Cervical speculum examination and taking a smear.
Learning Outcomes

- Able assemble the speculum correctly
- Able to inspect vagina and cervix using a speculum
- Perform a cervical smear
1. Designed for the inspection of the cervix and vaginal walls.
   Bivalve (cusco) speculum is the instrument most commonly used to inspect the vagina.

2. Access to the cervix and fornices for bacteriological swabs and cervical smears.
Examination

- **GRIP**
  - Greet, rapport, introduce and identify, explain procedure
- Tell the patient the procedure is not painful, but may be a bit uncomfortable.
- **Make sure:**
  - not menstruating
  - no spermicide, lubricant, sexual intercourse in the previous 48 hours.
“Lie on the couch, put your heels together, draw them up to your bottom and let your knees flop apart”
Speculum examination

- Warm blades under a stream of tepid water.
- Wear gloves, prepare the slide/bottle
- Write name of the patient, date and time of taking the specimen with pencil not pen if using slide
- Hold the speculum with dominant hand, separate the labia and expose introitus with non-dominant hand
- Tell the patient you are about to introduce the speculum and reassure
Speculum examination

- Slide the closed blades obliquely over the fingers into the introitus, introduce the instrument into the vagina.

- While inserting the instrument rotate it to a clockwise direction until the anterior and posterior blades run along the anterior and posterior vaginal walls with the handles pointing towards the anus or clitoris.
Speculum examination

- Maintain a downward pressure, on the speculum and press on the thumb piece to hinge the blades open to expose the vaginal vault and cervix.
- Adjust the light source to illuminate the vagina.
- Inspect vagina and cervix.
Inspection of the vagina

Discharge:

- Normal – clear / milky, odourless
  - Increased during ovulation, pregnancy, breast-feeding, sexual arousal
- Cottage cheese / curd-like: candida (assoc. with pain, itching, swelling and erythema of the vulva)
- Frothy, fishy odour: Trichomoniasis
- Asymptomatic discharge: gonorrhoea

Ulcers

Foreign body
Inspection of the cervix

- Cervix normally points posteriorly and inferiorly

Look for:
- Discharge
- Cysts
- Polyps
- Ulceration or fungating growth
Speculum examination

- Inspection of vagina
- Inspection of cervix
- Cervical smear

Methods:
- Slide method
- Liquid-based cytology
- Swabs

Removing the speculum

Ending the procedure

Summary

Further reading

Cervical Cancer

Incidence, age, risk factors, pathology – micro, pathology – macro, presentation, investigation

Cervical Screening

Normal

Normal with ectropion

cervicitis

cancer
Nabothian cyst – mucus filled cervical cyst due to blockage of a mucus gland
Cervical polyp (appears to be descending through the os)
Cervical smear performed after inspecting the cervix.

The aim is to sample cells from the transformation zone (where the epithelium changes from columnar to squamous).

![Diagram of the cervix and uterus with the transformation zone highlighted.](image)
Cervical smear - methods

- **Newer method = LBC (Liquid–based cytology)**
  - Use cervex brush (see next slide)
  - Dip brush into bottle of liquid fixative
  - Fewer inadequate samples. Being rolled out across the UK

- **Older method = slides**
  - Use Aylesbury spatula (see next slide)
  - Spray or dip in fixative
Cervical smear - devices

- **LBC**
  - A cervex brush is commonly used

- **Slide-based**
  - A wooden spatula is used with a bifid end (Aylesbury spatula).
Liquid Based Cytology method

- Use a cervex brush
- Place the tip of the brush in the os
- Twirl 10 times
- Place brush in fixative bottle and dip / stir / squish vigorously to wash the cells off the brush into the bottle
Slide method

- The bifid end is used to harvest the cervical cells.
- Introduce the spatula through the speculum and position the bifid end at the os.
- Rotate through 360°
The desquamating cells are collected by rotating the spatula around the circumference of the os and the lips of the cervix.
Slide method

- Send sample to the lab
  - Spread the cervical material onto the labelled glass slide by stroking each side of the bifid end of the spatula along the glass
Slide method

- The cervical cells and some mucus should cling to the glass.
- Immediately spray the slides with fixative or fix them by immersion in 95% alcohol.
- Do not allow the sample to dry.

Some examples of cells processed with the Papanicolaou stain.
Swabs

- If any ulcers, take swab from base of ulcer.

- If infection suspected, take swab from cervix or high vaginal.
Removing the speculum

- Undo the thumb screw
- Simultaneously withdraw the speculum and rotate the open blades to ensure that the anterior and posterior walls of vagina can be inspected.
- Near the introitus, allow the blades to close
- Taking care not to pinch the labia or any hairs while withdrawing the speculum.
Ending the procedure

- Tell the patient that you have finished, give a towel to the patient to wipe herself.

