Menstrual cycle
Summary

- The menstrual cycle is complex and controlled by many different glands and the hormones that these glands produce.
- The four phases of the menstrual cycle are menstruation, the follicular phase, ovulation and the luteal phase.
- Common menstrual problems include heavy or painful periods and premenstrual syndrome (PMS).
- Knowing when in the menstrual cycle a woman is most likely to conceive can increase the chance of pregnancy.

The average length of the menstrual cycle is 28–29 days, but this can vary between women and from one cycle to the next. The length of your menstrual cycle is calculated from the first day of your period to the day before your next period starts.

Girls get their first period (menarche), on average, between the ages of 11 and 14 years. By this stage, other sexual characteristics have developed, such as pubic hair and budding breasts.

Hormones and the menstrual cycle

The menstrual cycle is complex and is controlled by many different glands and the hormones that these glands produce. A brain structure called the hypothalamus causes the nearby pituitary gland to produce certain chemicals, which prompt the ovaries to produce the sex hormones oestrogen and progesterone.

The menstrual cycle is a biofeedback system, which means each structure and gland is affected by the activity of the others.

Phases of the menstrual cycle

The four main phases of the menstrual cycle are:

- menstruation
- the follicular phase
- ovulation
- the luteal phase.

Menstruation

Menstruation is the elimination of the thickened lining of the uterus (endometrium) from the body through the vagina. Menstrual fluid contains blood, cells from the lining of the uterus (endometrial cells) and mucus. The average length of a period is between three days and one week.

Sanitary pads or tampons are used to absorb the menstrual flow. Both pads and tampons need to be changed regularly (at least every four hours). Using tampons has been associated with an increased risk of a rare illness called toxic shock syndrome (TSS).

Follicular phase

The follicular phase starts on the first day of menstruation and ends with ovulation. Prompted by the hypothalamus, the pituitary gland releases follicle stimulating hormone (FSH). This hormone stimulates the ovary to produce around five to 20 follicles (tiny nodules or cysts), which bead on the surface.

Each follicle houses an immature egg. Usually, only one follicle will mature into an egg, while the others die. This can occur around day 10 of a 28-day cycle. The growth of the follicles stimulates the lining of the uterus to thicken in preparation for possible pregnancy.

Ovulation

Ovulation is the release of a mature egg from the surface of the ovary. This usually occurs mid-cycle, around two weeks or so before menstruation starts.

During the follicular phase, the developing follicle causes a rise in the level of oestrogen. The hypothalamus in the brain recognises these rising levels and releases a chemical called gonadotrophin-releasing hormone (GnRH). This hormone prompts the pituitary gland to produce raised levels of luteinising hormone (LH) and FSH.

Within two days, ovulation is triggered by the high levels of LH. The egg is funnelled into the fallopian tube and toward the uterus by waves of small, hair-like projections. The life span of the typical egg is only around 24 hours. Unless it meets a sperm during this time, it will die.

When you want to have a baby you can improve your chance of getting pregnant if you know about ovulation and the ‘fertile window’ in the menstrual cycle. Read more on ovulation and fertility window.

Luteal phase

During ovulation, the egg bursts from its follicle, but the ruptured follicle stays on the surface of the ovary. For the next two weeks or so, the follicle transforms into a structure known as the corpus luteum. This structure starts releasing progesterone, along with small amounts of oestrogen. This combination of hormones maintains the thickened lining of the uterus, waiting for a fertilised egg to stick (implant).
If a fertilised egg implants in the lining of the uterus, it produces the hormones that are necessary to maintain the corpus luteum. This includes human chorionic gonadotrophin (HCG), the hormone that is detected in a urine test for pregnancy. The corpus luteum keeps producing the raised levels of progesterone that are needed to maintain the thickened lining of the uterus.

If pregnancy does not occur, the corpus luteum withers and dies, usually around day 22 in a 28-day cycle. The drop in progesterone levels causes the lining of the uterus to fall away. This is known as menstruation. The cycle then repeats.

**Common menstrual problems**

Some of the more common menstrual problems include:

- **Premenstrual syndrome (PMS)** – hormonal events before a period can trigger a range of side effects in women at risk, including fluid retention, headaches, fatigue and irritability. Treatment options include exercise and dietary changes.
- **Dysmenorrhoea** – or painful periods. It is thought that the uterus is prompted by certain hormones to squeeze harder than necessary to dislodge its lining. Treatment options include pain-relieving medication and the oral contraceptive pill.
- **Heavy menstrual bleeding** (previously known as menorrhagia) – if left untreated, this can cause anaemia. Treatment options include oral contraceptives and a hormonal intrauterine device (IUD) to regulate the flow.
- **Amenorrhoea** – or absence of menstrual periods. This is considered abnormal, except during pre-puberty, pregnancy, lactation and postmenopause. Possible causes include low or high body weight and excessive exercise.

