

Low Back Injury

DNA Health Report

REPORT CATEGORY —



Sample Client

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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.

Personal information

NAME

Sample Client

SEX AT BIRTH

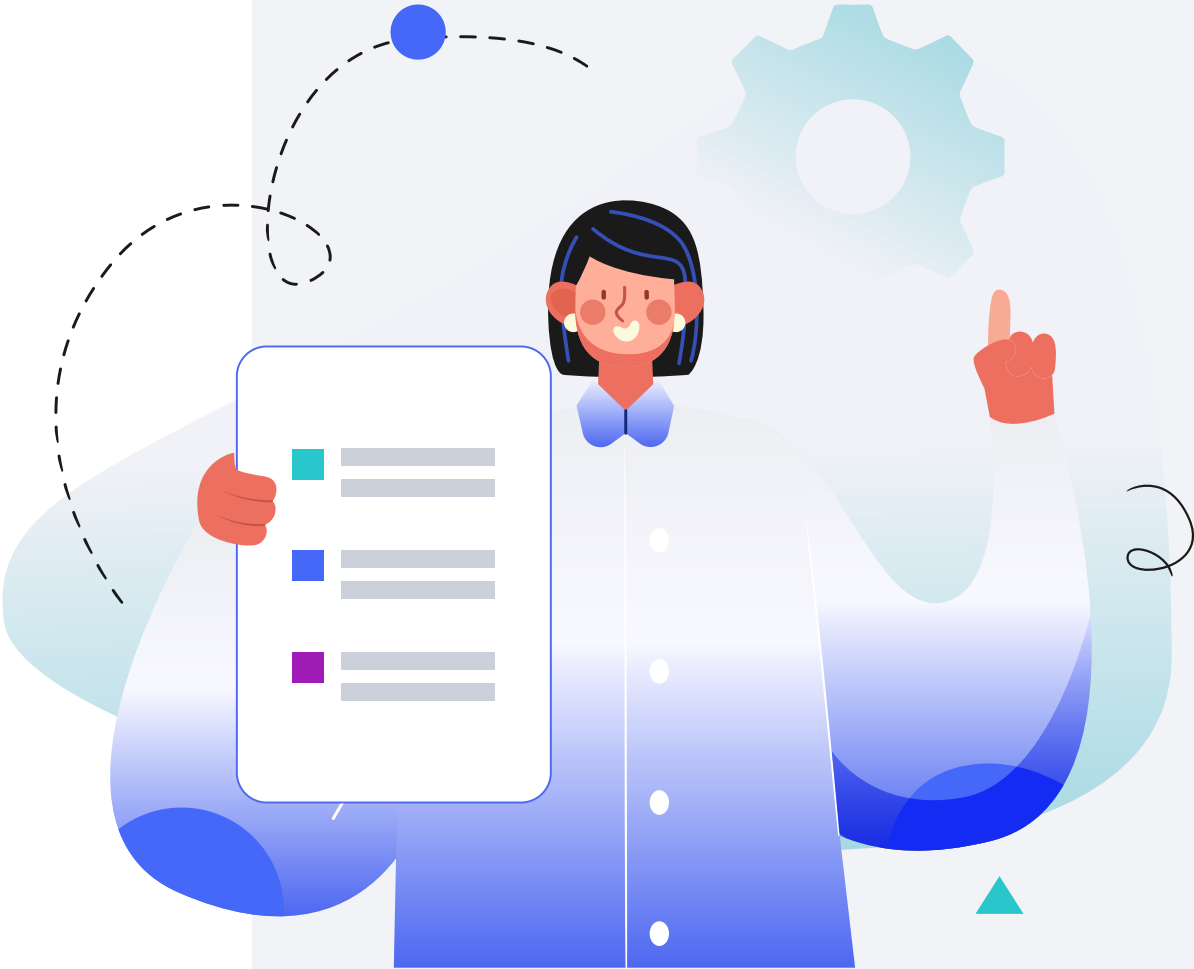
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg



How this works

Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



Similarly, our Trait Reports look at how your DNA influences your traits.



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

In total, we analyze up to 83 million genetic variants.

When we give a risk score, the risk icon tells you if you are at a higher or lower risk compared to other people:



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs.
The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

- 5 / 5
- Recommendations that are considered effective and generally recommended by experts and medical bodies.
-
- 4 / 5
- Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.
-
- 3 / 5
- Recommendations that are considered possibly effective and have many studies supporting them
-
- 2 / 5
- Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.
-
- 1 / 5
- Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.
-
- 0 / 5
- No evidence in humans.

