

Menorrhagia

What is menorrhagia? (Definition)

Menorrhagia is menstrual blood loss which interferes with a woman's physical, emotional, social and material quality of life, and which can occur alone or in combination with other symptoms. Any intervention should aim to improve her quality of life. Research studies usually define menorrhagia to be a monthly menstrual blood loss in excess of 80 ml.

What is normal?

The average menstrual cycle has a blood loss for seven days of a cycle of between 21 and 35 days. The usual shorthand for this is:

$K = 7/21-35$ in which K represents menstrual cycle, 7 is the duration of bleeding and 21-35 represents the length of the cycle.

Menstrual loss is heaviest for the first few days and becomes much lighter, tailing off towards the end.

Other definitions include:

- Metrorrhagia - flow at irregular intervals.
- Menometrorrhagia - frequent and excessive flow.
- Polymenorrhoea - bleeding at intervals of less than 21 days.
- Dysfunctional uterine bleeding (DUB) - abnormal uterine bleeding without any obvious structural or systemic pathology. It usually presents as menorrhagia. The diagnosis of DUB can only be made once all other causes for abnormal, or heavy, uterine bleeding have been excluded.
- Dysmenorrhoea - pain with menstruation.

The average menstrual blood loss is about 30–40 ml. Excessive menstrual blood loss is classified as 80 mL or more and/or a duration of more than seven days .

Many women who complain of heavy menstruation do not in fact have blood loss in excess of 80 ml. Menorrhagia is very subjective; a more practical definition may be that it is menstrual loss that is greater than the woman feels she can reasonably manage.

The National Institute for Health and Care Excellence (NICE) defines heavy menstrual loss as excessive blood loss that interferes with a woman's physical, social, emotional and/or quality of life.^[1]

Menorrhagia is related to increased limitations in physical activities and limitations in social and leisure activities.^[2]

How common is menorrhagia? (Epidemiology)

Menorrhagia is a very common complaint:

- The prevalence of menorrhagia increases with age, peaking in women aged 30–49 years. 5% of women aged 30–49 years in the UK consult their GP each year due to excessive uterine bleeding.
- The perception of what constitutes 'heavy' menstrual bleeding is subjective. The prevalence of menorrhagia ranges from 9–14% in studies that assess menstrual blood loss objectively by measuring it, but is much higher (20–52%) in studies which are based on subjective assessment.
- DUB is more common around the menarche and perimenopause.
- Menstrual disorders are the second most common gynaecological condition to be referred to hospital, accounting for around 12% of all gynaecological referrals .

Causes of menorrhagia (aetiology)

- 40–60% of those who complain of excessive bleeding have no pathology and this is called DUB.

- 20% of cases are associated with anovulatory cycles and these are most common at the extremes of reproductive life.
- Local causes include:
 - [Fibroids](#).
 - Endometrial polyps.
 - [Endometriosis](#).
 - Adenomyosis.
 - Endometritis.
 - [Pelvic inflammatory disease \(PID\)](#).
 - [Endometrial hyperplasia](#) or [endometrial carcinoma](#). Endometrial carcinoma presents in women aged over 50 years in the majority of cases and classically with postmenopausal bleeding; [3] however, some cases present with abnormalities of the menstrual cycle - usually associated with anovulation. 90% present with abnormal uterine bleeding in some form.
- Systemic disease can include hypothyroidism, liver or kidney disease, obesity and bleeding disorders - eg, von Willebrand's disease.
- [An intrauterine contraceptive device \(IUCD\)](#) or [anticoagulant treatment](#) can increase menstrual flow.

Symptoms of menorrhagia (presentation) [4]

See the separate [Gynaecological history and examination](#) article.

History

- Note the total duration of bleeding and how much of that time it is heavy. Over 90% of menstrual loss occurs in the first three days and there is no correlation with the duration of loss and the total volume. Pictorial blood loss assessment charts may be useful.
- Note the length of the cycle, ie the duration from the start of one period to the start of the next.

