AMENORRHOEA

Be, Amenorrhea (Ame), Amenorrhœa

The absence of a menstrual period in women of reproductive age.

診断

♀ Female

Related Diagnoses:
- Anorexia Nervosa
- Polycystic ovary syndrome
- Anovulation
- Menstrual cycle disorders
- Turner syndrome
- Kallmann syndrome
- Uterine malformations
- Hypogonadism
- Endometrial hyperplasia
- Uterine fibroids
- Cervical stenosis
- Hypoestrogenism
- Pelvic adhesions
- Hyperandrogenism

About Amenorrhoea

Amenorrhoea is the absence or abnormal cessation of the menses in a woman of reproductive age. Physiological states of amenorrhoea are seen, most commonly, during pregnancy and lactation (breastfeeding), the latter also forming the basis of a form of contraception known as the lactational amenorrhoea method. Outside of the reproductive years there is absence of menses during childhood and after menopause. Determining the cause of your amenorrhoea is necessary in order to begin appropriate management. Your doctor will need to ask for detailed information regarding your general health, sexual and physical development, diet and exercise habits as well as inquire about any family history of similar problems. Your doctor may also need to perform a physical examination, which may include the breasts (to check for normal development) and the pelvis (to look for any obvious abnormalities). In addition to this, you may be required to have a blood test, to look at hormone levels in the blood (including pregnancy hormones, FSH, LH, testosterone, prolactin and thyroid), and imaging studies such as an ultrasound of the pelvis or a scan of the head or pelvis.

There are two primary ways to classify amenorrhoea. Types of amenorrhoea are classified as primary or secondary, or based on functional "compartments". The latter classification relates to the hormonal state of the patient that hypo-, eu-, or hypergonadotropic (whereby interruption to the communication between gonads and follicle stimulating hormone - FSH causes FSH levels to be either low, normal or high).
A) **Classification by primary vs. secondary type:**

- Primary amenorrhoea is the absence of menstruation in a woman by the age of 16. As pubertal changes precede the first period, or menarche, women by the age of 14 who still have not reached menarche, plus having no sign of secondary sexual characteristics, such as thelarche or pubarche—thus are without evidence of initiation of puberty—are also considered as having primary amenorrhoea.

- Secondary amenorrhoea is where an established menstruation has ceased—for three months in a woman with a history of regular cyclic bleeding, or nine months in a woman with a history of irregular periods. This usually happens to women aged. However, adolescent athletes are more likely to experience disturbances to the menstrual cycle than athletes of any other age. Amenorrhoea may cause serious pain in the back near the pelvis and spine. This pain has no cure, but can be relieved by a short course of progesterone to trigger menstrual bleeding.

B) **Classification by compartment:** the reproductive axis can be viewed as having four compartments:

1. outflow tract (uterus, cervix, vagina),
2. ovaries,
3. pituitary gland, and
4. hypothalamus.

   Pituitary and hypothalamic causes are often grouped together.

   Treatment goals include the prevention of complications such as osteoporosis and endometrial hyperplasia from the associated abnormal hormone levels, and the preservation of fertility. In many cases of primary amenorrhea, treatment should be started immediately following the diagnosis, with the primary therapeutic goal being to facilitate normal secondary sexual development. Key issues are problems of surgical correction if appropriate and oestrogen therapy if oestrogen levels are low. For those who do not plan to have biological children, treatment may be unnecessary if the underlying cause of the amenorrhoea is not threatening to their health. However, in the case of athletic amenorrhoea, deficiencies in estrogen and leptin often simultaneously result in bone loss, potentially leading to osteoporosis. In general, the treatment of amenorrhea must be patient-tailored according to the causative factor.

**Associated diseases**

- Turner syndrome
- Kallmann’s syndrome
- polycystic ovarian syndrome (PCOS)
- hirsutism
- uterine fibroids
- anovulation

**Complications**

- infertility
- osteoporosis

**Risk factors**
• athletics
• eating disorders
• excessive exercise
• high levels of prolonged physical or mental stress
• brain tumour
• brain surgery or injury
• genetic abnormality preventing normal ovarian function
• vaginal or cervical abnormality

Impact on fertility

Amenorrhoea may have a very negative impact on fertility. **Many women with amenorrhoea are anovulatory.** An anovulatory cycle is a menstrual cycle during which the ovaries do not release an oocyte. If ovulation does not take place then of course pregnancy becomes impossible.

