

# Reprod. Topics

- 1) human life cycle**
- 2) male & female systems**
- 3) female monthly cycles**
- 4) fertility & contraception**
- 5) "to make a baby"**
- 6) diseases**

# Eggs & Sperm

## oogenesis (egg + begin)

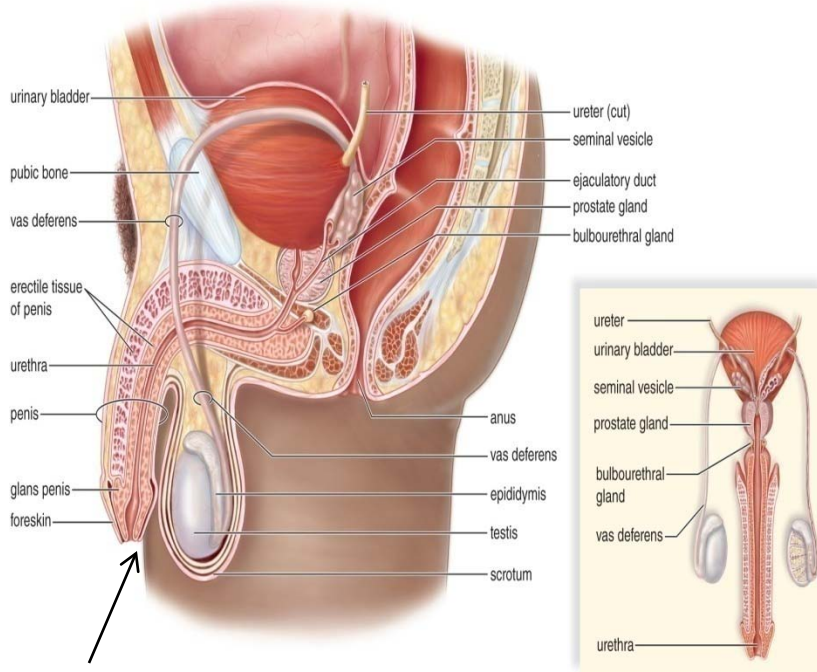
- begun 1st trimester, ends @ 50's
- egg cells last 10-40 years ( $\cong$  400k/lifetime)
- 1 egg dev/mon., completed in 28 days
- coord. with uterus prep. & hormone prod.

## spermatogenesis (sperm + begin)

- begun after puberty, ends @ 60's
- sperm cells last days ( $\cong$  400 million/day)
- million sperms dev/day, completed in 10 days

# Male System - Sperm Flow (1)

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**urethral orifice**

- 1) testis: prod. sperm
- 2) epididymis: store/mature sperm
- 3) vas deferens: transfer sperm
- 4) seminal vesicle: prod. semen fluid
- 5) prostate gland: "
- 6) ejac. duct: store semen\*
- 7) bulbourethral: prod. semen fluid
- 8) urethra: channel semen
- 9) urethral orifice: exit semen

**\*semen = sperm + fluid secretion**

# Semen

**semen = sperm + fluid secretions**

**- fluid prod.: 5% testis, 60% seminal vesicle,  
30% prostate, 5% bulbourethral**

**one ejaculation:**

<b>vol:</b>	<b>2-5 ml (thimble)</b>
<b>sperm count:</b>	<b>40-100 million/ml*</b>
<b>sterility:</b>	<b>&lt;20 million/ml</b>
<b>pH:</b>	<b>7-8 (basic)</b>
<b>WBC count:</b>	<b>0-2000 /ml</b>
<b>fructose:</b>	<b>150-600 mg/ml</b>

