

# the menstrual cycle

## what is a healthy menstrual cycle?

On average a female's menstrual cycle length depends on her genetic makeup and individual health. An average menstrual cycle occurs over 21-35 days (with day one of your menstrual cycle considered to be the first day of established bleeding). The timing of a healthy cycle is dependent on three important events (see below).

## the phases of the menstrual cycle

### Phase 1

The follicular phase: this is the first phase of your cycle where follicles (sacs containing an egg) in the ovary begin to develop and mature. One follicle will become dominant before the next phase. This phase typically lasts from day 1-14.

### Phase 2

Ovulation: this occurs when the dominant follicle has reached maturity in the ovary. When the egg is released it enters the fallopian tube ready to enter the uterus (if fertilisation by sperm occurs). This occurs around days 13-15.

### Phase 3

The luteal phase: this is the final stage of your cycle where the uterus lining becomes thicker in preparation for a fertilised egg. If the egg is not fertilised, the uterus lining breaks down, resulting in menstruation. This phase occurs from days 16-28. the cycle then begins again.

\*based on a 28 day cycle

## lets talk about hormones

Hormones are chemicals produced in our endocrine system. They are responsible for controlling and regulating the activities of certain cells and organs. The main hormones involved in the menstrual cycles are:

### Oestrogen (E2)

This is the dominant hormone in phase 1 (follicular phase). It is produced by the ovaries and is involved in thickening the uterus lining in the follicular phase. Once oestrogen reaches its peak, then ovulation can occur.

### Progesterone (P4)

This is the dominant hormone in phase 3 (luteal phase). It is produced by the 'corpus luteum' which is the old follicle that remains after ovulation. Progesterone can only be released if ovulation occurs. It is involved in keeping the uterus lining in place in the luteal phase ready for an embryo to be implanted.

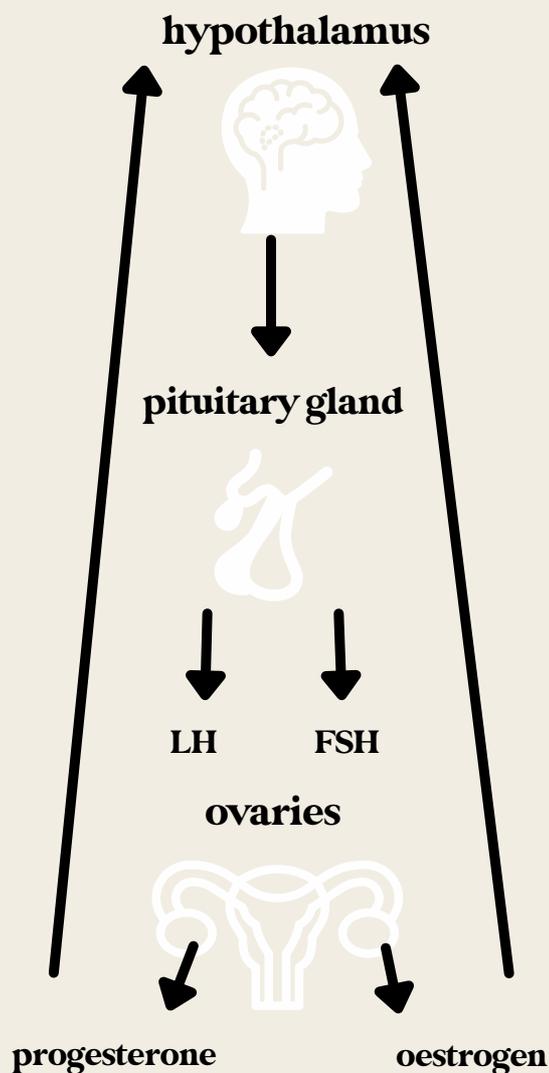
### Follicle Stimulating hormone (FSH)

Produced by the brain to tell the female reproductive system how to act. FSH stimulates the production of follicles in the follicular phase and helps with oestrogen production.

### Lutenising hormone (LH)

LH is produced by the brain and stimulates the release of the egg from the dominant follicle for ovulation to occur. This is produced in response to high oestrogen levels.

