

PEMF therapy for Carpal Tunnel Syndrome

Carpal tunnel syndrome (CTS) is an entrapment of the median nerve located at the wrist causing painful symptoms and occasional weakness of some hand muscles.

The condition affects more than 10 million people in the U.S. alone. The condition's debilitating symptoms could result in significant disability at work and everyday activities.

Carpal tunnel syndrome is one of the most common nerve compression disorder which could make you suffer from pain, discomfort, numbness, and tingling sensation in your wrist. While the carpal tunnel was long believed to be an occupational malady, experts recently found that it was more likely due to hormonal changes alongside underlying inflammatory conditions and perhaps genetics.

Hold your arms out in front of you, flex your wrists, and let your hands hand down for about a minute. Any feeling of tingling, discomfort, pain, or numbness within 60 seconds indicates that you might have carpal tunnel syndrome.

But do not panic if you think you might have carpal tunnel or if your doctor has just diagnosed you with the condition.

Carpal tunnel isn't usually very serious. Be assured that with proper treatment, [you can get rid of the pain](#) and can perhaps reverse the condition and you will no longer have to suffer from any long-lasting damage to your wrist or hands.

What are the symptoms of CTS?

Carpal tunnel syndrome occurs when the nerve that runs along the underside of your forearm through a tunnel of nine other tendons get compressed or squeezed.

While many healthcare experts aren't really sure about what causes this syndrome, it is believed that a kind of anatomic compression or inflammation surrounding these tendons might be causing the following symptoms:

- Pain that travels up and down your forearm and sometimes, any movement of your arm might get painful
- Dull, constant, or sometimes extremely severe wrist pain and discomfort
- Numbness, tingling sensation or pain around your thumb and the next two fingers
- Weak grip and perhaps muscle loss, especially at the base of the thumb
- The trouble with gripping objects like doorknobs and the steering wheel
- Burning sensation
- Decreased hand and wrist strength

Sometimes these symptoms which start gradually might worsen over time. CTS might sometimes interfere with your hand strength and sensation and might also lower impair hand function. For some people, the pain might be worse at night than during the day and [might even disturb their sleep](#).

Despite being a very commonly encountered ailment, it is most often misunderstood even by the scientific community. In a majority of cases, people attribute any kind of pain or discomfort in their hands or wrists to carpal tunnel syndrome.

Several other ailments could cause similar symptoms and it is very important to know the difference. More importantly, conditions like [arthritis](#), tendonitis, and other conditions involving the nerves should be ruled out prior to diagnosing carpal tunnel syndrome.

Doctors usually diagnose carpal tunnel syndrome after considering the history of symptoms alongside thorough physical exams and sometimes testing procedures like an ultrasound or MRI.

Repeatedly performing the same actions or hand movements can sometimes lead to carpal tunnel syndrome. It is quite commonly diagnosed among people whose occupation involves pinching or gripping with their wrist held bent.

People who use computers, carpenters, meat packers, musicians, mechanics, grocery checkers, and gardeners are believed to be more likely than others to bring on these symptoms.

Women, individuals with underlying ailments like diabetes, rheumatoid arthritis, [thyroid conditions](#) are believed to be at a higher risk of developing carpal tunnel syndrome. In some cases, the condition might simply run in their families and some women go through these symptoms during a phase of their pregnancies.

But a recent study published in the journal Nature Communications pointed out that genetics played a crucial role in carpal tunnel syndrome than previously assumed.

The researchers tracked a particular genetic mutation which was highly expressed in the tissue surrounding the median nerve. They opined that the mutated gene might be responsible for promoting an accumulation of cells that leads to compression of the connective tissues.

How is Carpal tunnel syndrome treated?

You could try to prevent CTS by taking some precautionaries such as maintaining healthy body weight, getting treated for underlying health conditions that might trigger carpal tunnel syndrome, trying not to bend/twist/extend your hands while working for a

prolonged period, switching hands during work tasks, taking regular breaks from repeated hand movements, and ensuring that your tools aren't very heavy,

Treatment options for carpal tunnel syndrome include, but are not limited to rest, wrist splints, cortisone injections, medications like steroids and NSAIDs, surgical procedures, stretching therapies, and home remedies.

As far as stretching therapy or exercises are concerned, it is very important that you discuss your options with your healthcare provider before starting the regimen. There are umpteen stretching exercises and demonstration videos of the same on the internet such as the wrist extension stretch, wrist flexion stretch, vertical/horizontal tendon glides, etc.

However, these exercises aren't ideal for everyone. There's no one-size-fits-all theory for these remedies. It is strongly recommended that you make an appointment with your physician before trying out any of these. But if you happened to have tried out some and if at all you experience worsening of your pain symptoms, discontinue them at once and seek medical help.

