

Vacuum endometrial sampling

Learning objectives

By the end of this module, participants will be able to:

- Identify clinical indications for vacuum endometrial sampling in primary care.
- Apply culturally safe and patient-centred care principles.
- Perform vacuum endometrial sampling safely and competently.
- Interpret histology results and determine appropriate follow-up or referral.

Abnormal uterine bleeding (AUB) describes both heavy menstrual bleeding and abnormal timing in uterine bleeding in pre-menopausal women, and any uterine bleeding experienced in post-menopausal women. There are several known sources of AUB. The FIGO classification system 'PALM-COEIN' ([Munro et al 2011](#)) defines two categories that are further divided into nine groups: discrete (structural) entities that can be measured visually: (**p**olyp, **a**denomyosis, **l**eiomyoma (fibroids) and **m**alignancy and hyperplasia); and non-structural (entities that are not defined by imaging or histopathology): **c**oagulopathy, **o**vulatory dysfunction, **e**ndometrial, **i**atrogenic and **n**ot yet classified. The PALM-COEIN system recognises that any person with AUB can have one or several of the entities described and that some of these (eg adenomyosis or polyps) may be asymptomatic and not a source of AUB ([Munro et al 2011](#)).



Figure 1: Pipelle® endometrial suction curette. CooperSurgical Inc. <https://www.coopersurgical.com/product/pipelle-endometrial-suction-curette/> Reproduced with permission CooperSurgical Inc.

Vacuum endometrial sampling is a minimally invasive procedure that is used in assessing the source of AUB, and evidence shows it is accurate in diagnosing endometrial hyperplasia and carcinoma ([Sakna et al 2023](#)). It is performed using a flexible, single-use, disposable suction curette, often known as a pipelle; the Pipelle® from CooperSurgical, Inc, or CCD Laboratories, is commonly used (Figure 1).

Clinical indications for vacuum endometrial sampling

Vacuum endometrial sampling is recommended for pre-menopausal people presenting with AUB when:

- Women aged 19 and under Endometrial sampling is not routinely recommended for women who present with AUB in this age group. An individualised approach should be taken for assessment and if endometrial sampling is considered, a referral to secondary care is indicated.
- Women between the ages of 20 and 30. The decision to perform endometrial sampling should be individualised in women under the age of 30 based on imaging and risk factors. Endometrial sampling should be considered at, or soon after, the initial presentation in those who have had long-standing unopposed oestrogen stimulation and or those who have multiple risk factors for EH or EC.
- Women between the ages of 30 and 45. Endometrial sampling is recommended for women who present with AUB and have risk factor(s), for EH or EC.
- Women over the age of 45. Endometrial sampling is recommended in all women who present with AUB over the age of 45, particularly in the presence of risk factors. Māori and Pacific Peoples are disproportionately affected by EC or EH.

Investigations including TVUSS and or aspiration endometrial sampling should be considered at, or soon after initial presentation for all Māori and Pacific Peoples presenting with AUB.

Contraindications: Pregnancy, active pelvic infection, or inability to visualize cervix.

Urgent vacuum endometrial sampling and assessment is required for all people presenting with postmenopausal bleeding (PMB).

Cultural safety and person-centred care

- Acknowledge tapu of te whare tangata (the womb) in Māori health perspectives
- A person-centred approach is essential to ensure that this procedure remains comfortable for the person. Attitudes and emotions towards genital examinations vary widely, eg between cultures, age groups, and at the individual level, and the needs of each person must be considered independently to ensure that their rights under the Code of Health and Disability Services Consumers'

Rights (including respectful treatment, retaining dignity and independence, and effective communication) are met.

- Ensure privacy, comfort, and informed decision-making for the consent process; it may be useful to have demonstration models of the instruments used available for the person to see and handle if desired.
- The person may wish to have a support person or whānau member present. This should always be offered as an option. Alternatively, they may request a staff member of a particular gender or the presence of a chaperone, and this must be facilitated.

Technique Overview

Before the procedure

- Take an appropriate patient history
 - Include allergies, and assess need for other investigations eg cervical screening, STI screening
 - Exclude pregnancy
- Explain the steps of the procedure and obtain informed consent
- Offer nonsteroidal anti-inflammatory drugs, eg ibuprofen

Procedure steps

Use a no-touch sterile technique for equipment used throughout the procedure.

- Perform STI swab if indicated
- Position patient and perform a bimanual exam to assess the position and size of the uterus. This is to assist when considering if a perforation may have happened; eg if the sampling device goes further than anticipated, or the need for a tenaculum to ensure you get the sampling device to the fundus if the uterus is acutely angled
- Insert speculum and visualize cervix.
- Take any additional samples as needed (eg cervical screening if indicated).
- Clean cervix if necessary to see, and if required (eg a prior failure or an acutely angled uterus) apply a tenaculum to gently hold the cervix.
- Insert the endometrial suction curette gently through the cervical os into the uterine cavity and advance it to the fundus.

