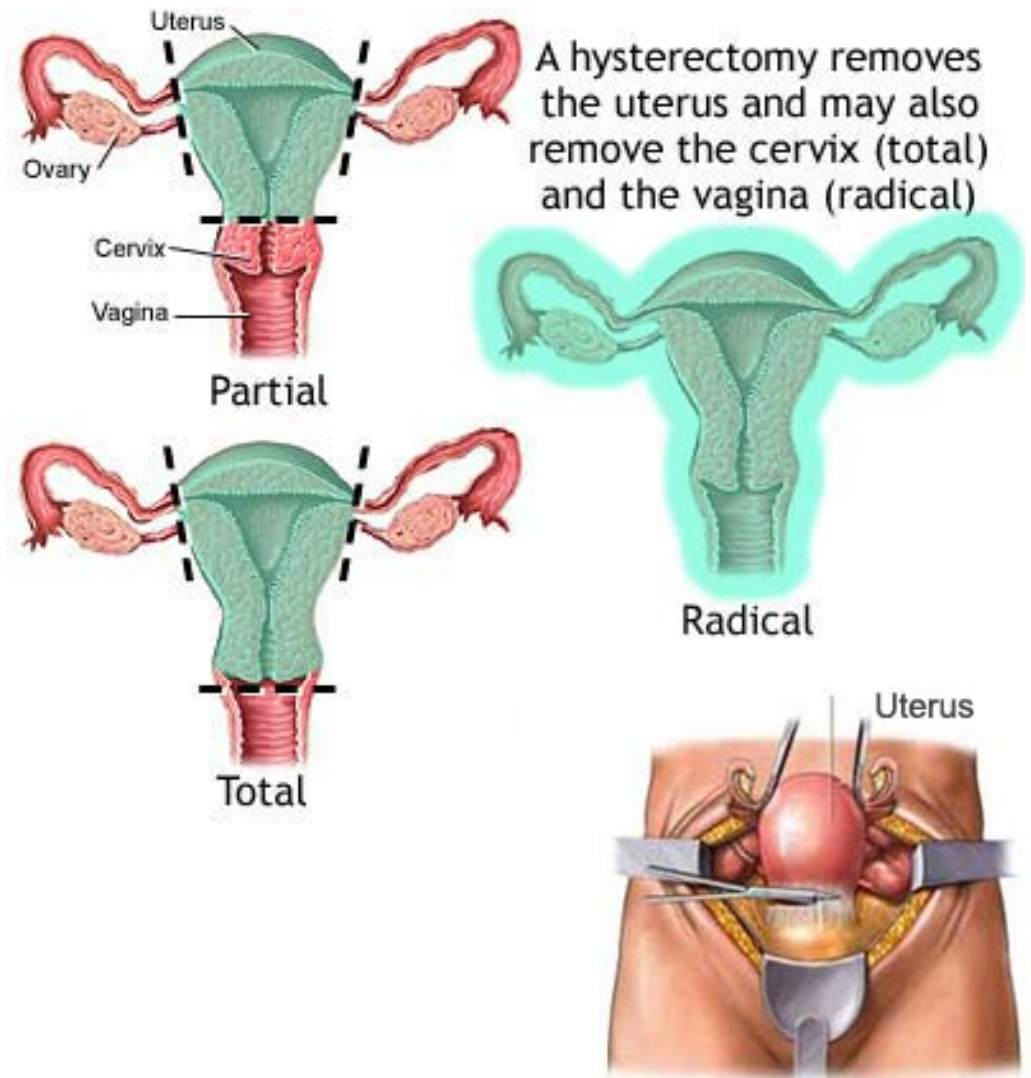
c) **Castration**: any surgical or chemical procedure where the female loses the **ovaries** and the male loses the **testes**

**Castration may be done to treat prostate cancer.** Androgens (male sex hormones) cause cancer cells to grow. Lowering androgen levels or stopping them from getting into prostate cancer cells often makes prostate cancers shrink or grow more slowly for a time. However, hormone therapy alone does not cure prostate cancer and eventually, it stops helping.

