

# Chronic Pain

## DNA Health Report

REPORT CATEGORY —



PAIN

Sample Client

Report date: 03 September 2025

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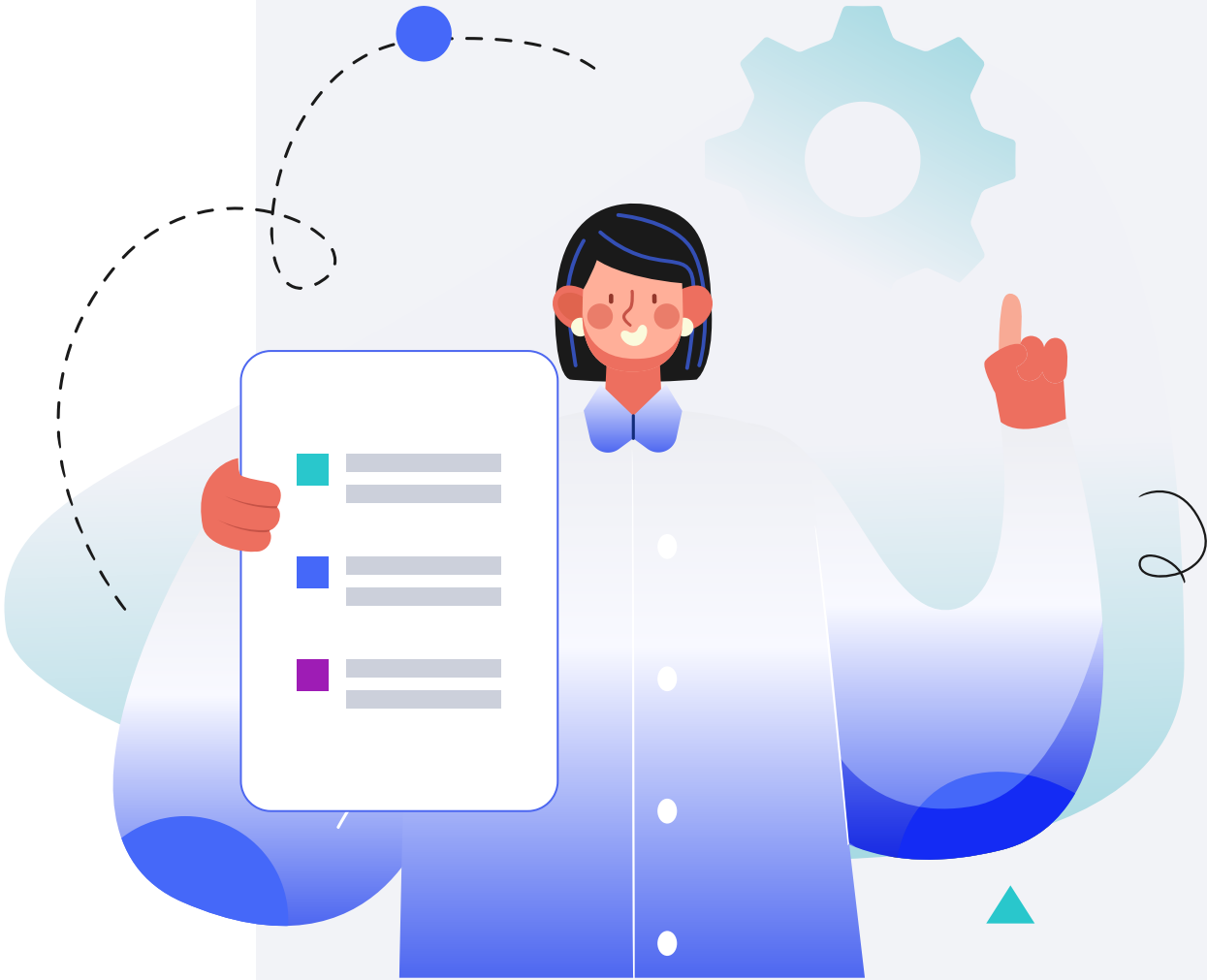
Your recommendations

## Personal information

|               |         |
|---------------|---------|
| NAME          |         |
| Sample Client |         |
| SEX AT BIRTH  |         |
| Male          |         |
| HEIGHT        |         |
| 5ft 9"        | 175.0cm |
| WEIGHT        |         |
| 165lb         | 75.0kg  |

DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.