**Where to get help**

- Your GP (doctor)
- Gynaecologist
- Family Planning Victoria Tel. (03) 9257 0100 or freecall 1800 013 952

**References**

Understanding your menstrual cycle, Women’s Health Queensland.

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Female reproductive system explained

- Androgen deficiency in women
  Androgen deficiency in women and its treatment is controversial, and more research is needed...

- DES daughters
  If your mother took DES while she was pregnant with you, then you are a DES daughter or DES son...

- Health checks for women
  A woman at high risk of a particular disease should be checked more frequently and/or at an earlier age...

- Pelvic floor
  Pelvic floor exercises are designed to improve muscle tone and prevent the need for corrective surgery...

- Pregnancy stages and changes
  It’s helpful to have an idea of how your body may react to the different stages of pregnancy. It also helps to know how pregnancy may affect your emotions and feelings...

- Puberty
  Adjusting to the many changes that happen around puberty can be difficult for both parents and young people...
• Reproductive system
  New life begins when a male sex cell (sperm) fertilises a female egg (ovum) within the female reproductive system.

• Sexually transmitted infections (STIs)
  It is not difficult to avoid catching sexually transmitted infections (STIs).

• Transvaginal mesh
  Transvaginal mesh has been used for more than 20 years to manage problems for women such as prolapse and incontinence. While this treatment is successful for many women, some unfortunately have...

Menstruation and ovulation

• Menstrual cycle
  The menstrual cycle is complex and is controlled by many different glands and the hormones that these glands produce.

• Menstruation - abnormal bleeding
  Heavy or abnormal periods may be an indication of other health problems.

• Menstruation – amenorrhoea
  Some women are more at risk of amenorrhoea (the absence of periods) because of emotional stress or changes in weight.

• Menstruation - athletic amenorrhoea
  Women who are athletes or who exercise a lot on a regular basis are at risk of developing athletic amenorrhoea, which is the absence of periods.

• Menstruation - pain (dysmenorrhoea)
  Women of any age can experience painful periods and some women find periods are no longer painful after pregnancy and childbirth.

• Ovulation
  The female body shows several signs of ovulation and you may experience some or all of these signs.

• Ovulation pain
  Ovulation pain is usually harmless, but can sometimes indicate various medical conditions such as endometriosis.

• Premenstrual syndrome (PMS)
  Most menstruating women have some form of premenstrual syndrome (PMS).

• Toxic shock syndrome (TSS)
  If you think you could have toxic shock syndrome, stop using tampons immediately and go to the emergency department of your nearest hospital.

Menopause

• Hormone replacement therapy (HRT) and menopause
  Hormone replacement therapy (HRT) can reduce menopausal symptoms, but the benefits and risks need to be considered carefully.

• Menopause
  Menopause is a natural occurrence and marks the end of a woman's reproductive years.

• Menopause and complementary therapies
  The use of complementary therapies to manage menopausal symptoms is popular, but the sources of information available to consumers are of variable quality and reliability.

• Menopause and osteoporosis
  Regular weight-bearing exercise and maintaining a diet rich in calcium from childhood will help reduce bone loss at menopause.

• Menopause and sexual issues
  Menopause, the final menstrual period, is a natural event that marks the end of a woman's reproductive years.

• Menopause and weight gain
  Weight gain at menopause can be managed using healthy eating and exercise; HRT may also be beneficial.

Fertility, pregnancy and childbirth

• Abortion
All women should have access to accurate information about abortion so they can make their own informed decisions...

- About pregnancy and birth services in Victoria (video)
  Victoria’s pregnancy, birth and maternal services, help from planning a pregnancy through to giving birth and caring for a newborn...

- Age and fertility
  Age affects the fertility of both men and women, and is the single biggest factor affecting a woman’s chance to conceive and have a healthy baby...

- Assisted reproductive technology – IVF and ICSI
  IVF (in-vitro-fertilization) and ICSI (intracytoplasmic sperm injection) are assisted reproductive treatment (ART) procedures in which fertilisation of an egg occurs outside the body...

