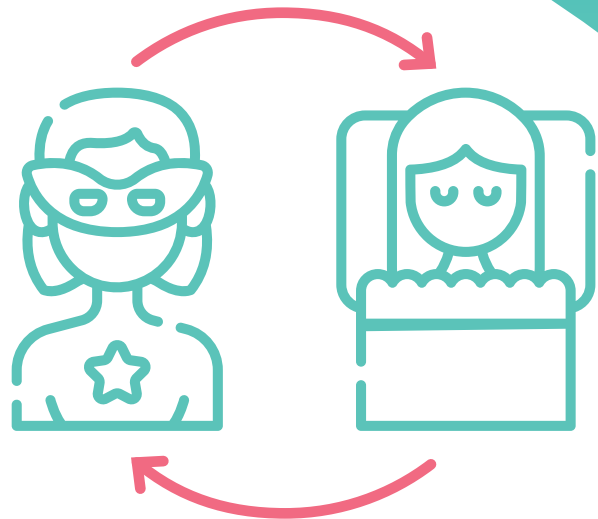


# THE FEMALE MENSTRUAL CYCLE

Do you ever wonder why some days in the month you feel like superwoman yet on another you want to hide under the duvet?



Well this is all down to your fluctuating hormones and the following is to help you to understand how this works. Whether you are reading this for yourself or to better understand the females in your life I hope it helps.

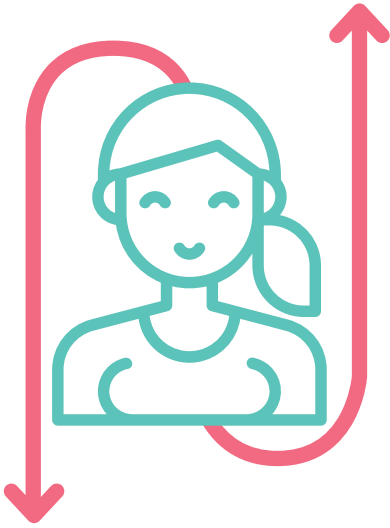
The female species is truly amazing (as if you didn't already know this) for many reasons but particularly because of its ability to reproduce another human being. That is quite something when you stop and think about it and this all starts with the menstrual cycle.

The menstrual cycle begins with puberty which for girls starts somewhere between the ages of 8 – 14 (for boys the average age is 12). The changes that start to occur for girls include growing taller, getting breasts, hips getting bigger, hair growing on the body and periods starting. The first period signifies the menstrual cycle starting.

A female's menstrual cycle usually lasts between 21-35 days with 29.3 days being the average (take note it is not 28 days). The cycle begins on day 1 of a period and in the middle(ish) of the cycle, ovulation occurs and signifies the release of an egg from the ovaries. It is this egg which if fertilised by male sperm can then grow into a baby.



Timing is of the essence here because sperm live for around five days and eggs can only be fertilised for around 24 hours after being released from the ovary. So, the two need to come together just at the right time! This means the most fertile time is the few days leading up to ovulation.

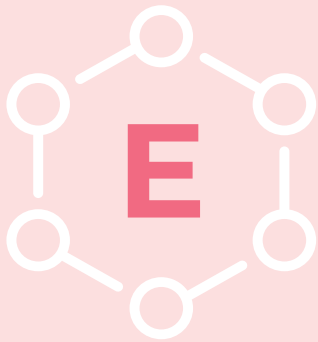


The rising and falling of hormone levels trigger all of the changes that females experience throughout the menstrual cycle.

Hormones are your body's messengers, they move around the veins delivering orders from your organs to your brain and vice versa to perform nearly everything we do.

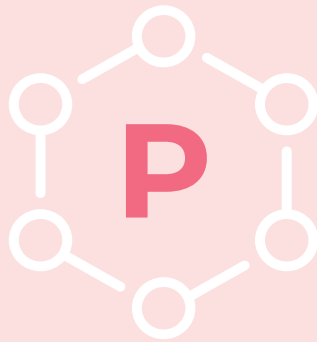
We have hormones that tell us when to eat, sleep, grow, give us an appetite and sex drive. Hormones allow us to have babies and make us happy, sad and even giddy in love. For men, these hormones are pretty stable from one day to another but for females, it is a very different story.

