

Chili Pepper Therapy for Pain and Weight Loss

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Bottom Line at the Top: Capsaicin, when used as described below, often helps to alleviate aches and pains. It is not a good weight loss aid.

Pain and Self-Defense: Capsaicin, a biologically active component in chili peppers, is one of the molecules that makes chili spicy. In concentrated form it *really* burns, making it the ideal active ingredient for riot control, bear and personal defense pepper sprays.

Capsaicin is also available in much less concentrated ointments, patches and creams to treat minor aches and pains, such as arthritis, sprains and backache. Some people find it helps symptoms of peripheral neuropathy, neuralgia caused by shingles and other types of nerve pain.

It works by stimulating vanilloid receptor subtype 1 (TRPV1), a sensor in nerve cells for pain and heat. Only nerves that contain TRPV1 respond to capsaicin. Stimulated TRPV1 then activates the nerve cell to release substance P, a molecule that passes signals for pain and heat to the brain. Initially capsaicin makes the pain you are trying to alleviate feel worse. After a while, all the substance P is used up, so there is nothing left to tell the brain that the nerve is sensing pain. Then the pain stops. For this reason the first application may not work. It may take regular repeated applications for up to 2 months to be effective.

A very thin film over painful areas, applied with gloves, is usually enough. If it causes severe burning, remove it before skin damage occurs. The damage is not a direct toxic effect of capsaicin, but rather the inflammatory reaction the body makes to what it perceives as an injury. Covering the area

with a bandage may make the burn worse. On the other hand, removing it before it causes any burning keeps it from working at all.

Since it comes from chili peppers, don't put capsaicin on an open wound, even if it is only a scrape – It causes more pain than it relieves. Inhalation or using it around or in the eyes or sensitive mucus membranes like the mouth, nostrils, or genital area is a really lousy idea. Wearing a mask during skin application prevents inadvertent misery. Use soap and/or an oil, Vaseline or oil-based cream for removal.

Weight loss: Foods containing chili peppers tend to make us feel full. If a person's brain doesn't override that sensation with a determination to 'clean the plate,' one eats fewer calories. Capsaicin does not, as some have claimed, convert metabolism from carbohydrate to fat oxidation.

However, it can provide the impetus for calories being wasted for heat generation. It does this through the body's temperature regulation mechanism. When we are cold, TRP nerve sensors activate brown adipose tissue (BAT or brown fat) to burn calories to generate heat. In binding to TRP, capsaicin stimulates this process even when the body is not cold. This is why we sweat and feel hot when eating spicy food.

Theoretically, if we are wasting calories for heat generation, we might lose weight. That's the promise of Capsiate, a brand of capsaicin marketed for weight loss. There are no studies that prove that it reliably works.

For one thing, capsaicin only generates heat in people who *have* brown fat. Most Americans don't. Only people who are not obese, are under age 40 and do not have much abdominal fat have brown fat. Those are the people who are least likely to need a weight loss aid.

I recommend spending your money on spicy salsa rather than Capsiate. Liberally season your food with the salsa and stop eating when you feel comfortably full. Then go exercise. The weight will take care of itself. If you pull a muscle during exercise, use capsaicin cream. ¶