

View this article online at: [patient.info/doctor/endometrial-sampling](https://patient.info/doctor/endometrial-sampling)

# Endometrial Sampling

## Introduction

The endometrium is sampled when pathology, particularly endometrial cancer, is suspected; this may be when the patient experiences a change in her normal pattern of menstrual bleeding or when bleeding is unexpected - eg, after the menopause.

When a patient presents with any of these symptoms the GP should undertake a full pelvic examination, including speculum examination of the cervix.

Guidelines in the UK advising when to refer urgently state:<sup>[1]</sup>

### If the patient is aged over 55 with:

- Unexplained bleeding more than 12 months after her last menstrual period, **refer** using urgent cancer referral.
- Unexplained discharge:
  - If it is new; **or**
  - If she has thrombocytosis; **or**
  - If she reports haematuria - consider direct access ultrasound to assess the endometrium.
- Visible haematuria and:
  - A low Hb; **or**
  - Thrombocytosis; **or**
  - Raised blood glucose - consider direct access ultrasound to assess the endometrium.

### If the patient is aged under 55 with:

- Unexplained bleeding more than 12 months after her last menstrual period, **consider** referral using urgent cancer referral.

## Risk factors for endometrial cancer<sup>[2]</sup>

These include:

- Obesity:
  - 70-90% of women with endometrial cancer are obese.
  - Endometrial cancer has the greatest association with obesity of all cancers, with a relative risk of 6.25.<sup>[3]</sup>
  - The majority of women are unaware of the link between obesity and endometrial cancer.<sup>[4]</sup>
- Diabetes more than doubles the risk.<sup>[5]</sup>
- Hypertension.
- Insulin resistance and hyperinsulinaemia.<sup>[6]</sup>
- Sedentary lifestyle.
- Oestrogen-related:
  - Anovulatory cycles - eg, polycystic ovary syndrome.<sup>[7]</sup>
  - Nulliparity.
  - Early menarche.
  - Late menopause.
  - Tamoxifen.
  - Unopposed oestrogen HRT.
- Family history of endometrial or colonic cancer.

## Initial investigations

- Transvaginal ultrasound measurement of endometrial thickness has become a routine procedure and an initial investigation in most patients with abnormal uterine bleeding (see guidelines above).
- There is debate as to whether a cut-off of 5 mm or 4 mm endometrial thickness should be employed. 5 mm has become standard for the postmenopausal patient.<sup>[8]</sup>
- In the pre-menopausal patient, the timing of the ultrasound should be as close to the end of the bleeding period as possible.<sup>[9]</sup>
- If the endometrial thickness is above these values, polyps have been diagnosed or the patient is presenting with recurrent bleeding, endometrial disease has to be excluded by histological assessment.

- It should also be noted that advanced endometrial cancer has subsequently been diagnosed where the endometrium was measured at  $\leq 5$  mm, so high-risk patients should also have histological sampling.<sup>[10]</sup>
- Outpatient aspiration curettage has superseded dilatation and curettage (see below), which was previously considered to be the gold standard for obtaining an endometrial biopsy.
- Hysteroscopy additionally allows visualisation of the uterine cavity and the opportunity for targeted biopsy and removal of endometrial polyps.

## Endometrial biopsy

- Introduced in the 1930s, originally using a narrow metal cannula with side opening with serrated edges and syringe attached for suction as the instrument was removed.
- As the cannula was rotated during removal, a strip of endometrium was peeled off and sucked into the syringe. This caused significant cramping during removal.
- Subsequently, the Vabra® curette was introduced, which required a vacuum source and also caused significant cramping.
- Today the most widely used device is the disposable Pipelle® also known as Pipelle de Cornier®.
- Can now be performed without prior cervical dilatation and can be undertaken as an outpatient procedure or in general practice.<sup>[11]</sup>
- Transcervical instillation of 5 mls 2% lidocaine can be used and has been shown to significantly reduce pain during endometrial sampling.<sup>[12]</sup>

### Clinical Editor's comments (October 2017)

Dr Hayley Willacy recently read a report of a pilot study for endometrial sampling in general practice<sup>[13]</sup>. In the first year of the service 108 samples were taken by general practitioners. Initial management of these patients was exclusively in primary care in 97.2% (104/108) of cases; most patients were treated with the Mirena intrauterine system 73.1% (79/109) and there were no cases of hyperplasia or cancer. Most premenopausal patients with abnormal uterine bleeding could potentially be managed in general practice without referral to hospital if endometrial sampling was made available to appropriately trained and supported GPs. This report coming nearly 20 years after the reference cited above.