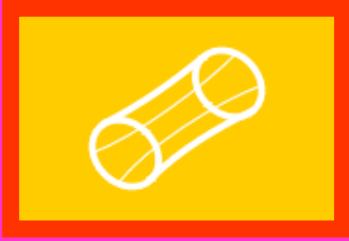
# Preventing Fertilization: Hysterectomy

- d) **Hysterectomy**: surgical removal of the **uterus**
- Can be complete (removal of the entire uterus and cervix) or partial (cervix remains)

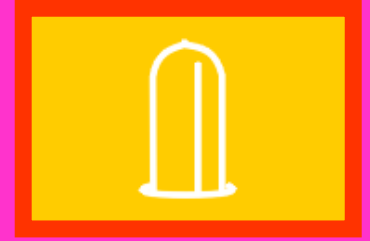
Sometimes recommended in severe cases of **endometriosis**, particular cases of reproductive system (uterine, cervical, ovarian) **cancers**







# Preventing Fertilization: Physical & Chemical Barrier Methods



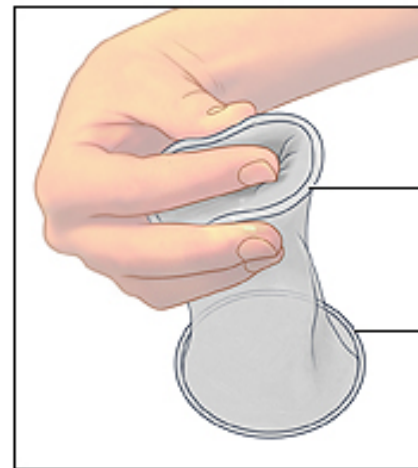
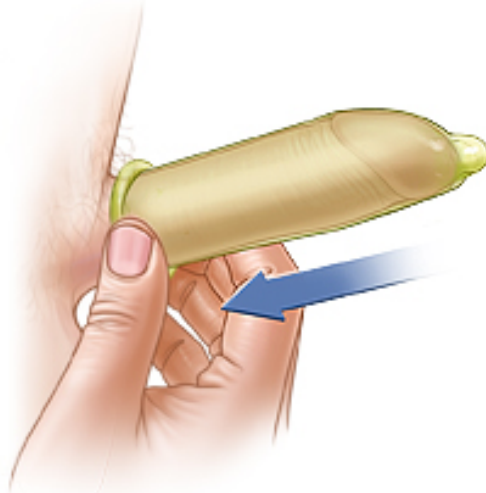
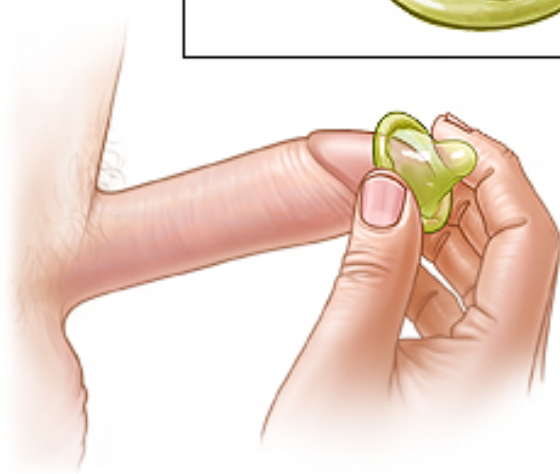
## a) Condoms

- Sheath that acts as a barrier – prevents sperm entering female reproductive tract
- 86% effective - must be put on before genital contact
- include male, female, polyurethane condoms and dental dams





