

## Patient information

### Menstrual Cycle

Diabetes and Endocrinology Department

#### What is the Menstrual Cycle?

The menstrual cycle is a series of changes, which take place within a woman's ovaries and womb (uterus), during which a mature egg (ovum) is released from the ovary into the reproductive tract.

The menstrual cycle is counted from the first day of a woman's period to the day before her next period. Cycles last between 24 to 35 days, with the average being 28 days.

The average age to start periods in this country is around 12 years of age. Menopause usually occurs between 45 -55; the average age for the menopause (when periods stop) in this country is around 51 years of age.

To understand what happens during a menstrual cycle, it helps to know about the ovaries and ovulation.

#### Ovaries

Ovaries are the main female reproductive organs. They produce and store eggs (ova). There are two ovaries situated in the lower abdomen, one on each side of the womb. Each ovary contains numerous follicles (small sacs), within which the eggs develop.

The follicles also secrete the female hormones, oestrogen, progesterone and small amounts of male hormones (androgens).

#### Ovulation

Ovulation is the release of a mature egg from the ovary follicle. Ovulation occurs only once in every menstrual cycle, usually around 12-14 days before your next period.

#### What happens during my menstrual cycle?

During the menstrual cycle, the walls of your womb respond to hormones produced by the ovaries, which in turn, respond to stimulation by hormones produced from the pituitary gland, a small gland located at the base of the brain.

At the start of the menstrual cycle, the pituitary gland releases Follicle Stimulating hormone (FSH), which causes some of the immature eggs and follicles within the ovaries to grow. As your follicles mature, they release the female hormone oestrogen.

Oestrogen causes the lining of the womb (endometrium) to thicken and prepares the womb to receive the fertilised egg.

When mature, the egg is released from the follicle and travels along a (fallopian) tube to the womb.

Immediately after ovulation occurs, the cells within the empty follicle are stimulated by Lutenising hormone, (a hormone produced by the pituitary gland) to form a small mass of yellow tissue called the corpus luteum. The corpus luteum secretes the hormone progesterone, which causes the lining of the womb to become thicker and richly supplied with blood in preparation for pregnancy.

If fertilisation takes place the fertilised egg becomes attached to the lining of the womb and pregnancy begins.

If the egg is not fertilised, the cycle continues: the corpus luteum shrinks and the womb lining is shed at menstruation.

### **What is menstruation?**

**Menstruation (sometimes called menses) is the stage of the menstrual cycle during which the thickened womb lining is shed because fertilisation has not occurred. The normal duration of menstruation varies from three to seven days.**

### **Summary of the hormones**

- **Oestrogen** – one of a group of hormones (including oestradiol) that control female sexual development in young women (e.g. breast development and hair growth). Oestrogen is made mainly by the ovary, but small amounts are also produced by the adrenal glands. During the menstrual cycle, Oestrogen causes the womb lining to thicken in preparation for the fertilised egg.
- **Progesterone** – a hormone secreted by the corpus luteum of the empty follicle, and also (in small amounts) by the adrenal gland. It is responsible for preparing the womb lining for pregnancy. If fertilisation occurs, progesterone maintains the womb throughout pregnancy and prevents further release of eggs from the ovary.
- **Lutenising hormone (LH)** a hormone produced and released by the pituitary gland that stimulates ovulation, corpus luteum formation and progesterone production by the ovary.
- **Follicle stimulating hormone (FSH)** – a hormone produced and released by the pituitary gland. FSH stimulates the ripening of the follicles in the ovary and the production of the ovarian oestrogen.
- **Androgens** -one of a group of hormones, including testosterone that regulates hair growth on the arms, legs, lower abdomen and face, and helps to keep bone and muscle healthy. Androgens are secreted in small amounts from the adrenal glands and the ovaries

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## Further Information

**Please feel free to contact the Endocrine Specialist Nurses with any questions you may have. There is an answer machine where you can leave your name and contact details. We will return all calls.**

**The Endocrinology Specialist Nurses**

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