- If the patient has to wear tampons and towels simultaneously, flow is heavy.
- The passage of clots represents heavy flow. Clots may be painful as they pass through the cervix.
- Ask about other associated menstrual problems – for example, premenstrual syndrome, intermenstrual bleeding (IMB), postcoital bleeding (PCB), dyspareunia and pelvic pain.
- Ask about contraception and intentions with regard to further children, as this may affect management.
- Ask about any symptoms to suggest anaemia.
- Ascertain the effect on personal life, including any time off work.
- Ask about past medical problems, including clotting disorders, thyroid status and gynaecological history.
- Ask about easy bruising or bleeding gums.

Examination

Clinical examination should be undertaken to assess for any anaemia and also to rule out potential organic causes of menorrhagia.

- Note general appearance and BMI. Body fat is very important in relation to metabolism of steroid hormones.
- Note any signs suggestive of endocrine abnormality (hirsutism, acne) or bruising.
- Look at the tongue for pallor and the nails for koilonychia.
- Examination of the abdomen always precedes pelvic examination; otherwise, large pelvic masses can be missed.
- Pelvic examination may not always be appropriate (for example, in adolescents) but should be considered:
 - Where underlying pathology seems likely from the history.
 - When the levonorgestrel-releasing intrauterine system (LNG-IUS) is being considered as treatment.
 - Where initial treatment has not been effective.

- Where relevant, ascertain that the cervical smear is up to date.
- Inspect the cervix and take swabs if clinically indicated.
- Where indicated, perform a bimanual examination. Abnormalities may include a bulky or grossly enlarged uterus, fixation of the uterus or tenderness.

Diagnosing menorrhagia (investigations)^[5]

- Women can be asked to complete a pictorial representation to assess the volume of blood loss.
- FBC is important. Every woman presenting with heavy menstrual bleeding should have FBC taken. The most common cause of iron-deficiency anaemia in women is menorrhagia.
- Tests for endocrine abnormalities, including TFTs, should be performed only if there is clinical suspicion.
- Assessment of bleeding disorders is only indicated if there is clinical suspicion.
- Consider ultrasound scan in women who have symptoms or signs suggestive of underlying pathology.

When to refer to secondary care

If appropriate, you should refer the patient for an [endometrial biopsy](#) to exclude endometrial cancer or atypical hyperplasia. Indications for a biopsy include:^[1]

- Persistent intermenstrual bleeding.
- Symptoms that have not improved with medical management.
- Women aged over 45 years with heavy menstrual bleeding.
- Women with a history to suggest endometrial pathology.
- If an abnormality is suspected after physical examination (apart from fibroids <3 cm in diameter).
- Women with risk factors for endometrial cancer or hyperplasia.

Other indications for referral to secondary care include :

- Symptoms or signs suggestive of malignancy (two-week referral).
- The woman wishes surgical treatment.
- Iron-deficiency anaemia not responding to treatment.

Ultrasound (ideally transvaginal) is the first-line diagnostic tool for identifying structural abnormalities – eg, fibroids. An endometrial thickness of <12 mm is normal in pre-menopausal women. In addition, hysteroscopy can be used to assess the endometrial cavity.

The NICE guideline recommends:^[1]

- Considering starting pharmacological treatment for menorrhagia without investigating the cause if the woman's history and/or examination suggests a low risk of fibroids, uterine cavity abnormality, histological abnormality or adenomyosis.
- If a woman declines outpatient hysteroscopy, consider offering hysteroscopy under general or regional anaesthesia.
- For women who decline hysteroscopy, consider organising pelvic ultrasound, explaining the limitations of this technique for detecting uterine cavity causes of menorrhagia.

NICE Quality Standard for heavy menstrual bleeding

NICE has issued a new quality standard on heavy menstrual bleeding.^[6] It recommends that:

People presenting with symptoms related to heavy menstrual bleeding have a focused history taken that includes the impact on their quality of life.

People with heavy menstrual bleeding and suspected submucosal fibroids, polyps or endometrial pathology are offered outpatient hysteroscopy.

People with heavy menstrual bleeding have a discussion with their healthcare professional about all their treatment options.

Management of menorrhagia

Not everyone needs referral to secondary care.^[1] If history and FBC are reassuring, medical treatment should be considered, if required. Medical treatment can be instituted in primary care. Patients are referred to exclude sinister pathology and when treatment in primary care has failed.