Genotype-specific Evidence

- High-quality
- Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).
-
- Medium-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).
-
- Low-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).
-
- Indirect
- A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).
-
- In theory
- A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

A low back injury refers to any type of damage or injury to the muscles, tendons, ligaments, or nerves in the low back. This can include **strains, sprains, herniated discs**, and more.

Symptoms of a low back injury may include:

- Pain
- Stiffness
- Difficulty moving
- Muscle weakness

The severity of the injury and the symptoms experienced will vary depending on the specific type of injury and other factors. A number of factors from diet to fitness level to the environment may have an impact. Surprisingly, **genetics also plays a role in low back injuries**.

Risk Factors and Your Genetics

Key Takeaways:

- Up to **70%** of differences in people's chances of having a low back injury may be due to **genetics**.
- Other risk factors include occupations involving repetitive motions or heavy lifting, prolonged sitting/standing, over 40, obesity, smoking, lack of physical activity, previous injury, and certain health conditions.
- Lower back injuries are common among athletes, and account for **20%** of workplace injuries.
- If your genetic risk is high, you may lower overall risk by taking action on those factors that you can change.
- Click the **Recommendations** tab for potential dietary and lifestyle changes.

A low back injury refers to any type of damage or injury to the muscles, tendons, ligaments, or nerves in the low back. This can include **strains, sprains, herniated discs**, and more.

Up to **70%** of differences in people's chances of having a low back injury may be due to **genetics**. The research in this area is still young, but scientists have identified genes involved in **collagen production** [\[R\]](#)!

Other common risk factors for back injury include:

- Occupations involving repetitive motions, heavy lifting, or prolonged sitting or standing
- Age, particularly after 40
- Obesity
- Smoking
- Lack of physical activity
- Previous back injury
- Osteoporosis or other underlying conditions

It's important to note that back injuries are often caused by a combination of several of these factors, and not just one.



More likely to have a low back injury based on 171,685 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
GSDMC	rs6651255	TT
ITGA1	rs13174042	TC
MYC	rs7833174	TT
DIS3L2	rs1453867	CC
DCC	rs4384683	GA
/	rs543634974	CC
MME	rs540690425	CC
SOX5	rs12310519	CC
TEX35	rs180946349	AA
COG2	rs192174382	TT
CD1C	rs183230426	GG
FCRL5	rs72710051	GG
CD1A	rs186414191	AA
PGBD5	rs191270555	TT
PGBD5	rs187895488	GG
SFPQ	rs138217819	GG
FHAD1	rs115359709	GG
FOXD2	rs72690353	CC
CD1B	rs187608964	AA
SHCBP1L	rs191229707	CC
RGS21	rs78438749	AA
FAM163A	rs143737646	CC
CD1D	rs182220840	GG
RASAL2	rs149706870	GG

GENE	SNP	GENOTYPE
THEM4	rs72696935	AA
MR1	rs573963465	CC
TMCO1	rs114646421	TT
PAPPA2	rs75213339	CC
CHRM3	rs17597501	CC
WNT2B	rs114327304	AA
OR10T2	rs189797298	AA
RIMS3	rs112068714	GG
GJB5	rs140255954	GG
EPB41	rs558368713	AA
PYHIN1	rs141136742	CC
KIFAP3	rs116328003	CC
GRIK3	rs79680253	CC
FCRL5	rs41273447	GG
OBSCN	rs112081431	TT
MROH9	rs141482151	AA

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	Reduce Back Strain	2	Core-Strengthening Exercises20 minutes
3	Physical Therapy30 minutes	4	Meditation30 minutes
5	Hot Applications20 minutes	6	Relaxation Techniques30 minutes
7	Kinesio Taping	8	Massage30 minutes
9	Alpha-Lipoic Acid100 mg	10	Stability Training30 minutes
11	Yoga30 minutes	12	Agmatine1 g
13	Mobility Training10 minutes	14	Acupuncture1 hour
15	Dietary Protein	16	Chiropractic Adjustment30 minutes
17	Practice Exercise Snacks1 minutesute	18	Gamma-Linolenic Acid (GLA) & Alpha Lipoic Acid200 mg
19	Stretching15 minutes	20	Turmeric
21	Pilates30 minutes	22	Good Posture
23	Exercise Therapy1 hour	24	Spinal Manipulation
25	Aquatic Exercise1 hour	26	Tai Chi1 hour
27	McKenzie Method5 minutes	28	Manual Therapy
29	Curcumin500 mg	30	Myofascial Release5 minutes

31	Aquatic Therapy	30 minutes	32	Walking	30 minutes
33	Apply Heat	15 minutes	34	Strength Training	1 hour
35	Balance And Mobility Training	30 minutes	36	Biofeedback	

1



Reduce Back Strain

IMPACT5 / 5

EVIDENCE5 / 5

How to implement

Maintain good posture while sitting and standing, avoiding bending or twisting at the waist. When lifting objects, bend your knees and lift with your leg muscles, not your back. Take breaks every 30 minutes to stretch or walk if you have a sedentary job. Implement these practices daily for ongoing back health.

