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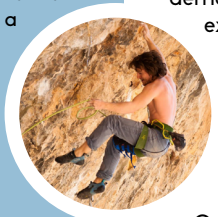
PHOTO: JOEL FRANS CLIMBING IN ROCKLANDS

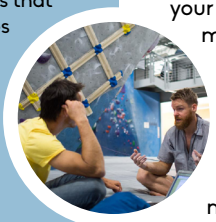
THE MENSTRUAL CYCLE

WITH COACH MADDY COPE

The menstrual cycle is typically 25-36 days. The levels of estrogen and progesterone vary throughout, but the cycle can be simplified into two stages; low hormone (from day 1 of menstruation to ovulation) and high hormone (from ovulation to menstruation). These hormones can have a broad range of effects including; varying nutritional needs, injury risk, weight, and thermoregulation. It is worth noting that some of the effects are antagonistic and not well understood, so symptoms may vary considerably.



High estrogen leads to glycogen sparing (metabolism of fats over glycogen). This could have a positive effect for long endurance, but make it harder to reach the high intensities that climbing often demands. Estrogen reduces connective tissue stiffness, potentially increasing risk of tendon/ligament injury, but muscle recovery is improved.



High progesterone increases core temperature, reducing heat tolerance, and impacts the CNS, increasing fatigue. Both hormones lead to water retention resulting in increased weight, which may noticeably affect weights used for fingerboarding and pull ups, as well as maximal bouldering.

The low hormone phase is likely to be when females feel most energetic, and perform best. The lead up to menstruation is likely to coincide with reduced performance due to increased fatigue/lethargy, poor coordination, and water retention alongside physical symptoms such as lower back pain and cramps.

TAKE HOME COMMENTS;

1. Performance is likely to be highest in the week following menstruation (and the lead up to ovulation).

2. Consider adjusting training load in the lead up to menstruation due to fatigue, water retention and tendon laxity.

3. Listen to your body, everyone will have individual experiences with training around the menstrual cycle.

DISCUSSION:

CONCURRENT TRAINING AND THE INTERFERENCE EFFECT

The physical demands of climbing mean we rely heavily on multiple energy systems along with high levels of strength and power. This is not just confined to a single climbing effort (e.g. crux followed by endurance finish on a route), but also climbers who wish to perform in different areas of the sport (e.g. boulder and route climbing). To address the demands of our sport, we need to try to improve in several different physical attributes; explosive power, strength, anaerobic capacity, aerobic capacity etc. Therefore, we often adopt the concurrent training method. A common definition: the specific training of endurance and strength capacities in immediate succession or within up to 24 hours of recovery separating the two exercise modes. We could go one further and say any periodized plan that includes these different modes of training. However, the first definition is certainly true for a lot of time-poor climbers or climbers looking to perform for an extended period of the year.

One issue that comes with this approach to training is that interference may occur when the development of one capacity hinders the development of the other, compared to training either capacity independently and in isolation. For example, your strength gains may be being hindered by your endurance training. This doesn't mean you need to avoid your endurance training entirely, as we know this is an important capacity to develop.

There are a few different mechanisms which account for adaptation interference, however none seem to be conclusive. The most convincing theories seem to be muscle fibre development, motor unit recruitment and enzyme activation. This is because the greatest interference effect is found on maximal strength and power development. Less of an effect has been found on endurance. It is also important to understand that this effect is more pronounced in highly training athletes, so unless you have a high training load with several sessions a week, don't be too concerned!

HOW CAN WE MINIMIZE THE INTERFERENCE EFFECT?

- Split sessions by at least 6 hours of recovery or alternate training days (24h).
- High protein availability may reduce effect of endurance training on protein synthesis.
- Avoid high volume strength sessions with high intensity endurance sessions.
- Understand which muscles groups are being used in the sessions. There is evidence to suggest it is localised to muscle groups, at least in the acute setting.

COACH CONTRIBUTION: JOSH HADLEY

DEVELOPMENT & RESEARCH

August has been a busy month! We've been flat out on 2 very exciting new things for this winter; the Lattice Youth Team and the Climbing Training Symposium 2019. Our Youth Team will be based in Sheffield and we'll be working in a more comprehensive 1-to-1 role with climbers to bring about the best development paths over the next few years. The Training Symposium is a huge event for us! We're heading down to HarroWall in London to run a full weekend event of testing, profiling, workshops and more... Full details on both of these are being released imminently. So watch this space on our social media platforms!