## FEMALES MAIN SEX HORMONES



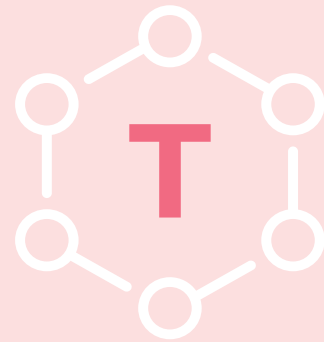
**Estrogen** is responsible for female physical features and reproduction. Think of estrogen as the hormone that looks externally (E for estrogen and E for external) and basically wants us to be out, strutting our stuff so we can find a mate get pregnant and reproduce.

Estrogen levels surge around day 12 of the menstrual cycle and triggers ovulation (release of an egg from the ovary). This is when females are most fertile. After ovulation progesterone gets a look in.



**Progesterone** is responsible for preparing the uterus for pregnancy and then looking after us and the new baby. Opposite to estrogen it wants us to be more internally focussed and this is to protect us when we are pregnant, keeping us safe and encouraging us to eat a bit more because of the extra mouth to feed.

High progesterone levels are believed to be partly responsible for symptoms of premenstrual syndrome (PMS) which include feeling bloated, tender breasts, acne, constipation or diarrhoea, headaches, food cravings, irritability, anxiety and mood swings.






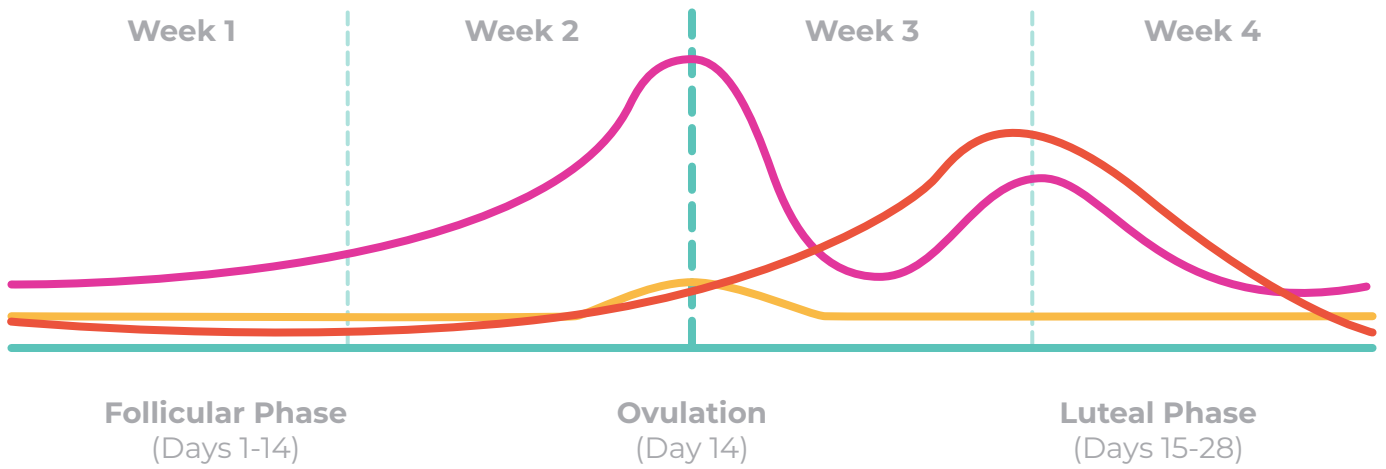
**Testosterone** (which for a male is their dominant sex hormone) in women is responsible for bone and breast health, fertility, sex drive and menstrual health.

### PLEASE NOTE

Both males and females have all of these hormones!

# HORMONES AND YOUR CYCLE

Estrogen   
 Progesterone   
 Testosterone 



## WEEK 1

**What's happening:** Estrogen and testosterone start out at rock bottom on the first day of your period, then steadily rise.

**Mood:** So much for the myth that women are grouchy during menstruation. Just a few hours after your period begins, your estrogen climbs, which boosts your brain's level of the feel-good chemical serotonin. The result: PMS weepiness and irritability may be replaced with an upbeat, social, and chatty feeling.

**Energy:** You may feel fatigued during the first few days due to low estrogen and testosterone levels, as well as a lack of iron from menstruation.

But by the middle of the week, rising hormones, coupled with the end of your period will give you a boost.



**Exercise:** A few days into this week is a great time to do strength exercises as you are building more muscle and faster! This is a good time to increase weights/reps.

