

# Menstrual cycle animation transcript

## NARRATOR:

Why do sports coaches, athletes, and trainers need to know about the menstrual cycle? Because changes in hormone levels across the menstrual cycle can impact on a female athlete's ability to train, perform, and recover. In some sports, training schedules can be adapted to take advantage of physiological changes that occur across a cycle and maximise the training effects.

A textbook menstrual cycle lasts for 28 days, but can vary from 24 to 35 days. For each individual, its length can even vary by up to eight days each month. The cycle is divided into two halves. The first half is the follicular phase, and the second half is the luteal phase. The first day of the cycle is when the period begins. At this time, levels of the two main hormones oestrogen and progesterone are low. After the period, oestrogen rises peaking around day 12.

Ovulation where an egg is released from the ovary usually happens around day 14. The luteal phase is the time between ovulation and the time when the period begins again. Progesterone peaks around the mid-luteal phase and oestrogen is also elevated again during this time.

The days before the period are called the premenstrual phase. And women may experience some of the 150 recorded symptoms caused by a rapid drop in hormone levels. All females will have different experiences of the effects of menstrual cycle hormones. Some will experience more or more severe physical and emotional symptoms than others. This also changes from cycle to cycle.

Importantly, the most current evidence shows that performance capacity in terms of endurance, speed, and power are not affected by fluctuations in hormones during the cycle. So on any given day of the cycle, athletes have the full range of performance capacity accessible to them. But it is not always easy to access that capacity as hormonal fluctuations might influence how a woman feels physically or emotionally, and performing can become harder or easier.

That is why it is so important to tune in to how the cycle affects athletes and to build in strategies to help manage days where symptoms could impact performance. Typically, during the first half of the cycle, elevated oestrogen creates a good environment for high Intensity training. Recovery is quicker and motivation to train can be higher. Research shows that when strength training is performed more frequently in the first half of the cycle and less frequently in the second half of the cycle, strength gains are between 14% and 40% greater than when strength training is distributed evenly across the cycle.

During the second half of the cycle, when oestrogen and progesterone are elevated, an athlete's core temperature will start to rise, meaning they can feel warmer during exercise. And as the athlete's metabolism favours using fat as fuel, lower intensity aerobic training is most suitable. High progesterone

levels can influence the neurocircuitry of the brain and sometimes affect coordination. But it can also relieve anxiety and promote good sleep making it a good time to build in recovery from training. These hormone shifts explain why training schedules designed for men may not suit female athletes. For female athletes, understanding their cycle and finding effective strategies to manage symptoms can reduce the number of days off or sessions when the quality of their training is poor. Finally, adapting training schedules to capitalise on the physiology of the cycle can improve fitness gains made and benefit performance.