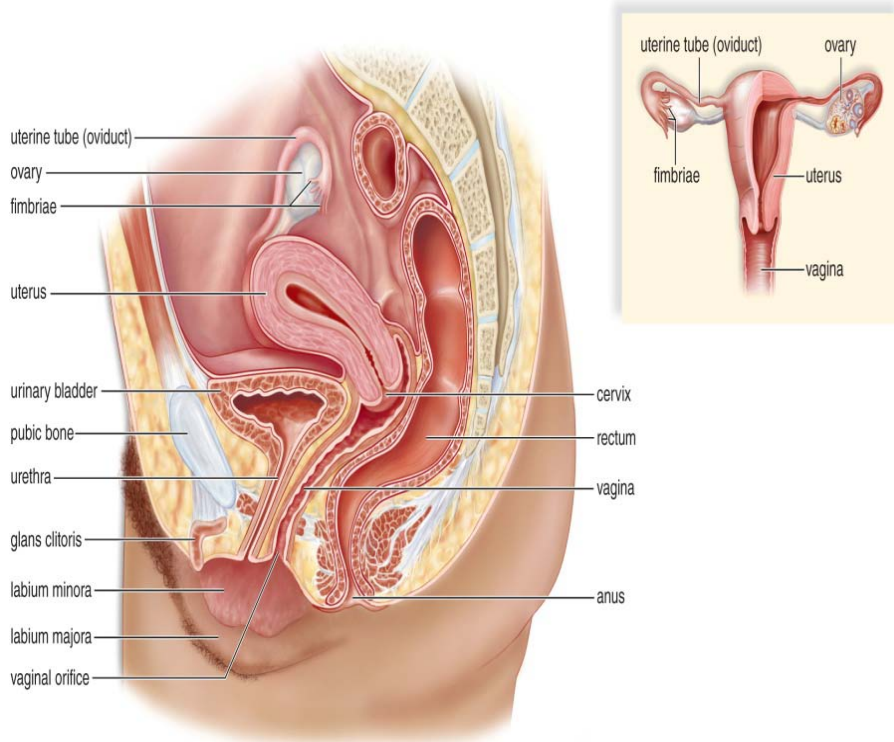
**\*about 225 million sperm per ejaculation**

# Female System - Stages

- 1) prenatal, 1st trimester of preg.,
    - eggs begun & stored\* (400K in stasis)
  
  - 2) reproductive years - puberty on\* (10-50 yrs old)
    - 1 egg/mo. developed & released
    - ↑hormones → ↑ female 2° sex. char
  
  - 3) reprod. free years - menopause, about 50 yrs
    - eggs deteriorate, menstruation ends
    - ↓hormones → ↓female 2° sex. char.
- \*life cycle - 10 to 40 yrs!**

# Egg Flow (1)

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- 1) ovary: store/mature eggs**
- 2) fimbriae: transfer egg**
- 3) oviduct\*: transfer/fertilize egg**
- 4) uterus: menses/gestation**
- 5) cervix: contain uterine contents**
- 6) vagina: channel**
- 7) vag. orifice: exit**

**\*fallopian tube, uterine tube**

# Female Fluids

## 1) vaginal fluid:

- stimulus: sexual intercourse
- site: 2 layers in vagina
- function: lubrication