- Contraception after an abortion
  Whether you have a surgical or medical abortion you can become fertile again very soon after the abortion, so it's important to start using contraception immediately if you wish to prevent any...

- Contraception - choices
  The method of contraception you choose will depend on your general health, lifestyle and relationships...

- Ectopic pregnancy
  Ectopic pregnancy is caused by a fertilised egg not being able to move through the fallopian tube...

- Endometriosis - know the facts (video)
  Learn some facts about endometriosis. We debunk some myths and explore symptoms, diagnosis and treatment options for women...

- Infertility in woman
  The odds of a young fertile couple conceiving by having sexual intercourse around the time of ovulation are approximately one in five every month...

- Miscarriage
  A range of feelings is normal after a miscarriage, and they often linger for some time...

- Molar pregnancy
  Most molar pregnancies are diagnosed when bleeding early in pregnancy prompts an ultrasound scan...

- Placental abruption
  Placental abruption means the placenta has detached from the wall of the uterus, starving the baby of oxygen and nutrients...

- Placenta previa
  Placenta previa means the placenta has implanted at the bottom of the uterus, over the cervix or close by...

- Pregnancy - obstetric emergencies
  An obstetric emergency may arise when a woman is pregnant, or during her delivery. In this case, extra care is needed. A woman may need a lot of tests and treatments, and extended hospital stays. She...

- Pregnancy - pre-eclampsia
  There is no evidence that pre-eclampsia is caused by emotional stress, working too hard or not getting enough rest...

- Pregnancy stages and changes
  It’s helpful to have an idea of how your body may react to the different stages of pregnancy. It also helps to know how pregnancy may affect your emotions and feelings...

- Pregnancy testing
  Sometimes, a home pregnancy test may be positive when a woman isn’t pregnant...

- Twins - identical and fraternal
  Multiple births are more common due to the advancing average age of mothers and the rise in assisted reproductive techniques...

- Weight, fertility and pregnancy health
  Compared with women in the healthy weight range, women who are carrying extra weight are less likely to conceive...

Breast

- Breast awareness
Women should become familiar with the normal look, feel and shape of their breasts, so they will notice any abnormal changes.

- Breast cancer
  Breast cancer is the most common cancer in Australian women.
- Breast cancer and oestrogen
  There are different types of breast cancer, and around 70 per cent are sensitive to the female sex hormone oestrogen.
- Breast conditions other than breast cancer
  The vast majority of breast changes are not breast cancer, but you should always see your doctor if you notice changes in your breasts.
- Breastfeeding
  Breastfeeding positioning and attachment come naturally to some babies and mothers, but many need time and practice to get it right.
- Breast implants and mammograms
  Most women who have breast implants will be able to have regular screening mammograms.
- Breast implants and your health
  Complications can occur with all types of breast implants, but recent improvements have made breast implants safer.
- Breast implants (augmentation)
  Breast implants are inserted under the skin to create larger breasts.
- Breast reduction for women
  Breast reduction surgery removes excess breast fat, glandular tissue and skin to achieve a breast size in proportion with your body.

Fallopian tubes and ovaries

- Ectopic pregnancy
  Ectopic pregnancy is caused by a fertilised egg not being able to move through the fallopian tube.
- Endometriosis - know the facts (video)
  Learn some facts about endometriosis. We debunk some myths and explore symptoms, diagnosis and treatment options for women.
- Fallopian tube cancer
  Fallopian tube cancer is one of the rarest gynaecological cancers.
- Ovarian cancer
  Many women with early stage ovarian cancer may not have any symptoms.
- Polycystic ovarian syndrome (PCOS)
  Polycystic ovarian syndrome is a hormonal condition associated with irregular menstrual cycles, excess hair growth, acne, reduced fertility, and increased risk of diabetes and mood changes.
- Pregnancy - obstetric emergencies
  An obstetric emergency may arise when a woman is pregnant, or during her delivery. In this case, extra care is needed. A woman may need a lot of tests and treatments, and extended hospital stays. She...
- Pregnancy stages and changes
  It’s helpful to have an idea of how your body may react to the different stages of pregnancy. It also helps to know how pregnancy may affect your emotions and feelings.
- Salpingitis
  Salpingitis is one of the most common causes of female infertility and may permanently damage the fallopian tubes.

Uterus and cervix

- Cervical cancer
  All women aged between 25 and 74 are advised to have Cervical Screening Tests every 5 years, new tests help identify HPV or cervical cancer.
- Cervical screening tests
  The cervical screening test protects up to 30 per cent more women than the Pap test.
• Contraception - vaginal ring
  The vaginal ring works in a similar way to the oral contraceptive pill to prevent pregnancy.

