Premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD)

1. Premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD)

Around three-quarters of women experience some physical or emotional changes associated with their menstrual cycle (Br J Psych 2025;11:1). For many, these symptoms are mild, but when they become persistent, severe or disruptive, they may meet the criteria for premenstrual syndrome (PMS) or its more severe form, premenstrual dysphoric disorder (PMDD).

There are challenges around the management of PMS in primary care:

- The aetiology of PMS and PMDD remains incompletely understood,

with no single established underlying cause.

- The evidence base for treatment is limited, particularly for PMDD, with relatively few high-quality trials.
- Few treatments are licensed specifically for PMS or PMDD, which makes management more complex and contributes to clinical uncertainty.

The RCOG has published a Green-Top Guideline on the management of PMS (RCOG 2017, GTG48). The National Association for Premenstrual Syndromes has also published guidelines on PMS (NAPS, 2018). Both include management of the full spectrum of premenstrual disorders.

This article was reviewed in January 2026.

1.1. What is PMS?

PMS is characterised by physical, psychological and behavioural symptoms that occur in the days leading up to menstruation and resolve by the end of menstruation.

Diagnosis is based on the cyclical timing of symptoms and their impact on daily functioning, rather than the specific symptoms experienced. To distinguish PMS from normal menstrual changes, symptoms must be severe enough to affect daily function or cause significant impairment at work, school or in relationships (RCOG 2017, GTG48).

More than 200 symptoms of PMS have been reported (BMJ 2011;342:d2994), including:

Physical symptoms	Psychological and behavioural symptoms
• Joint/muscle/back pain. • Breast tenderness or pain. • Abdominal swelling or bloating. • Headaches. • Skin disorders. • Weight gain. • Swelling of hands or feet.	• Changes in appetite, overeating and food cravings. • Mood swings, irritability, anger, confusion. • Sleep disturbances. • Poor concentration or restlessness. • Depressed mood, loneliness or hopelessness. • Lack of interest in usual activities; social withdrawal. • Anxiety or feeling out of control.

The International Society for Premenstrual Disorders (ISPMD) has defined a classification of different types of PMS (RCOG 2017, GTG48; BMJ 2011;342:d2994):

Core premenstrual disorders	• Symptoms can be predominantly physical, psychological or mixed. • Symptoms are triggered by ovulation and follow a predictable cyclical pattern. • Symptoms recur during the luteal phase of the menstrual cycle and resolve by the end of menstruation. • There is a clear symptom-free interval between menstruation and ovulation. • Symptoms should be tracked prospectively over at least two cycles.
Variant premenstrual disorders	• **Premenstrual exacerbation**: involves worsening of an underlying disorder (e.g. asthma, migraine, diabetes, depression) that is present throughout the month, but worsens in the luteal phase. • **Progestogen-induced premenstrual disorder**: symptoms arise from exogenous sources of progestogen such as combined hormonal contraception (CHC) or HRT. • **Premenstrual disorder with absent menstruation**: occurs in women who still have a functioning ovarian cycle, but do not menstruate (e.g. after endometrial ablation, hysterectomy or with IUS). • **Non-ovulatory premenstrual disorder**: poorly understood and rare, but thought to arise from follicular activity of the ovary.

1.2. What causes PMS?

We don't really know exact mechanisms, and it is not caused by one single factor. Key contributors include (Front Psychiatry 2024:15:1363875):

