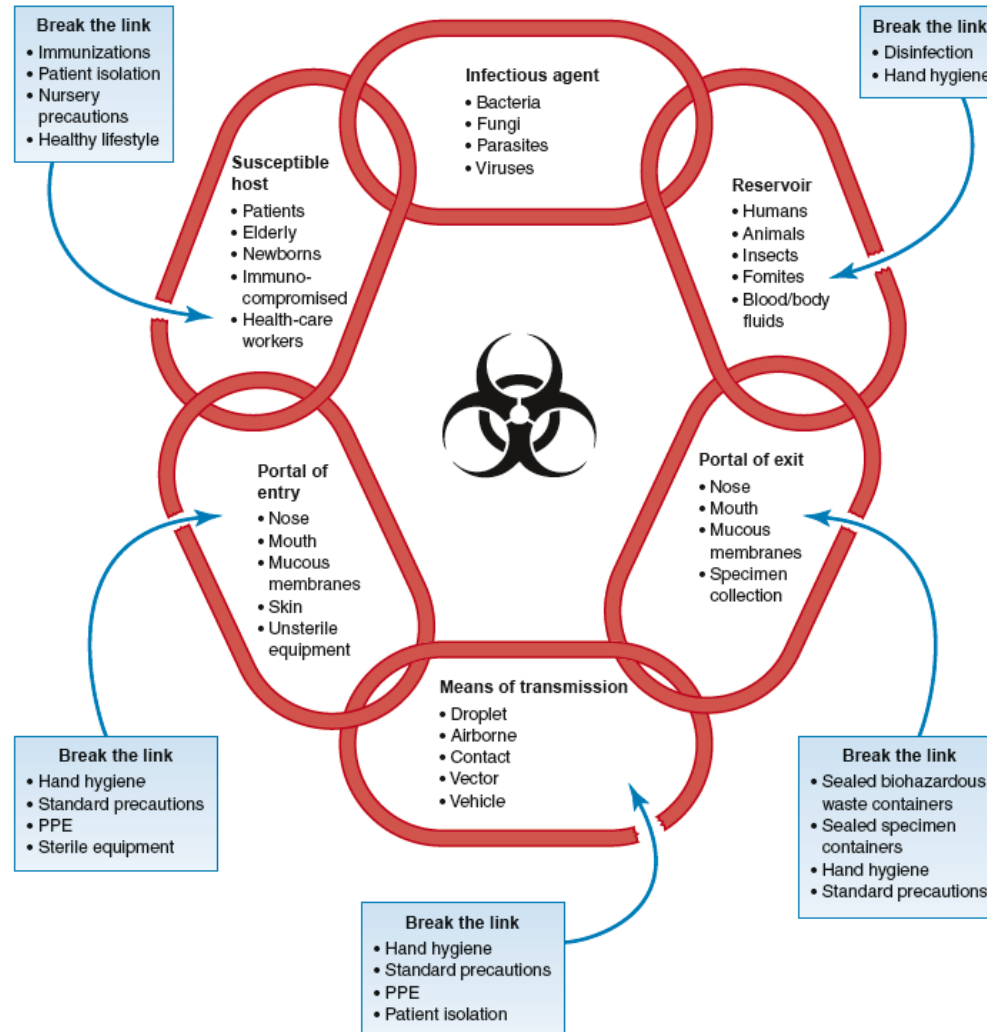


Sample collection & Management

By
Dr. Gouse Mohiddin Shaik

Sample collection & Management

- BIOHAZARD**



Urine collection & Management

- **Urine – Specimen Collection**
 - Must be collected in a clean dry and disposable container with screw cap lids
 - Properly labeled with name, date and time of collection and stick to the container
 - Depending on the requirement, should be tested within 1 hr. or refrigerate or add preservatives like Toluene, thymol, or boric acid)

Urine collection & Management

- **Urine Changes if not preserved**
 - Urea → ammonia
 - Decrease in glucose
 - Decrease in bilirubin from exposure to light
 - Decrease glucose due to glycolysis and bacterial utilization.
 - Decrease ketones because of utilization.
 - Decrease bilirubin from exposure to light.