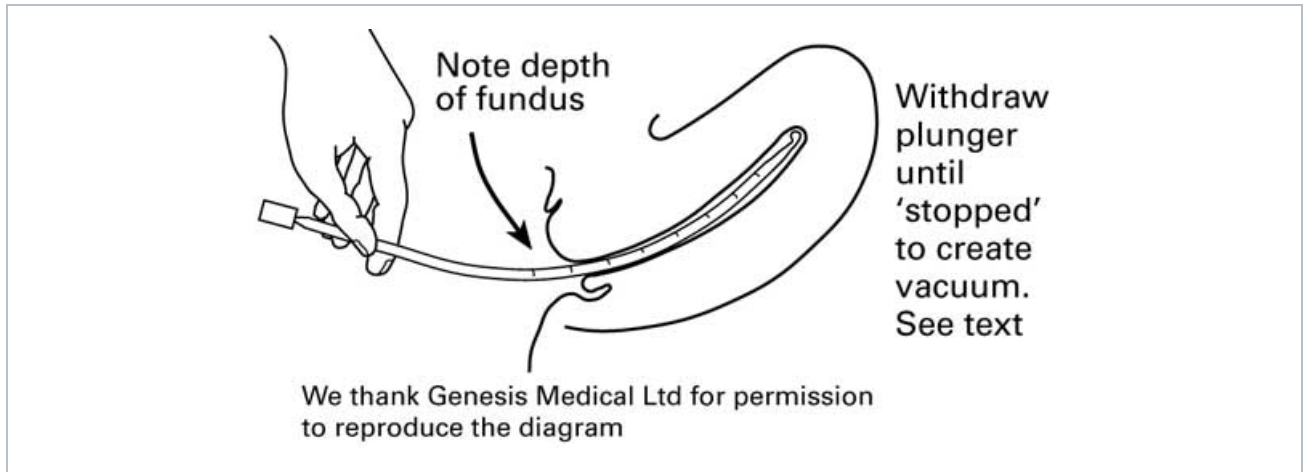
## Pipelle® biopsy

- Pipelle® endometrial biopsy is a cost-effective and safe procedure that is well tolerated by patients.
- Pipelle® is a flexible polypropylene suction cannula with an outer diameter of 3.1 mm. For comparison, this is significantly narrower than the diameter of a Mirena® intrauterine system insertion tube, which is 4.4mm.<sup>[14]</sup>
- There is less pain and a lower risk of perforation with the Pipelle® than with the Novak® curette.<sup>[15]</sup>
- In addition, the Pipelle® is more portable than the Novak® curette and the Vabra® aspirator, both of which require external suction.
- A quantitative systematic review showed that, providing an adequate specimen is obtained, Pipelle® has a high positive predictive value. However, it also concluded that Pipelle® has a poor negative predictive value. Therefore if a woman is at high risk of endometrial carcinoma and her symptoms persist but her Pipelle® biopsy is normal, further evaluation is warranted.<sup>[16]</sup>
- In postmenopausal women, the combined use of Pipelle® sampling and visualisation with either ultrasound or hysteroscopy, has a high detection rate for endometrial carcinoma.<sup>[10]</sup>
- The Pipelle® is poor at detecting endometrial pathologies such as polyps and submucosal myomas.

### Procedure

- A sexual history and screening for sexually transmitted infections should be considered
- Bimanual examination to assess the uterus.
- The cervix is then visualised.
- A tenaculum is applied to the anterior lip of the cervix and is used to provide gentle traction whilst a sound is inserted through the cervical os. This minimises the risk of perforation.
- Dilators may be required if there is difficulty in passing the sound.
- When the position and size of the uterine cavity have been assessed, the Pipelle® is inserted through the cervical os and advanced until gentle resistance is felt.