Male  
condom



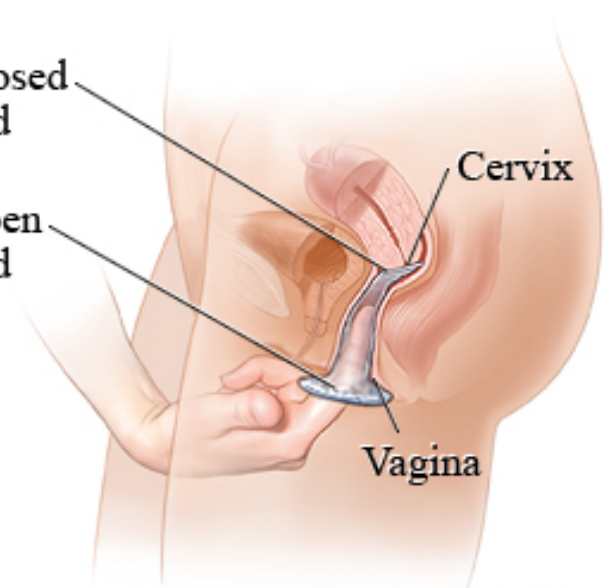
Female condom

Closed  
end

Open  
end

Cervix

Vagina



# Preventing Fertilization: Physical & Chemical Barrier Methods

## b) Diaphragm

- small cup filled with spermicide placed around cervix
- is both a barrier and chemical protection
- 80% effectiveness rate
- must be fitted & ordered by a doctor

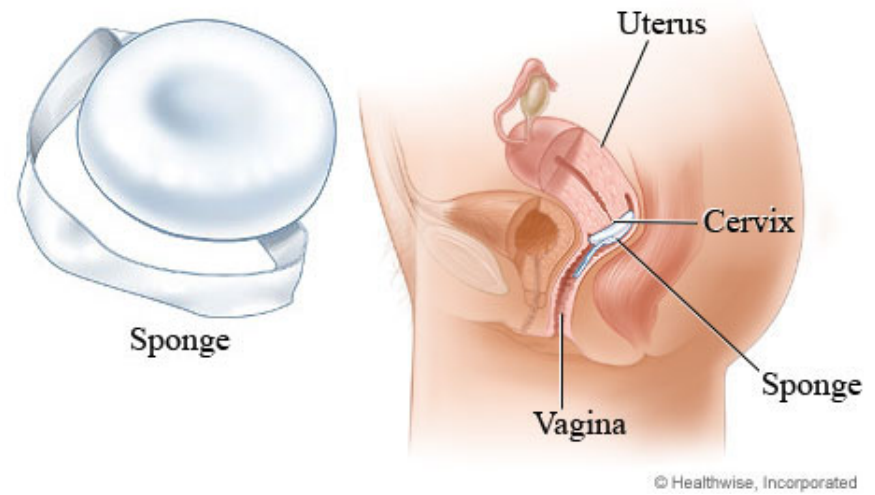


Barrier method:  
The diaphragm fits  
over the cervical  
opening, preventing  
sperm from entering  
the uterus