• Endometriosis
  Endometriosis is a painful condition that may be treated with medications or surgery.

• Endometriosis - know the facts (video)
  Learn some facts about endometriosis. We debunk some myths and explore symptoms, diagnosis and treatment options for women.

• Fibroids
  Often, fibroids do not cause any problems, but they are occasionally associated with infertility, miscarriage and premature labour.

• Prolapsed uterus
  The pelvic floor and associated supporting ligaments can be weakened or damaged in many ways, causing uterine prolapse.

• Retroverted uterus
  Painful sex may be caused by a retroverted uterus.

• Uterine cancer
  Uterine cancer is one of the most common gynaecological cancers.

• Uterine inversion
  Uterine inversion means the placenta fails to detach from the uterine wall, and pulls the uterus inside-out as it exits.

Pelvis, vagina and vulva

• Bacterial vaginosis
  Bacterial vaginosis (BV) is caused by an imbalance of the bacteria normally present in the vagina.

• Bladder prolapse
  Bladder prolapse is when the bladder bulges into the vagina.

• Cosmetic genital surgery - labiaplasty and phalloplasty
  Cosmetic genital surgery involves reshaping the labia, vulva or penis to alter their size or shape.

• Cysts
  Cysts may be as small as a blister or large enough to hold litres of fluid.

• Female genital cutting or circumcision (FGC)
  Female genital cutting or circumcision (FGC) involves the cutting or altering of the external female genital organs.

• Labial adhesions
  Labial adhesions are more common during the nappy years, but poor hygiene may be a cause in older girls.

• Pelvic inflammatory disease (PID)
  Pelvic inflammatory disease (PID) occurs when an infection spreads from the vagina to the cervix and fallopian tubes.

• Rectocele
  A rectocele is when the rectum protrudes into the vagina.

• Vaginal bleeding - irregular
  If you suffer from ongoing vaginal bleeding problems, see your doctor.

• Vaginal cancer
  Some vaginal cancers have no symptoms in their early stages, and only cause symptoms once they have invaded other parts of the body.

Reproductive and contraception

• Assisted reproductive technology – IVF and ICSI
  IVF (in-vitro-fertilization) and ICSI (intracytoplasmic sperm injection) are assisted reproductive treatment (ART) procedures in which fertilisation of an egg occurs outside the body.

• Caesarean section

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A caesarean section is usually performed when it is safer for the mother or the baby than a vaginal birth.

- **Contraception - tubal ligation**

Sterilisation is a permanent method of contraception that a woman can choose if she is sure that she does not want children in the future.

- **Dilatation and curettage (D&C)**

A dilatation and curettage (D&C) is an operation performed on women to lightly scrape away the womb lining.

- **Endometriosis - know the facts (video)**

Learn some facts about endometriosis. We debunk some myths and explore symptoms, diagnosis and treatment options for women.

- **Hysterectomy**

The conditions that prompt a hysterectomy can often be treated by other means, and hysterectomy should only be a last resort.

**Related Information**

- **Ovulation pain**

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- **Ovulation**

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- **Menstruation - pain (dysmenorrhoea)**

Women of any age can experience painful periods and some women find periods are no longer painful after pregnancy and childbirth...

- **Menstruation – amenorrhoea**

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- **Menstruation - abnormal bleeding**

Heavy or abnormal periods may be an indication of other health problems...

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**Content Partner**

This page has been produced in consultation with and approved by: Jean Hailes for Women's Health

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- Because of how memory works, distractions from routine mean you can forget things. It's wise to develop a routine to reduce the risk of leaving a child in a car, like always leaving your bag or phone in the back seat.

  Thanks to the Department of Education and Training for these tips: http://ow.ly/Vhd050oevhL

  Better Health Channel

- The average daily adult energy intake is 8,700 kilojoules, but everyone's energy needs are different. Use our kilojoule calculator to find out more about your daily energy needs: https://www.betterhealth.vic.gov.au/tools/energy-needs-kilojoules-calculator

  Better Health Channel

- Pest control operators handle dangerous chemicals in and around your house, so they should be licensed. Checking whether a pest control operator is licenced is easy with our online database: https://www2.health.vic.gov.au/public-health/environmental-health/pesticide-use-and-pest-control/find-a-licensed-pest-control-operator

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