

Client: London Orthopaedic Clinic
Source: Women's Fitness
Date: 01 June 2010
Page: 102,103
Reach: 32505
Size: 952cm2
Value: 7501.76

Cramp and exercise

MANY OF US WILL HAVE EXPERIENCED CRAMP DURING EXERCISE, BUT WHAT EXACTLY IS CRAMP AND WHAT CAN WE DO TO PREVENT IT? KRISTOPH THOMPSON HAS THE ANSWERS



According to Doctor Ralph Rogers, consultant in Sports and Musculoskeletal Medicine at The London Orthopaedic Clinic (www.londonorthopaedic.com), 'Cramps are painful involuntary muscular contractions or spasms. They will cause a palpable and often visible hardening of the involved muscle group and can last from just a few seconds to an hour or longer, and sometimes muscles are in such spasms that they have to be released manually.'

It's possible to experience cramp in every part of the body, but, according to Doctor Rogers, the most common muscles that are affected when exercising are the hamstrings at the back of the thigh, the quadriceps at the front of the thigh and the calves at the back of the lower leg. These muscles may feel tender for up to 24 hours after cramp has occurred.

What causes cramp?

The exact cause of cramping is still unknown, but Doctor Rogers lists dehydration, muscle fatigue, salt imbalances from sweating, electrolyte depletion and low blood sugar as the most likely causes. 'There is an increase in cramps when exercising in extreme heat,' he says, 'which may be due to insufficient hydration, as well as electrolyte depletion.' Sweat contains fluids and electrolytes (substances including salt, potassium, magnesium and calcium), and when these nutrients fall to certain levels, the incidence of muscle spasms increases.

Much of the latest research surrounding what causes cramp looks at the brain-muscle connection. Theories suggest that somehow the connection between the brain and the muscle is altered and this is what causes muscle cramps to occur. This is called altered neuromuscular control and it is often related to muscle fatigue. Muscles can tire if you're training too hard or for longer than your body is used to. Consequently, a level of poor conditioning or embarking on a new activity for the very first time can increase the likelihood of cramps occurring.

How can we prevent cramp?

Until we know for certain what causes cramp, it is difficult to know exactly how to prevent it. There are, however, plenty of steps you can take to help minimise your chances of suffering with cramps while you're exercising.

'Proper hydration is important and this includes electrolyte replacement,' says Doctor Rogers. If you're exercising for an hour or more take an isotonic sports drink and take regular sips throughout the duration of your session. Doctor Rogers also draws attention to proper nutrition in order to prevent low blood sugar. Researchers have observed that leg cramps are associated with excess insulin and therefore avoiding low blood sugar may help to avoid cramps. 'This is especially important in endurance sports,' he says. Complex carbohydrates, such as cereals, pasta and brown rice, should be eaten prior to prolonged bouts of exercise, too.

Since poor conditioning is also a possible cause of cramp, make sure you listen to your body and bear your intensity level in mind when you're doing a new activity for the first time. A proper warm-up will help, as it will get blood flowing around the body and prepare the muscles for exercise. A regular stretching programme or attending a weekly yoga class will also help to lengthen shortened muscles, which are the ones more likely to cramp during exercise.

Certain nutritional supplements have also been linked with helping to prevent the occurrence of cramp, particularly in the leg muscles. Quinine, magnesium and calcium have all been found in studies to reduce the incidence of leg cramps, but additional research is still needed to confirm preliminary results.

What are the best strategies for treating cramp?

Doctor Rogers suggests treating cramp by stretching and massaging the affected area. Stop exercising and gently stretch the cramped muscle. For calf cramps drop the heel of the affected leg off the edge of a kerb or step. As the cramp starts to release you can deepen the stretch a little by putting some more weight through the heel. For quad cramps take the foot of your affected leg up to your bottom and feel a stretch down the front of your thigh. Try to keep your knees together and hold something for balance if you need to. For hamstring cramp step slightly forward with the affected leg and pull your toes up towards you so you are resting on your heel. Lean forward from the hips and you'll feel a stretch in your hamstring. 'When cramp strikes, stopping for a drink to replace lost fluids will also help,' says Doctor Rogers.

If the cramp won't release through stretching then self-massage may improve things. Blood cannot flow through cramped muscle, so massage will help to release the tension in the muscle and stimulate blood flow. Rub the heel of your hand over the affected area, moving in an upward direction towards the heart (as this is the direction of blood flow). Once you've warmed up the area you can work deeper into the muscle using your thumbs to apply pressure to the muscle, still moving in an upward direction.

Finally, it's worth remembering that most muscle cramps are not serious and taking steps to prevent them is usually enough to limit their occurrence. If you are worried, however, or are suffering from extremely painful reoccurring cramps, then consult your doctor for advice. ■

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