## where are hormones produced



### The HPO (hypothalamus/pituitary/ovary)-axis

This diagram is called the HPO-axis which involves the communication between the brain and the ovaries to produce female sex hormones. The ovaries is where you produce most of your female sex hormones like progesterone and oestrogen.

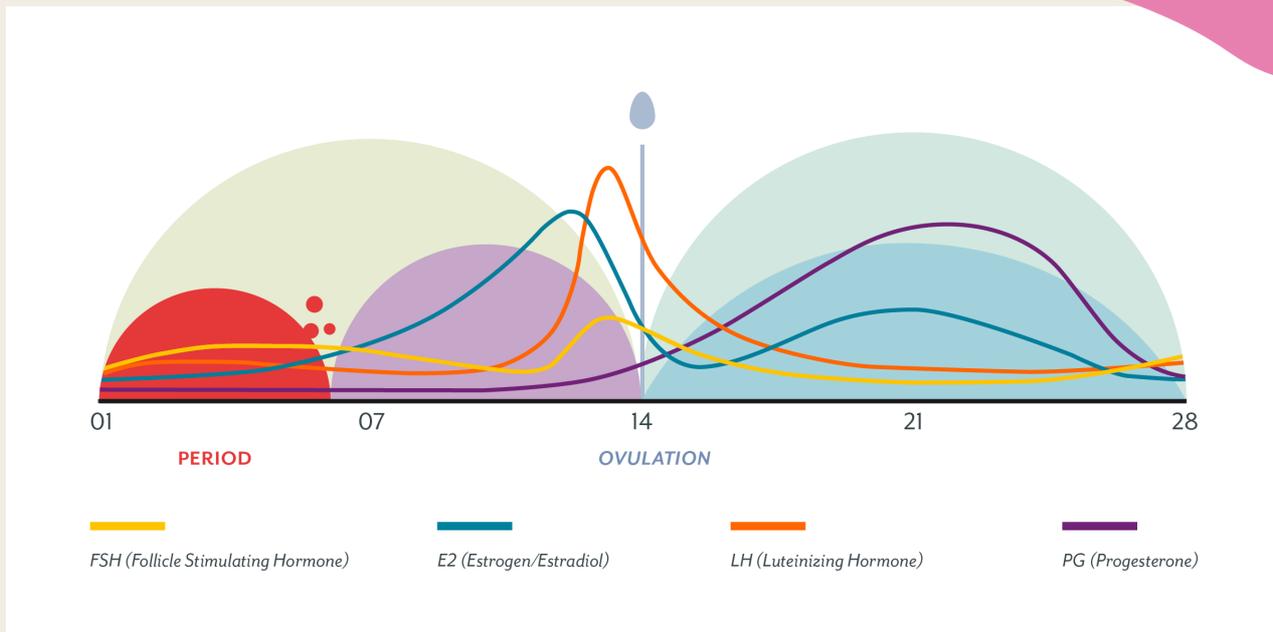
## menstruation

When your progesterone levels are optimal, your uterus lining sheds easily and your period should arrive with little to no premenstrual pain or spotting.

Every person is different, but a normal period should last for 3-7 days and can often include a day or two of light spotting towards the end.

### Overview of a healthy menstrual bleed:

- menstrual fluid is not all blood - it also contains cervical mucus, vaginal secretion and small fragments of uterus lining
- it should be liquid with minimal clots. As your lining breaks down, your body releases natural blood thinners to help it flow more easily.
- It should be red-brown in colour. When blood is exposure to air it turns darker. It should be bright red when flowing, and turn darker as your flow slows down.
- The total volume of your whole period should equal approximately 50mL. less than 25mL is considered a light or 'scanty' flow, more than 80mL is a healthy flow. \*as a general rule, you shouldn't need to change your pad or tampon more frequently than every 2 hours during the day. Your flow slows down at night time, so you should not need to change your pad over night.



## common female hormone issues

- **Pre-menstrual syndrome (PMS):** commonly causing irritability, anxiety, mood swings, fluid retention, bloating, breast tenderness, acne, food cravings, brain fog, sleep disturbances
- **Dysmenorrhoea:** painful periods, dull ache or sensation of heaviness in lower abdomen, cramping pain
- **Endometriosis:** pelvic pain and discomfort, painful sex, abnormal bleeding, PMS
- **Polycystic ovarian syndrome (PCOS):** hirsutism, acne, obesity, insulin resistance, irregular cycles, infertility
- **Uterine fibroids:** heavy periods, anaemia, frequent urination, constipation, pain

### cause of PMS

Hormones or yourself are not to blame for PMS! Hormones are beneficial and made to support you. Elevated or low levels of certain hormones will contribute to PMS, but its not the problem of the hormones themselves. It has to do with the ratios and timing of hormonal fluctuations.