**Libido:** Rising testosterone is kicking up your sex drive.

**Watch out for:** Headaches as low levels of estrogen may make you more susceptible to them so keep hydrated.

**Surprise!** This is a good week if you are wanting to lose some weight to implement changes to your diet as you're already eating 12 percent less this week, according to research as you have fewer hormone-related food cravings.

# WEEK 2

**What's happening:** Estrogen and testosterone rise all week. With testosterone spiking.

**Mood:** High levels of estrogen make you even more optimistic, social, motivated, and cheerful than last week. It's also making you more flirtatious, impulsive, and adventurous than during any other week of your cycle. Estrogen basically wants to get you out, meet a mate and conceive! The external world is the focus this week.

**Energy:** You'll notice that you're doing everything faster – for instance, talking, typing, and walking. High hormones are revving you up, so you've got energy to burn.

**Exercise:** With energy at its peak take advantage and include training where you are doing efforts at your maximum. This could be lifting weights, running, cycling or swimming intervals.

**Libido:** Sex doesn't get any better than it does this week, thanks to the surge in estrogen and testosterone, which also makes orgasms more intense and easier to reach.



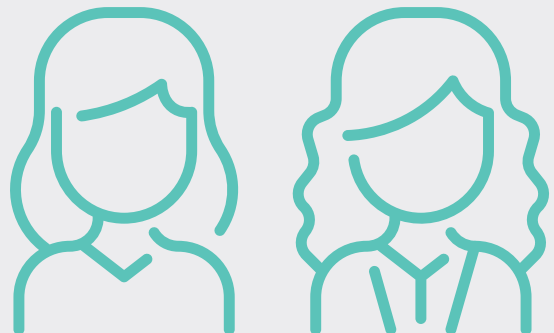
**Watch out for:** Anxiety attacks, which can be triggered by rising estrogen. If you start to feel overwhelmed, try deep breathing, some quiet time, visualise a relaxing scene, repeat a soothing mantra or get on the yoga mat.

**Surprise!** You are at your sharpest this week. This includes memory, faster thinking time and you are at your most eloquent. This is all thanks to high estrogen and testosterone. This is a great time to be brave and try new things.

Remember it is at the end of this week that you are most fertile as sperm is hanging in there for up to five days waiting for an egg to be released.

## PLEASE NOTE

It is important to note (unhelpfully) that every single woman is different and whilst this paints a general picture, the way each person responds to the rise and fall of hormones is different!



# WEEK 3

**What's happening:** The week kicks off with ovulation. That's estrogen and testosterone's cue to take a dive. Then, by day three or four, they rise again. Progesterone climbs all week.

**Mood:** During the first few days, you may feel a bit weepy or irritable as estrogen dips—sort of like pre-PMS. By the second half, your hormones all rise together, bringing calm. If you're sensitive to progesterone, you may feel a bit blue as it climbs.

**Energy:** You'll feel sluggish due to lower levels of estrogen and testosterone and rising levels of progesterone, a hormone known for its sedating effects.

**Exercise:** This is a great time to focus on aerobic activity like jogging, swimming and cycling. Moderate effort but longer workouts are ideal.

Remember to keep well hydrated as your core body temperature has increased this week.

**Libido:** Your sex drive hits a cycle-long low due to progesterone. Orgasms are also more difficult to reach this week.

**Watch out for:** Tongue twisters. Progesterone interferes with your verbal ability, making you stumble over words and forget what you wanted to say. This hormone can also cause constipation and bloating, so load up on water and fibre to stay regular, and reduce your salt intake to prevent puffiness.



**Surprise!** You are burning up to 30% more fat when you exercise thanks to a combination of estrogen and progesterone making your body more efficient at using fat for fuel. Which is perfect for your aerobic activity this week.

## PLEASE NOTE

Please note that whilst the above is described in weeks that these are not necessarily 7 days in length. The duration of each of the four weeks is determined by the length of your cycle and also when ovulation occurs. Ovulation tends to occur 12-16 days before the next period.



# WEEK 4

**What's happening:** During this premenstrual week, estrogen, testosterone, and progesterone levels plunge when the egg hasn't been fertilised.

**Mood:** You may find that your mood moves from mellow to irritable in a heartbeat. That's falling estrogens fault. As it plunges, it decreases the brain's level of serotonin and increases chemicals that govern your body's stress response. This isn't the case for everyone though and if you are leading a healthy lifestyle (sleep, nutrition, hydration, movement and me time) you may avoid the bouts of bad moods.