# Introduction

Cue a 1930s travelling salesman, standing before a curious crowd, perched atop a wooden box. He snaps a chili pepper in half and begins to rub it onto his skin. **“Hot peppers give you instant relief for your chronic pain!”**

Who doesn’t love slathering themselves in hot peppers?

**The funny thing is, this claim is not entirely false -- peppers do help!** But it may be a bit of an oversell. You can’t just rub peppers on yourself to relieve the pain. You need the chemical inside, called *capsaicin*. This compound can shut down pain-sensing nerve cells in your skin. If the concentration is strong enough, it may actually destroy them [R].

How strong of a concentration do you need? Well, the strongest topical cream you can buy is 0.1% capsaicin. This equates to 1 mg/g. A jalapeño pepper is 0.03 mg/g capsaicin, which means **the cream is 33 times stronger than rubbing down with a jalapeño.**

On the other hand, one of the hottest peppers on earth, the Carolina Reaper, comes in at **80 times stronger than the cream.** This is actually the same strength as the prescription capsaicin patch, which you are only allowed to use in a medical setting. One might say you were bringing in the Reaper to take the pain away [R].

**Some people have a variant in the *TRPV1* gene that makes them more sensitive to capsaicin.** That is, they’re more likely to realize that the salesman may be on to something.

**All jokes aside, chronic pain is serious.** It affects approximately 1 in 5 Americans and costs billions of dollars per year in medical treatments and lost work productivity [R].

Pain comes in several forms, and it may cause numerous problems. Needless to say, your genetics have a lot to say about this.

**This report focuses on the genetics of chronic pain. Read more to find out:**

- **How your genetics play a role in chronic pain**
- **Your genetic risk score based on over 600,000 genetic variants**
- **Personalized recommendations based on your genetics**

# About Chronic Pain

Key Takeaways:

- About **1 in 5 Americans** report experiencing some form of chronic pain.
- Risk factors include being female, older age, poverty, previous injury, mental health problems, and your genetics.
- With a high genetic risk, you may want to be more mindful of other factors that can increase risk.
- Click the **next steps** tab for relevant lifestyle factors.

Pain is discomfort with a purpose. It tells us, loud and clear, that something is wrong [\[R\]](#).

There are two major types of pain [\[R\]](#):

- **Acute pain** happens right after damage to the body. It can last a few seconds or up to six months, while the body heals
- **Chronic pain** can happen even when there's no damage. It can last 6 months or more and doesn't always have an obvious cause

In the United States, **1 in 5 people** report having some form of chronic pain. Types of chronic pain include [\[R\]](#), [\[R\]](#):

- Lower-back pain
- [Headaches](#)
- Widespread pain
- Nerve pain

It's important to identify and manage chronic pain. **Pain can have major, lasting effects on quality of life.** It can even impact mental health [\[R\]](#).

Unfortunately, chronic pain is difficult to diagnose. This is because people feel and describe pain differently. For example, older people might say they're sore or uncomfortable, whereas others might say something hurts [\[R\]](#).



MORE LIKELY

More likely to experience chronic pain based on 611,315 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

| GENE     | SNP        | GENOTYPE |
|----------|------------|----------|
| FAAH     | rs2295633  | AA       |
| ADRB2    | rs1042713  | GA       |
| FAAH     | rs324419   | TC       |
| SERPINA6 | rs941601   | CT       |
| ADRB2    | rs2053044  | AG       |
| HTR1B    | rs6296     | GC       |
| ANKK1    | rs1800497  | GA       |
| HTR2A    | rs6313     | GA       |
| COMT     | rs4680     | AG       |
| SLC24A3  | rs2424248  | GG       |
| MLN      | rs11751591 | GG       |
| NUMB     | rs12435797 | TT       |
| PCCB     | rs6770476  | TT       |
| DDX20    | rs197422   | AA       |
| TRIM32   | rs6478241  | AA       |
| DMRTA2   | rs10888692 | GG       |
| SORCS3   | rs11599236 | TT       |
| TDRD9    | rs2006281  | CC       |
| SOX6     | rs61883178 | AC       |
| GMPPB    | rs7628207  | CT       |

It can also be difficult to find the underlying cause, if any. A doctor may have to rule out dozens of potential causes [R].

Chronic pain is also difficult to treat. People often turn to painkillers to help manage their discomfort [R].

