Trichomoniasis

(Trichomonas vaginalis)

Trichomoniasis

- Sexually transmitted disease of worldwide importance

- It is cosmopolitan in distribution, however prevalence is not uniform because of sanitary and hygiene habits (depends on surroundings).

  – 20-40% in Women
  – 15% in Men

Pathology

Women

- Asymtomatic in most cases
- **Vulvovaginitis**
  - Purulent vaginal discharge (**leukorrhea**)
  - Malodourous smell
  - Strawberry cervix
    - Punctate haemorrhages in mucosa
  - Vulval & vaginal epithelium fiery red and inflamed
  - Dyspareunia
- **Urethritis**
  - Dysuria
  - Increased frequency of micturition

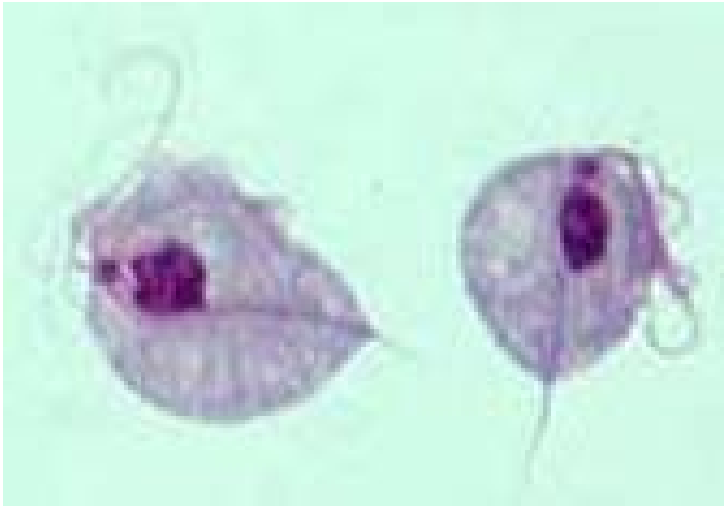
Pathology

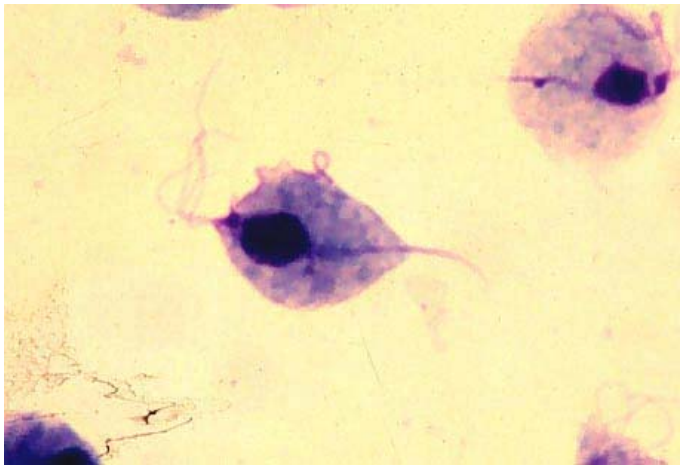
Men

- Usually asymtomatic
- **Non-gonococcal urethritis**
  - Pain in urethra
  - Testicular pain
  - Purulent to mucoid discharge
- Epididymitis
- Prostatitis
- Superficial penile ulcerations