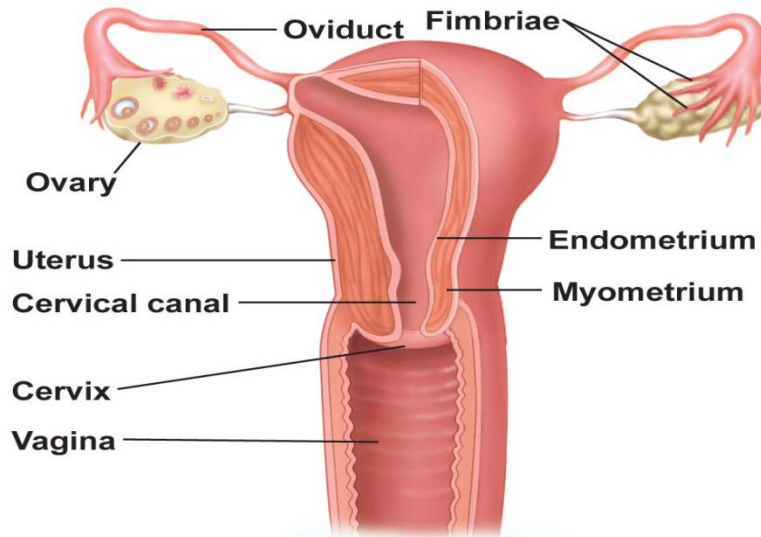
## 2) menstrual fluid

- stimulus: menses
- site: uterine walls
- function: viscous uterine lining

## 3) milk

- stimulus: suckling after delivery
- site: mammary glands
- function: fluid nourishment for young

# Female Monthly Cycles



**b) Anterior view of internal organs**

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- 1) uterine cycle**
  - uterus prepares nourishment for baby
- 2) ovarian cycle**
  - ovary prepares pregnancy hormones
- 3) egg cycle**
  - egg develops & ovulates (moves out of ovary, into fallopian tubes)



# Success Rates

<b>Method</b>	<b>Success Rate</b>
<b>1) abstinence</b>	<b>100%</b>
<b>2) vasectomy/hysterectomy</b>	<b>99.5%</b>
<b>3) oral, inject., implants, IUD</b>	<b>99%</b>
<b>5) condom (male/female)</b>	<b>79-89%</b>
<b>6) diaphragm</b>	<b>90%</b>
<b>7) spermicides (foam)</b>	<b>50-80%</b>
<b>8) rhythm/withdrawal</b>	<b>75%</b>
<b>9) douche</b>	<b>70%</b>
<b>10) nothing</b>	<b>10-15%</b>

# Female Infertility

- 1) body weight problems**
  - ovarian follicles do not develop or ovulate**
  
- 2) PID - pelvic inflammatory disease**
  - infected reprod. organs -> blocked uterine tubes**
  
- 3) endometriosis - uterine tissue in abdomen, develops incorrectly, hard to fertilize/conceive**
  
- 4) age - older, damaged eggs, lower egg count, less hormones, weaker body for pregnancy**

# To Make a Baby

**re-produce = again + produce**

**- to form a new human organism**

**before gestation:**

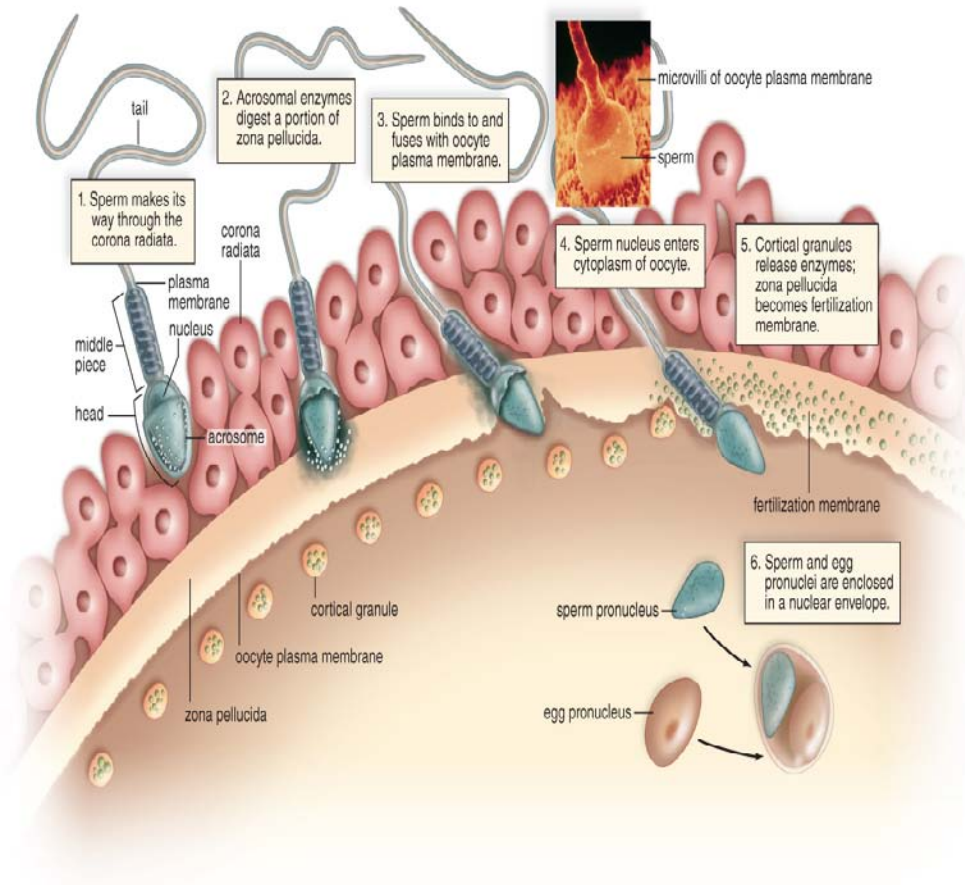
- 1) ovulation**
- 2) sperm penetration**
- 3) fertilization**

