

## Pre-menstrual Syndrome - Can Diet Help?

Premenstrual syndrome (PMS) is a common cause of physical, behavioural and social dysfunction in women of reproductive age. Most women experience some mild emotional or physical premenstrual symptoms, but for some 8-20% these symptoms can be so severe and disruptive that they seek medical treatment.

PMS occurs periodically and frequently during the latter stages of the menstrual cycle, known as the luteal phase, which occurs around one to two weeks before the menstrual period starts.

The exact cause of PMS is still unknown and although it doesn't occur when there is no ovulation, it doesn't seem to be related to levels of hormones in the blood. However it is thought that the hormones produced by the ovary, particularly progesterone, provoke PMS symptoms by using chemical messengers in the brain (known as neurotransmitters). Many enzymes, vitamins and minerals are involved in this leading to speculation and research into the role vitamins and minerals may play in helping to ease PMS. Unfortunately to date results from studies haven't been very conclusive.

Symptoms of PMS vary between women and each individual can also experience different symptoms from month to month. These include mood swings, irritability, increased appetite, carbohydrate and alcohol cravings, breast tenderness, headaches and bloating.

It is believed that having other underlying chronic diseases such as diabetes, irritable bowel syndrome or food allergies can make a woman more prone to PMS. This is supported by the finding that women with higher levels of inflammatory markers - protein and acids produced when the body is undergoing some sort of stress, have more severe premenstrual symptoms. So making sure that any other chronic medical condition is controlled as well as can be may help to reduce the severity of the symptoms.

Can diet help?

General healthy diet

A good starting point to help reduce the symptoms of PMS is to ensure the diet is healthy. Regular balanced meals, a variety of foods from each food group in adequate amounts and checking that intakes of salt, alcohol, caffeine, saturated and trans-fats are not excessive contribute to a healthy diet.



Low GI diet

Many PMS sufferers complain that they sometimes feel as if their blood sugars plummet premenstrually, which manifest as feelings such as tension, shakiness as well as sugar and starchy cravings for foods such as chocolate, cakes and biscuits.

**BDA THE BRITISH DIETETIC ASSOCIATION**

### Food Fact Sheet

#### G.I. (Glycaemic Index)

There are many types of carbohydrates (carbs), but they all behave differently in your body. This is because carbs - or starchy foods - are digested at different rates, which has an effect on your blood glucose (blood sugar) levels. The Glycaemic Index (GI), is a ranking of how quickly these foods make your blood glucose levels rise after eating them.

**Which food and drinks contain carbohydrate?**

- Starchy foods such as bread, pasta, chapatis, potatoes, rice, noodles, rice and cereals.
- Fruit and fruit juice.
- Some dairy products such as milk and yoghurt.
- Some daily processed foods.
- Sugar and other sweet foods.
- Non-diet soft drinks.
- Pasta, potatoes, biscuits and cakes.

Each time you have a sugary or starchy food or drink, the blood glucose levels in your body rise. Some of these are quickly digested and cause a spike and sharp rise in your blood glucose levels - they are called high GI foods and drinks. Low GI foods and drinks, which are more slowly digested, will make your blood glucose rise more slowly. These are sometimes called 'slow release' carbs.

**How to use GI**

The GI value of a food is based on the food when eaten on its own, and there are published lists of high, medium and low GI foods. However, it is not usually possible to eat the GI value in isolation, so we usually eat food in combination with other foods. GI needs to be taken in the context of what you are eating. It can be successfully incorporated into a healthy diet.

**Here are some everyday carbs with examples of a lower GI choice:**

Carbohydrate food	Lower GI Choice
Bread	Multigrain, granary, rye, seeded bread, wholemeal, pita bread.
Potatoes	Chickpea, oat bread, new potatoes in their skins, sweet potato, yam.
Rice	All grain, coarse (e.g. basmati), wholegrain, dentle, rice, long grain.
Pasta	Wholegrain, wholemeal, barley, durum wheat, lentil.
Other grains	Porridge, quinoa, couscous, millet, most breakfast cereals, most cereals.
Breakfast cereals	

A healthy way to use the GI principles is to incorporate a range of lower GI carbs that are also low in fat and calories into your meals. So, when you choose a low GI breakfast like porridge, consider making it with skimmed milk and sweetening it with the minimum of sugar and some dried fruit. When you're buying a sandwich, go for granary bread.

**Foods with a high GI are not necessarily bad foods.**

However when blood sugar levels are measured at these times, they are rarely below normal; it is thought that premenstrually there may be a heightened sensitivity to fluctuations in blood sugars that can occur after eating food with a high GI (fast acting carbohydrates such as white bread and sugary drinks). Basing meals and snacks around low GI carbohydrates (such as pasta and granary bread) may help with PMS symptoms by maintaining an even blood sugar level. To find out more about GI diet read our GI Food Fact Sheet.

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## Vitamins and minerals

Good intakes of both calcium and vitamin D from the diet have been associated with lower incidence of PMS, in particular low-fat milk and yoghurts. There is also some evidence that calcium supplements (1000mg/day) along with 10 micrograms of vitamin D can help relieve premenstrual pain and migraine. It is always best to try and get calcium from the diet by consuming adequate low fat milk or milk substitute products such as soya milk. If insufficient dietary vitamin D can be achieved, then taking a 10 microgram supplement may help with PMS symptoms.



Recently a study showed that a diet high in thiamine and riboflavin (vitamin B1 and B2) may reduce the incidence of PMS by 35%. However taking supplements of these had no affect on PMS rates. Therefore a diet containing plenty of these B vitamins is advisable (whole grain cereals, some meat, milk, and beans). A supplement containing a mix of essential fatty acids including gamma linolenic and oleic acid and vitamins including vitamin

E significantly reduced the symptoms of PMS. Evening primrose oil, which contains gamma linolenic acid used to be prescribed for premenstrual breast tenderness but was then revoked as was thought to be ineffective. In the light of research it may be worth trying this supplement which is easily bought over the counter.

There is sparse evidence for the effectiveness of other vitamin, mineral and herbal supplements and further robust trials are needed in this area.

## Alcohol

Excess alcohol intake seems to aggravate the condition. Alcohol can also lower the body's stores of several essential nutrients including the B vitamins. It is thought that some PMS sufferers have more of a desire for alcohol premenstrually but are also less able to metabolise it. It is therefore advisable to stick to recommended levels of alcohol per week (14 units per week for women) and to avoid binge drinking.

## PMS and weight

During the luteal phase, many women, especially those with PMS, experience an increase in appetite and tend to eat more. The increase in appetite is believed to be caused by a small increase in energy requirement due in turn to an increase in body temperature and metabolic rate. However, the magnitude of the increased requirement is small so eating too many extra calories may cause weight gain. Being obese has been shown to be strongly associated with PMS. Thus to lessen the incidence and symptoms of PMS, avoiding weight gain is important and weight loss may help to relieve symptoms if a woman is overweight or obese.

## Summary

- Most women suffer with some degree of PMS but for some 8%-20% it can be severe, requiring medical intervention.
- There are several theories why some women suffer with PMS but although it is periodic, it seems unrelated to actual hormonal levels.
- Diet and lifestyle factors, including weight loss if BMI exceeds normal range, can help relieve mild symptoms and should form the foundation if further treatment is required.
- With regards to vitamins and minerals, adequate dietary sources of calcium and vitamin D, vitamins B1 and B2 and essential fatty acids appear to be effective. A supplement of evening primrose oil may also help. For other supplements the evidence is currently emerging or of uncertain significance.

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