The most common types of pain medications are [R, R, R]:

- **NSAIDs** (like ibuprofen or naproxen). These reduce pain and inflammation.
- **Opioids** (like oxycodone, morphine, or fentanyl). These mimic the body's natural opioids. They create pleasant feelings and block pain.

Painkillers may work better for some people than others. Long-term use of opioids also comes with the risk of addiction and abuse. Thus, many people turn to alternative practices to manage pain. Acupuncture, massage, and yoga are all popular strategies [R, R, R, R, R].

Risk factors for chronic pain include [R, R]:

- Female gender
- Older age
- Poverty
- Previous injury
- Mental health problems
- **Genetics**

**Genetics plays an important role in the development of chronic pain.** Genes that contribute to pain tend to influence [R, R, R, R, R, R, R, R]:

- Brain chemistry ([DRD2](#), [HTR2A](#))
- Stress and adrenaline ([ADRA1A](#), [ADRB2](#), [FKBP5](#))
- Nerve activity ([SCN9A](#), [MYT1L](#))

Genetically high neutrophil levels may be causally associated with a lower risk of chronic pain [R].

| GENE      | SNP        | GENOTYPE |
|-----------|------------|----------|
| ANAPC4    | rs34811474 | GA       |
| ADAMTSL4  | rs59898460 | CT       |
| OLFM4     | rs1443914  | CT       |
| FAM120AOS | rs10992729 | TC       |
| UTRN      | rs6926377  | CA       |
| SP4       | rs7798894  | AT       |
| SDCCAG8   | rs12071912 | CT       |
| KNDC1     | rs12765185 | AT       |
| FOXP2     | rs12537376 | AG       |
| LRRTM1    | rs4852567  | AG       |
| DCAKD     | rs11871043 | TC       |
| MAML3     | rs13136239 | GA       |
| TNF       | rs1800629  | GG       |
| CEP120    | rs17474406 | GG       |
| LTA       | rs2229094  | TT       |
| SLC39A8   | rs13135092 | AA       |
| ILRUN     | rs6907508  | AA       |
| BBX       | rs28428925 | GG       |
| CA10      | rs11079993 | GG       |
| DCC       | rs62098013 | GG       |
| SDK1      | rs10259354 | AA       |
| GPR20     | rs11786084 | GG       |
| MLLT10    | rs2183271  | TT       |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You'll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

| DOSAGE |                                    | DOSAGE     |    |                                                    |            |
|--------|------------------------------------|------------|----|----------------------------------------------------|------------|
| 1      | Psychotherapy                      | 1 hour     | 2  | Transcutaneous Electrical Nerve Stimulation (TENS) | 30 minutes |
| 3      | Acupuncture                        | 1 hour     | 4  | Physical Therapy                                   | 30 minutes |
| 5      | Dance                              | 30 minutes | 6  | Self-Hypnosis                                      | 20 minutes |
| 7      | Cognitive-Behavioral Therapy (CBT) |            | 8  | Low-Level Laser Therapy (LLLT)                     | 30 seconds |
| 9      | Autogenic Training                 | 10 minutes | 10 | Biofeedback                                        |            |
| 11     | Pain Neuroscience Education (PNE)  |            | 12 | Acupressure                                        | 1 minute   |
| 13     | Meditation                         | 30 minutes | 14 | Acceptance and Commitment Therapy (ACT)            |            |
| 15     | Cupping Therapy                    | 15 minutes |    |                                                    |            |

1



Psychotherapy

IMPACT

4 / 5

EVIDENCE

4 / 5

## How to implement

Schedule and attend regular sessions with a licensed psychotherapist, typically once a week for 50-60 minutes, over a period of several months to years depending on your individual needs and progress. Consistency is key, and the duration can vary widely based on personal goals and the type of psychotherapy being practiced.

TYPICAL STARTING DOSE

1 hour

## Description

Psychotherapy is a broad term for therapeutic approaches that address mental and emotional health issues through talking and counseling. It can be used to treat a wide range of psychological and emotional challenges.

**Psychotherapy (talk therapy) involves talking about your health with a licensed therapist.** It may improve the way you react to certain experiences and help reduce stress [\[R, R\]](#).

**Psychotherapy is a great way to improve many conditions,** including [\[R, R, R, R, R, R\]](#):

- Depression
- Anxiety disorders
- PTSD
- OCD
- Weight problems
- Eating disorders

**Cognitive-behavioral therapy (CBT)** is a type of psychotherapy. CBT aims to change the way you think about your life and yourself. Through CBT, a therapist can help you develop healthy coping mechanisms [\[R\]](#).

