



Spinal Manipulation: What You Need To Know

What is spinal manipulation?

- [Spinal manipulation](#) is a technique where practitioners use their hands or a device to apply a controlled thrust to a joint of your spine. The amount of force can vary, but the thrust moves the joint more than it would on its own. Spinal manipulation is different from spinal mobilization, which doesn't involve a thrust, is performed within a joint's natural range of motion, and can be controlled by the patient.
- Most spinal manipulations are done by chiropractors ([chiropractic](#) treatment often involves spinal manipulation), although other licensed professionals including osteopathic physicians and physical therapists also use this technique.
- For more information on what chiropractors do, see the National Center for Complementary and Integrative Health (NCCIH) fact sheet [Chiropractic: In Depth](#).



Who uses spinal manipulation and has usage changed?

In 2017, 10.3 percent of U.S. adults received chiropractic care (which usually involves spinal manipulation) during the past year, compared to 9.1 percent in 2012, according to National Health Interview Survey data from the 2 years. The 2017 data show that women were more likely than men to have visited a chiropractor and that people in the 45-to-64 age range were more likely than older or younger adults to have seen one during the past year. According to the same national survey (by the Centers for Disease Control and Prevention's National Center for Health Statistics), non-Hispanic White adults were much more likely to have visited a chiropractor (12.7 percent) than Hispanic (6.6 percent) or non-Hispanic Black (5.5 percent) adults in 2017.

Among children, there was no significant difference in the use of chiropractic care between 2012 and 2017 (3.5 percent versus 3.4 percent). Older children (age 12 to 17) were more likely than younger ones (age 4 to 11) to have seen a chiropractor, but there was no significant difference in the use of chiropractic care between girls and boys. Non-Hispanic White children were more likely than non-Hispanic Black or Hispanic children to have seen a chiropractor.

What are some of the conditions for which spinal manipulation is used?

Low-back pain

Spinal manipulation is one of several nondrug approaches that may be used to treat acute and chronic low-back pain. It may lead to small improvements in both pain and function. Function means how low-back pain affects various aspects of people's lives, such as walking, standing, sleeping, and doing household tasks. In research studies, function is assessed using questionnaires.

- For adults with acute low-back pain (pain that has lasted for no more than 6 weeks), a 2017 analysis of data from 15 studies (1,699 participants) provided moderate-quality evidence that spinal manipulation is associated with a modest improvement in pain (similar to the benefit produced by nonsteroidal anti-inflammatory drugs). In the same report, data from 12 studies (1,381 participants) provided moderate-quality evidence that spinal manipulation is also associated with a modest improvement in back function. For both pain and function, the evidence was viewed to be of moderate rather than high quality because it was not completely consistent.
- For adults with chronic (long-lasting) low-back pain, a 2019 review of 47 studies (9,211 participants) compared spinal manipulation or mobilization with other therapies recommended in various countries, such as exercise or drug therapy. The review found moderate-quality evidence that the short-term (1 month) pain relief from manipulation or mobilization was similar to that produced by the other recommended therapies. For back function, there was moderate-quality evidence that manipulation or mobilization was slightly better than other therapies. For both pain and function, the evidence was viewed to be of moderate rather than high quality because it was not completely consistent. In all the studies included in this review, over half of the participants had pain for more than 3 months.
- In its 2017 clinical guidelines, the American College of Physicians stated that spinal manipulation is one of several therapeutic options that may help people with acute or chronic low-back pain (although the strength of the evidence favoring spinal manipulation is low).

- A 2020 analysis by the Agency for Healthcare Research and Quality examined the evidence on noninvasive, nonpharmacologic treatments for common chronic pain problems to determine which treatments improved pain and/or function for at least 1 month. Eight studies of spinal manipulation for low-back pain, with 2,580 total participants, were included. In these studies, spinal manipulation was associated with small improvements in function in the short term (at least 1 month but less than 6 months) and intermediate term (at least 6 months but less than 12 months), as well as with small improvements in pain in the intermediate term. The strength of the evidence was low for function and moderate for pain.

Neck pain

Spinal manipulation can be helpful for acute neck pain, and manipulation or mobilization can be helpful for chronic neck pain.

- For acute neck pain (pain that has lasted less than 6 weeks), a 2021 combined analysis of 6 studies (446 participants) showed that spinal manipulation, alone or in combination with other treatments, was helpful in reducing pain intensity. However, the reviewers said that the results should be interpreted with caution because of the small amount of evidence and varied design of the studies.
- For chronic neck pain (lasting 12 weeks or longer), a 2019 review of 47 trials (4,460 participants) of either spinal manipulation or mobilization, alone or combined with other interventions, concluded that these treatments may reduce pain and improve function. The evidence was viewed to be of low-to-moderate quality because most of the studies were small and their results were inconsistent.

Headache

- A 2020 review of 7 studies (601 participants) found that spinal manipulation may reduce the frequency and intensity of cervicogenic headache (head pain that originates from a problem in the neck).
- A 2019 review of 6 studies (677 participants) of spinal manipulation for migraine found that spinal manipulation may reduce the number of days with migraine as well as migraine pain/intensity. However, because of limitations in the design of some of the studies, the reviewers considered the results to be preliminary.
- A 2020 analysis by the Agency for Healthcare Research and Quality examined the evidence on noninvasive, nonpharmacologic treatments for common chronic pain problems to determine which treatments improved pain and/or function for at least 1 month. For chronic tension headache, spinal manipulation was associated with small improvements in function and moderate improvements in pain in the short term (at least 1 month but less than 6 months). Little evidence was available; the conclusion was based on a single study with 75 participants.