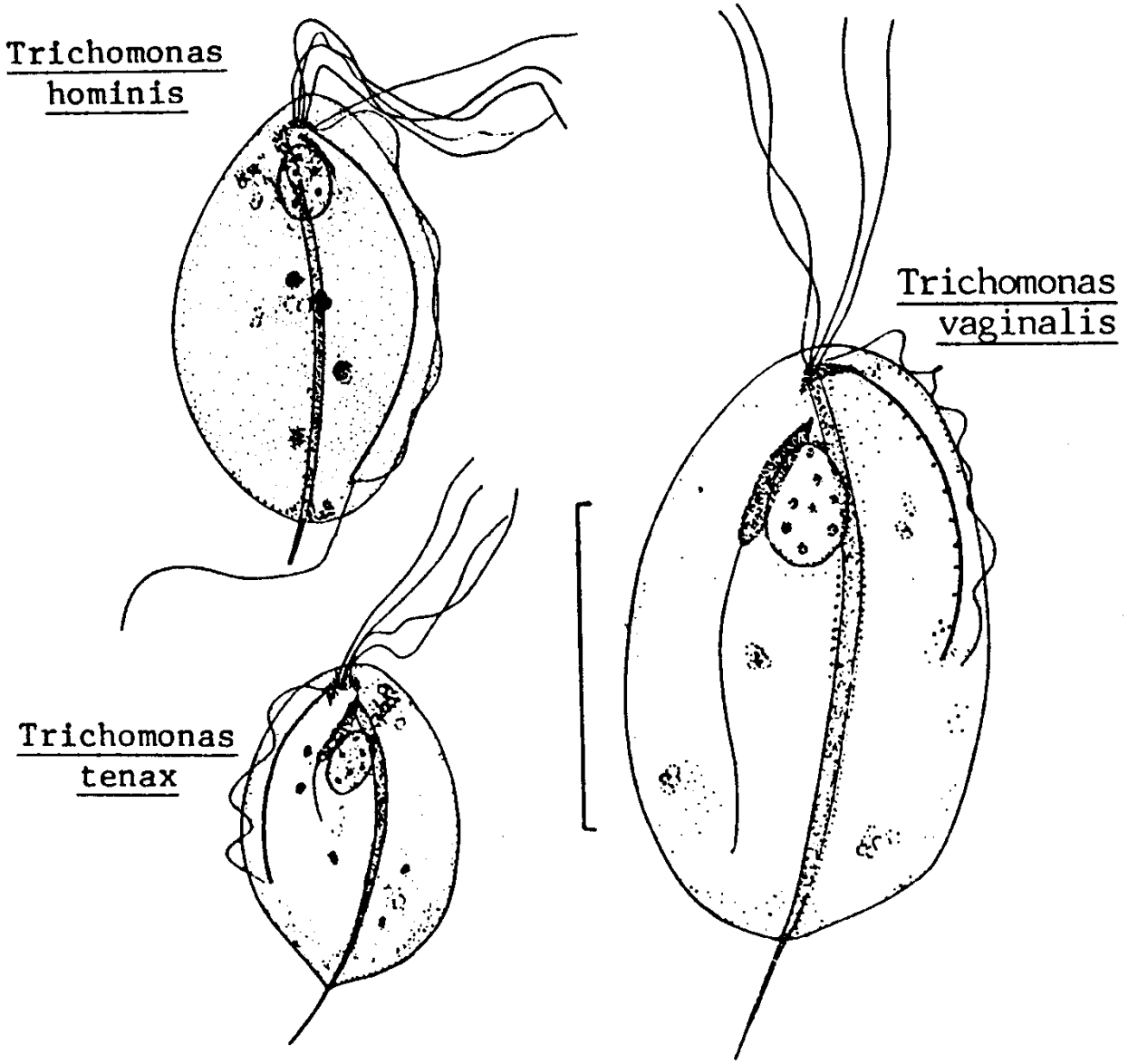
Trichomonas

- Trophozite is the only stage present in the life cycle, **cystic stage absent**
- 3 species in humans
  - ***T. vaginalis***
  - *T. tenax*
  - *T. hominis*
- Characteristic jerky motility
- Multiplies by longitudinal binary fission