- **Sensitivity to hormone changes.** Hormone levels across the menstrual cycle are generally similar in women with and without PMS. Symptoms appear to arise from the way the brain responds to normal hormonal fluctuations, particularly changes in progesterone and its neuroactive metabolite allopregnanolone during the luteal phase. Rapid changes in hormone levels may be more important than absolute levels.
- **Neurotransmitter dysregulation.** Allopregnanolone acts on the GABA-A receptor in the brain, which helps to regulate emotional and stress responses. In PMS, the reduction in allopregnanolone levels during the premenstrual period may disrupt this regulation and contribute to anxiety, irritability, low mood and sensitivity to stress.
- **Altered stress response.** PMS is associated with dysregulation of the hypothalamic–pituitary–adrenal axis, with changes in cortisol responses and a greater reactivity to stress during the luteal phase.
- **Changes in serotonin**. There may be lower availability of serotonin and increased reuptake during the premenstrual period in women with PMS. This may help explain the therapeutic benefits of SSRIs.
- **Inflammation and immune activation**. There is some evidence of increased inflammatory markers such as CRP and cytokines in women with PMS. This may contribute especially to pain, bloating and somatic symptoms.
- **Genetic factors**. Family and twin studies suggest a heritable component, suggesting that some women may be biologically more sensitive to cyclical hormonal and neurochemical changes.

Other risk factors associated with the development of PMS and PMDD include (PLoS One 2023;18:e0278702):

- Rhesus-negative blood type.
- Higher caffeine consumption.
- Moderate or severe depressive symptoms.
- Younger age at menarche. Older age at menarche was associated with a reduced prevalence of PMS and PMDD, and appeared protective.
- Alcohol intake, particularly heavy drinking (BMJ Open 2018;8:e019490).

1.3. What is premenstrual dysphoric disorder (PMDD)?

Premenstrual dysphoric disorder (PMDD) is a severe form of PMS that has more significant psychological symptoms. Like PMS, symptoms occur in the luteal phase – typically the week before menstruation – and improve markedly or are absent in the week following menstruation.

To make the diagnosis, DSM-5-TR specifies that there should be five or more symptoms, including at least one core emotional symptom, in most menstrual cycles over the past year (APA, 2022). Symptoms must also cause significant distress or interfere with daily function:

Core symptoms of PMDD (must include at least one of these)	Additional symptoms
• Marked mood swings or emotional lability. • Irritability or anger. • Depressed mood or hopelessness. • Anxiety or tension.	• Reduced interest in usual activities. • Poor concentration. • Lethargy or lack of energy. • Changes in appetite or overeating. • Insomnia or hypersomnia. • Feeling overwhelmed or out of control. • Physical symptoms such as breast tenderness, bloating, swelling or joint pain.
(APA, 2022; J Aff Dis 2024;349:534)	

Importantly, **PMDD is also associated with high rates of suicidal ideation and attempts**, with prevalence comparable to major depression. This has led to calls to explicitly include suicidality within the PMDD diagnostic criteria, and underscores the importance of routine suicide risk assessment for people presenting with severe premenstrual symptoms (Lancet Psychiatry 2025;12:90).

The diagnostic criteria of PMDD have also been criticised for focusing on psychological symptoms and putting less emphasis on physical symptoms, potentially excluding women with severe physical symptoms who do not meet full criteria (Cochrane Syst Rev 2024;8:CD001396).

Challenges in PMDD recognition and treatment

PMDD is a severe and debilitating condition affecting a significant number

of women, yet it remains under-recognised and undertreated in clinical practice. One of the main challenges is the long delay in diagnosis, with some women waiting up to 20 years before receiving an accurate diagnosis or appropriate treatment. This contributes to increased psychological distress and may elevate the risk of suicidal ideation or attempts.

Lack of recognition of PMDD can also result in misdiagnoses, where women are incorrectly labelled with other mental health conditions such as bipolar disorder or borderline personality disorder, increasing frustration and delaying effective treatment. Gender inequalities in healthcare, combined with the historical neglect of women's health issues, have also contributed to a lack of comprehensive research and treatment options tailored to the specific needs of women with PMDD.

The effects of PMDD can have a wide-ranging impact on women's personal, social and professional lives, including:

- Increased absenteeism from work and reduced productivity, leading to lost wages, financial strain and higher healthcare costs.
- Impaired relationships and social isolation due to unpredictable symptoms and lack of empathy or understanding from others, including where the condition is dismissed or trivialised.
- Lack of recognition and validation from the medical profession, which can lead to distress and frustration, and the sense that difficulties are not being taken seriously. It also contributes to a cycle of dissatisfaction with care and delayed management of the condition.