Doctors usually prescribe pain medications like acetaminophen and NSAIDs for symptomatic relief. In some cases, they might even prescribe cortisone injections directly into the carpal tunnel area which often helps manage pain symptoms for several weeks or even months at a time.

But when most of the above-mentioned treatment options fail, your physician might recommend surgical procedures like a 'carpal tunnel release' that might open the carpal tunnel and help relieve the pressure on your median nerve. Surgical options might be recommended sometimes even prior to considering other non-invasive procedures when the severity is extreme.

Complementary and integrative medicine

Even though neurological conditions are becoming more common these days, conventional treatments and cures have their limitations. This is when many patients turn to complementary and alternative medicine to find some relief.

Given the recurrence rate, potential complications of surgical procedures, and the need for less invasive treatment (especially for pregnant women) make alternative medicine worth considering for CTS.

Around one-third of carpal tunnel syndrome patients already request alternative therapies to manage their condition. Moreover, these therapies can be combined with other traditional approaches and be used in an integrative approach for better relief.

Pulsed electromagnetic therapy for Carpal tunnel syndrome:

PEMF for carpal tunnel syndrome can be an excellent non-invasive consideration to try prior to surgical interventions.

A [2017 study](#) published in the Journal of Advanced Research has demonstrated the effectiveness of pulsed electromagnetic field therapy in treating carpal tunnel syndrome.

The researchers who sought to compare the effects of pulsed electromagnetic field therapy versus pulsed ultrasound included forty postnatal female patients who were diagnosed with idiopathic carpal tunnel syndrome and divided them into two different groups.

While the first group of study participants received pulsed electromagnetic field therapy for treating carpal tunnel syndrome alongside nerve and tendon gliding wrist exercises thrice per week for four weeks.

And the other group of study participants received pulsed ultrasound with the same set of accompanying wrist exercises.

Upon measuring the pain level, sensory and motor distal latencies, and other functions of the median nerve before and after treatment, the researchers found a [significant reduction in pain](#) and improved hand function and grip strength in both the groups.

However, compared to those who received the ultrasound treatment, the recipients of the pulsed electromagnetic field therapy for carpal tunnel syndrome experienced more benefits.

While women, especially middle-aged are more susceptible to carpal tunnel syndrome, it is a very common complaint they encounter during pregnancy. About 70% of women experience CTS and the prevalence of this condition during pregnancy is as high as 62%. Carpal tunnel syndrome during pregnancy in most cases develops in the second half due to fluid retention and because of lowered venous circulation that could lead to swelling of tissues.

Hormonal issues are yet another contributing factor of carpal tunnel syndrome in pregnant women—increased estrogen, aldosterone, and cortisol levels could be responsible for creating CTS symptoms in pregnant women.

Since electromagnetic therapy hasn't been widely used compared to other treatment options, the authors wanted to study its effectiveness in treating carpal tunnel syndrome in a population which is one of the most vulnerable to the condition.

No other previous research has compared the effectiveness of magnetic field therapy and ultrasound – one of the most common treatments for carpal tunnel syndrome, especially in a population with a high incidence of CTS.

PEMF offered the following benefits for carpal tunnel syndrome patients:

Pain reduction

The study participants who received PEMF therapy saw a 4.93 point reduction in their pain symptoms while those who underwent ultrasound therapy only saw a 1.3 point reduction in pain.

Improved handgrip strength

Pulsed electromagnetic field therapy for carpal tunnel syndrome exhibited a significantly higher improvement in handgrip strength compared to ultrasound therapy.

Electrophysiological outcomes

These measures can provide information that complements clinical assessments. The study authors reported that both median sensory distal latency (MSDL) and median motor distal latency (MMDL) were significantly decreased in both groups but PEMF showed significant differences in both MSDL and MSCV.

Numbness or paresthesia

Both Phalen and Tinel tests reported a reduction in numbness symptoms among study participants who received pulsed electromagnetic field therapy for CTS.

Improved hand function

The functional status scale tested eight different activities like writing, buttoning of clothes, gripping of a telephone handle, etc. The results were significantly better among women who received PEMF for CTS compared to those who received ultrasound therapy.

A [2008 clinical trial](#) which was conducted to find out if a combination of static and dynamic magnetic fields was effective in treating carpal tunnel syndrome.

It was a randomized double-blinded, placebo-controlled trial that included 36 patients with CTS symptoms. The study participants underwent neurologic examination and were evaluated for dynamometry, pinch gauge readings, and current perception threshold scores.

With nearly 10 months of active pulsed electromagnetic field exposure, the researchers noted an objective improvement in nerve conduction and subjective improvement on the participants' pain scores and examination. The trial concluded that exposure to the pulsed electromagnetic field provided statistically significant short, as well as long-term pain reduction and mild improvement in objective neuronal functions in carpal tunnel syndrome patients.

