Compartment Syndrome

by Kate Carter, Brighton University

What is it?

Compartment syndrome is a common cause of exercise-related leg pain. Muscles in the legs are divided into muscle compartments by sheets of non-elastic tissue called fascia. Compartment syndrome is when the tissue pressure becomes too high within these muscle compartments during exercise. High pressures within this limited space reduce the blood flow to tissues in that space. If there is not enough blood to supply the local tissues, this causes pain during exercise.

Compartment syndromes can occur in any muscle compartment of the body but most commonly affects the legs. It typically causes pain to the front compartment of the lower leg or deep in the back of the lower leg.

Who gets it?

Compartment syndromes may be acute, caused by a single trauma such as a fracture or muscle rupture, or it may be chronic, caused by prolonged repetitive stress and overuse. Both acute and chronic compartment syndromes can occur in sports people, whether professional or amateur.

Contact sports such as ice hockey and rugby can increase the risk of acute compartment syndrome. Sports with repetitive loading such as long distance running increase the risk of chronic compartment syndrome.

What are the symptoms?

Acute compartment syndrome in athletes is rare. Pain out of proportion to the injury is the hallmark of acute compartment syndrome. Pain develops during and over several hours after stopping exercise and becomes increasingly severe. As pressure increases the leg becomes swollen and tense.

Chronic (a condition that is continuing for a long time or recurring frequently) compartment syndrome is more common, typically occurring in both legs and usually presenting with less severe symptoms. These include:

- No pain at rest
- Aching pain or cramping pain that begins 10 to 30 minutes after starting exercise
- Pain that begins after shorter and shorter distances making exercise impossible
- Pain that is relieved by rest
- Tightness and swelling of the affected leg
- Extreme pain brought on by stretching the muscle
- Numbness of parts of the foot and leg

Please turn over...

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What can I do to prevent it?

Many people start exercising without the appropriate footwear. Podiatrists recommend you wear the correct sports shoe for your foot and the type of sports activity you are doing. Go to a good sports shop and have your feet fitted for the correct sports shoe.

Stretching your leg muscles correctly can improve flexibility, which can help to improve leg function during walking and exercise. Avoiding restrictive clothing around the legs and maintaining adequate levels of hydration during exercise may also help to prevent problems.

What should I do if I have compartment syndrome?

Acute compartment syndrome requires urgent hospital treatment to reduce the pressure in the muscle compartment, while chronic compartment syndrome is generally less urgent.

If you think you have chronic compartment syndrome you should:

- **Seek help** from your GP, physiotherapist or podiatrist, who will be able to assess and diagnose the problem and advise on the best course of treatment. If treated early you can avoid any long term problems and damage.
- **Rest** from your sports activities
- **Remove** all restrictive clothing or braces from around your legs

What can a podiatrist do?

Podiatrists have a good knowledge of foot and leg anatomy, which is essential for a prompt and accurate diagnosis. Chronic compartment syndrome can be difficult to diagnose and a full history and physical examination is required.

Chronic compartment syndrome may develop due to a person's specific biomechanics; (i.e the structure, alignment and function of the feet and legs). Podiatrists can perform a biomechanical assessment and can advise on appropriate footwear, muscle stretching exercises and can determine whether you would benefit from orthoses in your shoe to improve foot position and function.

Measuring the pressure inside the muscle compartment before and after exercise can help to confirm a diagnosis of compartment syndrome, and your circulation and sensation may also be checked. Podiatrists work with other health professionals to identify and provide effective treatment leading to quick recovery.

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