- The inner piston of the device is then withdrawn to create suction and the endometrial sample is obtained by moving the Pipelle® up and down within the uterine cavity by approximately 2-3 cm but not beyond the cervical os.



- This procedure should be repeated at least four times and the device rotated 360° to ensure adequate coverage of the area.
- The Pipelle® is then withdrawn from the cervical os and the endometrial sample expelled into a solution of formalin for transport to the laboratory.

Pipelle® endometrial sampling can also be combined with hysteroscopy.

Other devices include:

- The Gravlee Jet Washer®.
- The Mi-Mark® spiral sampler.
- The Gynoscann® surface stripper (based on the intrauterine contraceptive device (IUCD) insertion principle).
- The H Pipelle®.<sup>[17]</sup>
- The Explora®.<sup>[18]</sup>
- The Tao brush®.<sup>[19]</sup>

### Contra-indications

These include:

- Pregnancy.
- Acute vaginal or cervical infection.
- Pelvic inflammatory disease.
- Clotting disorders.

Risk of endocarditis is not a contra-indication and antibiotic prophylaxis is no longer recommended.<sup>[20, 21]</sup>

### Complications

These include:

- Prolonged bleeding.
- Infection.
- Uterine perforation and post-procedure pain.

## Dilatation and curettage

This has been the traditional technique for obtaining samples of endometrium for pathological examination. However, 'blind' dilatation and curettage (D&C) has been shown to miss significant amounts of pathology, including:

- Endometrial polyps.
- Intrauterine mucous fibroids.
- Small areas of endometritis.
- Hyperplasia or cancer.
- Lost IUCDs.

**Diagnostic curettage** requires cervical dilatation to >8 mm and the use of a small sharp curette for systematic, thorough, gentle sampling of all parts of the uterine cavity, including the tubal ostial areas.

**Fractional curettage** uses endocervical curettage followed by endometrial curettage with two samples examined separately.

## Endomyometrial resection biopsy

- 3-5 mm deep biopsy obtained with hystero-resectoscope loop.
- This is used to identify adenomyosis or to investigate deep lesions of the endometrium.
- It permanently removes a narrow strip of basal endometrium with underlying myometrium.
- This usually heals well.