**Energy:** You're feeling sapped this week as estrogen and testosterone plummet.

**Exercise:** Be kind to yourself this week, keep moving but think about light activities like swimming, cycling, yoga or Pilates.

**Libido:** Your interest in sex may climb as the week goes on, due to your upcoming period.

**Watch out for:** Migraines, aches, and insomnia due to dipping estrogen. As this hormone level gets lower and lower, it brings down pain-squelching endorphins and sleep-regulating serotonin along with it. So, practice good sleep routines by staying off devices, limiting caffeine and alcohol.

**Surprise!** Temper bad PMS with serotonin-boosting activities found in exercise. Aerobic activity is great as you are burning 30% more fat a couple of days before your period.



## PLEASE NOTE

Getting to know your menstrual cycle is a really positive step to working with it and not against it. There are many apps available where you can do this or you could have a simple spreadsheet or notebook where you can jot down how you are feeling each day in relation to your mood and energy levels, also noting down other things like your food cravings, body temperature, sore boobs, spots, feeling bloated etc. Over a few months, you should be able to pick out some patterns which map into the four weeks of the menstrual cycle.



# WHAT HAPPENS IF I AM TAKING A FORM OF CONTRACEPTION?

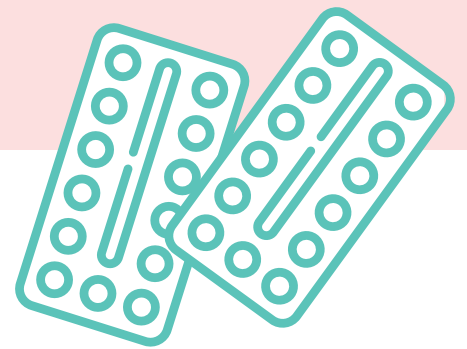
Over 50 years ago the 'Pill' was approved for preventing pregnancy.

Fast forward and there are now many different forms of contraception that exist all with different hormone combinations and doses which result in skipping or stopping periods entirely.

Whilst the primary reason for the invention of the Pill and subsequent forms of hormonal contraception was to prevent pregnancy women can now use forms of contraception

to reduce and eliminate a number of premenstrual symptoms and to skip periods entirely by manipulating their menstrual cycle.

The four menstrual weeks outlined previously are all carefully scripted by dramatic changes in levels of certain hormones to promote ovulation and menstruation. Most forms of contraception add hormones to the body to alter this and stop ovulation.



## TYPES OF CONTRACEPTIVE

**Estrogen and progesterone combined include:**

- Combined oral contraceptive Pill
- Vaginal ring (Nuva ring)
- Patch

The above-combined forms release synthetic versions of both estrogen and progesterone hormones into the bloodstream causing the natural hormones in the body to be suppressed and stop ovulation. This also means that the natural fluctuation of hormones during a 'natural' cycle doesn't happen and instead only a low-level alteration in hormone levels occur. The bleed which happens isn't menstruation but a withdrawal bleed from the sudden decrease in hormones on Pill, patch or ring free days which occur every fourth week, unless this gap is deliberately missed by carrying on with the hormone replacement contraception, i.e. not having a break in taking your Pill.

**Progesterone only contraceptives include:**

- Hormonal intrauterine device
- Progesterone only Pill
- Injection or implant
- Hormone coil (IUS)

When using contraception which releases only progesterone the natural levels of this hormone are reduced which thickens the cervical mucus which makes sperm entry into the uterus difficult, hence stopping pregnancy. Ovulation is still likely to occur with this option and a more 'typical' fluctuation in hormones across the cycle is likely.

As mentioned earlier everyone is different and so the sooner that you can start to understand your body and your cycle whether you are taking some kind of contraception or not the easier it will be to recognise changes and be in a strong position to understand why these are happening to ensure you are working with and not against your menstrual cycle.