The main aims of treatment are to improve symptoms and also quality of life. Women should be advised on advantages and disadvantages of treatments and should also receive written information.

Pharmacological

When a first pharmaceutical treatment has proved ineffective then a second pharmaceutical treatment should be considered rather than immediate referral to surgery. Iron deficiency should be corrected with oral iron.

First-line treatment

This is the LNG-IUS – Mirena®. This is long-term treatment and should be left in situ for at least 12 months.^[1]

- Studies show that women with menorrhagia reported more improvement in bleeding and they were more likely to continue with this treatment.^[7]
- A recent Cochrane review compares the IUS to oral treatments, endometrial ablation and hysterectomy:^[8]
 - The IUS is more effective than oral treatment, results in more reduction in bleeding and more improvement in quality of life and is more acceptable long-term. However, there are more minor adverse effects with the IUS than with oral treatment.
 - The IUS is similar in outcome to ablation but is more cost-effective. Again there are more minor adverse effects reported. Overall satisfaction rates are similar.
 - In comparison to hysterectomy, the IUS is less effective but more cost-effective, and is not associated with the complications and risks attached to major surgery.

Second-line treatment

This includes tranexamic acid, non-steroidal anti-inflammatory drugs (NSAIDs) such as mefenamic acid, or the combined oral contraceptive (COC):

- **Mefenamic acid** works by inhibiting prostaglandin synthesis. It reduces menstrual loss by around 25% in three quarters of women and is better tolerated than tranexamic acid. Naproxen and ibuprofen may also be used and no difference has been demonstrated between the NSAIDs. [9] They are less effective than tranexamic acid.
- **Tranexamic acid** is a plasminogen-activator inhibitor. It inhibits the dissolution of thrombosis that leads to menstrual flow. It can reduce flow by up to 50%. [10] It is most effective at reducing menstrual loss associated with IUCDs, fibroids and bleeding diathesis. Side-effects include nausea, vomiting and diarrhoea. If there is disturbance in colour vision then it should be discontinued.
- **The COC pill** suppresses production of gonadotrophins and is thought to reduce menstrual blood loss by up to 50%. It can improve dysmenorrhoea, lighten periods, regulate the cycle, improve premenstrual symptoms, reduce the risk of PID and protect the ovaries and endometrium against cancer. A Cochrane review found insufficient evidence to determine comparative efficacy of combined hormonal contraceptives with NSAIDs, or long-course progestogens. [11]

Third-line treatment

Progestogens such as norethisterone 5 mg tds from day 5 to 26, or injected long-acting progestogens such as **medroxyprogesterone acetate (Depo-Provera®)** every 12 weeks.

- A Cochrane review found this to be less effective than other medical options. [12]
- This regimen of progestogen may have a role in the short-term treatment of menorrhagia. There are very limited data regarding the use of progestogens and of oestrogens and progestogens in combination in the treatment of irregular menstrual bleeding associated with anovulation.

- There is still no consensus about which regimens are the most effective.^[13]

Gonadotrophin-releasing hormone (GnRH) analogues may be offered for 3-4 months in secondary before hysterectomy or myomectomy, where the uterus is enlarged or distorted by fibroids.

- It is also a reasonable choice of therapy if other methods are contra-indicated – but 'add-back' hormone therapy will be needed if continued for >6 months.
- GnRH analogues have also been used prior to endometrial ablative surgery.^[14] GnRH analogues should not be initiated in primary care.

Ulipristal acetate is only indicated for some premenopausal women with fibroids that have a diameter of at least 3 cm.^[1] In these women, ulipristal acetate for the intermittent treatment of moderate to severe symptoms of uterine fibroids in premenopausal women should only be considered if:

- Surgery and uterine artery embolisation for fibroids are not suitable – for example, because the risks to a woman outweigh the possible benefits; **or**
- Surgery and uterine artery embolisation for fibroids have failed; **or**
- The woman declines surgery and uterine artery embolisation for fibroids.