## How it helps

Talk therapy may help manage stress and symptoms in people with chronic pain. It may also improve day-to-day function [\[R, R, R, R\]](#).

Types of talk therapy that may help with chronic pain include:

- **Cognitive-behavioral therapy (CBT):** Changes thoughts and behaviors related to pain. It also provides coping strategies and trains the brain to send fewer pain signals [\[R, R, R, R\]](#).
- **Acceptance and commitment therapy:** Focuses on accepting the thoughts and emotions associated with pain. It also helps people identify and avoid behaviors that may contribute to pain [\[R, R, R, R, R\]](#).
- **Graded motor imagery:** Involves picturing yourself doing a pain-free movement. This trains the brain to send fewer pain signals in response to those movements [\[R, R, R, R\]](#).
- **Pain education:** Teaches people about pain so they can find it less threatening [\[R, R, R, R\]](#).
- **Music therapy:** Involves performing or listening to music to help reduce pain [\[R, R\]](#).



PERSONALIZED TO YOUR GENES

People with your [COMT](#) gene variant might get more pain relief from talk therapy [\[R\]](#).

YOUR GENETIC VARIANTS

| GENE | SNP    | GENOTYPE | EVIDENCE                                                           |
|------|--------|----------|--------------------------------------------------------------------|
| COMT | rs4680 | AG       | <div><div></div><div></div><div></div><div></div><div></div></div> |



Transcutaneous Electrical Nerve Stimulation (TENS)



How to implement

Apply TENS unit electrode pads around the area in pain; begin with the device set to a low setting and gradually increase intensity to a comfortable level. Use the device for 15-30 minutes per session for pain relief, and it can be used multiple times a day as needed.

TYPICAL STARTING DOSE  
30 minutes

Description

TENS is a therapy that uses low-level electrical currents to relieve pain by stimulating the nerves. It's commonly used as a non-invasive method to manage various types of pain, such as musculoskeletal pain or chronic pain conditions.

How it helps

TENS may reduce pain intensity and pain catastrophizing in people with chronic pain. Both high- and low-frequency TENS may be similarly effective. However, the effects may be short-lasting [\[R, R, R, R\]](#).

TENS may help with the following types of chronic pain:

- Back pain [\[R, R, R, R, R, R\]](#)
- Knee osteoarthritis pain [\[R, R, R, R, R\]](#)
- Musculoskeletal pain [\[R, R, R\]](#)
- Temporomandibular pain [\[R, R, R\]](#)
- Neuropathic pain [\[R, R\]](#)
- Neck pain [\[R\]](#)
- Spinal cord injury pain [\[R\]](#)
- Pelvic pain [\[R\]](#)
- Rheumatoid arthritis pain [\[R\]](#)
- Multiple sclerosis pain [\[R\]](#)

3



Acupuncture

IMPACT3 / 5

EVIDENCE4 / 5

## How to implement

Visit a licensed acupuncturist for a session, typically lasting between 30 to 60 minutes, once or twice a week. Depending on your specific condition, a course of treatment might range from a few weeks to several months.

TYPICAL STARTING DOSE

1 hour

## Description

Acupuncture is a part of traditional Chinese medicine. It involves inserting thin needles at specific points on the body. People use it to relieve pain and allergies, as well as reduce nausea and improve sleep.

[Acupuncture](#) is a part of traditional Chinese medicine. It involves **inserting thin needles at specific points on the body**. People use it to [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Relieve pain
- Improve sleep quality
- Relieve allergies
- Reduce nausea

## How it helps

One of the top uses of acupuncture is chronic pain management [\[R\]](#), [\[R\]](#).

In people with chronic pain, it may help improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Pain symptoms
- Mood
- Stress and tension

The effects of acupuncture may last a relatively long time. **Up to 90% of its benefits remain after 12 months**. However, you may need to stick with it for **at least 5 weeks** to maximize benefits [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Acupuncture may help by releasing natural [opioids](#) and other chemicals that reduce pain [\[R\]](#), [\[R\]](#).

**Please note:** *Acupuncture is safe for most people. However, it may come with extra risks for pregnant women, people with pacemakers, and people with bleeding disorders. Consult your doctor or a licensed acupuncturist for more information* [\[R\]](#).