# Preventing Fertilization: Physical & Chemical Barrier Methods

## c) Spermicides

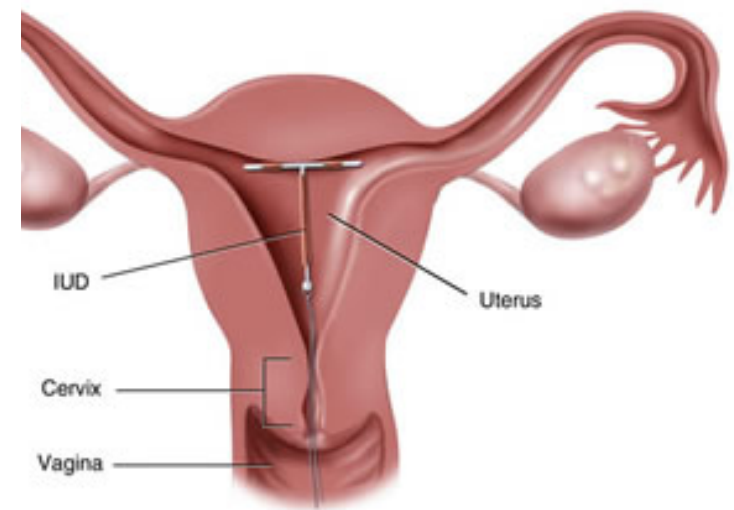
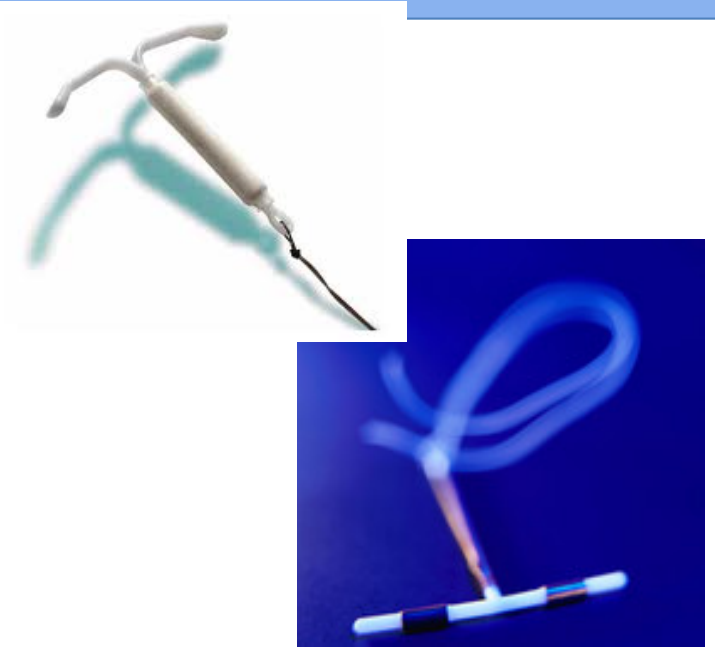
- Contain the chemical Non-Oxynol-9
- May facilitate the spread of HIV and other STIs
- 80% (or less) effectiveness rate



# Killing Sperm

## Intra-Uterine Device – IUD

- Small device placed in the uterus – kills sperm
- Must be put in/removed by a doctor
- Can be worn for:
  - 5 years (hormonal) to
  - 12 years (copper)
- Once removed, even after long term use, fertility returns to normal immediately.



# Preventing Everything

- ABSTINENCE – No sex or sexual contact.



**0% Failure Rate**



# Local Resources

- Planned Parenthood - 423-3737 - #50, 9912-106 St
- Birth Control Centre - 413-5735 - #405, 10030-107 St
- STD Centre - 413-5156 - 11111 Jasper Ave
- HIV Edmonton - 488-5742 - #300, 11456 Jasper Ave

# **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... 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 are 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 mental retardation and death.**
  - **Can ONLY be TREATED NOT CURED.**