**gestation (9+ mo., 280 days):**

- 1) pre-embryonic: conceptus->embryo**
- 2) embryonic: embryo->fetus**
- 3) effect on woman's body**
- 4) birth & delivery**

# Fertilization

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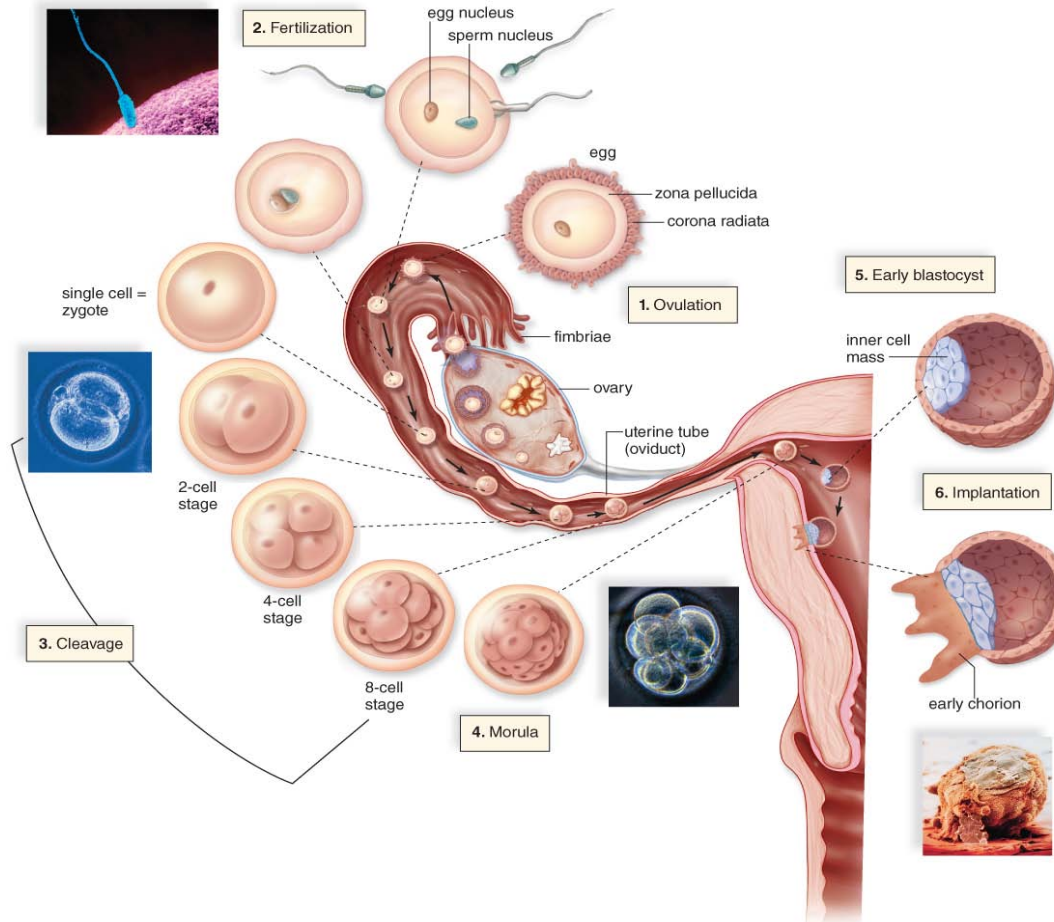