Women should be advised that ulipristal acetate can be associated with serious liver injury leading to liver failure, and the signs and symptoms to look out for.^[15] LFTs should be measured before starting treatment, monthly for the first two courses and once before each new treatment course when clinically indicated. Treatment should be stopped and LFTs checked urgently if a woman shows signs and symptoms of liver failure during treatment. If the criteria above apply, ulipristal acetate 5 mg can be considered for up to four courses for premenopausal women with heavy menstrual bleeding and fibroids of 3 cm or more in diameter, particularly if the haemoglobin level is 102 g per litre or below.

High-dose norethisterone (30 mg daily) may be used (off-label) in the acute situation where a bleeding episode is extremely disabling for the woman. This is continued until bleeding is controlled, but is then tailed off.

Surgical options

Surgery, and in particular hysterectomy, improves heavy menstrual bleeding more effectively than medical options.^[16] However because of the reversibility of medical treatment and the added risks and complications of surgery, surgical treatment is not usually considered first-line.

The choice of treatment will depend on both the uterine size and the woman's desire to retain her uterus:

Endometrial ablation

This is the recommended first-line treatment if the uterus is <10 weeks of gestation on palpation.^[1] It involves removing the full thickness of the endometrium together with the superficial myometrium and the basal glands thought to be the focus of endometrial growth. It retains the uterus.

- Endometrial ablation is contra-indicated in women with large fibroids or suspected malignancy and in those who have not completed their family.
- There are various types of endometrial ablation:
 - **Impedance-controlled bipolar radiofrequency ablation:** a bipolar radiofrequency electrode is placed through the cervix and radiofrequency energy is delivered to the uterus.
 - **Balloon thermal ablation:** a balloon is inserted through the cervix to the endometrial cavity, inflated with a pressurised solution and then heated to destroy the endometrium.
 - **Microwave ablation:** a microwave probe is inserted into the uterine cavity to heat the endometrium and moved side-to-side to destroy it.
 - **Free fluid thermal ablation:** heated saline is used to destroy the endometrium.
 - **Rollerball ablation:** a current is passed through a rollerball electrode which is moved around the endometrium.
 - **Transcervical resection of the endometrium:** small fibroids are removed using a cutting loop.

- Unwanted outcomes of ablation include vaginal discharge; increased period pain (even if there is no further bleeding); the need for additional surgery; infection; perforation (very rare). **NB:** contraception after endometrial ablation is still advised even though fertility is usually not retained.
- Cochrane reviews have found endometrial ablation to be an effective alternative to hysterectomy, with high satisfaction rates.^[17]

Uterine artery embolisation (UAE) or hysteroscopic myomectomy

If the uterus is >10 weeks in size and the woman wishes to retain her uterus, treatment options are uterine artery embolisation or hysteroscopic myomectomy.^[18] A 2024 meta-analysis of approximately 196,595 patients demonstrates that myomectomy results in a significant reduction in re-intervention rate compared to UAE.

Hysterectomy

If the patient does not wish to retain the uterus, then treatment is with hysterectomy – first consider vaginal, then abdominal with conservation of ovaries, if appropriate. Healthy ovaries should not be removed.

- Hysterectomy is not first-line surgical management. Only consider when:
 - Other treatments have failed, are contra-indicated or declined.
 - There is desire for amenorrhoea.
 - The woman is fully informed and requests it.
 - There is no desire to retain the uterus and fertility.

- Unwanted outcomes of hysterectomy include:^[19]
 - Long recovery time.
 - Infection.
 - Intraoperative haemorrhage.
 - Damage to other organs, such as urinary tract and bowel.
 - Urinary dysfunction.
 - Thrombosis.
 - Menopausal symptoms if the ovaries are removed.

Further reading

- [Potter J, Lindblad AJ](#); Intrauterine devices for menorrhagia. *Can Fam Physician*. 2023 Feb;69(2):113. doi: 10.46747/cfp.6902113.
- [Pickett CM, Seeratan DD, Mol BWJ, et al](#); Surgical approach to hysterectomy for benign gynaecological disease. *Cochrane Database Syst Rev*. 2023 Aug 29;8(8):CD003677. doi: 10.1002/14651858.CD003677.pub6.