- Apply suction (for a Pipelle® curette this is done by sliding back the central piston) and rotate the curette 360°, and up and down with small movements to draw the sample into the collection tube.
- Withdraw the curette and expel the sample directly into a collection pottle containing formalin, and label accurately.
 - If there has been insufficient sample collected and it is possible that the curette may not have got past the internal cervical os the procedure may be repeated
 - The sample may be sent for cytology instead of histology if there does not appear to be any tissue present and it reached the fundus

Complete all immediate post-procedural documentation, including details of:

- Indication
- Patient tolerance, advice given and follow-up arrangements
- Sample adequacy
- Any complications

Aftercare

People may experience mild cramping and light bleeding for 1-2 days, requiring NSAIDS and pads following the procedure. These expectations need to be discussed before the procedure begins. The healthcare practitioner should also ensure that the person is aware of the next steps in the diagnostic process: how and when they will receive the test results from the endometrial sampling.

People should receive instructions (verbally and in writing) to contact the health care provider if they experience:

- Heavy bleeding, for longer than two days after the procedure
- Foul-smelling discharge from the vagina
- Fever or chills or feel unwell
- Severe lower abdominal pain

Complications

- Unable to perform the procedure

- Cervical stenosis may be present in postmenopausal individuals or following cervical surgery, most commonly in those who have undergone a loop electrocautery excision procedure or cone biopsy.
- Misoprostol before the procedure (typically 200–400 mcg, vaginal or oral 8–24 hours before) may be of benefit if there has been a failed procedure previously
- [Cervical os finder](#), [cervical dilators](#), or lacrimal dilators may be helpful to gain initial access to the external os.
- Insufficient tissue
 - When insufficient sampling is not due to an unsuccessful or incomplete attempt, then repeat sampling in the office or referral for sampling with hysteroscopy are options guided by patient preference, cost, and/or other logistics. People who have minimal oestrogen (eg postmenopausal) may have very little endometrium – in this situation a TV US scan of endometrial thickness would be <4mm.
- Patient discomfort
 - Cramping, pain, and patient anxiety are managed with the techniques and medications outlined previously, vaginal lignocaine gel and paracervical block can be used especially if a tenaculum +/- dilation is required. Occasionally, they may be a reason that the patient or provider believes it is necessary to stop the attempted procedure; in this case there should be a referral for hysteroscopy.
- Vasovagal reaction/cervical shock
 - Can be common with cervical and intrauterine procedures. Most resolve spontaneously, manage according to cervical shock algorithm.
- Bleeding
 - Often minimal and controlled with pressure alone.
 - Cervical bleeding, usually from the tenaculum site, may require application of silver nitrate or Monsel solution for haemostasis. Laceration at the cervical tenaculum site may rarely require suturing to stop bleeding.
 - While rare, heavy uterine or cervical bleeding requires emergency management. Consider perforation in this case.
- Infection

- Infection is uncommon, but if patients develop signs or symptoms of endometritis, they should be treated promptly with appropriate antibiotics.
- Perforation
 - If cervical or uterine perforation is suspected, the procedure should be abandoned; refer for further guidance and management.

Histology interpretation and follow-up

Histology result	Action
Insufficient sample	Repeat biopsy or refer for hysteroscopy
Proliferative/secretory endometrium	Reassure, consider medical management of AUB
Atrophic endometrium	Common in PMB; refer if bleeding persists usually after treatment with ovestin – follow your local health pathways for PMB
Endometrial hyperplasia (without atypia) with normal scan	Trial progestin therapy / insert a Mirena, monitor with repeat biopsy endometrial sample in 6 months, this can be with a Mirena in situ
Endometrial hyperplasia (with atypia)	Urgent referral to gynaecology - significant risk of undiagnosed endometrial cancer
Endometrial carcinoma	Urgent referral to gynaecology

Competency assessment

- Complete endometrial vacuum sampling procedures under supervision (minimum two supervised procedures). If you intend to be doing only premenopausal sampling these supervised procedures can be in premenopausal people but if your future work will include sampling for PMB then one supervised procedure must be in someone who is menopausal as the process can feel quite different.
- Pass theoretical assessment on [AUB management](#).

Online theory module on AUB

Abnormal Uterine Bleeding (AUB) unit at Health New Zealand | Te Whatu Ora

<https://koawatealearn.co.nz/course/info.php?id=13348>

Suppliers

Pipelle®: In Vitro Technologies (<https://wandc.invitro.co.nz/>); Medent Medical (<https://medent.co.nz/>)

Cervical os finder and dilator sets: Cooper Medical Ltd (www.coopermedical.co.nz), Medent Medical (<https://medent.co.nz/>)

Referenced in the text

Munro, M.G., Critchley, H.O.D., Broder, M.S., Fraser, I.S. and for the FIGO Working Group on Menstrual Disorders (2011). FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nonpregnant women of reproductive age. *International Journal of Gynecology & Obstetrics*, 113: 3-13. <https://doi.org/10.1016/j.ijgo.2010.11.011>

Sakna, N.A., Elgendi, M., Salama, M.H., et al. (2023). Diagnostic accuracy of endometrial sampling tests for detecting endometrial cancer: a systematic review and meta-analysis. *BMJ Open*;13:e072124. <https://doi.org/10.1136/bmjopen-2023-072124>

Vitale, S.G., Buzzaccarini, G., Riemma, G., Pacheco, L.A., Di Spiezio Sardo, A., Carugno, J., Chiantera, V., Török, P., Noventa, M., Haimovich, S., De Franciscis, P., Perez-Medina, T., Angioni, S., Laganà, A.S. (2023). Endometrial biopsy: Indications, techniques and recommendations. An evidence-based guideline for clinical practice. *J Gynecol Obstet Hum Reprod*. 52:102588. <https://doi.org/10.1016/j.jogoh.2023.102588>