

## Carpal tunnel syndrome: Do corticosteroid injections work?



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Carpal tunnel syndrome occurs when a nerve in the "carpal tunnel" of the wrist is compressed or squashed by the surrounding tissue. It causes pain, numbness and prickling sensations in the affected hand. It can be harder to move that hand too. Carpal tunnel syndrome often goes away by itself, but it can sometimes be severe and long-lasting.

Keeping the hand still by wearing a wrist brace at night is a common treatment. Some people take pain-relieving and anti-inflammatory medication. Doctors may also sometimes recommend surgery.

Another common treatment for relieving carpal tunnel pain is to inject corticosteroids (often simply called "steroids") directly into the carpal tunnel area. Corticosteroids are types of synthetic hormones that reduce swelling. We call this a local injection, because the corticosteroids are injected directly into the affected area. This kind of treatment is normally given if the symptoms are not too serious.

### **How do corticosteroid injections compare?**

Researchers from the Cochrane Collaboration – an international network of researchers – looked at the results of so-called randomised controlled trials to find out how effective local corticosteroid injections are. You can read about how trials like this are done and why they provide the most reliable results here (URL: <http://www.informedhealthonline.org/index.61.en.html>).

The Cochrane researchers looked for trials that compared local corticosteroid injections either with other non-surgical treatments, or with an injection that had no medication in it (placebo). The researchers wanted to see how often the injections worked and how long the pain-relieving effects lasted. They were also interested in how the injections compared to other treatments.

The researchers found 12 studies involving more than 650 participants altogether. Two trials showed that, after four weeks, corticosteroid injections had reduced symptoms more than a placebo injection. Another trial showed that two injections (given eight weeks apart) had the same effect as one injection.

One trial found some evidence that local injections were similar to corticosteroid tablets in the short term but appeared to be more effective in the medium term (up to 3 months). However, a more recent review suggests that this advantage does not last long: 20 months after treatment, there was no difference in improvement between people who had been given injections and people who had taken tablets. A further trial showed that a local injection was better than a "systemic" injection. Here "systemic" means that it was injected into a muscle rather than directly into the carpal tunnel area. Two trials showed no difference between local corticosteroid injections and other treatments, including anti-inflammatory drugs with wrist braces. More research is needed to be sure about whether other treatments relieve symptoms better or for longer than local injections do.

### **Long-term effects not clear**

A few trials compared the long-term effects of local injections with a placebo, but they were of poor quality and had conflicting results. The long-term effects of carpal tunnel syndrome treatments are difficult to test in a trial – researchers are reluctant to use placebo treatments in long-term trials. For this reason, there are no good long-term trials comparing corticosteroid treatment with a placebo.

Several good-quality trials have shown that, compared to a placebo, local corticosteroid injections can relieve carpal tunnel syndrome pain in the short term. But more research is needed to find out whether other treatments could provide more effective relief in the short or long term. There is also not enough information on the possible adverse effects of corticosteroid injections because the trials did not specifically look at this aspect. As soon as information about adverse effects becomes available, we will write about that here.

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## Glossary

### anti-inflammatory drugs

Anti-inflammatory drugs are drugs that reduce inflammation. This includes substances produced by the body itself like cortisone. It also includes artificial substances like ASA – acetylsalicylic acid (or “aspirin”) or ibuprofen –, which relieve pain and reduce fever as well as reducing inflammation.

### hormones

“Hormones” is the collective term for different types of messenger substances in the body. They are produced in different organs or tissues and released into the blood or the lymphatic system to be distributed throughout the body. Hormones only have an effect on those parts of the organism that have a corresponding docking site. This is how hormones can have such specific effects. Insulin, estrogens, vasopressin and thyroxine are some well-known hormones. Many medical ingredients imitate the effect of hormones.

### Cochrane Collaboration

The Cochrane Collaboration is an international network of thousands of researchers and others. They work together in teams called Cochrane Review Groups to answer questions about health care by doing systematic reviews of evidence. To achieve this, the members of the Collaboration have developed systems and methods for systematically finding and analysing the results of trials of health care interventions. The goal of the Cochrane Collaboration is to help patients, health care practitioners and others make more informed decisions about health care. You can read more about the Cochrane Collaboration at their website.

### evidence

Evidence is what we call scientific proof from well-conducted, good-quality scientific trials that have been carefully designed to answer specific questions. Depending on the types of questions, different scientific research methods (types of study) are most appropriate to find reliable answers to these questions. Randomized controlled trials (RCTs), for example, are the best way to get reliable evidence on the effectiveness of medical treatments (interventions). This type of study, however, is not the best form of evidence for all possible questions, and does not provide the best answers to all kinds of questions, either.

Epidemiological studies, for example, are very suitable for establishing well-founded proof for the spreading of a disease in the population.

## Sources

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## **The German Institute for Quality and Efficiency in Health Care (IQWiG)**

The German Institute for Quality and Efficiency in Health Care (IQWiG) was established by legislation to provide evaluations of the effectiveness, quality and efficiency of healthcare services. This includes the assessment of medicines as well as the publication of health information for consumers and patients.

## **Evidence basis of our health information**

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at **[www.informedhealthonline.org](http://www.informedhealthonline.org)**

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