Prevention

Preventing the large stress and excessive physical activity.

Symptoms

• absence of menstrual periods
• hair loss
• headache
• vision changes
• excess facial hair
• pelvic pain
• acne

Therapies

Self therapy

Decreasing the amount and intensity of exercise

"Athletic" amenorrhoea which is part of the female athlete triad (a syndrome in which eating disorders, amenorrhoea/oligomenorrhoea, and decreased bone mineral density - osteoporosis and osteopenia are present) is treated by eating more and decreasing the amount and intensity of exercise. If the underlying cause is the athlete triad then a multidisciplinary treatment
including monitoring from a physician, dietitian, and mental health counselor is recommended, along with support from family, friends, and coaches.

Yoga

Practice of Yoga Nidra is a simple method of relaxation which is practiced in the flat lying position of shavasana (lying on the back, the arms and legs are spread at about 45 degrees), and followings the spoken instruction of yoga therapist. Yoga Nidra can be an effective practice to overcome the psychiatric morbidity associated with menstrual irregularities apart from bringing the hormonal profile towards normalcy. Therefore, Yogic relaxation training (Yoga Nidra) could be prescribed as an adjunct to conventional drug therapy for menstrual dysfunction.

Conventional medicine

Pharmacotherapy

Although oral contraceptives can causes menses to return, oral contraceptives should not be the initial treatment as they can mask the underlying problem and allow other effects of the eating disorder, like osteoporosis, continue to develop. Weight recovery, or increased rest does not always catalyze the return of a menses. Recommenecement of ovulation suggests a dependency on a whole network of neurotransmitters and hormones, altered in response to the initial triggers of secondary amenorrhoea. To treat drug-induced amenorrhoea, stopping the medication on the advice of a doctor is a usual course of action.

As for physiological treatments to hypothalamic amenorrhoea, injections of metreleptin (r-metHuLeptin) have been tested as treatment to oestrogen deficiency resulting from low gonadotropins and other neuroendocrine defects such as low concentrations of thyroid and IGF-1. R-metHuLeptin has appeared effective in restoring defects in the hypothalamic-pituitary-gonadal axis and improving reproductive, thyroid, and IGF hormones, as well as bone formation, thus curing the amenorrhoea and infertility. However, it has not proved effective in restoring of cortisol and adrenocorticotropin levels, or bone resorption.

Looking at hypothalamic amenorrhoea, studies have provided that the administration of a selective serotonin reuptake inhibitor (SSRI) might correct abnormalities of Functional hypothalamic Amenorrhoea (FHA) related to the condition of stress-related amenorrhoea. This involves the repair of the PI3K signaling pathway, which facilitates the integration of metabolic and neural signals regulating gonadotropin releasing hormone (GnRH)/luteinizing hormone (LH). In other words, it regulates the neuronal activity and expression of neuropeptide systems that promote GnRH release. However, SSRI therapy represents a possible hormonal solution to just one hormonal condition of hypothalamic amenorrhoea. Furthermore, because the condition involves the inter workings of many different neurotransmitters, much
research is still to be done on presenting hormonal treatment that would counteract the hormonal affects.

**Surgical therapy**

Surgical therapy for amenorrhoea is not common, but may be recommended in some conditions (uterine scarring, pituitary tumor).

![Assisted reproduction](image)

Amenorrhoea remains a clinically challenging entity because in vitro fertilisation (IVF) with donor oocytes is currently the only treatment known to be effective. Most such IVF patients will conceive from treatment using oocytes from an anonymous oocyte donor. As with all types of donor gamete therapy, pre-treatment counselling is very important.