## Further reading & references

- **Menorrhagia**; NICE CKS, August 2012
1. **Suspected cancer: recognition and referral**; NICE Clinical Guideline (2015 - last updated July 2017)
  2. **Fader AN, Arriba LN, Frasure HE, et al**; Endometrial cancer and obesity: epidemiology, biomarkers, prevention and survivorship. *Gynecol Oncol.* 2009 Jul;114(1):121-7. doi: 10.1016/j.ygyno.2009.03.039. Epub 2009 Apr 29.
  3. **Calle EE, Rodriguez C, Walker-Thurmond K, et al**; Overweight, obesity, and mortality from cancer in a prospectively studied cohort of U.S. adults. *N Engl J Med.* 2003 Apr 24;348(17):1625-38.
  4. **Soliman PT, Bassett RL Jr, Wilson EB, et al**; Limited public knowledge of obesity and endometrial cancer risk: what women know. *Obstet Gynecol.* 2008 Oct;112(4):835-42. doi: 10.1097/AOG.0b013e318187d022.
  5. **Friberg E, Orsini N, Mantzoros CS, et al**; Diabetes mellitus and risk of endometrial cancer: a meta-analysis. *Diabetologia.* 2007 Jul;50(7):1365-74. Epub 2007 May 3.
  6. **Nead KT, Sharp SJ, Thompson DJ, et al**; Evidence of a Causal Association Between Insulinemia and Endometrial Cancer: A Mendelian Randomization Analysis. *J Natl Cancer Inst.* 2015 Jul 1;107(9). pii: djv178. doi: 10.1093/jnci/djv178. Print 2015 Sep.
  7. **Long-term Consequences of Polycystic Ovary Syndrome**; Royal College of Obstetricians and Gynaecologists (November 2014)
  8. **Nutis M, Garcia KM, Nuwayhid B, et al**; Use of ultrasonographic cut point for diagnosing endometrial pathology in postmenopausal women with multiple risk factors for endometrial cancer. *J Reprod Med.* 2008 Oct;53(10):755-9.
  9. **Goldstein SR**; The role of transvaginal ultrasound or endometrial biopsy in the evaluation of the menopausal endometrium. *Am J Obstet Gynecol.* 2009 Jul;201(1):5-11. doi: 10.1016/j.ajog.2009.02.006.
  10. **Dimitraki M, Tsikouras P, Bouchlariotou S, et al**; Clinical evaluation of women with PMB. Is it always necessary an endometrial biopsy to be performed? A review of the literature. *Arch Gynecol Obstet.* 2011 Feb;283(2):261-6. Epub 2010 Aug 4.
  11. **Seamark CJ**; Endometrial sampling in general practice. *Br J Gen Pract.* 1998 Sep;48(434):1597-8.
  12. **Hui SK, Lee L, Ong C, et al**; Intrauterine lignocaine as an anaesthetic during endometrial sampling: a randomised double-blind controlled trial. *BJOG.* 2006 Jan;113(1):53-7.
  13. **Dickson JM, Delaney B, Connor ME**; Primary care endometrial sampling for abnormal uterine bleeding: a pilot study. *J Fam Plann Reprod Health Care.* 2017 Oct;43(4):296-301. doi: 10.1136/jfprhc-2017-101735. Epub 2017 Aug 19.
  14. **Jaydess Levonorgestrel intrauterine system - New product review**; Clinical Effectiveness Unit of the Faculty of Sexual and Reproductive Healthcare (2014)
  15. **Hill GA, Herbert CM 3rd, Parker RA, et al**; Comparison of late luteal phase endometrial biopsies using the Novak curette or PIPELLE endometrial suction curette. *Obstet Gynecol.* 1989 Mar;73(3 Pt 1):443-5.
  16. **Clark TJ, Mann CH, Shah N, et al**; Accuracy of outpatient endometrial biopsy in the diagnosis of endometrial cancer: a systematic quantitative review. *BJOG.* 2002 Mar;109(3):313-21.
  17. **Madari S, Al-Shabibi N, Papalampros P, et al**; A randomised trial comparing the H Pipelle with the standard Pipelle for endometrial sampling at 'no-touch' (vaginoscopic) hysteroscopy. *BJOG.* 2009 Jan;116(1):32-7.
  18. **Arafah MA, Cherkess Al-Rikabi A, Ajasser R, et al**; Adequacy of the endometrial samples obtained by the uterine explora device and conventional dilatation and curettage: a comparative study. *Int J Reprod Med.* 2014;2014:578193. doi: 10.1155/2014/578193. Epub 2014 Jan 8.
  19. **Williams AR, Brechin S, Porter AJ, et al**; Factors affecting adequacy of Pipelle and Tao Brush endometrial sampling. *BJOG.* 2008 Jul;115(8):1028-36.
  20. **Wilson W, Taubert KA, Gewitz M, et al**; Prevention of infective endocarditis: guidelines from the American Heart Association: a guideline from the American Heart Association Rheumatic Fever, Endocarditis and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group. *J Am Dent Assoc.* 2008 Jan;139 Suppl:3S-24S.
  21. **Prophylaxis against infective endocarditis: Antimicrobial prophylaxis against infective endocarditis in adults and children undergoing interventional procedures**; NICE Clinical Guideline (March 2008)





**Disclaimer:** This article is for information only and should not be used for the diagnosis or treatment of medical conditions. Patient Platform Limited has used all reasonable care in compiling the information but makes no warranty as to its accuracy. Consult a doctor or other healthcare professional for diagnosis and treatment of medical conditions. For details see our [conditions](#).

Author: Dr Jacqueline Payne	Peer Reviewer: Dr John Cox	
Document ID: 1040 (v23)	Last Checked: 12/10/2015	Next Review: 10/10/2020

View this article online at: [patient.info/doctor/endometrial-sampling](http://patient.info/doctor/endometrial-sampling)

Discuss Endometrial Sampling and find more trusted resources at [Patient](http://Patient).

## Ask your doctor about Patient Access

-  Book appointments
-  Order repeat prescriptions
-  View your medical record
-  Create a personal health record (iOS only)



Simple, quick and convenient.  
Visit [patient.info/patient-access](http://patient.info/patient-access)  
or search 'Patient Access'