(Front Psych 2025;15:1458114)

1.4. How common are premenstrual disorders?

Up to 75% of menstruating individuals report some premenstrual symptoms, although many will not seek treatment or experience major functional impairment. The prevalence of clinically significant PMS is estimated at around 43–48% (Br J Psych 2025;11:1).

In contrast, PMDD is far less common, with approximately 1.6% of menstruating females meeting full DSM diagnostic criteria (J Aff Dis 2024;349:534).

1.5. Comorbidity with other mental health conditions

Both PMS and PMDD show high levels of comorbidity with other mental health conditions. Symptom overlap with conditions such as bipolar disorder and depression can make diagnosis more complex (Cochrane Syst Rev 2024;8:CD001396).

A systematic review and meta-analysis found that (Br J Psych 2025;11:1):

- Both PMDD and PMS commonly occur alongside mood disorders such as depression and bipolar disorder (particularly bipolar II), with around 40–45% co-occurrence of premenstrual and mood disorders.
- PMDD has a particularly strong relationship with mood disorders, and is more than 5x more common in females with bipolar disorder and 4.5x more common in females with mood disorders.
- This appears to be a bidirectional relationship, where premenstrual disorders can precede mood disorder onset, and a history of mood disorder can increase vulnerability to developing premenstrual symptoms.
- Comorbidity is associated with:

- Earlier age of onset of mood and premenstrual symptoms.
- More frequent or more severe depressive episodes.
- In bipolar disorder, higher rates of rapid cycling of mood.
- Greater functional and cognitive impact of symptoms.

Premenstrual exacerbations of mood disorders

Premenstrual exacerbation refers to the worsening of symptoms of an existing mood disorder such as depression or bipolar disorder in the premenstrual phase. This is distinct from PMDD and PMS, and it may be common, under-recognised and clinically important for the care of women diagnosed with mood disorders (Curr Psychiatry Rep 2021;23:78).

Around 60% of women with mood disorders experience premenstrual worsening of symptoms.

1.6. Making the diagnosis

History: timing is key!

We need to determine:

- Whether symptoms are truly premenstrual (i.e. is there a symptom-free period in the follicular phase) or is there an underlying disorder such as depression or irritable bowel.
    - **Care is needed to avoid wrongly diagnosing PMS in women with underlying psychiatric or somatic disorders NOT affected by the menstrual cycle.**
- How much impairment do the symptoms cause?
- Is the patient taking hormonal treatment? Is contraception desired?

- What treatment does she want – if any?
- **In severe symptoms or possible PMDD, risk assessment for suicidal thoughts and plans is essential** (Lancet Psychiatry 2025;12:90).

(RCOG 2017, GTG48)

Symptom diary

The RCOG recommends that diagnosis is based on a symptom diary kept for a minimum of 2 cycles. The daily record of severity of problems is widely used (and can be found in the appendix of the GTG) and another diary is available on the NAPS website.

PreMentricS is a smartphone app designed to enable women to track their PMS symptoms more easily, and may be useful diagnostically. Other smartphone symptom diary apps may do a similar thing.

If it is not clear whether PMS is the diagnosis…

A gynaecologist may offer a 3m course of gonadotrophin-releasing hormone (GnRH) analogue to confirm.

1.7. Management of PMS

We should offer first-line treatment in primary care, and refer to secondary care if this is not effective. The RCOG recommends that women with severe PMS should be managed by a multidisciplinary team, including a GP, gynaecologist, mental health professional and dietician.

Treatment choice will depend on suitability, tolerability, acceptability to patient and severity of condition. Management options include:

- Lifestyle.