References

1. [Heavy menstrual bleeding: assessment and management](#); NICE Guideline (March 2018 - updated May 2021)
2. [Lukes AS, Baker J, Eder S, et al](#); Daily menstrual blood loss and quality of life in women with heavy menstrual bleeding. *Womens Health (Lond Engl)*. 2012 Sep;8(5):503-11. doi: 10.2217/whe.12.36.
3. [Kuhn TM, Dhanani S, Ahmad S](#); An Overview of Endometrial Cancer with Novel Therapeutic Strategies. *Curr Oncol*. 2023 Aug 27;30(9):7904-7919. doi: 10.3390/currenco130090574.
4. [Walker MH, Coffey W, Borger J](#); Menorrhagia.
5. [Menorrhagia \(heavy menstrual bleeding\)](#); NICE CKS, February 2024 (UK access only)
6. [Heavy menstrual bleeding](#); NICE Quality Standard, October 2020
7. [Bofill Rodriguez M, Dias S, Jordan V, et al](#); Interventions for heavy menstrual bleeding; overview of Cochrane reviews and network meta-analysis. *Cochrane Database Syst Rev*. 2022 May 31;5(5):CD013180. doi: 10.1002/14651858.CD013180.pub2.

8. [Bofill Rodriguez M, Lethaby A, Jordan V](#); Progestogen-releasing intrauterine systems for heavy menstrual bleeding. *Cochrane Database Syst Rev.* 2020 Jun 12;6(6):CD002126. doi: 10.1002/14651858.CD002126.pub4.
9. [Bofill Rodriguez M, Lethaby A, Farquhar C](#); Non-steroidal anti-inflammatory drugs for heavy menstrual bleeding. *Cochrane Database Syst Rev.* 2019 Sep 19;9:CD000400. doi: 10.1002/14651858.CD000400.pub4.
10. [Bryant-Smith AC, Lethaby A, Farquhar C, et al](#); Antifibrinolytics for heavy menstrual bleeding. *Cochrane Database Syst Rev.* 2018 Apr 15;4(4):CD000249. doi: 10.1002/14651858.CD000249.pub2.
11. [Lethaby A, Wise MR, Weterings MA, et al](#); Combined hormonal contraceptives for heavy menstrual bleeding. *Cochrane Database Syst Rev.* 2019 Feb 11;2:CD000154. doi: 10.1002/14651858.CD000154.pub3.
12. [Bofill Rodriguez M, Lethaby A, Low C, et al](#); Cyclical progestogens for heavy menstrual bleeding. *Cochrane Database Syst Rev.* 2019 Aug 14;8:CD001016. doi: 10.1002/14651858.CD001016.pub3.
13. [Hickey M, Higham JM, Fraser I](#); Progestogens with or without oestrogen for irregular uterine bleeding associated with anovulation. *Cochrane Database Syst Rev.* 2012 Sep 12;9:CD001895. doi: 10.1002/14651858.CD001895.pub3.
14. [Tan YH, Lethaby A](#); Pre-operative endometrial thinning agents before endometrial destruction for heavy menstrual bleeding. *Cochrane Database Syst Rev.* 2013 Nov 15;11:CD010241. doi: 10.1002/14651858.CD010241.pub2.
15. [Ulipristal acetate 5 mg \(Esmya\)](#); further restrictions due to risk of serious liver injury; GOV.UK (Feb 2021)
16. [Marjoribanks J, Lethaby A, Farquhar C](#); Surgery versus medical therapy for heavy menstrual bleeding. *Cochrane Database Syst Rev.* 2016 Jan 29;1:CD003855. doi: 10.1002/14651858.CD003855.pub3.
17. [Bofill Rodriguez M, Lethaby A, Fergusson RJ](#); Endometrial resection and ablation versus hysterectomy for heavy menstrual bleeding. *Cochrane Database Syst Rev.* 2021 Feb 23;2(2):CD000329. doi: 10.1002/14651858.CD000329.pub4.
18. [Fatima K, Ansari HW, Ejaz A, et al](#); Uterine artery embolization versus myomectomy: a systematic review and meta-analysis. *SAGE Open Med.* 2024 May 14;12:20503121241236141. doi: 10.1177/20503121241236141. eCollection 2024.
19. [Carugno J, Fatehi M](#); Abdominal Hysterectomy.

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