## Birth Control Methods

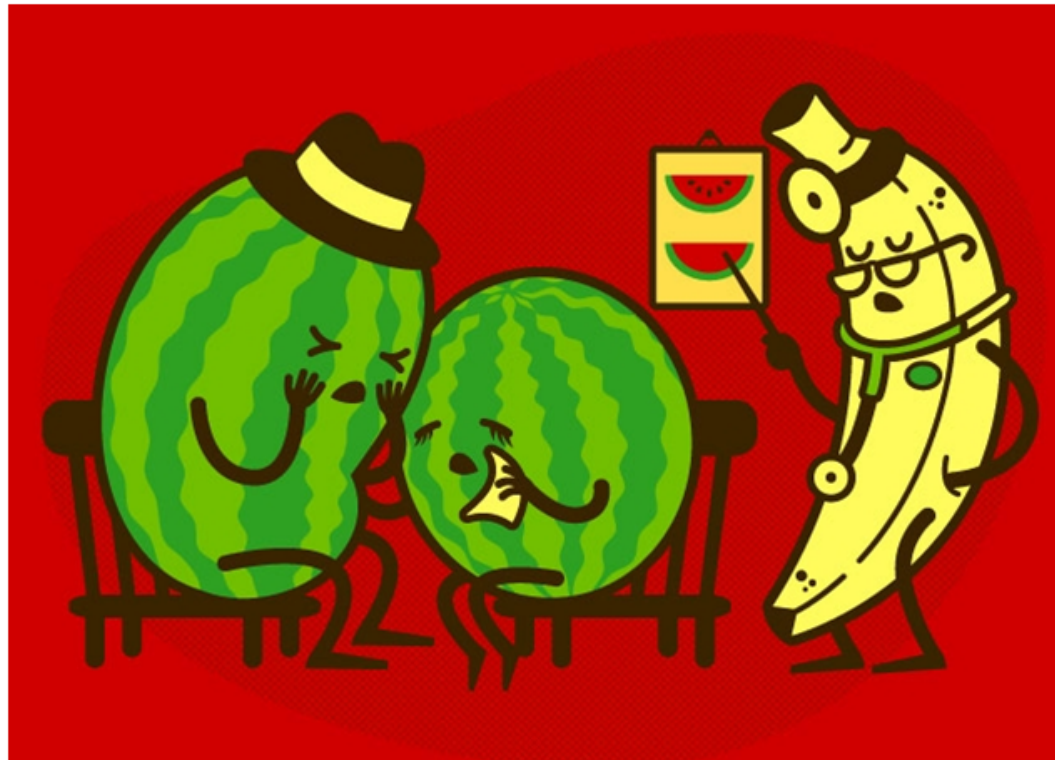
1. Which birth control methods protect against STDs?
2. What is an IUD?
3. What is a diaphragm and how does it work?
4. State one difference between a female condom and a male condom.
5. What is **lactational amenorrhea**?
6. What is the difference between castration and hysterectomy?
7. State how the effectiveness of a condom or diaphragm can be improved and why.

# **Assistive Reproductive Technology**



# Assisted Reproductive Technology

**Sterile:** unable to have children



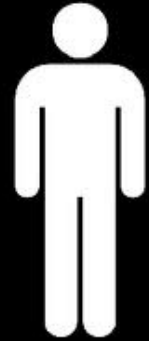
# Assisted Reproductive Technology

## **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

# 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”

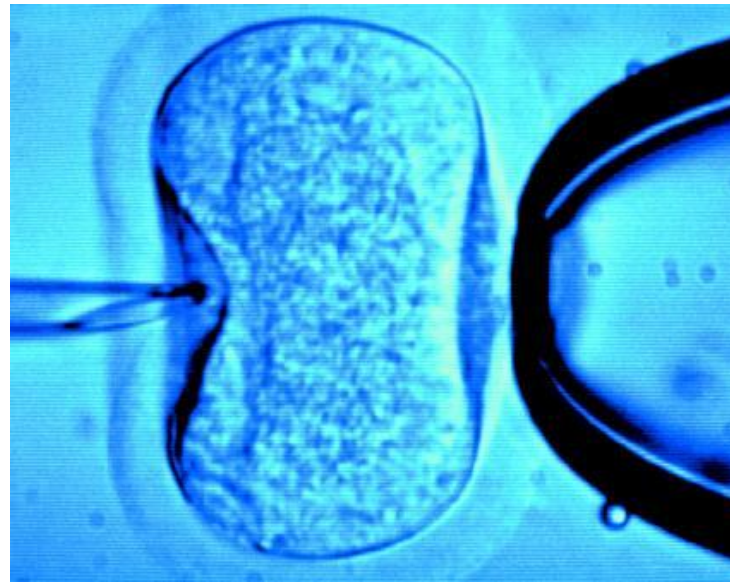
- Eggs close to ovulation are removed from follicles
  - sperm and egg are combined in Petri dish
  - **morula** is **placed** in uterus
- **Useful if:** oviducts are blocked, or in combination with other technologies





# Key Assisted Reproduction Technologies

## In Vitro Fertilization



[In Vitro Fertilization](#)

# 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**

