

OREGON HEALTH & SCIENCE UNIVERSITY
Point of Care

**Trichomonas, Clue Cells, and Yeast
by Wet Mount Microscopic Examination**

Principle

Wet preparations of vaginal secretions are often examined to diagnose causes of vaginal or urethral discharge. The nature of the discharge, its pH and odor, and the presence or absence of characteristic organisms in wet preparations are key to the evaluation. *Trichomonas Vaginalis*, clue cells, and yeast are often associated with genital tract infections. Yeast should be observed with the addition of KOH, for the presence of budding or pseudohyphae forms. KOH will dissolve tissue cells and keratinized material, making fungal material more visible.

Specimen Requirements

1. Vaginal secretion, urethral discharge or urine.
2. For vaginal secretion or urethral discharge:
 - a. Collect the specimen using a cotton-tipped swab.
 - b. Place swab in sterile tube containing 0.5 mL normal sterile saline.
 - c. Test specimen immediately.
3. For urine:
 - a. Collect 10-20 mL urine in sterile container.
 - b. Test specimen immediately.

Interferences

1. Small quantities of yeast and hyphae may be missed in the wet mount. Send the sample for culture to verify.
2. Wet mount examination for *Trichomonas* may detect only 50-70% of positive specimens.

Reference Range

None seen.

Alert Values

N/A

Test Accuracy and Reliability Verification

All providers performing Wet Mounts must be enrolled in the on-line training with Medtraining. Please contact Point of Care at 4-6035 to be enrolled.

Procedure

1. Perform a wet mount and a KOH preparation on each specimen.
2. Gently swirl the vaginal secretion or urethral discharge swab in the saline to suspend specimen into saline.
3. Place a drop of saline suspended specimen or urine on one end of a slide and place a coverslip over preparation.
4. Place a drop of saline suspended specimen or urine on the other end of the slide and add a drop of 10% KOH. Place a coverslip over the KOH preparation.
5. Examine the wet mount and the KOH preparation using a microscope under low power (10X) for:
 - a. Motile Trichomonas
 - b. Clue Cells
 - c. Yeast with or without Hyphae
6. Change the magnification to high power (400x) to verify elements seen on low power.
7. Trichomonas are slightly larger than a white blood cell and motile with flagella and an undulating membrane.
8. Clue Cells are squamous epithelial cells appearing stippled or granulated due to bacteria adherence to the epithelial cell surface. Squamous epithelial cells will disintegrate and the attached bacteria will stream off in a KOH preparation.
9. Yeast are oval and sometimes round cells which may be mistaken for red blood cells. A KOH wet preparation will differentiate red blood cells from yeast. Red blood cells will be disrupted while yeast will remain intact. Hyphae will vary considerably in length and width and may be found interwoven among epithelial cells.