PERSONALIZED TO YOUR GENES

The [HTR2A](#) gene encodes the [5-HT2A](#) serotonin receptor. Impaired [serotonin](#) signaling via this receptor may play a key role in chronic [pain](#) [[R](#), [R](#), [R](#)].

Your genotype for [rs6313](#) may affect serotonin signaling via the 5-HT2A receptor, thus contributing to chronic pain [[R](#), [R](#)].

[Acupuncture](#) may help with different types of chronic pain partly by balancing serotonin levels and targeting the 5-HT2A receptor [[R](#), [R](#), [R](#), [R](#)].

To learn more about this gene and how you may be able to counteract its effects, check out the *HTR2A SelfDecode* blog post [here](#).

YOUR GENETIC VARIANTS

| GENE  | SNP    | GENOTYPE | EVIDENCE                                                           |
|-------|--------|----------|--------------------------------------------------------------------|
| HTR2A | rs6313 | GA       | <div><div></div><div></div><div></div><div></div><div></div></div> |

4

Physical Therapy

IMPACT3 / 5

EVIDENCE3 / 5

## How to implement

Attend physical therapy sessions 2-3 times per week for a duration of 4-6 weeks, depending on your specific condition and the advice of your healthcare provider. Each session typically lasts about 30-60 minutes, where a licensed therapist will guide you through targeted exercises, stretches, and possibly other treatments like electrical stimulation or ultrasound therapy.

TYPICAL STARTING DOSE

30 minutes

## Description

Physical therapy is a therapeutic practice focused on optimizing physical function and mobility through specialized exercises, manual techniques, and therapeutic modalities. It helps individuals recover from injuries, manage chronic conditions, and improve overall physical well-being by enhancing strength, flexibility, and pain management.

**Physical therapy (physiotherapy)** helps people regain or maintain their ability to move [\[R\]](#).

Physical therapy can involve [\[R\]](#):

- Joint or muscle exercises
- Corrective movements
- Massage
- Education and advice

People mainly use physical therapy to help with [\[R\]](#), [\[R\]](#):

- Pain and injury
- Stroke recovery
- Chronic health conditions
- Headaches

**Mirror therapy** uses a mirror placed between the arms or legs. The image of a moving arm or leg gives the illusion of normal movement in the affected one. This therapy stimulates different brain regions and aims to improve mobility [\[R\]](#).

**Constraint-induced movement therapy** is another type of physical therapy. It consists of restraining the healthy leg or arm to increase the use of the affected one [\[R\]](#).

## How it helps

**Physical therapy (physiotherapy)** may improve joint, muscle, or bone pain [\[R\]](#).

It may be more effective when combined with **pain education**. The goal of pain education is to help people better understand their condition. One way to do this is through talk therapy [\[R\]](#).

Physical therapy may help by:

- Making brain cells less sensitive to pain perception [\[R\]](#), [\[R\]](#)
- Reducing inflammation [\[R\]](#)
- Restoring normal joint movement [\[R\]](#)

5



Dance

IMPACT

3 / 5

EVIDENCE

3 / 5

## How to implement

Engage in dance activities for at least 30 minutes, three times per week. You can choose any form of dance you enjoy, such as ballroom, hip hop, or salsa, and you can dance at home, in a studio, or in a group class setting.

TYPICAL STARTING DOSE

30 minutes

## Description

**Dancing involves moving your body to music.** Many people take dance classes to learn various styles of dance and improve their skills. Examples include:

- Ballet
- Zumba
- Belly dancing
- Hip hop
- Salsa

**Dancing is a fun, creative, and relaxing activity.** It can also provide a range of health benefits, improving your heart health, brain health, fitness, and more.

## How it helps

Dancing stimulates the release of endorphins, your body's natural painkillers, which can help manage chronic pain. Additionally, it enhances flexibility and strength, thereby reducing physical stress and pain symptoms.

A [meta-analysis of 34 studies and 1,254 participants](#) concluded that dancing **improves chronic primary and secondary musculoskeletal pain when practiced for 60-150 min/week** [\[R\]](#).

A [meta-analysis of 7 studies](#) concluded that dance programs (60-120 min, 1x-2x/week for 12-14 weeks) **reduce pain in patients with fibromyalgia** [\[R\]](#).

6

Self-Hypnosis

IMPACT

3 / 5

EVIDENCE

3 / 5

## How to implement

Practice self-hypnosis for 20-30 minutes daily. Find a quiet, comfortable place where you won't be disturbed. Close your eyes, take deep breaths, and focus on positive affirmations or imagery that addresses your specific needs, such as reducing stress or pain management.