- 1) sperm outside egg
- 2) sperm enters egg
- 3) sperm fuses w/ egg
- 4) sperm inside egg
- 5) sperm enclosed
- 6) sperm & egg merge  
- chrom. connect

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# Pre-embryonic Dev.

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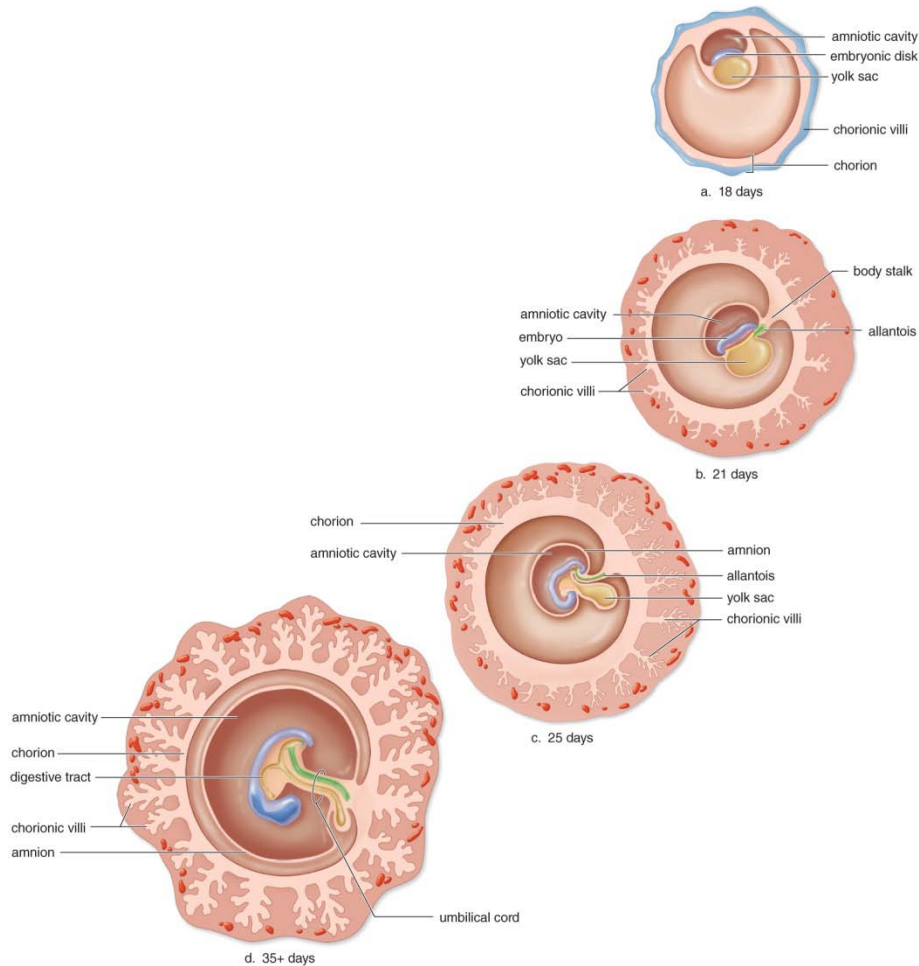
- 1) ovulate
- 2) fertilize
- 3) cleave
- 4) morula
- 5) blastocyst
- 6) implant\*