A [2015 study](#) conducted by the experts at Kafrelsheikh University sought to compare the effectiveness of pulsed magnetic field therapy versus surgical interventions in treating mild to moderate carpal tunnel syndrome, via a randomized, placebo-controlled double-blind study. The researchers included forty-five female CTS patients who were diagnosed with mild to moderate CTS and divided them into three different groups.

While the first one received sham exposure, group two received PEMF at a frequency of 50Hz and the last group underwent surgical procedures to treat their carpal tunnel syndrome symptoms. The results indicated that carpal tunnel syndrome patients who underwent PEMF therapy saw significant improvement in their median nerve electrophysiological function, as well as hand functional abilities compared to those who underwent surgical procedures.

The results of the above-mentioned study demonstrated the efficacy of pulsed electromagnetic field therapy upon surgical interventions, in case of mild to moderate levels of carpal tunnel syndrome which appear in enhancing median nerve function, improved hand functional abilities, and decreasing CTS symptoms like pain, numbness, and paraesthesia.

A 2010 study conducted but the researchers at Cairo university sought to investigate the effectiveness of pulsed magnetic field therapy at different frequencies in people diagnosed with carpal tunnel syndrome via a randomized, placebo-controlled double-blinded study. The researchers included forty-five female CTS patients who suffered from

mild to moderate carpal tunnel syndrome, in the age group 49-57 and were divided into three different groups. Group 1 was placebo which received sham exposure, and the other two groups received PEMF at frequencies of 50 Hz and 5 Hz respectively.

The findings of the study suggested that PEMF therapy at a frequency of 50Hz might be significantly beneficial in improving median nerve electrophysiological function and lowering the disabilities in people diagnosed with carpal tunnel syndrome.

The researchers highlighted that the choice of the right frequency of Pulsed electromagnetic field therapy was very important for optimum effect in treating conditions like carpal tunnel syndrome. The researchers demonstrated that the efficacy of pulsed electromagnetic field therapy in enhancing median nerve function and improving neurogenic symptoms alongside improved functionalities in patients with mild to moderate carpal tunnel syndrome.

They concluded that, clinically, the frequency of the pulsed electromagnetic field should be considered while treating individuals suffering from carpal tunnel syndrome and emphasized that a frequency of 50 Hz should be utilized for ultimate benefits.

And a [2005 study](#) published in the Journal of Back and Musculoskeletal Rehabilitation was conducted to find out if nine consecutive one-hour therapy sessions of pulsed electromagnetic field therapy could reduce neuropathic pain scores in refractory hands diagnosed with carpal tunnel syndrome. The results pointed out that directing PEMF to the carpal tunnel region could offer modest, short-term relief for a lot of people suffering from carpal tunnel syndrome.

What makes PEMF effective in treating carpal tunnel syndrome?

The reason pulsed electromagnetic field therapy does wonders in carpal tunnel syndrome treatment is that it enhances your cell's ability to recover on a mitochondrial level. When you use a PEMF device to treat carpal tunnel syndrome, the debilitated cells in the tissues, ligaments, and the whole carpal tunnels get stimulated and it results in rapid recovery.

Chiropractors and physical therapists should definitely consider recommending pulsed electromagnetic field therapy to treat carpal tunnel syndrome patients in order to enhance recovery and bring about rapid improvement in their CTS symptoms.

And while choosing high-quality PEMF devices from a trusted brand like TeslasPEMF Light, you are more likely to reap better benefits and improvements in your CTS symptoms.

Frequently Asked Questions

Does electrical stimulation help carpal tunnel?

Yes. Since carpal tunnel syndrome is caused by factors that are responsible for causing swelling inside your wrist, like arthritis, pregnancy, or repeated hand movements, electrical stimulation could be effective in alleviating the pain related to CTS. Interferential current (IFC) and Transcutaneous electrical muscle stimulation (TENS) was assessed to find out if it was effective in managing carpal tunnel syndrome in a randomized controlled [study conducted in 2012](#).

The results indicated that IFC therapy offered a significantly greater improvement in pain, symptom severity, and functional capacity. The researchers emphasized that IFC could be considered a new and safe therapeutic option to treat CTS.

Can you do physical therapy for carpal tunnel syndrome?

Many physicians recommend stretching and exercises to treat carpal tunnel syndrome. In fact, therapeutic exercise programs are one of the treatment options that most doctors recommend for carpal tunnel syndrome. Certain exercises have the ability to reduce pressure on the median nerve located at the wrist.

The exercises are to be incorporated alongside bracing or splinting in order to see improvement in CTS symptoms. However, it is very important that you consult your healthcare provider and discuss physical therapy for carpal tunnel syndrome before indulging in any exercise regimen.

What is the most effective treatment for carpal tunnel syndrome?