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**Find more about related issues**

### Diagnoses

**Anorexia Nervosa**
An eating disorder characterized by the maintenance of a body weight below average, fear of gaining weight, and a distorted body image.
Learn more at: [www.fertilitypedia.org/therapy/diag/anorexia-nervosa](http://www.fertilitypedia.org/therapy/diag/anorexia-nervosa)

**Polycystic ovary syndrome**
A condition in which a woman has an imbalance of female sex hormones. This may lead to changes in the menstrual cycle, cysts in the ovaries, trouble g
Learn more at: [www.fertilitypedia.org/therapy/diag/polycystic-ovary-syndrome](http://www.fertilitypedia.org/therapy/diag/polycystic-ovary-syndrome)

**Anovulation**
Failure of the ovaries to release an oocyte over a period of time generally exceeding 3 months.
Learn more at: [www.fertilitypedia.org/therapy/diag/anovulation](http://www.fertilitypedia.org/therapy/diag/anovulation)

**Menstrual cycle disorders**
An abnormal condition in a woman’s menstrual cycle.
Learn more at: [www.fertilitypedia.org/therapy/diag/menstrual-cycle-disorders](http://www.fertilitypedia.org/therapy/diag/menstrual-cycle-disorders)

**Turner syndrome**
Turner syndrome is a genetic disorder in which a female is partly or completely missing one X chromosome that results in ovarian dysgenesis.
Learn more at: [www.fertilitypedia.org/therapy/diag/turner-syndrome](http://www.fertilitypedia.org/therapy/diag/turner-syndrome)
Kallmann syndrome
A genetic condition where the primary symptom is a failure to start puberty or a failure to fully complete puberty.
Learn more at: www.fertilitypedia.org/therapy/diag/kallmann-syndrome

Uterine malformations
A type of female genital malformation resulting from an abnormal development of the Müllerian duct(s) during embryogenesis.
Learn more at: www.fertilitypedia.org/therapy/diag/uterine-malformations

Hypogonadism
A medical term which describes a diminished functional activity of the gonads – the testes and ovaries.
Learn more at: www.fertilitypedia.org/therapy/diag/hypogonadism

Endometrial hyperplasia
Thickening of the lining of the uterus.
Learn more at: www.fertilitypedia.org/therapy/diag/endometrial-hyperplasia

Uterine fibroids
The most common benign smooth muscle tumors of the uterus encountered in women of reproductive age.
Learn more at: www.fertilitypedia.org/therapy/diag/uterine-fibroids

Cervical stenosis
Narrowing of cervix - the opening to the uterus.
Learn more at: www.fertilitypedia.org/therapy/diag/cervical-stenosis

Hypoestrogenism
A lower than normal level of estrogen which is the primary sex hormone in women.
Learn more at: www.fertilitypedia.org/therapy/diag/hypoestrogenism

Pelvic adhesions
A form of abdominal adhesions in the pelvis.
Learn more at: www.fertilitypedia.org/therapy/diag/pelvic-adhesions

Hyperandrogenism
A medical condition characterized by excessive levels of androgens in the body.
Learn more at: www.fertilitypedia.org/therapy/diag/hyperandrogenism

Organs
Hypothalamus
A region of the forebrain that regulates body temperature, some metabolic processes and governs the autonomic nervous system.
Learn more at: www.fertilitypedia.org/edu/organs/hypothalamus

Ovary
The ovum-producing organs of the internal female reproductive system
Learn more at: www.fertilitypedia.org/edu/organs/ovary

Pituitary gland
An endocrine gland, about the size of a pea, whose secretions control the other endocrine glands and influence growth, metabolism, and maturation.
Learn more at: www.fertilitypedia.org/edu/organs/pituitary-gland

Thyroid gland
One of the largest endocrine glands in the body, controls rate of use of energy sources, protein synthesis, and body's sensitivity to other hormones.
Learn more at: www.fertilitypedia.org/edu/organs/thyroid-gland

Reproductive cells

Oocyte
A female germ cell involved in reproduction.
Learn more at: www.fertilitypedia.org/edu/reproductive-cells/oocyte

Biological control

Anti-Müllerian hormone
A hormone, that provokes the regression of male fetal Müllerian ducts.
Learn more at: www.fertilitypedia.org/edu/biological-control/anti-mullerian-hormone

Follicle-stimulating hormone
FSH is a hormone secreted by the anterior pituitary gland. It regulates the development, growth, pubertal matur and reproductive functions of the body
Learn more at: www.fertilitypedia.org/edu/biological-control/follicle-stimulating-hormone

