



TECHNIQUE FOR OBTAINING SATISFACTORY PAP SMEARS (CERVICAL SAMPLES)

1. INDICATORS FOR SATISFACTORY SAMPLING

To date, the standard screening test for cervical cancer is the Pap Smear. The diagnostic value of Pap Smears for cervical cancer screening is dependent by the quality of the sampling technique. Literature has shown that the majority of false-negative Pap Smears, in cervical cytology, are a result of poor sampling technique and/or inadequate sampling of the transformation zone (TZ). It is in the TZ that the majority of precursor lesions occur, therefore, locating and proficiently sampling the TZ is essential to obtaining a satisfactory sample.

2. TRANSFORMATION ZONE

The location and configuration of the TZ is variable, depending on factors associated with the individual's age, parity, hormonal status, anatomy, and any previous surgery. Generally, the TZ lies on the ectocervix in reproductive years, and recedes within the endocervix during post-menopausal years.



←TZ-Reproductive Years



←TZ-Post-Menopausal Years

The TZ consists of squamous metaplastic cells and is bordered proximally (in the endocervical canal) by cylindric cells and distally (on the exocervix) by squamous cells. Representative sampling will ideally contain both well-preserved exocervical cells (i.e., squamous cells), and endocervical cells (i.e., columnar and/or metaplastic squamous cells).



←Columnar Cells

←Metaplastic Cells

←Squamous Cells

3. PREPARING THE EQUIPMENT AND THE PATIENT

Lay out the equipment in advance:

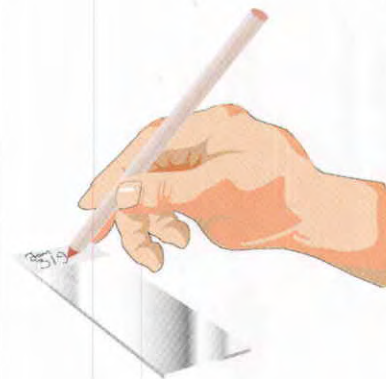
- lead pencil
- spray alcohol fixative
- Pap Smear transport container
- cytology request form
- speculum
- gloves
- frosted-end microscopic glass slide
- sampling devices:
preferably an extended-tip-spatula
and a cytobrush (i.e., spatula, brush)



Spatula



Brush



3.1 On the frosted end of the slide, label the name or identifying reference number of the woman in lead pencil. Unlabelled slides will not be processed by the cytology laboratory.

4. VISUALIZING THE CERVIX

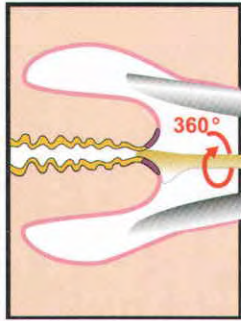


Insert the speculum preferably without any lubricating jelly (as lubricating jelly can obscure the cervical cells sampled). Warm water may be used to lubricate the speculum. Visualize the cervix as clearly as possible to assess position of the TZ and for any clinical abnormalities. Gently remove excessive mucus, discharge or blood with a cotton pledget, if required.

5. SAMPLING THE CERVIX

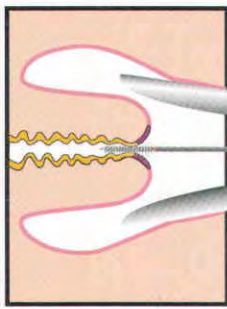
Combination Sampling Using the Spatula and Brush

Combination sampling with the spatula and brush is recommended. This sampling technique encompasses an endocervical and ectocervical specimen, which increases the satisfactory sampling for cervical cytology.



With the spatula, rotate 360° under slight pressure. A clockwise rotation beginning and ending at 9 o'clock will position the spatula so that the collected material is retained on the upper horizontal surface of the spatula.

Carefully remove the spatula and do not smear at this time. Put the spatula aside with specimen face-up. The risk of cellular degeneration (air-drying) is less if the cervical sample remains with the spatula.

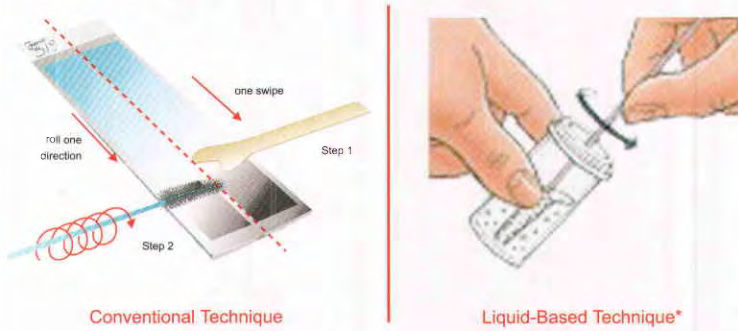


Next, insert the endocervical brush into the cervical os. Ensure some bristles are still visible. Gently rotate 90°. This minimizes bleeding.

6. TRANSFERRING THE CERVICAL SAMPLE ONTO THE SLIDE

Use only one slide. When transferring the cervical sample onto the slide, the objective is to quickly but evenly spread the cellular material without excessive force. This will avoid damage to the cells and avoid air-drying artifact.

Note: Cervical sample should be transferred on slide with the frosted side up



When the sample was taken using the brush and spatula, apply each sample onto one-half of the one slide. First, transfer the cellular material from the spatula in a single uniform motion and in one direction. Next, quickly roll the bristles of the brush by rotating the brush handle. Roll in the same direction the brush was rotated in the cervix.

*If liquid-based then follow manufacturer's instructions.

7. FIXING THE CERVICAL SAMPLE



Immediately spray-fix the specimen. Shake the bottle and spray approximately 15cm to 20cm at right angles. Holding the bottle closer will "blast" or "flood" the cells away, while holding too far will cause uneven fixation or cellular

degeneration. Allow the sample to dry completely before packaging into the mail container.

8. COMPLETING THE CYTOLOGY REQUISITION

Complete the Cytology Requisition (request form) as fully as possible to ensure patient identification and relevant history. Mail completed requisition together with slide.



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Source:

Arbyn M. A technical guideline: collection of adequate Pap smears of the uterine cervix. End report of the Flemish Working Party Sampling (Ministry of the Flemish Community, Flemish Steering Cervical Cancer Screening). Brussels, Scientific Institute of Public Health. IIPH-EPI Reports 2006/064. Available at http://www.iph.fgov.be/epidemiol/epin/cervixnl/s_eng1.pdf

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"Stirring the vial" image courtesy of Cytoc Corporation and Affiliates, the ThinPrep® Pap Test