Urine collection & Management

- **Urine Changes if not preserved**
 - Increase bacterial number.
 - Increase turbidity caused by bacteria & amorphous.
 - Disintegration of RBCs casts, particularly in diluted alkaline urine.
 - Increase nitrite due to bacterial reduction of nitrate.
 - Changes in color due to oxidation or reduction of metabolic

Urine collection & Management

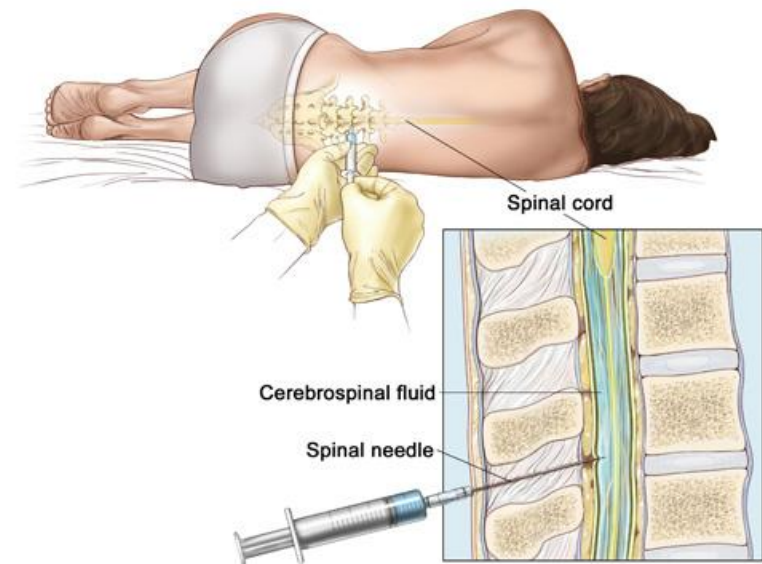
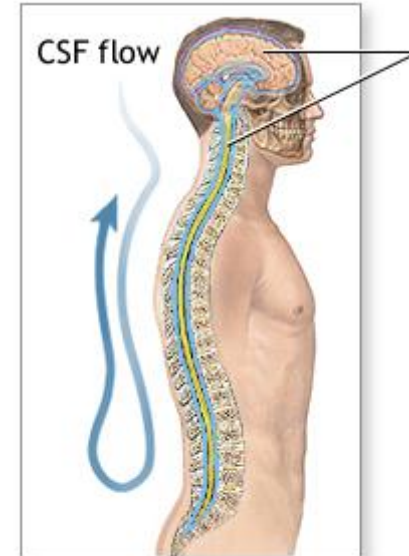
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Urine collection & Management

- **Types of urine samples**
 - Random sample – for routine screening
 - First morning sample – more concentrated and gives better results
 - 24 hr collection – to evaluate kidney function
 - Post Prandial sample – after meal and specific time
 - Clear catch sample – for infection testing
 - Catheterized sample – pediatric application

CSF collection & Management

- **Cerebrospinal fluid**
 - It is clear colorless liquid that fills the cavities of brain and the spinal cord
- **Sample collection**
 - Lumbar puncture

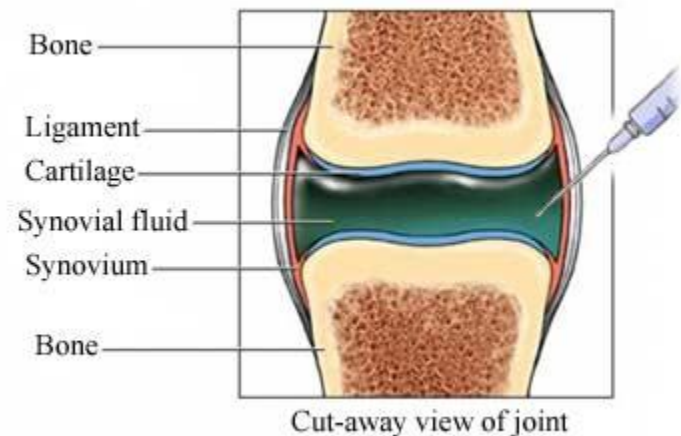


CSF collection & Management

- **Sample collection**
 - Should be collected in sterile conditions
 - Can be drawn up to 3 samples for chemistry, serology and microbiology
- **Purpose**
 - To diagnose CNS diseases
 - Viral, bacterial (meningitis, encephalitis)
 - Cancer of CNS
 - Hemorrhage detection
 - Syphilis also