Description

Reducing back strain entails adopting proper posture, lifting techniques, and ergonomic practices to prevent or alleviate stress on the back muscles and spine, promoting better musculoskeletal health.

The muscles, tendons, and bones of the back are extremely complex. Together, they hold up a large portion of the body’s weight. **Any mechanical stress on the back, especially if the muscles aren’t fit, can cause strain.** Hence, back strain is very common [R].

Back strain often develops in the workplace. Jobs that increase the risk of back strain include:

- Truck drivers [R]
- Nurses and physiotherapists [R, R, R]
- Dentists [R]
- Farmers [R]
- Forklift operators [R]
- Domestic workers [R]

How it helps

Physical strain is one of the leading causes of low back injuries. Bending, heavy lifting, and poor posture can all cause problems [R, R, R].

Occupational low back injuries are especially common in the following jobs:

- Nurses [R, R]
- Material handlers [R]
- Soldiers [R, R]
- Miners [R]

People practicing the following sports are more likely to injure their low backs:

- Rowing [R, R, R]
- Golf [R, R]
- Weightlifting and calisthenics [R]
- Basketball [R]
- Football [R]
- Softball [R]
- Bowling [R]

Experts recommend reducing strain to prevent low back injuries. Techniques that may help include [R, R, R, R, R, R, R]:

- Correct posture while sitting and standing
- Proper technique when lifting heavy objects
- Use of equipment and tools that reduce back strain



PERSONALIZED TO YOUR GENES

Back strain (frequent bending and twisting) may have a stronger impact on low back injury in people with your [VDR](#) gene variant [R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
VDR	rs7975232	AA	

2



Core-Strengthening Exercises

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Incorporate exercises like planks, bridges, abdominal crunches, and leg lifts into your daily routine. Aim to do these exercises for 20-30 minutes, 3 times a week. Each exercise should be performed in sets of 10-15 repetitions.

TYPICAL STARTING DOSE

20 minutes

Description

Core-strengthening exercises target the muscles of the abdomen, lower back, and pelvis, helping improve posture, stability, and reduce the risk of back pain. Regular core workouts support a strong and balanced musculoskeletal system.

The core, or trunk, includes several groups of muscles in your abdomen, back, and pelvis. Keeping these muscles strong helps stabilize your body, twist and bend your back, protect your back from injuries, and enhance your overall fitness [\[R\]](#).

Some exercises that help strengthen the core include [\[R\]](#):

- Crunches
- Planks
- Bridges
- Supine toe taps
- Bird dogs

The core can also be strengthened by practicing Pilates, kettlebell training, and some types of yoga [\[R, R, R\]](#).

How it helps

Regular, gentle exercise may reduce the risk of painful conditions of the back, including low back injuries [\[R\]](#).

Training programs aimed at strengthening the core may reduce low back injury incidence and work restriction. Types of training that may work include [\[R, R, R\]](#):

- **Isometric training:** loading the spine while the trunk muscles contract to maintain the spine in a neutral position.
- **Isotonic training:** moving the lumbar spine through a range of motion while under load.
- **Motor control training:** isolated activation of the deep trunk musculature.

Physical readiness programs aimed at improving reaction to expected and unexpected sudden trunk loading may help people at high occupational risk of low back injuries, such as nurses [\[R, R\]](#).

Core-strengthening exercises may reduce the risk of low back injuries by strengthening the muscles that protect the back [\[R, R\]](#).

Please note: *Intense exercise may increase the risk of lower back injuries. Be careful to avoid exercises that involve heavy weight lifting, pulling, pushing, and bending sideways* [\[R, R\]](#).

3

Physical Therapy

IMPACT

3 / 5

EVIDENCE

3 / 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 may help improve back pain and physical function in people with low back injuries. However, it may take some time to experience benefits [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Specific physical therapy techniques that may help include:

- Massage [\[R\]](#), [\[R\]](#)
- Kinesio Taping [\[R\]](#)

Physical therapy may help with low back injuries by [\[R\]](#):

- Helping the spine move more smoothly
- Restoring normal muscle movement

4



Meditation

IMPACT

2 / 5

EVIDENCE

2 / 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

In people with low back injuries, meditation may slightly reduce disability in the short term and pain in the long term [\[R\]](#).

