

## What is the Menopause?

The menopause is the time in a woman's life when her menstrual periods stop due to the egg supply in her ovaries running out.

The actual day of the menopause can only be identified afterwards when one full year has passed without a menstrual period.

However, unless ovaries are removed by surgery or stopped from working by radiotherapy or chemotherapy the menopause is a natural process that usually occurs gradually – a time known as the **perimenopause**.

To understand what's happening in the body, we need to start with some information about the menstrual cycle:

### The menstrual cycle

Women are born with a set number of eggs in each ovary – about a million in each.

During puberty, the menstrual cycle is established. This is a system of hormones and hormone sensitive tissue involving the pituitary gland in the brain, the ovaries and the lining of the uterus.

There are many images available on the internet to show the cyclical changes in the menstrual cycle including this one in Encyclopaedia Britannica:

<https://www.britannica.com/science/menstruation>

A hormone called FSH in the pituitary gland stimulates the ovaries and some eggs in each ovary start to ripen. Cells around the developing egg (follicular cells) produce the hormone **estrogen**. Estrogen is responsible for the development of our reproductive organs, breasts and fat distribution. It is also involved in sex drive, health of the vaginal walls and vaginal lubrication. Estrogen has key roles in many other body organs and tissues including the brain, bones and joints, blood vessels, skin, bladder as we will discuss again later.

During the menstrual cycle estrogen stimulates the lining of the uterus to grow.

If a woman is not taking any other hormones e.g. contraceptives then usually after about 14 days one of the eggs will be released from the ovary, triggered by another hormone from the pituitary gland called LH. The cells around the released egg in the ovary then start producing **progesterone**.

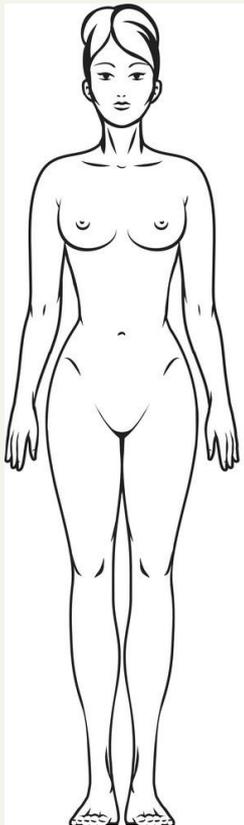
Progesterone is responsible for maturing the lining of the uterus ready to accept a fertilised egg. If fertilised, an embryo will implant into the uterine lining establishing pregnancy. Progesterone helps to maintain a pregnancy and develop the breast in readiness for milk production.

If the egg is not fertilised, progesterone production gradually dwindles, the uterine lining sheds as a menstrual period and the whole process starts over again.

### The Perimenopause

Gradually the eggs in the ovaries get used up. The pituitary gland releases more FSH to try to stimulate the last few eggs to ripen. As there are less eggs there are less follicular cells so estrogen levels fall. The menstrual cycle happens less often so several months can go by between periods. As less estrogen is produced, the estrogen receptors around the body are not stimulated as much so many women start to get some symptoms.

Typical **symptoms** can be explained by the location of estrogen receptors in the body:



**Brain:** Hot flushes, night sweats  
Sleeplessness  
Reduced concentration  
Headaches  
Low mood, tearfulness, anxiety, irritability  
Loss of energy, reduced sexual desire

**Uterus:** Periods become less frequent and eventually stop  
**Urinary tract:** Frequency, urgency, pain, recurrent urine infections  
**Vagina:** Dryness, painful penetration, reduced arousal/orgasm

**Skin:** Dry skin, itchiness

**Joints, cartilage and muscles:** aches and pains

**Other:** Pressure/tightness in head/body,  
parts of body feeling numb/tingling,  
loss of feeling in hands/feet

Some changes in the menopause don't cause symptoms but can adversely affect long term health. **Bones** lose mineral, increasing the risk of osteoporosis. This loss of strength increases the risk of fractures in later life especially in the wrist, spine and hip.

Before the menopause oestrogen seems to protect women's **blood vessels** from chemical changes that can cause the build up of 'atheroma' that narrows blood vessels. However, when oestrogen levels fall, these changes start to happen making heart disease and stroke more common after the menopause.

The average age of the menopause is 51 but there is quite a range from 45 to 55. About 1 in 100 women go through the menopause much younger before age 40, a condition known as Premature Ovarian Insufficiency or 'POI'. It is strongly recommended these women take oestrogen replacement therapy at least until age 51 to protect against developing early osteoporosis, heart disease or stroke.

Not everyone gets symptoms but if present they can vary greatly in severity and in how long they last. The average for hot flushes is 5-7 years but they can persist much longer in some women. At the age the menopause usually occurs, there may be other issues and changes going on in women's lives, eg looking after teenage children, looking after elderly relatives, work responsibilities, changes in relationships. These can all affect the experience of symptoms.

However, the menopause is not just about symptoms, it's a marker of changing to the next life stage and is a very personal experience. The meaning of the menopause can vary for many reasons including our attitudes to growing older, our earlier life experiences and cultural messages we have taken on.

As the menopause is a marker of change it is a great opportunity to take stock and think about any changes in our lives or to our lifestyle we might like to make. Please see our Top 10 tips leaflet for some ideas.