Synovial collection & Management

- **Synovial fluid**
 - Also known as joint fluid
- **Sample collection**
 - Needle aspiration of the knee (Arthrocentesis)
 - Up to 3.5 ml can be collected



Synovial collection & Management

- **Purpose**

- To identify joint problems
- To diagnose few types of arthritis and inflammatory joint disease
- To relieve pain

Samples tested for crystals, microbiology and immune studies

Synovial fluid had almost same composition as plasma except some big proteins

Seminal collection & Management

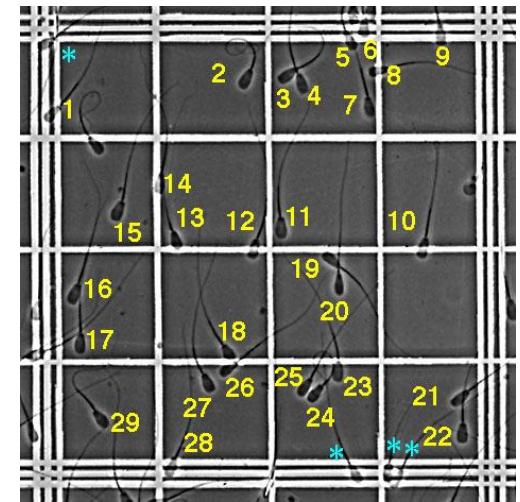
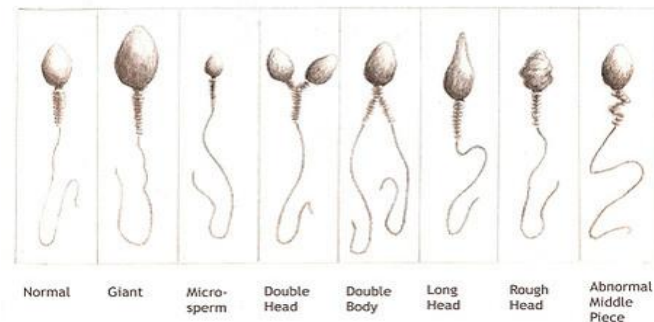
- **Purpose**

- To perform investigations on infertility
- To determine effectiveness of vasectomy operation
- For sperm donation banks
- Medico-legal : sexual crimes

Seminal collection & Management

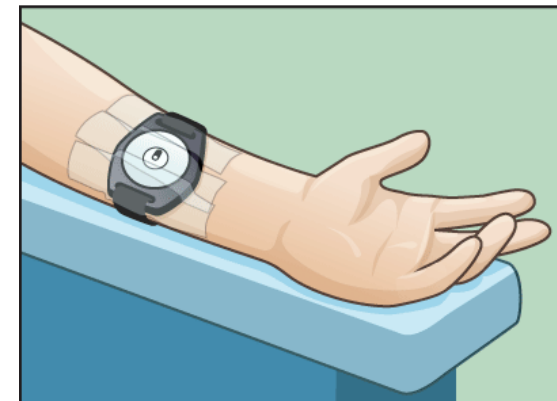
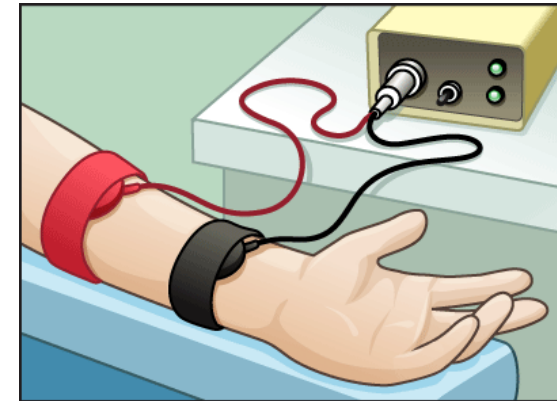
- **Sample collection**
 - Should be collected in pre-warmed sterile container preferably after 2 days of abstinence from sexual activity
 - Mainly for microscopic examination
 - For chemistry lab
- **Methods of collection**