- Psychological treatments.
- Hormonal treatments (to suppress ovulation and so reduce hormonal fluctuations).
- SSRI/SNRI (to increase serotonin levels in the brain).
- Surgery.
- Complementary therapies (an even less evidence-based option).

Treatment recommendations and supporting evidence are summarised below (RCOG 2017, GTG48):

Management type	GTG recommendations	Evidence from GTG (and elsewhere where referenced)
First-line options (primary care)		
Lifestyle	• Exercise. • Stress reduction. • Alcohol reduction. • Diet (e.g. low glycaemic index). However, a 2025 systematic review found no evidence of benefit from any PMS-specific diet (Nutrit Rev 2025; 83:280).	• Non-randomised trials show that exercise is beneficial. • Evidence is lacking for other lifestyle interventions.
SSRI/SNRI	Offer SSRIs or SNRIs first line: • Either continuously or luteal-phase use (from day 15–28 of the menstrual cycle). • Counsel about possible side-effects, and start with a low dose (e.g.	A Cochrane review (Cochrane 2024;8:CD001396) found that: • SSRIs are effective in

	citalopram 10mg). • Discontinue if pregnancy desired/occurs (PMS symptoms should resolve). • Taper dose down gradually if given continuously to avoid withdrawal reaction. • These are off licence for PMS in the UK.	reducing symptoms of PMS and PMDD. • They can be taken continuously or only in the two weeks leading up to menstruation. Both regimens are effective, but continuous dosing was probably more effective overall. • Adverse effects such as nausea and fatigue are relatively common. The RCOG bases its recommendation for SNRIs on a very small study which showed venlafaxine to be beneficial for PMS (J Clin Psychopharmacol 2004;24:540).
Combined hormonal contraception	The RCOG recommends: • A drospirenone-containing COC first line (e.g. Yasmin, Eloine, Lucette) because there is the most data supporting its use. • A continuous pill-taking regimen rather than cyclical. The FSRH recommends that: • Any CHC may be beneficial for	Evidence showing efficacy of CHC for PMS is sparse; it is not clear what formulations and what regimens are the best. • A review of 4 studies looking at a 20mcg

	PMS (FSRH Combined Hormonal Contraception guideline, 2019).
	
	So, we may wish to balance choice of agent against potential increased risk of VTE (and cost!) with newer formulations!
		levonorgestrel-containing COC taken continuously found inconsistent results, but no evidence of harm (Contraception 2012;85:437).
		
		• A Cochrane review of drospirenone-containing COCs in PMS (CD006586, 2011) concluded that:
		
		  • 20mcg drospirenone-containing pills (e.g. Eloine) may help PMS.
		
		  • A large placebo effect was evident in the studies.
		
		  • They may not be better than other oral contraceptives.

Psychological therapies	Offer CBT routinely to women with severe PMS symptoms.	Data suggests that CBT can improve psychological symptoms (and avoids pharmacotherapy) in PMS and

		PMDD. CBT may also have reduced rates of recurrence compared with SSRIs (NAPS, 2018).
Complementary therapies	Most products are not regulated for safety or efficacy, and are not licensed or registered for PMS treatment (discuss with patient). The following *may* be of benefit as part of a holistic approach: • Evening primrose oil. • Vitamin B6. • Vitamin D/calcium. • Agnus castus. • Magnesium. • St John's wort (BUT consider interactions). A 2025 systematic review found that vitamin B6, calcium and zinc had significant positive effects on psychological symptoms of PMS, but there was insufficient evidence to support the effects of vitamin B1, vitaminD, whole-grain carbohydrates, soy isoflavones, dietary fatty acids, magnesium or multivitamins (Nutrit Rev 2025; 83:280).	Evidence is conflicting; clinical trials are limited and very small.
Second-line options (secondary care)		