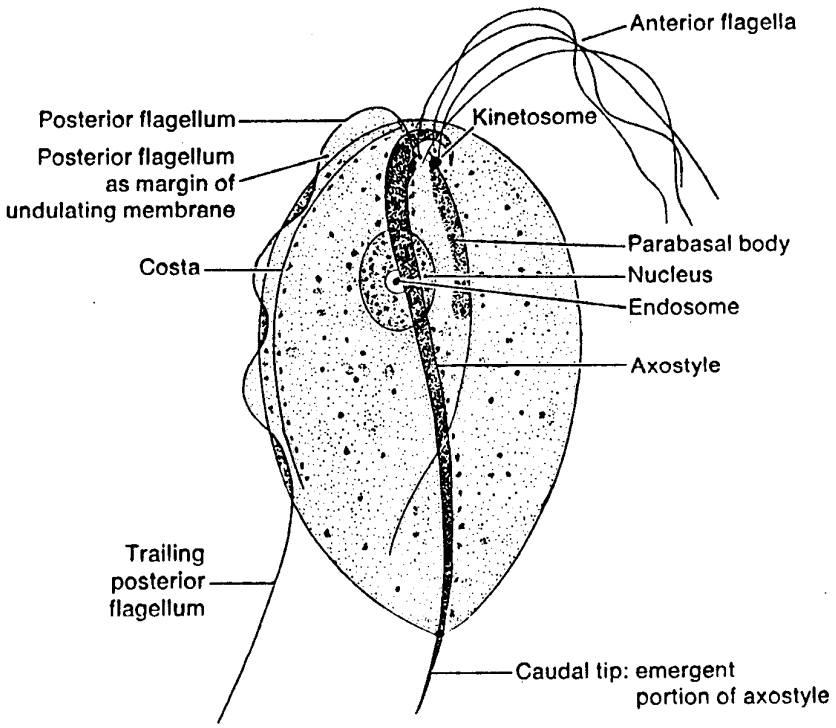




Three spp. of *Trichomonas* found in humans

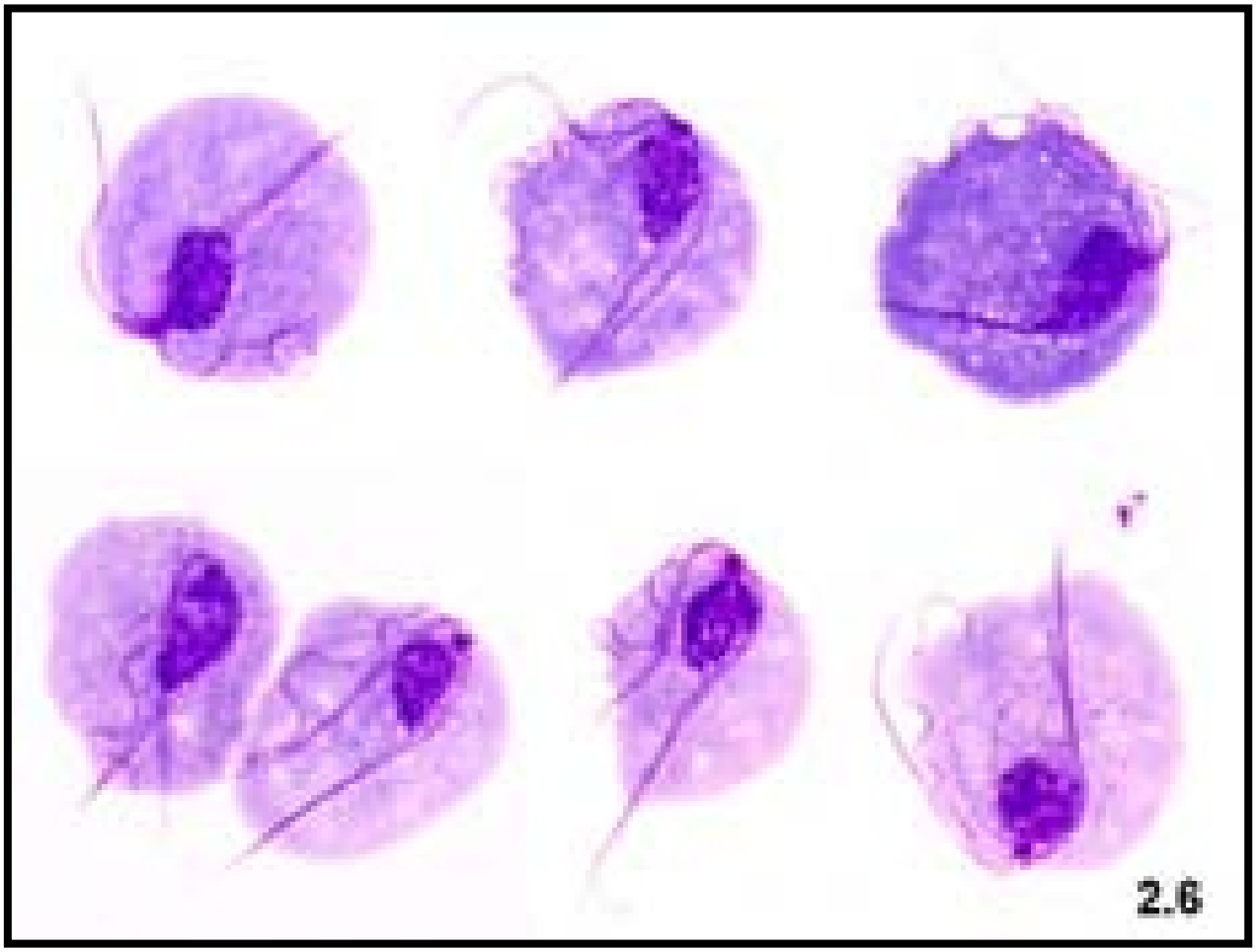


General Morphology of *Trichomonas* trophozoite



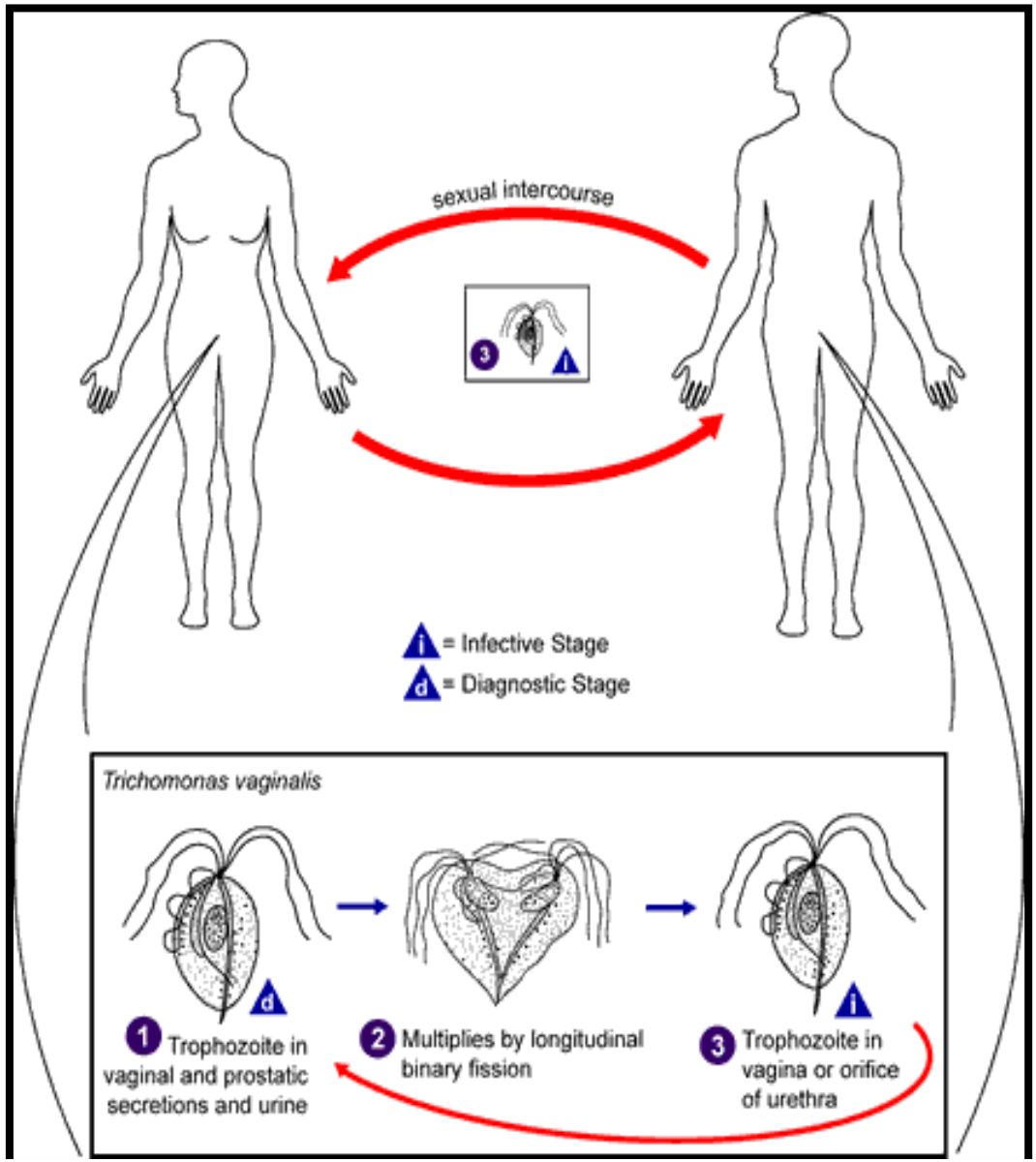
- Pear shaped
- 7 – 23 in length
- 4 flagella extend anteriorly
- 1 flagellum extends posteriorly along the cell membrane to form an **undulating membrane**
- **Costa** , a rigid cord attaches the undulating membrane to the cell membrane and gives the undulating membrane support
- **Axostyle** runs down the middle of the body & ends in a pointed tail like etremity
- Round nucleus in the anterior portion