TYPICAL STARTING DOSE

20 minutes

## Description

Self-hypnosis involves using relaxation techniques and focused attention to enter a state of heightened suggestibility, often for the purpose of self-improvement or managing certain conditions like stress or pain.

## How it helps

A meta-analysis of 9 trials and 530 participants concluded that hypnosis (including self-hypnosis) treatment lasting a minimum of 8 sessions can improve musculoskeletal and neuropathic pain [\[R\]](#).

In a non-placebo-controlled trial of 203 patients with chronic pain, the combination of self-hypnosis and self-care improved pain attitudes and physical quality of life [\[R\]](#).

In 2 non-placebo-controlled trials of people with chronic low back pain, self-hypnosis improved aspects of pain [\[R\]](#), [\[R\]](#).

In 2 non-placebo-controlled trials of 75 patients with multiple sclerosis and chronic pain, receiving 4 sessions of self-hypnosis, especially if combined with cognitive restructuring, reduced average pain intensity [\[R\]](#), [\[R\]](#).

In a non-placebo-controlled trial of 37 patients with sickle cell disease, following a self-hypnosis program for 18 months reduced recurrent, unpredictable episodes of pain and bad sleep nights [\[R\]](#).

In a non-placebo-controlled trial of 53 hospitalized patients with chronic pain, hypnosis (including self-hypnosis) improved pain and depression scores [\[R\]](#).

In a non-placebo-controlled trial of 37 patients with spinal cord injury, receiving 10 sessions of self-hypnosis training reduced pain intensity and average daily pain while increasing perceived control over pain [\[R\]](#).

Self-hypnosis may help by altering your perception of pain signals, effectively reducing their intensity. It also promotes relaxation and stress reduction, which can indirectly have a positive effect on pain levels.

7



Cognitive-Behavioral Therapy (CBT)

IMPACT

3 / 5

EVIDENCE

3 / 5

## How to implement

Schedule weekly sessions with a certified cognitive-behavioral therapist for a period of 5 to 20 weeks. Engage actively in exercises assigned by your therapist both during sessions and as homework to apply CBT strategies to daily life.

## Description

Cognitive-behavioral therapy (CBT) is a psychotherapeutic approach that has been effective in treating various mental health conditions by helping individuals identify and change negative thought patterns and behaviors. It is widely used for conditions like depression, anxiety, and phobias.

**Psychotherapy (talk therapy) involves talking about your health with a licensed therapist.** It may improve the way you react to certain experiences [\[R\]](#).

**Talk therapy is a great way to improve many conditions,** including [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Depression
- Anxiety disorders
- PTSD
- OCD
- Substance use disorder
- Bipolar disorder

**Cognitive-behavioral therapy (CBT)** is a type of talk therapy. CBT aims to change the way you think about your life and yourself. Through CBT, a therapist can help you develop healthy coping mechanisms [\[R\]](#).

## How it helps

Cognitive behavioral therapy (CBT) is the type of psychotherapy most commonly used for chronic pain [\[R\]](#), [\[R\]](#). Research, including meta-analyses covering thousands of participants, shows that CBT may improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Pain intensity
- Physical function
- Mood (e.g., anxiety)
- Negative thoughts related to pain
- Sleep quality

When CBT is combined with exercise, even over the phone, also helps, although the effects on pain and disability may be considered small [\[R\]](#), [\[R\]](#), [\[R\]](#).

8



Low-Level Laser Therapy (LLLT)

IMPACT3 / 5

EVIDENCE3 / 5

## How to implement

Use a low-level laser therapy device, as directed by its manual or a healthcare professional, on the affected area. Generally, treatment involves applying the laser for a specified duration, often between 30 seconds to several minutes, per treatment area. Sessions can be conducted 2-3 times per week for a period of 4-12 weeks, depending on the condition being treated and the device used.

TYPICAL STARTING DOSE

30 seconds

## Description

Low-level laser therapy (LLLT), also known as photobiomodulation, is a type of light therapy that uses low-intensity lasers to promote healing. It has been shown to be effective in treating a variety of conditions, including pain, inflammation, and wound healing.

## How it helps

A study reviewed 4 studies and suggested that using infrared lasers (with powers above 70 mW) may help relieve pain. However, more research is needed to determine the best settings [\[R\]](#).