**\*to uterus  
- to oviduct,  
ectopic preg.  
high risk**

(fertilization): © Don W. Fawcett/Photo Researchers; (2-cell): © Rawlins-CMSP/Getty Images; (morula): © RBM Online/epa/Corbis; (implantation): © Bettmann/Corbis

# Embryonic Dev.

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**a) 18 days**

**- embryonic disc,  
amniotic cavity,  
full yolk sac**

**b) 21 days**

**- allantois, body stalk**

**c) 25 days**

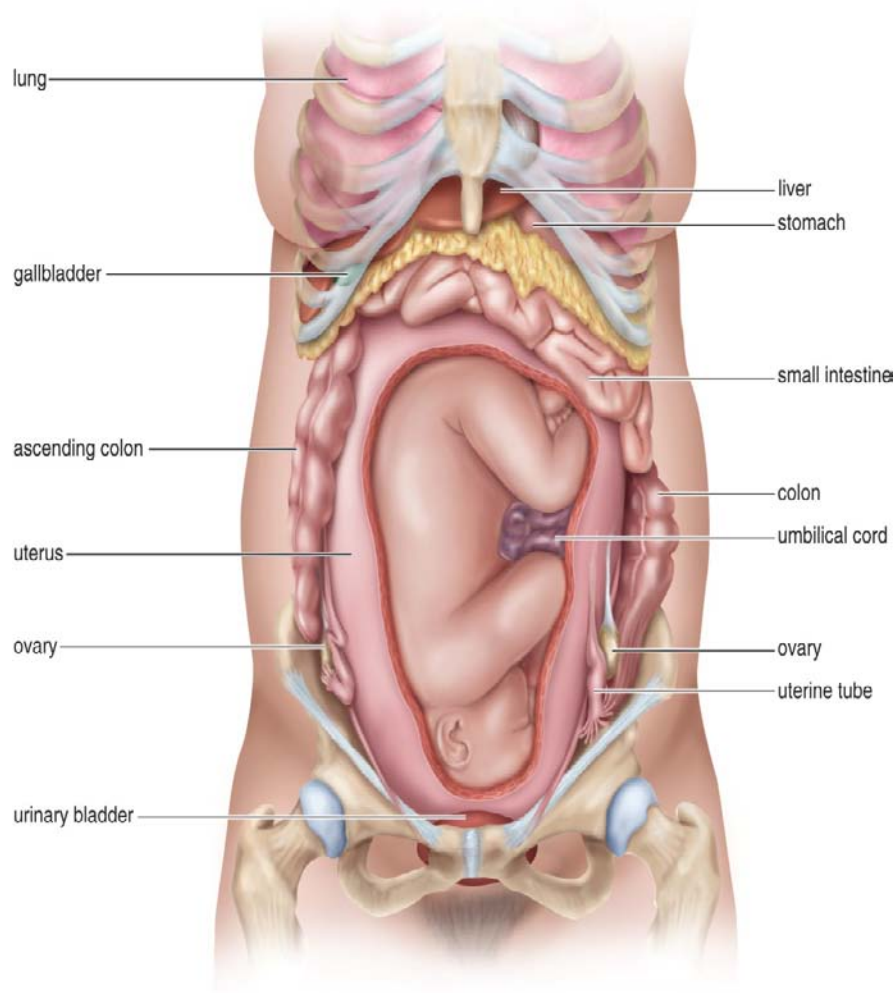
**- reduced yolk sac**

**d) 35+ days**

**- umb. cord, digest. tract**

# Pregnant Woman's Body

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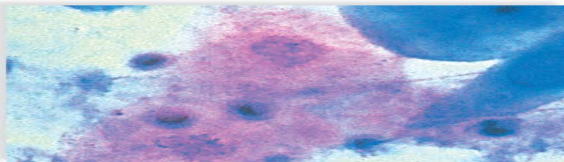


- 1) lungs, heart, & diaphragm pushed up
- 2) liver, gall bladder, SI compressed
- 3) LI stretched
- 4) urinary bladder compressed
- 5) backbone pressed
- 6) weight on hip bones
- 7) what else?