- Send samples to lab
Summary

- Necessary equipment
  - Cusco’s speculum
  - Cervix brush
  - Specimen bottle
  - Microbiology swabs
  - Water based lubricant
  - Tissues
- Introduce yourself
- Identify patient (full name and DOB)
- Procedure –
  - Explain what you are going to do and what she may experience
- Permission
  - Obtain informed consent
- Privacy
- Position
  - Heels together, draw heels towards bottom, let knees flop apart
- Light
- Exposure
  - Remove clothing from the waist down, cover with blanket
- Wash hands, don gloves
- Label bottle and open the lid
- Assemble speculum
- If not in warmer, warm under tap
- Use fingers to keep blades shut
- Warn patient
- Separate labia
- Insert with rotating motion
- Avoid touching clitoris
- Under direct vision open the blades and angle the speculum accordingly so that cervix comes into view
- Inspect cervix and lateral vaginal walls
- Insert tip of cervix brush into os
- Rotate 10X, sample whole cervix
- Remove brush and dip vigorously into bottle
- Remove the speculum gently, rotate to inspect anterior and posterior vaginal walls
- Let the blades close carefully
- Offer patient some tissues to wipe herself, cover her with blanket and leave the curtained area
Further Reading

- Why screen regularly with smear test
- What is CIN?
- What are the stages?
- How do we treat?
- How does CIN differ from invasive cancer
Further reading


Cervical Screening

General screening criteria

- The disease should be responsible for significant morbidity or mortality in the target population
- The natural history of the disease should be known
- Intervention at an early stage should be effective in preventing the condition
- A screening programme should be cost effective
- Treatment should cause low morbidity
Cervical Screening

- Almost four million women are screened each year

- 42% fall in incidence of cervical cancer between 1988 and 1997 attributable to screening

- Mortality rates in 2000 were 60% lower than 30 years earlier
Cervical Screening

- The screening programme in England and Wales invites all women between 25 and 64 years for three- or five-yearly screening.

- It is recommended that women 25 to 49 are screened three-yearly and 50 to 64 five yearly.

- Women over 65 are only called if they have not had a smear since age 50, or have had a recent abnormality.

- In Scotland the programme is slightly different, with women between the ages of 20 and 60 being invited for screening every three years.
Cervical Intraepithelial Neoplasia

- **CIN 1** - Dysplasia in the basal 1/3

- **CIN 2** - Dysplasia extending to middle 1/3

- **CIN 3** - Dysplasia involving the whole epithelium but the basal membrane is intact.

**Dysplasia**
- basal hyperplasia - multi-layering of basal cells
- nuclear pleomorphism
- increased mitotic activity
Cervical Cancer

Incidence

- 2400 new cases per year in England and Wales
- <1000 deaths annually
- ½ of women who present with late stage disease have never had a smear
Age

- Rare under 20yrs
- Peak 45-55yrs
- Peaks earlier in pts from lower socioeconomic groups
Cervical Cancer

Risk factors

- Age
- Lower social class
- HPV infection (types 16 and 18 mainly)
- Large numbers of sexual partners
- Partner with many previous partners
- Smoking
- Immunosuppression
- Early age of 1\textsuperscript{st} intercourse and 1\textsuperscript{st} pregnancy
- Abnormal smear
- Oral contraceptive use rather than barrier
Cervical Cancer

Pathology - micro

- 80% squamous carcinoma of transformation zone
- Rest are adenocarcinoma
Cervical Cancer

Pathology – macro

- Ulceration or mass on cervix that bleeds easily
Cervical Cancer

Common Presentations

- During routine smear
- Postcoital bleeding
- Intermenstrual bleeding
- Postmenopausal bleeding
- Offensive vaginal discharge
- Pain
Cervical Cancer

**Investigations**

- Urgent referral for colposcopy
  - Direct visualisation
  - Green light – abnormal blood vessels
  - Acetic acid – causes coagulation of nuclear proteins, hence areas of high nuclear density appear white
  - Iodine – Schiller’s test – abnormal immature epithelium doesn’t contain glycogen and therefore doesn’t stain with iodine
Other tests

- FBC
- U&E
- LFT
- Serum Ca
- Chest X-ray
- CT scan
- In advanced disease consider cystoscopy / sigmoidoscopy
Treatment

Depend on the stage of the disease

- Cone biopsy ↔ Radical Hysterectomy
- Radiotherapy Stage I-IV
- Chemotherapy for some cases