An analysis of 9 studies involving 325 people with fibromyalgia showed improvements after LLLT in [\[R\]](#):

- Pain severity
- Tender points
- Fatigue
- Stiffness
- Anxiety
- Depression

However, adding LLLT to the standard exercise didn’t show additional benefits.

Research in people with diabetic peripheral neuropathy showed that LLLT therapy may [\[R\]](#), [\[R\]](#):

- Reduce neuropathic pain
- Improve nerve function
- Decrease foot ulcer risk

LLLT may alleviate pain by lowering [\[R\]](#):

- Oxidative stress
- Inflammation
- Hemorrhage

9

Autogenic Training

IMPACT

3 / 5

EVIDENCE

3 / 5

## How to implement

Practice autogenic training for 10-15 minutes daily, ideally in a quiet, comfortable space where you won't be disturbed. Sit or lie down in a comfortable position, close your eyes, and focus on calming your mind and body through self-suggested affirmations. Repeat this routine daily for at least 2-3 months to observe beneficial effects on stress reduction and relaxation.

TYPICAL STARTING DOSE

10 minutes

## Description

Autogenic training is a relaxation technique that involves self-suggestion and progressive muscle relaxation to promote relaxation, reduce stress, and alleviate symptoms of anxiety and tension.

Autogenic training is a relaxation technique that a person may carry out on their own [\[R\]](#), [\[R\]](#).

Autogenic training uses 6 exercises that take the mind’s attention to bodily sensations such as warmth and heaviness. The exercises involve guided imagery and verbal cues (e.g. "My arm is very heavy") to [\[R\]](#), [\[R\]](#):

- Relax the body
- Quiet and calm the mind
- Increase energy

## How it helps

Autogenic training, a relaxation technique, could aid in managing chronic pain by helping to lower stress levels and muscle tension, which often exacerbate discomfort. Through consistent practice, this mind-body technique could potentially reduce pain and improve your overall quality of life.

A meta-analysis of 13 trials and 576 participants concluded that autogenic training improves chronic pain as effectively as other psychological interventions [\[R\]](#).

10



Biofeedback

IMPACT

3 / 5

EVIDENCE

3 / 5

## How to implement

Attend biofeedback sessions once or twice a week for about 8 to 10 weeks. During these sessions, a therapist will guide you through exercises to control different body functions, such as heart rate or muscle tension, using monitors that provide feedback on your physiological state. Practice the techniques learned during sessions at home daily to improve symptoms and manage your condition.

## Description

Biofeedback is a type of therapy that teaches people how to control certain body functions, such as heart rate, blood pressure, and muscle tension. It can be used to treat a variety of conditions, including stress, anxiety, and chronic pain.

**Biofeedback** is a kind of “**brain training**” in which sensors are attached to your body. They detect information like your heart rate, temperature, and breathing rate. By seeing this information, you may be better able to control these functions [\[R\]](#), [\[R\]](#).

Biofeedback is used to help with [\[R\]](#), [\[R\]](#):

- Gut problems
- Chronic pain
- Migraines
- Insomnia
- Attention

[Neurofeedback](#) is a form of biofeedback that measures brain activity in real time [\[R\]](#).

## How it helps

**Neurofeedback** is a form of biofeedback that measures brain activity in real time. It may reduce pain by more than **30%** [\[R\]](#).

Neurofeedback may help by [\[R\]](#), [\[R\]](#):

- Altering the activity of brain regions linked to pain
- Reducing muscle tension

**Note that the evidence to support biofeedback for chronic pain is of low quality.**

11

## Pain Neuroscience Education (PNE)

IMPACT

3 / 5

EVIDENCE

2 / 5

## How to implement

Attend scheduled PNE sessions with a qualified healthcare professional. These sessions typically occur once or twice a week and continue for 2 to 6 weeks depending on individual needs. The aim is to better understand pain and its biological underpinnings through structured education.

## Description

Pain neuroscience education is an approach used by healthcare professionals to educate patients about the science of pain perception and management. It can help individuals better understand and cope with chronic pain conditions, potentially leading to improved pain management and quality of life.

## How it helps

Research of over 1,500 people suggests that pain education shows promise in reducing chronic pain intensity along with [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Disability
- Fear of movement
- Negative thoughts about pain

Its benefits are even greater when paired with physical therapy or aquatic exercise leading to reductions in pain and disability. However, the quality of the currently available research is low [\[R\]](#), [\[R\]](#).

