
Menstruation - athletic amenorrhoea

Summary

- Amenorrhoea is the absence of menstrual periods.
 - Women who are elite athletes or who exercise excessively on a regular basis are at risk of developing athletic amenorrhoea.
 - Causes are thought to include low levels of body fat and the effects of exercise-related hormones on the menstrual cycle.
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Amenorrhoea is the absence of menstrual periods. Women who are elite athletes or who exercise a lot on a regular basis are at risk of developing athletic amenorrhoea. Exercise-related hormones and low levels of body fat are thought to affect how the sex hormones (oestrogen and progesterone) work. If left untreated, long-term complications of athletic amenorrhoea include increased risk of broken bones and premature ageing. For a doctor to diagnose athletic amenorrhoea, all other possible causes, such as certain reproductive disorders, need to be eliminated first. Treatment options include exercising less or, in some cases, starting hormone therapy.

The menstrual cycle

Brain structures called the hypothalamus and pituitary gland control the menstrual cycle. The hypothalamus triggers the pituitary gland to make hormones that trigger the ovaries to make oestrogen and progesterone. These hormones make the lining of the uterus (womb) thicker to prepare the body for pregnancy.

If pregnancy does not happen, hormone levels drop and the lining of the uterus comes away. This is called a period, or menstruation. The cycle then happens again.

Disorders of the hypothalamus, pituitary gland or ovaries can affect menstruation, causing amenorrhoea.

Symptoms of athletic amenorrhoea

Symptoms of athletic amenorrhoea can include:

- no periods for at least three months
- irregular and heavy periods that only happen four times or less each year.

Causes of athletic amenorrhoea

Athletic amenorrhoea can be caused by a range of factors related to over-exercising, which can include:

- low levels of body fat – the female body cannot menstruate below a certain percentage of body fat
- exercise-related hormones – exercising makes the body release certain hormones, such as beta endorphins and catecholamines. High levels of these hormones are thought to affect how oestrogen and progesterone work
- emotional stress – strong, negative emotions can affect the hypothalamus
- disordered eating – such as crash dieting and skipping meals.

High-risk sports for athletic amenorrhoea

Athletic amenorrhoea may be more common in women who play very intense sports, such as:

- ballet
 - basketball
 - cycling
 - gymnastics
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- long-distance running
- swimming.

Long-term complications of athletic amenorrhoea

The long-term complications of untreated athletic amenorrhoea include:

- reduced fertility – women are less likely to get pregnant if they do not menstruate regularly, but athletic amenorrhoea has no effect on long-term fertility once regular menstruation returns
- high levels of blood **cholesterol** – are caused by an oestrogen-related fall in the ratio of good cholesterol (high-density lipoprotein or HDL) to bad cholesterol (low-density lipoprotein or LDL)
- loss of bone density – this may cause osteopenia (low bone density, but not low enough to be osteoporosis) or **osteoporosis** (brittle bones that break easily), especially if peak bone density has not yet been reached because of age
- premature ageing – the skin loses its flexibility because of low levels of oestrogen.

Diagnosis of athletic amenorrhoea

For a doctor to diagnose athletic amenorrhoea, all other possible causes, such as certain reproductive disorders, need to be eliminated first.

Tests can include:

- **pregnancy tests**, which can be either a urine or blood test
- physical examination to check overall health and see if other sexual characteristics, such as breasts and pubic hair, have developed
- medical history, including gynaecological history and contraceptive methods used
- hormone tests to check how the hypothalamus, pituitary gland and ovaries are working
- other scans, which can include CT scans and ultrasounds of the reproductive system.

Treatment for athletic amenorrhoea

Treatment options for athletic amenorrhoea depend on the person, but can include:

- exercising less often or choosing sports that are not as intense
- putting on two or three kilograms of body fat
- starting the combined oral contraceptive pill or hormone therapy if dietary changes and reduced exercise do not result in regular menstruation returning
- making dietary changes such as increasing calcium and daily kilojoules
- taking calcium supplements to increase bone strength and prevent osteoporosis
- seeking counselling if an eating disorder is an issue.

Where to get help

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

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