When diagnosed at an early stage, carpal tunnel syndrome can be treated effectively. You can consider one of the non-invasive treatment options like medications, wrist splinting, or wearing wrist bands, especially to relieve nighttime symptoms of numbness and tingling.

PEMF therapy is definitely worth trying and can be one of the safest and effective treatment regimen for people suffering from CTS symptoms. Several clinical trials and studies have demonstrated the safety and efficacy of PEMF therapy to treat carpal tunnel syndrome patients.

How do you stop the carpal tunnel from progressing?

Even though there isn't a particular surefire way to keep carpal tunnel syndrome at bay, reducing stress and strain on your wrists and hands can prevent your CTS from worsening. Since repeated hand movements are one of those important causes for CTS symptoms, if your job involves it, you might take some precautionary measures to prevent carpal tunnel syndrome in the first place, or at least the progression of the condition, if you have already been diagnosed with it.

You could try to sleep with your wrists held straight, hold them straight while working with heavy tools, and refrain from extending or curling your wrists repeatedly, and try to take frequent breaks from activities that involve repetitive hand movements.

Also, since certain underlying health conditions like diabetes, arthritis, high blood pressure levels, and lifestyle factors like obesity, smoking, excessive salt consumption, and physical inactivity could increase your likelihood of developing carpal tunnel syndrome, getting treated for these ailments can also help prevent CTS progression.

Does massage help carpal tunnel?

Massage therapy is believed to be one of the effective ways to alleviate CTS-related symptoms and can also be used as a preventive strategy against carpal tunnel syndrome. Massage can help manage CTS by reducing pain, inflammation, and numbness in your carpal tunnel.

And there is an acupressure point called P6 located three finger breadths beneath your wrist, on the inner forearm in between the two tendons. Locating this point and applying downward pressure between the two tendons, massaging and stimulating it for a few seconds can help relieve carpal tunnel syndrome symptoms.

How can I fix carpal tunnel naturally?

Depending on the severity of your symptoms, your physician will recommend the right treatment plan. You can always consider home remedies, especially when your symptoms are mild. For mild CTS symptoms, you might be easily able to fix them with a few lifestyle changes like the following:

- Take regular breaks, while performing activities that involve repetitive hand movements such as playing guitar, typing on the computer, or using heavy tools. You could take a tiny break every 15 minutes to stretch your hands and move your wrists, so as to improve blood circulation to your carpal tunnel region
- Refrain from performing activities that could flex your wrist to the extreme in the opposite directions. Keep them in a neutral position as much as possible.
- Try hand warmers or fingerless gloves to keep your hands warm. This can aid in easing your pain and stiffness.
- You could also try out wrist exercises which can help relieve any pressure on your wrist. There are a lot of videos and demonstrative pages with exercises for treating carpal tunnel syndrome online. But discuss it with your healthcare provider before considering them.
- And a very simple home remedy is to just elevate your hands and wrists most of the time. This can help in case of fluid retention, especially during pregnancy.

How do you know if your carpal tunnel is severe?

Your carpal tunnel syndrome might be severe if your handgrip strength has decreased and if you have been experiencing worse pain and muscle cramping. This might be due to the fact that your muscles in your hands are shrinking or because the median nerve has begun to lose its function due to all the pressure or irritation surrounding it.

According to WebMD, you could sometimes end up with permanent muscle damage and loss of hand function. Seek medical help at the earliest if you are experiencing loss of feeling in your hand, slower nerve impulses, or if you happen to lose strength and coordination.

How should you sleep with a carpal tunnel?

Given the fact that carpal tunnel syndrome symptoms could worsen at night, it is important to position your sleep in a certain way to get a good night's sleep. Since the tissue fluid in the arms might get redistributed, because you don't move while trying to sleep, it can lead to increased pressure in your carpal tunnel, causing the symptoms.

Positioning your wrists by as little as 20 degrees can significantly alter nerve compression symptoms in CTS patients. One study pointed out a strong association between people sleeping on their side and carpal tunnel syndrome.

Therefore, experts recommend that CTS patients avoid sleeping on your stomach and in the fetal position and to sleep on your back, on your side, and maybe with a pillow in

between the legs for proper hip support and spine alignment which can ensure a neutral position of the cervical spine.

Will the Carpal Tunnel go away on its own?

Perhaps! A 2001 study, as reported by [WebMD](#) pointed out that several cases of carpal tunnel syndrome might sometimes improve on their own, even without surgical interventions or other treatment strategies.

The Italian researchers highlighted the fact that doctors should rethink their patients' treatment strategies before suggesting invasive procedures. Surprisingly, the study also reported that CTS patients suffering from severe symptoms also tended to feel better, compared to those with milder CTS symptoms.

Most doctors think of surgical options whenever they treat a CTS patient with severe symptoms and this research emphasized that they better reconsider it.