Sciatica

- Sciatica is pain associated with the sciatic nerve, which controls muscles in the back of the knee and the lower leg. This nerve also provides feeling to the back of the thigh, part of the lower leg, and the sole of the foot.
- Manipulation isn't widely used to treat sciatica, but it may help according to a 2015 review of a variety of sciatica treatments. However, the studies had many limitations, the authors noted.
- In a 2014 study of 192 people with leg pain associated with back pain, participants who received spinal manipulation along with advice and a home exercise program had less pain after 12 weeks and used less medication a year later than participants who only received home exercise and advice. However, leg pain was the same for both groups after 1 year.

Other conditions

- Only a small amount of high-quality research has looked at the effects of spinal manipulation on conditions other than musculoskeletal problems. A comprehensive 2021 review identified only 6 studies (534 total participants) of high or acceptable quality that evaluated spinal manipulation for nonmusculoskeletal conditions, such as high blood pressure or menstrual cramps. None of the studies showed a clear benefit of spinal manipulation.

Is spinal manipulation safe?

A 2017 review brought together evidence from 250 scientific publications related to risks and side effects of spinal manipulation or mobilization and reached the following conclusions:

- Transient mild-to-moderate side effects—most commonly, increased pain or discomfort, stiffness, or headache—often occur after spinal manipulation or mobilization. Most of these side effects go away within 24 hours.
- Serious side effects, such as serious spinal or neurological problems or strokes involving arteries in the neck, have been reported. However, they are very rare, and there are no accurate estimates of how often they occur.
- The likelihood of a serious side effect may be greater in people who have underlying health problems that increase their risk of injury.

Because preexisting health problems may increase the risks associated with spinal manipulation or mobilization, it is important for practitioners to assess patients thoroughly and for patients to share information about their health conditions and medications with the practitioner.

Strokes and artery tears

A type of spinal manipulation that focuses on the neck has been linked to small, potentially dangerous tears in the artery walls in the neck, called cervical artery dissections (CAD). These tears are rare but can lead to a stroke. Any kind of sudden neck movement, such as those involved in playing sports, getting whiplash, and violent vomiting or coughing, may also increase the risk of tears. The available evidence suggests that the incidence of CAD in people getting spinal manipulation is low, and there is disagreement about whether manipulation can actually cause CAD. Nevertheless, patients need to be informed of this potential risk.

Spinal manipulation and pregnancy

Reports of serious adverse events from spinal manipulation during pregnancy are very rare, but there has not been much rigorous research on this topic. If you are pregnant and you are interested in using spinal manipulation, discuss the potential risks and benefits with your health care provider.

NCCIH-Funded Research

NCCIH-supported studies have been investigating:

- The mechanisms by which two nondrug treatments—mindfulness training and spinal manipulation—may influence pain.
- The effectiveness of chiropractic care for low-back pain in the veterans' health care system, including a comparison of a smaller number of visits (1 to 5) to a larger number (8 to 12).
- The effects of two types of nondrug treatment for low-back pain—spinal manipulation and a structured self-management program—and how they compare with usual medical care. The goal is to determine which approaches work best for decreasing the likelihood that low-back pain will persist for long periods of time.

More To Consider

- Before selecting a chiropractor:
 - Ask about the chiropractor’s education and licensure.
 - Tell the chiropractor about your health history, including medical conditions.
 - Ask if the chiropractor has specialized training or experience treating your condition.
 - Ask about how many sessions you’ll need and typical out-of-pocket costs and insurance coverage. For more information, see NCCIH’s fact sheet [Paying for Complementary and Integrative Health Approaches](#)
 - Tell the chiropractor about any medications (prescription or over-the-counter) and dietary supplements you take. If the chiropractor suggests a dietary supplement, ask about potential interactions with your medications or other supplements.
- Take charge of your health—talk with your health care providers about any complementary health approaches you use. Together, you can make shared, well-informed decisions.

For More Information

NCCIH Clearinghouse

The NCCIH Clearinghouse provides information on NCCIH and complementary and integrative health approaches, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

Toll-free in the U.S.: 1-888-644-6226

Telecommunications relay service (TRS): 7-1-1

Website: <https://www.nccih.nih.gov>

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Know the Science

NCCIH and the National Institutes of Health (NIH) provide tools to help you understand the basics and terminology of scientific research so you can make well-informed decisions about your health. [Know the Science](#) features a variety of materials, including interactive modules, quizzes, and videos, as well as links to informative content from Federal resources designed to help consumers make sense of health information.

[Explaining How Research Works \(NIH\)](#)

[Know the Science: How To Make Sense of a Scientific Journal Article](#)

[Understanding Clinical Studies \(NIH\)](#)

PubMed®

A service of the National Library of Medicine, PubMed® contains publication information and (in most cases) brief summaries of articles from scientific and medical journals. For guidance from NCCIH on using PubMed, see [How To Find Information About Complementary Health Approaches on PubMed](#).

Website: <https://pubmed.ncbi.nlm.nih.gov/>

National Institute of Neurological Disorders and Stroke (NINDS)

NINDS conducts and supports research on how the brain and nervous system function and on treatments for neurological diseases.

Toll-free in the U.S.: 1-800-352-9424

Website: <https://www.ninds.nih.gov/>

National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

The mission of NIAMS is to support research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases; the training of basic and clinical scientists to carry out this research; and the dissemination of information on research progress in these diseases.

Toll-free in the U.S.: 1-877-22-NIAMS

Website: <https://www.niams.nih.gov>

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