The cause of PMS is a complex interplay between hormones, neurotransmitters, nutrients and psychosocial factors. PMS can present as a variety of emotional and physical symptoms that occur in the luteal phase of the menstrual cycle. Symptoms usually last 5-10 days before menstruation. The symptoms range in severity for each woman and usually subside with the onset of the period.

## how to reduce PMS

### diet and nutrition

Adopt as many of these principles as you can to support healthy hormone production and clearance.

**Eat your fibre** - oestrogen is eliminated by the liver and bowels. Keeping them healthy with a high-fibre diet will help with elimination. Constipation can cause oestrogen to become recirculated in the body causing imbalanced oestrogen : progesterone.

at least 25-30g daily for women. An example of a high fibre diet looks like:

1/2 cup cooked steel cut oats = 5g

1 cup of cooked cauliflower = 4.9g

¼ cup raw almonds = 3g

1 large carrot = 2g

½ cup cooked chickpeas = 7g

1 cup of raspberries = 8g

1 gold kiwi fruit = 2g

Total = 31.9g



### Follow 5;2 = 5 serves of veg and 2 serves of fresh fruit daily

this is simple advice, but highly effective. Fruits and veg are some of your best ways to get fibre, antioxidants, and a whole bunch of nutrients required for healthy hormone balance.

#### 1 serve of veg equals:

½ cup of cooked vegetables eg broccoli, spinach, carrots, pumpkin

1 cup of raw leafy salad greens

½ cup starchy vegetables eg sweet potato, beetroot, potato

1 medium sized tomato

½ cup of cooked corn

½ cup of cooked legumes

#### 1 serve of fruit looks like:

1 medium apple, banana, orange, pear

2 small fruits eg apricots, stone fruit, kiwi fruit

1 cup of berries

## diet and nutrition

**Enjoy an abundance of magnesium rich foods.** Magnesium deficiency is a common cause of PMD. Research has found magnesium to be highly beneficial in reducing PMD symptoms in people with menstrual cycles.

Magnesium is a smooth muscle relaxant (great for cramping), it improves blood sugar balance (great for sugar cravings), helps to relieve anxiety and insomnia.

### **Food sources include:**

Leafy greens

Wholegrains - oats and barley are great sources

Legumes - navy, pinto, kidney and chickpeas

Nuts and seeds = peanut butter, sunflower seeds

Seafood

Meat

Dairy products

**Eat your brassicas daily - mostly cooked.** Brassicas improve oestrogen detoxification through the liver. If you are experiencing PMD this is one of the easiest things you can do for support.

Broccoli

Cauliflower

Cabbage

Kale

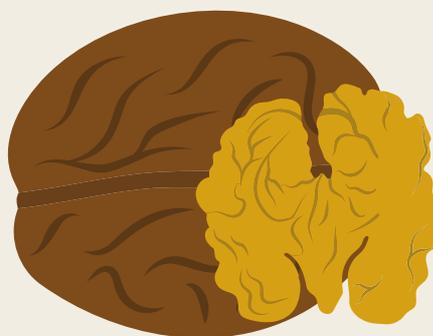
Brussel sprouts

Rocket

Mustard spinach

Kohl rabi

Bok choy



**Include omega-3 foods regularly.** Especially if pain and cramping is an issue. Highly anti-inflammatory fatty acids to help reduce pain. Also required for brain health and reducing neuroinflammation, great for anxiety and mood swings in the luteal phase.

Fatty fish (salmon, mackerel, anchovies, sardines, herring) x 3 times week - wild caught is great if you have access to it. Consider supplementing with fish oil.

Vegan omega 3 options include chia seeds, flaxseed meal and oil, walnuts and algae oil

## diet and nutrition

**Be mindful that sugar, caffeine, alcohol, deep fried foods, and cows dairy** may have an impact on PMS. Not all of these will effect everyone so you don't need to fully cut them out. Just be mindful if you notice worse PMS after consuming these foods in excess.