Gonadotropin-releasing hormone
A releasing hormone responsible for the release of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) from the anterior pituitary.
Learn more at: www.fertilitypedia.org/edu/biological-control/gonadotropin-releasing-hormone
**Human chorionic gonadotropin**
A hormone that supports the normal development of an egg in a woman's ovary, and stimulates the release of the egg during ovulation.
Learn more at: [www.fertilitypedia.org/edu/biological-control/human-chorionic-gonadotropin](http://www.fertilitypedia.org/edu/biological-control/human-chorionic-gonadotropin)

**Luteinizing hormone**
A hormone, that stimulates ovulation and the development of the corpus luteum in females, and the production of androgens in males.
Learn more at: [www.fertilitypedia.org/edu/biological-control/luteinizing-hormone](http://www.fertilitypedia.org/edu/biological-control/luteinizing-hormone)

**Progesterone**
Steroid hormone, secreted by the ovaries, whose function is to prepare the uterus for the implantation of a fertilized ovum and to maintain pregnancy.
Learn more at: [www.fertilitypedia.org/edu/biological-control/progesterone](http://www.fertilitypedia.org/edu/biological-control/progesterone)

**Testosterone**
Steroid hormone produced primarily in the testes of the male; responsible for the development of secondary sex characteristics in the male.
Learn more at: [www.fertilitypedia.org/edu/biological-control/testosterone](http://www.fertilitypedia.org/edu/biological-control/testosterone)

**Thyroid hormones**
Tyrosine-based hormones produced by thyroid gland and that regulate metabolism, heat production, protein synthesis, and many other body functions.
Learn more at: [www.fertilitypedia.org/edu/biological-control/thyroid-hormones](http://www.fertilitypedia.org/edu/biological-control/thyroid-hormones)

**Thyroid-stimulating hormone**
A hormone that stimulates the thyroid gland to produce thyroxine, and then triiodothyronine, which stimulates the metabolism of tissue in the body.
Learn more at: [www.fertilitypedia.org/edu/biological-control/thyroid-stimulating-hormone](http://www.fertilitypedia.org/edu/biological-control/thyroid-stimulating-hormone)

### Reproductive functions

**Endometrial receptivity**
Period when the womb is receptive for implantation of the free-lying blastocyst.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/endometrial-receptivity](http://www.fertilitypedia.org/edu/reproductive-functions/endometrial-receptivity)

**Fertilization**
The fusion of an ovum with a sperm to initiate the development of a new individual organism.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/fertilization](http://www.fertilitypedia.org/edu/reproductive-functions/fertilization)

**Folliculogenesis**
Development of ovarian follicles from primordial to tertiary under the stimulation of gonadotropins.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/folliculogenesis](http://www.fertilitypedia.org/edu/reproductive-functions/folliculogenesis)
Implantation
The very early stage of pregnancy at which the embryo adheres to the wall of the uterus. 
Learn more at: www.fertilitypedia.org/edu/reproductive-functions/implantation

Oogenesis
The process of the maturation of the female gametes through the meiotic division. 
Learn more at: www.fertilitypedia.org/edu/reproductive-functions/oogenesis

Ovulation
The release of egg(s) from the ovaries. 
Learn more at: www.fertilitypedia.org/edu/reproductive-functions/ovulation

⚠️ Risk factors

Eating disorder
A mental disorder defined by abnormal eating habits that negatively affect a person's physical or mental health. 
Learn more at: www.fertilitypedia.org/therapy/rf/eating-disorder

Emotional stress
Learn more at: www.fertilitypedia.org/therapy/rf/emotional-stress

Heavy metal exposure
The toxic effect of certain metals in certain forms and doses on life. 
Learn more at: www.fertilitypedia.org/therapy/rf/heavy-metal-exposure

Low level of estrogen
A diminished level of blood estrogen level. 
Learn more at: www.fertilitypedia.org/therapy/rf/low-level-of-estrogen

Over-exercise
A common term for any practice of, or training for, a concrete sport which is in excess of that necessary to effectively participate in the sport.
Learn more at: www.fertilitypedia.org/therapy/rf/over-exercise

