Cytology

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Worldwide, but especially in developed countries, cervical cytology remains the mainstay of cervical screening as part of cervical cancer prevention programs. Cytology is used for routine or follow-up screening for cervical cancer/precancer.

**RELEVANT ANATOMY**

Cervix, squamocolumnar junction. Cytologic interpretation required (Fig. 13.1.1).

**PATIENT POSITION**

- Dorsal lithotomy

**ANESTHESIA**

- None

*FIGURE 13.1.1*  
Papanicolaou smear. **A:** Normal appearing cervix, **B:** Normal appearing cells, **C:** Acetowhite white epithelium (possible dysplasia), **D:** Abnormal appearing (pre-cancer or cancer) cells.
**EQUIPMENT (Fig. 13.1.2)**

- Speculum
- Extended tip spatula/or cervical broom plus cytobrush
- Ethyl ether plus 95% ethyl alcohol or 95% ethyl alcohol alone or spray fixative (conventional)
- Slide
- Large cotton swab

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**Cytology**

**TECHNIQUE**

**Conventional Cytology**

1. Insert speculum—for patient comfort, small amounts of lubrication can be applied to the speculum. Large amounts of lubrication can affect quality of specimen.
2. Small amounts of blood will not interfere with cytologic sampling.
3. If performing a culture, obtain the cytology specimen first.
4. Clear the cervix of excess vaginal discharge.
5. Scrape the cervix circumferentially using a spatula (Figs. 13.1.3 and 13.1.4A).
6. Use the endocervical brush to collect the highest yield of endocervical cells (Fig. 13.1.4B).
7. Insert the brush into the endocervix so the bristles closest to the examiner are flush with the external cervical os.
8. Rotate the brush 180 degrees to obtain a sample.
9. Specimen should be rolled (brush) or smeared (spatula) uniformly onto a slide and rapidly fixed with either ethyl alcohol or spray fixative (Fig. 13.1.3C,D).

If using a spray fixative, hold the slide at least 10 inches to prevent disruption of the cells by propellant.

**Liquid-based Cytology**

ThinPrep

1. Speculum insertion as noted above.
2. Either a plastic extended tip spatula or broom-like device can be used.
3. After the ectocervical sample is obtained, spatula is swirled vigorously in the vial ten times and then discarded.
4. Endocervical specimen can then be collected by inserting the endocervical brush into the canal until the bottom-most fibers touch the ectocervix. It is then rotated five times in one direction to obtain the sample.
5. If the broom-like device is used, this device is pushed gently into the endocervical canal.
6. Rotate the broom five times in one direction to obtain a sample.
7. Place the broom at the bottom of the vial of preservative solution to force the bristles to spread apart and release the sample. Swirl the broom vigorously to further release material into the vial (Fig. 13.1.5).
SurePath

1. Uses a special broom-type sampling device that is placed into the vial and preservative solution.
2. Insert the broom collection device into the endocervical canal using a twisting motion while applying gentle pressure and rotate five times in one direction.
3. Transfer entire sample by placing the thumb against the back of the brush pad. This will disconnect the brush from the stem.

CPT Codes: n/a

PEARLS

- With liquid-based cervical cytology co-testing for HPV and other sexually transmitted diseases using the same collection vial is possible.