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## **What Causes a Charley Horse? What's the Quickest Way to Get Relief?**

If you've ever been jolted out of a sound sleep by a searing pain in your leg that leaves you gasping for breath, you know all too well how painful a charley horse can be. If you've never experienced a charley horse, you can count yourself lucky.

A charley horse, as they are most often referred to, is an involuntary reaction that causes the nerves that control the muscle (usually the calf muscle) to misfire, causing the muscle to freeze and lock into a contracted position. A charley horse can be quite painful and can leave you hobbling around for a few days. Besides calf muscles that can suddenly contract, the muscles in the soles of the feet can cramp as well, which can also be painful.

Muscle cramps often occur in middle-aged and older people, but they are also common in athletes (long-distance runners and cyclists) and those who maintain active lifestyles.

There are several factors associated with muscle cramps. One factor that influences muscle cramps is a mineral deficiency or an imbalance of electrolytes such as magnesium, potassium, calcium, and sodium. Electrolytes are certain minerals that play an important role in muscle function. Low levels of any of these minerals can allow the muscle to contract, but prevent it from relaxing. Some researchers believe a mineral imbalance can negatively affect blood flow to the muscles and that a deficiency of some minerals, like potassium, can interfere with the muscles' ability to use glycogen, a sugar that is the muscles' main source of energy.

Long-distance runners and cyclists, even individuals who exercise regularly, are prone to cramps. Often, these individuals have electrolyte deficiencies or imbalances because they lose critical electrolytes in sweat. Other factors associated with muscle cramps include dehydration, inactivity, or sitting for long periods of time; anatomical conditions, i.e., flat feet; physical conditions, such as pregnancy; or the use of certain drugs, i.e., diuretics. Women who wear high heels are also prone to muscle cramps because high heel-shoes position the feet and legs into a cramp-prone position.

So what can you do to ward off painful nighttime cramps or provide relief should one happen to strike?

First, consider adding essential electrolytes, i.e., magnesium, potassium, etc. Sodium is an electrolyte; however, most people get plenty of it in their diet. Sodium should only be a nutritional concern if your intake is low or you sweat a lot while working or exercising. If either of these two instances are the

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case, then replacing sodium is something you should consider. Besides sodium, other important electrolytes are magnesium, potassium, and chloride. Magnesium, for instance, is an essential mineral involved in muscle function that helps muscles to contract and relax. A few years ago, researchers in the United Kingdom found that 300 mg of supplemental magnesium (as magnesium citrate) reduced nighttime or nocturnal leg cramps in individuals who suffered chronic leg cramps. Like magnesium, potassium is an electrolyte found in your muscles. In fact, when your muscles contract, they release potassium into the surrounding tissue. Chloride is an electrolyte that helps your body regulate the level of fluids in your body. Chloride is an important electrolyte to remember, since dehydration can be a contributing factor to muscle cramps or charley horses.

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A second preventative measure, especially if you sweat in hot weather, exercise for long periods of time, or work in hot conditions, is to maintain adequate fluid intake. Dehydration can be life threatening, but did you know that mild dehydration reduces your blood volume, which, in turn, can reduce the supply of oxygen to your muscles? When the oxygen supply is reduced to the muscles, they can go into spasm. Be sure to drink plenty of water during the day interspersed with electrolytes. But don't rely on sports drinks for adequate hydration. Many sports drinks can contain as much sugar as punch and only provide one or two electrolytes (sodium and potassium).

If a cramp does occur, there are some steps you can take to relieve the pain. First, try stretching the affected muscles. For calf-muscle cramps, for instance, try stretching your calf muscle by pulling your toes towards your knees with the affected leg extended straight. Second, relax in a warm bath or take a hot shower (allowing water to hit the affected area) to help relax the muscle. Third, gently massage the affected area, being careful not to apply too much pressure. You can also apply an ice pack to the sore muscle to reduce pain and swelling. If the affected area still hurts, treat it like you would an injured muscle, which means resting the affected leg and avoiding any further muscle strain.

Finally, if you have chronic or severe leg cramps, contact your doctor. It may be the sign of a more serious condition, so it's important to check with your physician first.

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