Transdermal oestradiol	Transdermal oestradiol (e.g. 100mcg patch) with cyclical progestogen (taken d17–28 for endometrial protection) is recommended for severe PMS. • Patient should use effective contraception. • The long-term effect on breast/endometrium is unknown. • Micronised progesterone (e.g. oral/vaginal 100–200mg Utrogestan for 10–12d of a cycle) may THEORETICALLY be better tolerated than other progestogens (e.g. norethisterone 2.5mg or an IUS), which could exacerbate PMS symptoms.	A Cochrane review found (CD010503, 2017): • Very low-quality evidence supporting the effectiveness of continuous transdermal oestrogen plus progestogen. • 100mcg appeared similar in terms of efficacy compared with 200mcg, and was likely to cause fewer side-effects. • Long-term efficacy/safety are unknown because trial duration was 8m maximum.
GnRH analogues	Result in complete suppression of the menstrual cycle. Due to hypoestrogenic side-effects and sequelae, they should only be used: • Diagnostically. • In severe cases. • In treatment failure. Prolonged use should be avoided if possible, BUT, if used for >6m: • Give add-back continuous combined HRT or tibolone.	A meta-analysis found that: • GnRH analogues were an effective treatment for PMS. • The addition of add-back HRT did not reduce efficacy.

	• Advise about cardiovascular and bone health. • For women on long-term treatment, consider DXA-scanning annually (although inter-scan variability is such that most osteoporosis guidelines say wait at least 2y between scans).	
Diuretics	Spironolactone may be used to treat physical symptoms, BUT is potentially teratogenic (use effective contraception).	2 small placebo-controlled trials (involving 35 and 28 women) suggest benefit.
Hysterectomy and bilateral salpingo-ophrectomy	This is a permanent removal of ovarian cycles, and should only be undertaken in extremely severe cases when medical management has failed. HRT should be prescribed to women <45y.	Observational data suggests high satisfaction rates in selected women.

Treatments to avoid

- Low-dose danazol (200mg twice daily) has been shown to help with breast-related PMS symptoms, but side-effects include irreversible virilization.
- Progesterone or progestogens. Despite the fact that some progestogens (e.g. norethisterone, cyclogest pessaries) are licensed for treating PMS, there is no convincing evidence of benefit.
- There is currently no evidence to recommend the IUS alone as a treatment for PMS. *However, despite this, your patient might think it worth*

a try – especially considering that lack of evidence of benefit would apply to most of our PMS treatment choices!

1.8. How does the management of PMDD differ from PMS?

The management of PMDD overlaps substantially with PMS. However, the evidence base specific to PMDD is even more limited than for PMS, and there is a lack of clear, dedicated guidelines for PMDD. Some key pointers for management include (Int J Womens Health 2022;14:1783):

- **Have a low threshold for referral to specialist care** for severe, refractory or complex cases.
- **Routinely assess suicide risk** whenever you review the patient, particularly in women with severe symptoms or marked functional impairment. See our article, *Suicide*, for more about how to approach this.
- **Lifestyle changes:** these may still play a supportive role in PMDD and should not be overlooked in favour of medication alone. Moderate aerobic exercise may be beneficial, although the evidence base is less robust than for pharmacological treatments (Best Prac Res Clin Endocrin Metab 2024;38:101858).
- **Psychological therapies:** CBT remains an important component of PMDD management, but is best viewed as complementary rather than an alternative to pharmacological treatment in moderate to severe cases. Evidence suggests that CBT can improve functioning and depressive symptoms in PMDD, even where core cyclical symptoms persist (Best Prac Res Clin Endocrin Metab 2024;38:101858).
- **SSRIs are effective for PMDD and are often considered a first-line**

treatment. Starting doses are similar to those in anxiety and depression, although lower doses may also be effective for some. Symptom improvement can occur more rapidly in PMDD than in other mental health conditions, sometimes within 24–48h of starting treatment. There are no specific recommendations regarding choice of drug so local formularies can be followed. Note that, in the UK, no SSRIs are licensed for the treatment of PMDD and they are therefore prescribed off licence (Best Prac Res Clin Endocrin Metab 2024;38:101858).