# Viral STD's

- 1) **AIDS: HIV (human immunodeficiency virus)**
- 2) **genital herpes: HSV-2 (herpes simplex virus, type 2)**  
(HSV-1 -> cold sores & fever blisters)
- 3) **hepatitis B: hepatitis B virus**

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a-b: Courtesy Centers for Disease Control, Atlanta, GA. (Crooks, R. and Baur, K.)  
Our Sexuality/3/e, Wadsworth 2000 17-4, p. 489. c © G. W. Willis/Visuals Unlimited

- genital herpes: HSV-2**  
(herpes simplex virus, type 2)
- a) female labia
  - b) male penis
  - c) herpes simplex virus



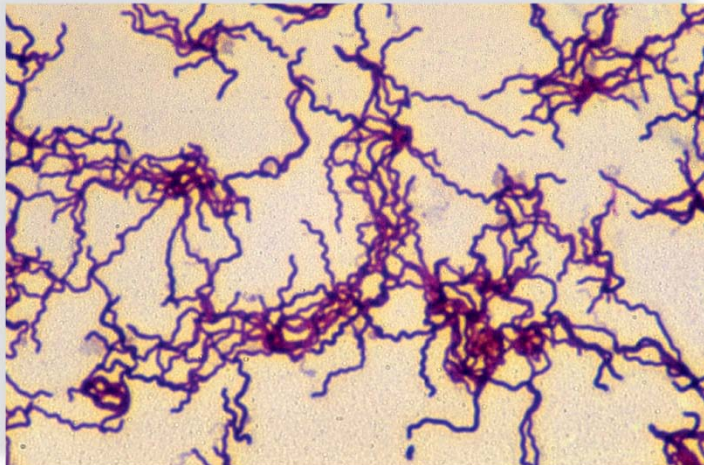
# Bacterial STD's

- 1) **chlamydia: *Chlamydia trachomatis***  
(newborn: blindness, lungs, death, malformed)
- 2) **gonorrhea: *Neisseria gonorrhoeae***
- 3) **syphilis: *Treponema pallidum***

**syphilis**

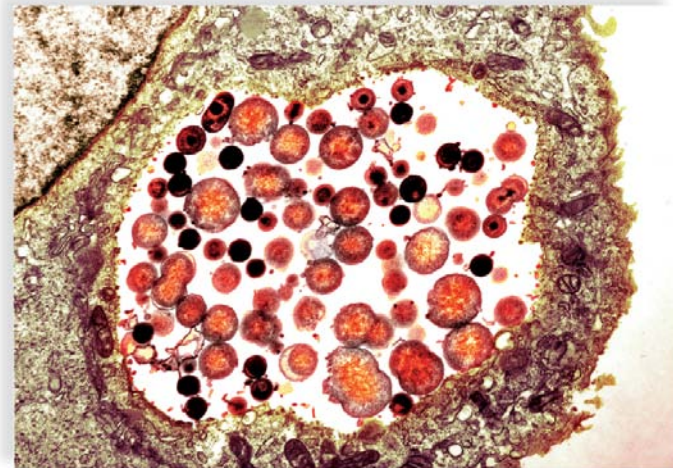
**chlamydia**

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# Reprod. Diseases

**Describe the cause and effects of these STD's:**

**a) bacterial**

**- gonorrhea, syphilis, chlamydia**

**b) viral**

**- AIDS, hepatitis B, genital herpes, genital warts**

**c) others**

**- yeast infection, trichomoniasis, pubic lice**