Menstruation - athletic amenorrhoea

Amenorrhoea is the absence of menstrual periods. Women who are athletes or who exercise a lot on a regular basis are at risk of developing athletic amenorrhoea.

Low levels of body fat and exercise-related hormones, such as beta endorphins and catecholamines, are thought to affect how the sex hormones (oestrogen and progesterone) work. If left untreated, long-term complications 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 (HT).

Symptoms of athletic amenorrhoea

Symptoms can include:

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

High-risk sports and athletic amenorrhoea

Athletic amenorrhoea may be more common in women who play very intense sports, including the following:

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

The menstrual cycle

Brain structures called the hypothalamus and pituitary gland control the menstrual cycle. The pituitary gland makes 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 a pregnancy that may happen.

When 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.

Causes of athletic amenorrhoea

The sex hormones can be affected by a range of factors, including:

- Low levels of body fat – the female body cannot menstruate below a certain percentage of body fat.
- Exercise – makes the body release certain exercise-related 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 – crash dieting and skipping meals can be signs of eating disorders and can lead to weight-related amenorrhoea.

**Long-term complications of athletic amenorrhoea**

The long-term complications of untreated athletic amenorrhoea include the following:

• Reduced fertility – a woman is less likely to get pregnant if she does 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 brittle bones that break easily.
• 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 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
• making dietary changes such as increasing calcium and daily kilojoules
• taking calcium supplements to increase bone strength and prevent osteoporosis
• starting the combined oral contraceptive pill or hormone therapy if dietary changes and reduced exercise do not result in regular menstruation returning
• seeking counselling if an eating disorder is an issue.

**Where to get help**

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

**Things to remember**

• Amenorrhoea is the absence of menstrual periods.
• Women who are athletes or who exercise a lot 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.

*This page has been produced in consultation with, and approved by:*

Family Planning Victoria