- **Hormonal treatments, particularly combined oral contraceptives, can be beneficial in PMDD,** and may have a stronger evidence base for effectiveness than in PMS. The primary aim is to stabilise hormonal fluctuations through suppression of ovulation, rather than correction of overall hormone levels. Continuous regimens or shortened hormone-free intervals may further reduce symptom recurrence by limiting hormone withdrawal effects. However, hormonal treatments seem to be more effective for physical than emotional symptoms of PMDD, whereas SSRIs may be more helpful for mood (Front Psychiatry 2024:15:1363875).
- **More intensive hormonal suppression strategies are reserved for severe PMDD,** and require specialist guidance. GnRH agonists may be as effective as SSRIs in reducing symptoms, but are limited by significant adverse effects, including bone loss. Add-back hormone therapy remains controversial in PMDD because reintroducing progesterone or oestrogen may worsen mood symptoms in susceptible individuals (Front Psychiatry 2024:15:1363875).

1.9. Premenstrual exacerbations of mood disorders

Premenstrual exacerbation (PME) refers to a premenstrual worsening of an existing mood disorder such as depression or bipolar disorder. It is common, affecting around 60% of women with mood disorders, and is associated with a more severe illness course, greater functional impairment and higher relapse risk.

Important aspects of management include:

- **Differentiating premenstrual exacerbation from PMDD**. PME should be considered when premenstrual symptoms occur on the background of an ongoing mood disorder or are not confined to the premenstrual period (with a clear symptom-free interval). This distinction is important because treatments shown to be effective for PMDD, including hormonal treatments and ovulation suppression, have less evidence of efficacy for PME.
- **Optimising treatment of the underlying mood disorder**. Management should focus on effective treatment of the primary problem. Evidence is limited, but small studies suggest that temporary increases in antidepressant doses during the premenstrual period may reduce symptom worsening in some women with depression.
- **Have a low threshold for specialist referral**. This is particularly important if there are severe symptoms, a lack of response to treatment or where there is severe mental illness such as bipolar disorder.

(Curr Psychiatry Rep 2021;23:78)

Premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD)

- PMS is characterised by physical, psychological and behavioural symptoms that occur in the days leading up to menstruation, are completely resolved by the end of menstruation and are severe enough to impair daily functioning.
- PMS is a poorly understood condition; most licensed treatments are not recommended, and most recommended treatments are unlicensed.
- PMDD is a severe form of PMS that involves marked psychological symptoms, significant functional impairment and has a high risk of suicide.
- Diagnosis of PMS and PMDD should be based on symptoms recorded prospectively in a symptom diary kept for a minimum of 2 cycles.
- First-line options include exercise, SSRIs, CBT and combined hormonal contraception.
- Complementary treatments may be of benefit (although there is less evidence).
- If first-line treatments do not control symptoms, refer to gynaecology for second-line options, including transdermal HRT or GnRH analogues.

Useful resources:

Websites (all resources are hyperlinked for ease of use in Red Whale Knowledge)

- The National Association for Premenstrual Syndrome

your personal practice. It should not be shared or used for commercial purposes. If you wish to use our content for group or commercial purposes, you must contact us at sales@red-whale.co.uk to discuss licensing, otherwise you may be infringing our intellectual property rights.

Although we make reasonable efforts to update and check the information in our content is accurate at the date of publication or presentation, we make no representations, warranties or guarantees, whether express or implied, that the information in our products is accurate, complete or up to date.

This content is, of necessity, of a brief and general nature, and this should not replace your own good clinical judgment or be regarded as a substitute for taking professional advice in appropriate circumstances. In particular, check drug doses, side effects and interactions with the British National Formulary. Save insofar as any such liability cannot be excluded at law, we do not accept any liability for loss of any type caused by reliance on the information in these pages.

Here is the link to our terms of use.