MALE STRUCTURES

- Spermatogenesis
  - 20-100 million sperm/ml

FEMALE STRUCTURES

- 20-100 million sperm/ml
Oogenesis

Prevents menstruation, causes thickening of uterine lining

PATHOLOGIES

• Prostatitis-
  – Bacterial or other causes
  – Often affects older men
  – Pain in the lower back and rectum, painful urination

• Pelvic Inflammatory Disease (PID)
  – Infection of the uterine tubes, 850,000 women/year
  – Often the result of an STD (esp. gonorrhea)
  – Fever, Abdominal Pain, Elevated WBC count
  – Common cause of infertility

• Cancers of the prostate (male), cervix, ovaries & uterus (female)
Birth Control Methods

Barrier Methods

Hormonal Methods
"Natural" Methods

The Calendar (Rhythm) Method

These days may be spread of twenty-eight days. Cycle varies as much as eight to ten days between shortest and longest cycles. Intercourse on these days may have live sperm to fertilize egg.

"Natural" Methods

Basal Body Temperature Method

Day of cycle

NERVOUS SYSTEM
Overview

Nerve Cell Structure

Resting Potential
Gated Channels

Action Potential

Synapse Function
**PATHOLOGIES**

- **Demyelination Disorders**
  - Heavy metal poisoning, Diphtheria, Guillain-Barre Syndrome, Multiple Sclerosis

- **Meningitis**
  - Bacterial or viral

- **Others:** Stroke, Parkinson’s, Alzheimer’s, Depression, Eating Disorders

**IMMUNE SYSTEM**
FUNCTIONS

STRUCTURES

Lymphatic System Organs

Blood

Integumentary System

TWO TYPES OF DEFENSES

<table>
<thead>
<tr>
<th>Nonspecific defenses</th>
<th>Specific defenses (Immune system)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First line of defense</td>
<td>Second line of defense</td>
</tr>
<tr>
<td>• Skin</td>
<td>• Phagocytic white blood cells</td>
</tr>
<tr>
<td>• Mucous membranes</td>
<td>• Defensive proteins</td>
</tr>
<tr>
<td>• Secretions of skin and mucous membranes</td>
<td>• The inflammatory response</td>
</tr>
<tr>
<td></td>
<td>• Lymphocytes</td>
</tr>
<tr>
<td></td>
<td>• Antibodies</td>
</tr>
<tr>
<td></td>
<td>• The lymphatic system</td>
</tr>
</tbody>
</table>

Copyright© 2006 Pearson Education, Inc. Publishing as Benjamin Cummings.
FIRST LINE OF DEFENSE

SECOND LINE OF DEFENSE

INFLAMMATION
- REDNESS
- HEAT
- SWELLING
- PAIN

THIRD LINE OF DEFENSE
SPECIFIC DEFENSES
INDUCED IMMUNITY

Rheumatoid ARTHRITIS

Sexually Transmitted Diseases
  • BACTERIA-PID
  • PARASITES
    – PROTOZOAN
    – ECTOPARASITES
  • VIRUSES
**Chlamydia trachomatis**
- Most common in US, 75% unreported
- Symptoms rare-65% no symptoms
- Causes PID, infertility
- 3-4 million people/yr

**Neissera gonorrhea**
- Second most common STD
- 650,000 cases/yr
- neonatal ophthalmia
- Similar symptoms to chlamydia

- In women:
  - unusual vaginal discharge
  - burning when urinating
  - lower abdominal pain
  - bleeding between periods
  - low fever

- In men:
  - discharge from the penis
  - burning when urinating
  - pain and swelling in the testicles
Gonorrhea

Pelvic Inflammatory Disease

Treponema pallidum: Syphilis

- 1400’s
- Spirochete bacteria
- 4 stages
  - 1-chancr
  - 2-rash
  - 3-latent
  - 4-severe
Sexually Transmitted Parasites

*Trichomonas vaginalis*

- **Pathology and symptoms:**
  - **female:** Vaginal inflammation, creamy to yellowish frothy vaginal discharge, burning on urination, itching, irritation
  - **male:** Asymptomatic
    - Prostatitis, urethritis, epididymitis with hematuria, incomplete bladder emptying, wbc and rbc in urine
  - **Treatment:** Metronidazole
  - Tinidazole

---

**Phthirus pubis**

Pubic Lice

- Itchy skin
- Black powder (lice droppings) in underwear
- White eggs on the hair
- Occasionally, visible lice and eggs
- Spots of blood are sometimes seen as lice feed from blood vessels close to the surface of the skin

---

### Viral STD’s: Herpes

- 45 m infections in US
- Lesions shed (cast off) viruses that can infect another person
- 1st symptoms w/in 2 to 10 days
  - Itching or burning
  - Pain in the legs, buttocks, or genital area
  - Discharge of fluid

**Treatments:** (NO CURE)

- Acyclovir (Zovirax)
- Famciclovir (Famvir)
- Valacyclovir (Valtrex)
Viral STD's: Papilloma (HPV)

- 100 types; 30 types are STIs
- 20 m people in the US; 6m new/yr
- 50% of active, 80% of women 50+
- Often no symptoms
- Skin-to-skin contact
- 2/3 will get warts
- Antiviral creams and Acid treatments
- Linked to cervical cancer

Viral STD's: HIV

- Human Immunodeficiency Virus
- AIDS-Acquired Immune Deficiency Syndrome
- blood, vaginal fluid, semen, and breast milk
- 800,000 to 900,000 people who are HIV-positive
- 300,000 people with AIDS
- signs of HIV disease like fevers, night sweats, diarrhea, or swollen lymph nodes