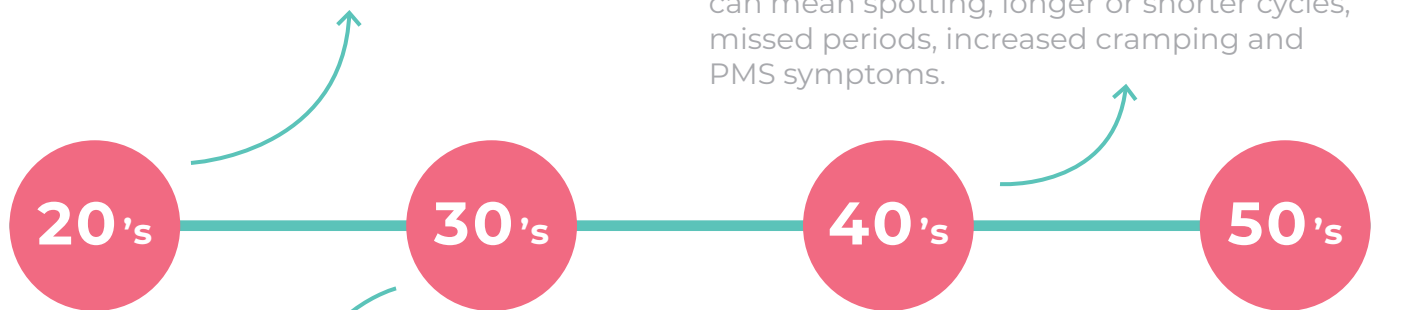
# YOUR HORMONES: BY DECADE

## IN YOUR 20'S

**Your hormonal map:** Estrogen, progesterone, and testosterone are being pumped out by your ovaries, following a more predictable pattern than during your teens.

**What it means for you:** Lots of energy, a revved-up libido, killer cognitive skills, and less-severe mood swings.

**What your periods are like:** Pretty regular, which means less-intense cramps.



## IN YOUR 30'S

**Your hormonal map:** Estrogen, progesterone, and testosterone are still cycling in a predictable pattern, but the overall levels of these hormones decline steadily at this age in early preparation for menopause.

**What it means for you:** You may notice subtle changes in your energy and libido, which decrease as the overall amount of estrogen and testosterone declines.

**What your periods are like:** The length and flow of your period remains regular, but if you've had kids by now, you may find that cramps are less severe due to your cervix widening during childbirth.

## IN YOUR 40'S

**Your hormonal map:** You're entering perimenopause – a transition phase that triggers a steeper decline in estrogen and testosterone and erratic hormone shifts.

**What it means for you:** You could experience moodiness, irritability, hot flashes, insomnia, lack of energy, and/or lower libido.

**What your periods are like:** Irregular hormone patterns (remember your teens?) can mean spotting, longer or shorter cycles, missed periods, increased cramping and PMS symptoms.

## IN YOUR 50'S

**Your hormonal map:** Menopause means your ovaries run out of viable eggs and stop making hormones. Your remaining hormones are pumped out by adrenal glands at about a tenth of the amount that you've been used to.

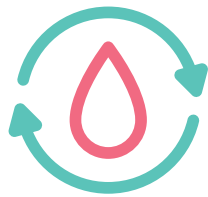
**What it means for you:** While plunging estrogen causes some to suffer moodiness, depression, fatigue, irritability, hot flashes, aches, difficulty sleeping, and/or a lower libido, other women don't have any of these symptoms.

**What your periods are like:** When your periods stop for 12 consecutive months, you've officially entered menopause. Until then, expect spotting in between periods and skipping cycles for months, only to have your period suddenly spring up again.



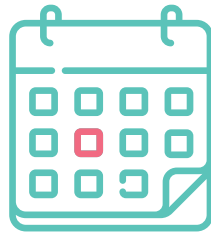
# SUMMARY

The menstrual cycle begins when a female has her first period. From this time pregnancy can occur.



Menopause marks the end of the menstrual cycle and happens at approximately age 51 after going 12 months without a period. After this pregnancy cannot occur.

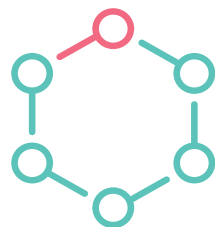
The menstrual cycle is broken down into 4 weeks and starts at week 1 with a period.



PMS are both physical and emotional symptoms women can experience in the weeks before their period.

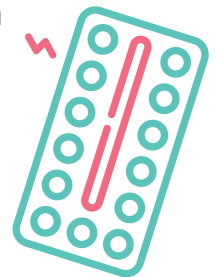


Ovulation occurs close to the middle which is the release of an egg. The three days before ovulation is when you are most fertile.



Three main sex hormones make everything in the cycle happen – estrogen, progesterone and testosterone.

Contraception comes in many forms but most release hormones to override the natural menstrual cycle and stop ovulation which prevents pregnancy and some PMS symptoms.



Keep a journal as everyone is different.

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