Trichomoniasis *(Trichomonas vaginalis)*

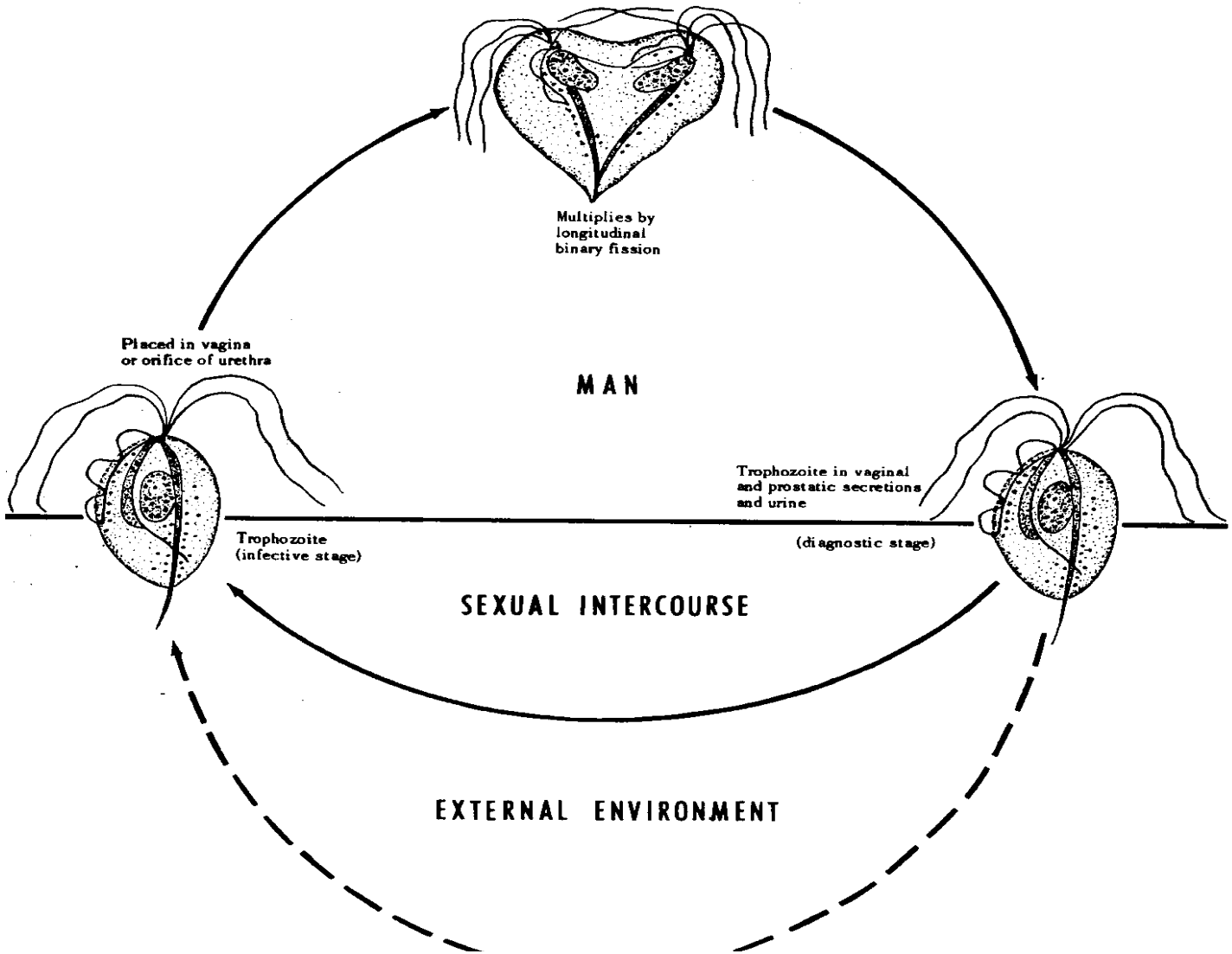


Trophozoites

Trichomonas vaginalis – Life Cycle



Life Cycle of *Trichomonas vaginalis*



Trichomonas vaginalis

- It lives in the reproductive and urinary system of people (obligate parasite)
- **Obligate parasite** – cannot live without close association with vaginal, urethral or prostatic tissues
- Infects **squamous epithelium** but not columnar epithelium
- High incidence of symptomatic infection is seen in **women**
- Zinc and other inhibitory substances probably inhibit their growth in men

Trichomonas vaginalis

- Natural flora (bacteria) keep the pH of the vagina at 4-4.5 and ordinarily this discourages infections.

- *T. vaginalis* can survive at a low pH.

- Once established it causes a shift toward alkalinity (pH 5-6) which further encourages its growth.

Laboratory Diagnosis

Samples in women

- Vaginal discharge
- Endocervical specimen

Samples in men

- Urethral discharge
- Prostatic fluid
- Early morning first voided urine sediment
- Semen

Laboratory Diagnosis

Parasitic Diagnosis-Methods of examination

- Microscopy
- Culture
- Antigen detection (ELISA)

Serodiagnosis- limited value

Molecular diagnosis

- DNA probes – more sensitive & highly specific
- PCR- highly sensitive & specific

Microscopy

Wet mount

- Easy, useful & economic
- About 80% sensitivity in symptomatic females
- T. vaginalis trophozoites seen with characteristic jerky & twitching motility

Acridine orange stain

- Rapid & accurate method
- Sensitivity same as wet mount

Direct fluorescent antibody staining

- Rapid & more sensitive
- Requires a fluorescent microscope

Lab. Diagnosis - Culture

- Gold standard
- Most sensitive
- Media – Diamond's, Lash & Kupferberge
- Media contains yeast extract, horse serum & antibiotics
- Observed for 7 days
- Culture usually positive after 48 hrs
- Done in patients with suspected Trichomoniasis but wet mount negative

Treatment

- Metronidazole – highly effective
- Clotrimazole topical

Prevention

- Detection & treatment of cases – both partners
- Avoidance of sexual contact with infected partners
- Use of condoms