

*Pain News Network*

## **Ambroxol: A Potential New Treatment for Chronic Pain**

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Researchers say a drug long used in cough syrup and cold medicines shows potential for treating some types of neuropathic pain.

A small study recently published in the journal *Headache* found that topical administration of ambroxol in a cream could significantly decrease pain in patients with trigeminal neuralgia, a chronic facial condition that can make even routine tasks such as brushing one's teeth excruciatingly painful.

In their review of the medical records of five trigeminal neuralgia patients, German researchers reported that all five patients experienced pain reduction with ambroxol 20% cream being applied within 30 minutes of a pain flare, with pain relief lasting from 4 to 6 hours. In one case, pain was eliminated completely in one week.

The results were similar to those of previous German studies and were so significant that researchers recommended that ambroxol “should be investigated further as a matter of urgency.”

Similarly, a recent study in the journal *Pain Management* found that application of topical ambroxol reduced spontaneous pain in several patients with complex regional pain syndrome (CRPS), a little understood nerve condition that causes chronic pain after a significant injury or surgery. Notably, ambroxol therapy improved several other neuropathy-related conditions in CRPS patients, including edema, allodynia, hyperalgesia, skin reddening, motor dysfunction and skin temperature.

### **An Old Drug with a New Purpose**

With a pharmacological history that can be traced back to Indian ayurvedic medicine, ambroxol was initially approved in 1978 as a medication to break down mucus and make it easier to eliminate by coughing. It is generally administered in tablet or syrup form.

Ambroxol is also used to treat a sore throat associated with pharyngitis, thus its potential role as a potent local anesthetic. The drug's anesthetic properties stem from its ability to block sodium and calcium channels that transmit pain signals.

Although the idea that ambroxol can treat a sore throat is widely accepted, its application to other forms of pain is more recent.

Previous studies using animal models of neuropathic pain have been promising. In a 2005 study, researchers effectively reduced – and in some cases eliminated – chronic

neuropathic and inflammatory pain in rats. Indian researchers also found ambroxol effective in treating neuropathic pain in rats, attributing its success to its antioxidative and anti-inflammatory properties. Unfortunately, human studies are few at this point.

### **Ambroxol and Fibromyalgia**

A 2017 *Clinical Rheumatology* study showed that ambroxol can play a key role in treating chronic pain associated with fibromyalgia. As reported by *Fibromyalgia News Today*, researchers from Mexico added ambroxol to the treatment regimens of 25 fibromyalgia patients, three times a day for one month. At the end of the study, pain scores decreased significantly and there was also noticeable improvement in sleep disturbances, stiffness and autonomic nervous system dysfunction. No major adverse events were reported.

Another 2017 study supported these findings, with the authors concluding that “fibromyalgia treatment with ambroxol should be systematically investigated” because the drug “is the only treatment option used thus far that has the potential to address not just individual but all of the aforementioned aspects of pain.”

Although data on its effectiveness in humans are limited, ambroxol shows great potential in treating painful conditions for which there are currently few safe and effective options. It is particularly attractive because it has few significant side effects, is not addictive and can be administered topically in some instances.