

Capsaicin (Zostrix?) is the active component of cayenne pepper and is responsible for its pungent and irritating effects. A specific receptor activated by capsaicin (termed vanilloid receptor subtype 1 or VR1) is implicated in both the treatment of chronic pain and urinary incontinence.

Repeated applications deactivate the capsaicin receptor: overstimulating the receptor may destroy the sensory nerve endings.

Repeated administration of Capsaicin depletes peripheral neuropeptides, notably Substance P which is known to be essential in pain transmission and is involved in inflammatory conditions such as arthritis.

It is therefore most useful for pain of peripheral origin, such as postherpetic neuralgia or diabetic neuropathy.

Commercial ointments containing 0.025% or 0.075% capsaicin are available. These preparations (particularly the higher strength preparations) may offer significant benefit in a number of conditions including the pain associated with peripheral neuropathy and arthritis, when it appears to relieve some of the burning.

The cream should be applied twice daily to the affected areas. Many patients find the initial (expected) increase in pain (which occurs prior to the anaesthetic effect) is intolerable, and this may limit its use.

In June 2000, McCleane reported ([\[1\]](#)) results of a study of topical application of doxepin hydrochloride, capsaicin and a combination of both and found that they produce analgesia in chronic neuropathic pain. He used 3.3% doxepin hydrochloride, 0.025% capsaicin and a combination of 3.3% doxepin and 0.025% capsaicin.

He found that

“The analgesia with doxepin/capsaicin was of more rapid onset. Capsaicin significantly reduced sensitivity and shooting pain. Burning pain was increased by doxepin and by capsaicin and to a lesser extent by doxepin/capsaicin.”

Disadvantages include

- Initial discomfort
- Does not begin working right away, possible long delay (2-6 weeks)

Proper use of capsaicin:

- It is advisable to put on a glove first to ensure against inadvertently rubbing the eyes or touching sensitive skin with fingers contaminated with the medicine.
- Do not apply to broken skin.
- Rub it into the skin of the affected area completely.
- Capsaicin may sting at first. This burning usually lasts only a few days, but for some users it may be quite some time before it dissipates.
- The medicine must be applied every day. Skipping doses will not help and will in fact prolong the amount of time it takes before the burning reduces. Apply the medicine three to four times a day. Must continue be applied consistently several times a day

Isosorbide dinitrate: this is the spray used by people with heart conditions. It has recently been found to be effective in diabetic neuropathy. A study at Addenbrooke's Hospital in Cambridge ([\[2\]](#)) found that 50% of patients gained relief.

The authors concluded:

“ISDN spray offers an alternative and effective pharmacological option in relieving overall pain and burning sensation in the management of painful diabetic neuropathy.”

A recent Greek study ([\[3\]](#)) looking at treatment of post-operative pain after surgery for breast cancer, found that a combination of gabapentin (1200mg/day) and mexiletine (600mg/day) were ineffective in preventing chronic pain except burning pain which was reduced.

However, an animal study ([\[4\]](#)) showed that mexiletine was effective in a model of neuropathic pain (spared nerve injury) in reducing both cold allodynia and mechanical hyperalgesia, with the most distinct and prolonged effect on mechanical allodynia.

Miscellaneous:

Some patients have found that the troublesome nocturnal muscle cramps may be relieved by quinine, found in drinks such as Indian Tonic Water.

[\[1\]](#) McCleane G *Br J Clin Pharmacol* 2000 Jun; 49(6):574-9 Topical application of doxepin hydrochloride, capsaicin and a combination of both produces analgesia in chronic human neuropathic pain: a randomized, double-blind, placebo-controlled study.

[\[2\]](#) Yuen KC, Baker NR, Rayman G. *Diabetes Care* 2002 Oct; 25(10):1699-703 Treatment of Chronic Painful Diabetic Neuropathy With Isosorbide Dinitrate Spray: A double-blind placebo-controlled cross-over study.

[\[3\]](#) Fassoulaki A, Patris K, Sarantopoulos C, Hogan Q. *Anesth Analg* 2002 Oct; 95(4):985-91, The analgesic effect of gabapentin and mexiletine after breast surgery for cancer.

[\[4\]](#) Erichsen HK, Blackburn-Munro G. *Pain* 2002 Jul; 98(1-2):151-61 Pharmacological characterisation of the spared nerve injury model of neuropathic pain.