12

Acupressure

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Apply firm pressure on specific acupoints related to your condition using your fingers or a blunt object for 1-3 minutes. Repeat this process 2-3 times a day for several weeks to potentially observe improvements.

TYPICAL STARTING DOSE

1 minute

Description

Acupressure is a traditional Chinese healing technique that involves applying pressure to specific points on the body to promote relaxation, alleviate pain, and improve overall well-being.

How it helps

A review of three high-quality studies involving 303 people with chronic pain found that acupressure (1-1.5 hours/session for 4-6 weeks) may help reduce low back pain and chronic headaches. Acupressure may offer greater benefits than [R](#):

- Standard therapy
- Thermotherapy
- Exercise

13

Meditation

IMPACT

2 / 5

EVIDENCE

3 / 5

## How to implement

Set aside 10-20 minutes each day in a quiet space without distractions to practice meditation. Focus on your breath or perform guided meditation using an app or audio track.

TYPICAL STARTING DOSE

30 minutes

## Description

Meditation is a mindfulness practice that can reduce stress, improve mental clarity, and promote relaxation. Regular meditation is associated with numerous mental and emotional health benefits, including reduced anxiety and enhanced emotional well-being.

**Meditation is a relaxation technique that trains your mind to focus and redirect your thoughts.** Some of the main types of meditation are [\[R\]](#):

- Mindfulness
- Focused
- Transcendental
- Mantra
- Moving

People use meditation to improve [\[R\]](#), [\[R\]](#):

- Stress and anxiety
- Mood
- Sleep disturbances
- Pain

## How it helps

Analysis of studies including more than 4,000 people with chronic pain suggested that mindfulness meditation (for at least 12 weeks) might lead to a slight reduction in pain and also have beneficial effects on depression and quality of life. The studies included people with the following conditions [\[R\]](#), [\[R\]](#):

- Fibromyalgia
- Back pain
- Arthritis
- Migraine

However, the quality of the evidence was considered low. Therefore, further well-conducted studies are necessary to confirm its benefits [\[R\]](#).

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# Acceptance and Commitment Therapy (ACT)

IMPACT

2 / 5

EVIDENCE

3 / 5

## How to implement

Participate in Acceptance and Commitment Therapy (ACT) sessions with a licensed therapist weekly for a minimum of 8 to 12 weeks. During this period, engage in daily ACT exercises at home as recommended by your therapist, such as mindfulness practices and writing exercises that help you connect with your values and accept your thoughts without judgment.

## Description

ACT is a type of psychotherapy that focuses on accepting one's thoughts and feelings while committing to actions that align with personal values. It is used to improve mental well-being and treat conditions like anxiety and depression.

## How it helps

Acceptance and commitment therapy (1-1.5 hours/session for 1-6 months) in people with chronic pain may slightly improve [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Pain intensity, acceptance, and interference
- Mood (e.g., anxiety, depression)
- Psychological flexibility

When compared to mindfulness-based interventions, ACT may offer greater benefits in improving anxiety and depression [\[R\]](#).

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Cupping Therapy

IMPACT

2 / 5

EVIDENCE

3 / 5

## How to implement

To practice cupping therapy as part of your lifestyle, schedule sessions with a qualified therapist once or twice a month to address specific concerns or for general wellness. Each session usually lasts between 5 to 15 minutes. Consistent treatment over several months may yield the best results.

TYPICAL STARTING DOSE

15 minutes

## Description

Cupping therapy is an alternative therapy that involves placing cups on the skin to create suction. Some believe it may help with pain relief and muscle tension.

## How it helps

Cupping therapy increases blood flow to areas where cups are applied, potentially relieving muscle tension and promoting cell repair, which can alleviate chronic pain. However, its effectiveness varies from person to person, and should not replace conventional treatments.

A meta-analysis of 18 trials and 1,172 participants concluded that cupping therapy has large effects on chronic pain intensity compared to no treatment, but not compared to sham cupping or other active treatments, and medium short-term effects on disability compared to no treatment and other active treatments, but not to sham cupping. Another meta-analysis (18 trials) concluded that cupping therapy, both alone and as an add-on to conventional treatment, reduces pain and improves quality of life compared to no treatment and active treatments. However, the authors warned about the low quality of the evidence [\[R\]](#), [\[R\]](#).