## lifestyle

**Lifestyle changes are key for rebalancing hormones**

### **Meditate to manage stress**

Regular meditative practice has many benefits. It has been shown to reduce stress by lowering levels of cortisol (our stress hormone). It has also been shown to improve concentration and sleep. Reducing stress levels will help to balance oestrogen and progesterone, which has benefits for PMS and a healthy menstrual cycle.

### **Swap Instagram for a good book**

Social media can make us feel triggered easily and heighten (already heightened) emotions. Reducing time on social media is a great idea during the luteal and menstrual phases. I'm a sucker for fantasy books by Sarah J. Maas.

### **Improve your sleep**

Getting enough good quality sleep is key for reducing inflammation, controlling cortisol levels and balance hormones.

- Establish a set time for going to bed and rising
- Exposure yourself to morning sunlight upon waking to regulate your circadian rhythm
- Don't snooze your alarm in the morning
- No caffeine after lunch/2pm
- Switch off from devices 45 minutes before bed. Engage in a relaxing, non-stimulating activity like reading, drawing, journalling etc.
- Consider meditation before bed

### **Regular exercise**

Including regular exercise into your routine is so great for hormonal health. Include cardio, strength and restorative exercise (e.g. yoga). Exercise is important for healthy detoxification of sex hormones and increases your ability to cope with stress.

3 x 60 minute cardio session per week an improve physical and emotional symptoms of PMS.

## lifestyle

### Try the Fertility Awareness Method (FAM)

FAM is a non-hormonal symptom-based contraceptive method, but can also help you to get in tune with your menstrual cycle. FAM looks at changes that occur in your body to detect ovulation, including your base body temperature and cervical mucus changes.

How to do it:

- get a thermometer from the chemist
- take your temperature via your mouth at the same time everyday. Upon rising, before talking or checking your phone, in the back pocket of your cheek.
- you should notice a 0.5 degree rise in temperature around ovulation due to progesterone being release. If you don't notice a rise in your cycle, you may not have ovulated.
- notice different cervical mucus changes throughout your cycle to help determine what phase of your cycle you are in. See diagram below.



## support during menstruation

### menstrual products

There are so many great menstrual products available. Here is a list of available products you could consider.

#### Menstrual products

Menstrual cup

#### Pros

sustainable, no leaking, great for travel, different sizes

#### Cons

need to clean properly to prevent infection, can be messy

Tampons

readily available, different sizes

Not sustainable, conventional tampons can use cotton sprayed with toxic chemicals.

Pads

Easy use, different sizes, readily available

Not sustainable, often use cotton sprayed with toxic chemicals

Period underwear

Very easy use, different sizes and flow rates

Need to wash after each use, more expensive

Reusable pads

Easy use, different sizes

Need to wash after each use, more expensive, not as readily available

### diet and nutrition

#### Eat regular healthy meals

Maintaining healthy blood sugar levels by eating regular snacks and meals means less cravings for sugar and refined carbs. Also, your body is losing a lot of nutrients via menstruation so eating healthy will help to replenish lost nutrients easier.

#### A note on smoothies

Your body temperature is at its lowest level and needs to be kept warm. Having a cold green smoothie at this time is not great fuel for your body. Eat more warming, slow cooked and nourishing foods at this time.

## **lifestyle**

### **Sore back**

Lower back pain is something many women experience during menstruation. Try using a heat pack, hot water bottle and if you have bath add some epsom salts to increase magnesium and hop in.

### **Headache**

Applying essential oils like lavender and peppermint to your temples may help to relieve headaches. Acupuncture is also great for relieving headaches. Ensure you are remaining hydrated.

### **Castor oil abdominal massage**

Castor oil massages are great for reducing inflammation and cramping, helps to shed stagnant tissue and enhance circulation of fresh oxygenated blood. It also promotes healthy bowel motions if constipation is an issue for you. You can get from health food stores, be careful when using as the oil can stain.

### **Heat pack**

Hot water bottles and heat packs applied to the abdomen is great for reducing pain and bloating.

### **Herbal tea**

Herbal teas like chamomile, peppermint and cinnamon are great for easing bloating. The added water consumption also helps with fluid retention.