Sperm Morphology



Sweat collection & Management

- **Purpose**
 - Mainly measures the amount of salts
 - Useful in diagnosis of cystic fibrosis
- **Methods of collection**

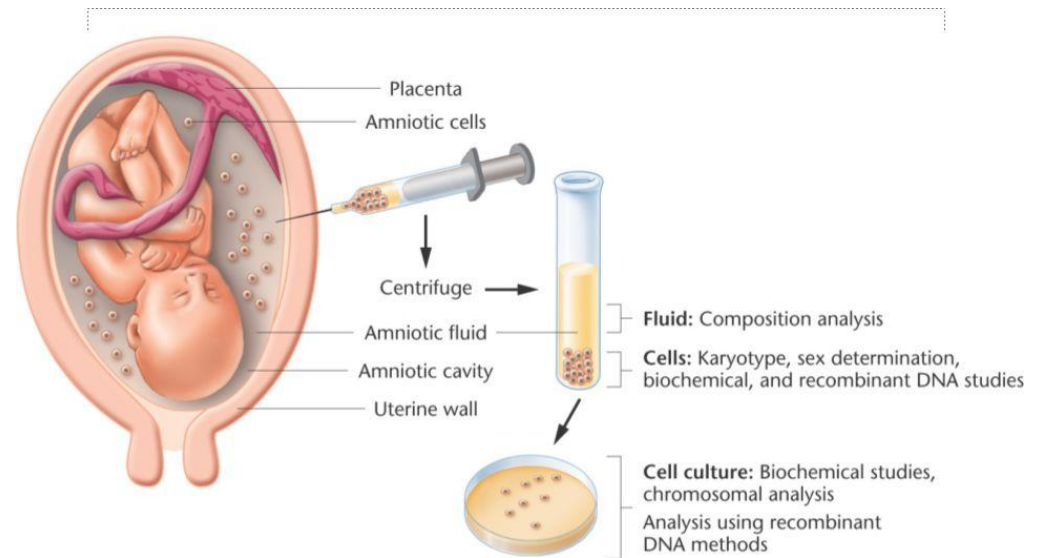


Amniotic fluid collection & Management

- **Amniotic fluid**
 - Clear yellowish liquid that surrounds the fetus
- **Purpose**
 - To predict diseases
 - To detect fetal sex
 - To discover genetic disorders (down's syndrome)
 - To assess lung maturity
 - To test for infections

Amniotic fluid collection & Management

- **Collection**



- **Storage**

- Can be stored by freezing for 1 week in sterile containers

Saliva collection & Management

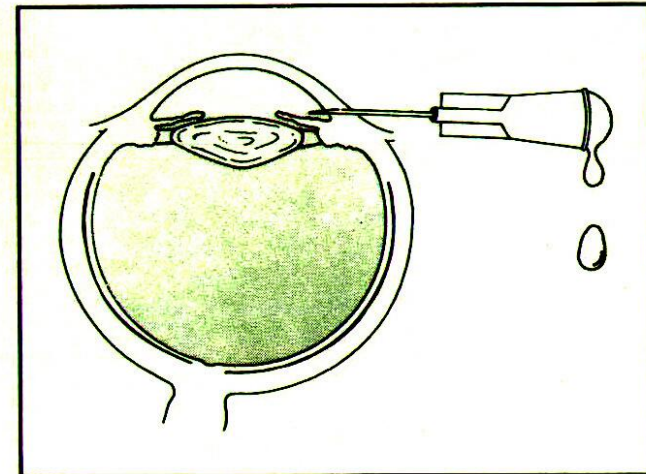
- **Saliva**
 - Whole saliva is a mixture of fluids
 - Can be affected by systemic diseases and changes reflect
- **Tests**
 - Antibody detection for infectious diseases
 - Test for hormones
 - Test for drugs

Saliva collection & Management

- **Collection**
 - Can be collected with/without stimulation
 - Absorbent pads which can be put in mouth for 2-3 minutes are also of choice
 - Can be frozen to store

Aqueous humor collection

- **Aqueous humor**
 - Transparant geleatenous liquid supporting lens
 - Changes in volume and viscosity can lead to pressure differences in eye
 - Glucoma



Fluid collection & management

- Many other fluids include
 - Feces
 - GI secretions
 - Milk
 - Etc.....