Poor dietary habits
Eating habits are one of the few factors within our control that impact not only our chances of falling pregnant.
Learn more at: www.fertilitypedia.org/therapy/rf/poor-dietary-habits
Using anabolic steroids
Abuse of anabolic-androgenic steroids to control and develop one’s musculature.
Learn more at: www.fertilitypedia.org/therapy/rf/using-anabolic-steroids-1

Symptoms

Absence of menstrual periods
The absence of a menstrual period in a woman of reproductive age.
Learn more at: www.fertilitypedia.org/edu/symptoms/absence-of-menstrual-periods-1

Acne
A long-term skin condition characterized by areas of blackheads, whiteheads, pimples, greasy skin, and possibly scarring.
Learn more at: www.fertilitypedia.org/edu/symptoms/acne

Chronic pelvic pain
Pain in the area of the pelvis, that lasts more than six months.
Learn more at: www.fertilitypedia.org/edu/symptoms/chronic-pelvic-pain-1

Delayed puberty
An organism has passed the usual age of onset of puberty with no physical or hormonal signs.
Learn more at: www.fertilitypedia.org/edu/symptoms/delayed-puberty

Excessive facial and body hair growth in women
The excessive hairiness on women in those parts of the body where terminal hair normally is absent or minimal, such as a beard or chest hair.
Learn more at: www.fertilitypedia.org/edu/symptoms/excessive-facial-and-body-hair-growth-in-women-1

Hair loss
A hair loss that frequently occurs due to an underlying susceptibility of hair follicles to androgenic miniaturisation.
Learn more at: www.fertilitypedia.org/edu/symptoms/hair-loss-1

Headache
The symptom of pain anywhere in the region of the head.
Learn more at: www.fertilitypedia.org/edu/symptoms/headache

Infertility
The failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.
Learn more at: www.fertilitypedia.org/edu/symptoms/infertility
Vision and hearing problems
A decreased ability to see and hear to a degree that causes problems.
Learn more at: www.fertilitypedia.org/edu/symptoms/vision-and-hearing-problems

Therapies

Egg donation
Process by which a woman donates eggs for purposes of assisted reproduction or biomedical research.
Learn more at: www.fertilitypedia.org/edu/therapies/egg-donation

ICSI
A micromanipulative fertilization technique in which a single sperm is injected directly into an egg.
Learn more at: www.fertilitypedia.org/edu/therapies/icsi

Medical nutrition therapy
It is a therapeutic approach to treating medical conditions and their associated symptoms via the use of a specifically tailored diet.
Learn more at: www.fertilitypedia.org/edu/therapies/medical-nutrition-therapy

Pharmacotherapy of amenorrhea
Learn more at: www.fertilitypedia.org/edu/therapies/pharmacotherapy-of-amenorrhea

Sperm donation
The procedure in which a man (sperm donor) provides his sperm for fertility treatment.
Learn more at: www.fertilitypedia.org/edu/therapies/sperm-donation

Standard IVF
A process in which an egg is fertilised by sperm outside the body: in vitro. Own or donated gametes may be used.
Learn more at: www.fertilitypedia.org/edu/therapies/standard-ivf

Yoga
A physical, mental, and spiritual practice or discipline which originated in India.
Learn more at: www.fertilitypedia.org/edu/therapies/yoga

Sources

“Amenorrhoea (https://en.wikipedia.org/wiki/Amenorrhoea)” —sourced from Wikipedia licensed under CC BY-SA 3.0

“Successful Pregnancy Outcome in Primary Amenorrhoea” — by Uday et al. licensed under CC-BY 2.0

“Causes of amenorrhea in Korea: Experience of a single large center” — by Kwon et al. licensed under CC BY-NC 3.0

“Ovulation” — sourced from Wikipedia licensed under CC BY-SA 3.0

“IVF for premature ovarian failure: first reported births using oocytes donated from a twin sister” — by Sills et al. licensed under CC BY 2.0

“Female athlete triad” — sourced from Wikipedia licensed under CC BY-SA 3.0

“Psycho-Biological Changes with Add on Yoga Nidra in Patients with Menstrual Disorders: a Randomized Clinical Trial” — by Rani et al. licensed under CC BY-NC 4.0