What is it?
Premenstrual syndrome (PMS) refers to a group of physical and emotional symptoms that start 7 to 14 days before your menstrual period begins. The symptoms usually resolve within a few days after bleeding starts. At least 75% of all people who menstruate women have experienced some symptoms of PMS. Symptoms may vary from cycle to cycle and may be mild to severe. 3% to 8% suffer from a very severe form of premenstrual syndrome known as Premenstrual Dysphoric Disorder (PMDD) that seriously impacts their daily lives.

What symptoms are common in PMS?
Physical symptoms may include:
- Breast engorgement/tenderness
- Abdominal bloating
- Constipation, diarrhea, nausea, vomiting
- Acne flares
- Headache
- Alcohol intolerance
- Fluid retention/ weight gain
- Crampy pain in the lower abdomen
- Joint or muscle pain

Emotional symptoms may include:
- Anxiety/panic attacks
- Insomnia
- Change in sexual interest/libido
- Irritability
- Depression and crying spells
- Withdrawal /trouble in relationships with family and friends
- Lethargy and fatigue
- Mood swings
- Inability to concentrate/perceived memory problems
- Increased appetite/ specific food cravings (especially salt and sugar)

When symptoms of PMS are significant and persistent, talking to your provider is advised to rule out other medical conditions as a cause of the symptoms above. Side effects of oral contraceptive pills (OCPs) can sometimes cause similar symptoms, although many people find OCPs helpful in PMS symptoms.

Reproductive hormones and neurotransmitters
Progesterone converts to pregnenolone, a compound that enhances the effect of the neurotransmitter GABA. GABA in turn has properties that may protect against anxiety. Some studies have detected lower levels of progesterone and pregnenolone in some people with PMS. Estrogen may play a role by maintaining sufficient levels of the neurotransmitter serotonin. Low levels of serotonin are associated with depression and carbohydrate cravings. Some studies have suggested that some people with PMS may have abnormal response to estrogen fluctuations.

Researchers have also noted that “stress response” in people with PMS may be more intense than in those without PMS. This response is regulated by hypothalamic-pituitary-adrenal system. After a stressful event, neurotransmitters called catecholamines (such as dopamine and epinephrine) cause the production of cortisol, the primary stress hormone. Low levels of cortisol are associated with depression. One study found that people with PMS-related depression had lower cortisol levels during the premenstrual phase, and
higher levels in the menstrual phase compared to people with few PMS symptoms.

**Cultural and psychological factors**

People in different cultures experience premenstrual events differently. For example, a study of Chinese women in Hong Kong reported that pain was the most significant PMS symptom, while depression predominated in Western women.

**How is premenstrual syndrome diagnosed?**

Your medical provider may ask you to keep track of your symptoms on a calendar over a 3 to 4 month time period. If your symptoms always appear 1 to 2 weeks before your periods, that may suggest you have PMS. It is also important to see a medical provider to rule out other possible causes for your symptoms. The diagnosis of more serious PMDD is usually made in consultation with your medical provider and/or mental health professionals.

**How can I ease my PMS symptoms?**

For many people with mild PMS symptoms, a lifestyle adjustment may be sufficient to control symptoms.

- Dietary recommendations include drinking plenty of fluids to reduce bloating.
- Eating frequent small meals including whole grains, fresh fruits and vegetables, and avoiding saturated fats and high salt snack foods.
- Complex carbohydrates found in whole grains may increase levels of serotonin.
- Avoid alcohol at this time as it may increase depression.
- Cut back on caffeine to feel less tense, irritable and to ease breast soreness.
- A number of vitamins and dietary supplements, including vitamin B6, vitamin E, calcium, and magnesium have been studied as therapeutic agents for PMS; however the evidence is inconsistent that any of these supplements are more effective than placebo.
- Aerobic exercise such as walking may help.
- Get plenty of sleep: 8 hours a night is ideal.
- Keep to a regular schedule of meals, bedtime and exercise.
- Keep a daily diary for a few months to help you identify your own cycles and sources of stress.
- Try to restructure your priorities so that you plan ahead for pleasurable activities during your premenstrual phase and try to avoid stressful events at that time.
- Anti-inflammatory drugs such as over-the-counter ibuprofen and naproxen can help most premenstrual cramping and headaches. If you get severe cramps, you may need to start the anti-inflammatory 1 to 2 days before you expect cramps to begin.

Talk to your provider about persistent or debilitating cramps to consider other causes and treatments.

**Are there medications for premenstrual syndrome?**

If your symptoms of PMS are not reduced with lifestyle modifications, consult with your medical provider.

- Certain antidepressants called SSRIs (selective serotonin reuptake inhibitors) may help with depression, fatigue and relationship problems during the premenstrual time phase.
- Anti-anxiety medications are sometimes considered as well. For very severe symptoms, a gonadotropin-releasing hormone agonist (GnRH) is a medication which may suppress the hormonal fluctuations that produce PMS.
- For some individuals, a trial of oral contraceptives may be prescribed to prevent PMS symptoms, especially cramping and acne.
- Occasionally diuretics, which increase urination, are prescribed to reduce bloating and breast fullness/tenderness.