Microscopic examination of Seminal fluid

Purpose of the test

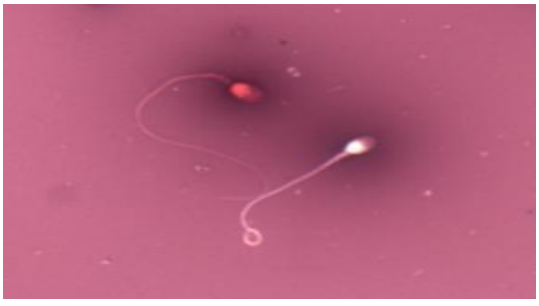
- Semen analysis mainly measures the amount of semen a man produces and determines the number and quality of sperm
- One of the routine tests done to determine male infertiliy
- To determine the effectiveness of vasoctomy
- To assess suitability of semen for artificial insemination
- Forensic and medico legal cases requires semen analysis in sex crimes.

Table 10–1 Semen Composition

Spermatozoa	5%
Seminal fluid	60% to 70%
Prostate fluid	20% to 30%
Bulbourethral glands	5%

• Sample collection

- Samples are collected after a period of abstinence of 2 days
  - If not false results may appear
- Complete sample collection after ejaculation is essential
  - If not false results may appear
- Sample should be collected in to pre warmed sterile ،non-toxic ،wide mouth container
- Should be tested within 2-1 hours
- Many methods are in practice.



Microscopic examination

Motility – or Mobility

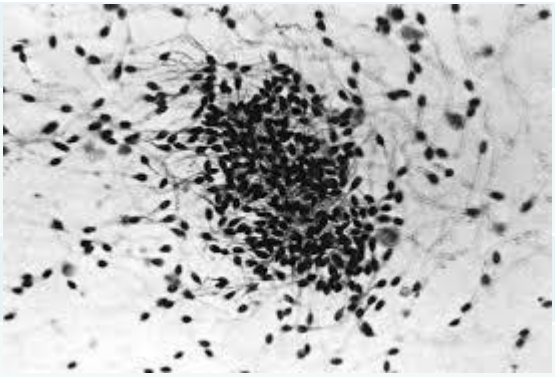
Describes the percentage of sperm which are movint .Generally 50% of the sperm should be moving
For normal fertilization sperm not only moving but must be capable to move in forward progression (progressive activity)

Rapid progressive The sperm are moving swiftly across field in a straight line	**Slow or sluggish** Straight line mobility but slow **Non-progressive** Sperm not moving in straight line (twitching or shaking)	**Immobility** No movement at all

Live and dead sperms can be differentiated by eosin stain (dead – stained)

Microscopic examination

Other cells in semen



Leukocytes normally 1-4 / HPF
High number (leukocytospermia (indicates infection

Epithelial cells normally 1-2/ HPF

Spermatocytes (immature germ cells) 1-2 / HPF

Erythrocytes / 2-1HPF .Increased number indicates trauma or infection

Bacteria or protozoan such as trichomonas vaginalis are rare but presence indicates infection

Agglutination or clumping

Presence of agglutination indicates immunological infertility Presence of anti-sperm antibody.

Microscopic examination

Morphology – describes the shape of the sperm

At least 30% of the sperm should be normal for fertility Must meet specific sets of criteria to be classified as normal

Normal spermatozoa should have oval shaped head(4-5.5 µm X 3-2.5 µm)

The middle piece should be cylindrical 50-45) µm long and 0.5 µm wide (The tail should also be cylindrical 50-45) µm long and 0.5 µm wide)

Head shape/size Large ، small ،tapering ،pinhead form ،amorphours ، vacuolated, multiple heads	**Neck & middle piece** Irregular ، bent middle piece, thin middle piece) no mitochondria،(	**Tail defects** Short, multiple ،hairpin ،broken, irregular width، coiled tails **Cytoplasmic droplets**

sperm the of describes the shape – Morphology