Meditation may help by reducing stress [\[R\]](#).

5



Hot Applications

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Apply a hot pack, heating pad, or a warm towel to the affected area for 15-20 minutes at a time. Do this several times a day, especially before activities that increase pain.

TYPICAL STARTING DOSE

20 minutes

Description

The use of hot applications, such as heating pads or warm compresses, can help relieve muscle tension, reduce pain, and improve blood flow to affected areas. It is a common approach for managing muscular discomfort and promoting relaxation.

People use hot applications to relieve pain, improve blood flow, and help muscles relax [\[R, R\]](#).

Types of hot applications include [\[R, R\]](#):

- Heating pads
- Hot baths
- Saunas

How it helps

Hot applications may cause a short-term reduction in low-back pain and disability. They may also work as an add-on to painkillers [\[R, R\]](#).

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

- Increasing blood flow
- Reducing pain sensitivity
- Helping muscles heal

6



Relaxation Techniques

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Incorporate relaxation techniques such as deep breathing exercises, meditation, or yoga into your daily routine. Spend at least 15-30 minutes each day practicing one of these techniques, preferably in a quiet, comfortable space without interruptions.

TYPICAL STARTING DOSE

30 minutes

Description

Relaxation techniques encompass various methods like deep breathing, yoga, meditation, and progressive muscle relaxation, aimed at reducing stress and promoting mental and physical relaxation. Practicing these techniques regularly can help manage stress, improve mental clarity, and enhance overall emotional well-being.

We all get stressed from time to time.

[Stress](#) can help you deal with a challenge or avoid danger. However, **it’s not healthy to be stressed for a long time** [\[R\]](#), [\[R\]](#).

Relaxation techniques such as [yoga](#) and [meditation](#) can relieve stress in different ways. Most of them focus on breathing and help you get rid of negative thoughts and emotions [\[R\]](#).

People use relaxation techniques to improve conditions like [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Anxiety
- Depression
- Chronic pain

Progressive muscle relaxation is another relaxation technique. In this technique, you focus on tensing and relaxing different parts of your body. It is common to start with the toes and slowly work your way up to the neck and head [\[R\]](#), [\[R\]](#).

Autogenic training is a relaxation technique that a person may carry out on their own. It uses exercises that take the mind’s attention to bodily sensations such as warmth and heaviness [\[R\]](#), [\[R\]](#).

How it helps

Stress at work may increase the risk of low back injuries. Stress-related risk factors include [\[R\]](#), [\[R\]](#):

- High workload
- High demand
- High effort-reward imbalance
- Low support
- Low decision possibilities

Stress may contribute by increasing tension in the muscles [\[R\]](#).

The following relaxation techniques may help with pain and disability in people with low back injuries:

- Meditation [\[R\]](#)
- Yoga [\[R\]](#)

7



Kinesio Taping

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Apply kinesio tape directly to the skin over the affected muscle or joint area. The tape should be stretched slightly to create tension after being applied over the pre-cleaned skin. Typically, kinesio tape can be worn for 3 to 5 days, including during showering, before it needs to be replaced.

Description

Kinesio taping involves the application of special tape to support injured muscles and joints. It can help reduce pain, improve circulation, and enhance overall mobility when used correctly.

Kinesio Taping is a physical therapy technique that uses special tapes to help support muscles and tendons. People use Kinesio Taping to help with [R](#), [R](#):

- **Musculoskeletal injuries**
- Swelling due to lymph fluid buildup (lymphedema)
- Muscle stiffness

How it helps

Kinesio Taping may improve back pain and mobility in people with low back injuries [R](#).

Kinesio Taping may help by [R](#):

- Helping the spine move more smoothly
- Restoring normal muscle movement
- Improving blood flow
- Reducing pain perception

8



Message

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Schedule a massage session, ideally with a licensed therapist, for 30-60 minutes, once a week. Choose a type of massage that suits your specific needs, such as Swedish for relaxation or deep tissue for muscle tension.

TYPICAL STARTING DOSE
30 minutes

Description

Massage therapy involves the manipulation of soft tissues to relax muscles, reduce stress, and alleviate pain. It can improve circulation, promote relaxation, and provide relief from various physical and mental health concerns.

If you’ve ever had a professional [massage](#), then you probably know how much good it can do. Massages may help with [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Anxiety
- Pain
- Fatigue

Reflexology is a type of massage. It involves applying pressure to specific parts of your feet or hands. In theory, by pressing on these areas, you can relieve tension from other parts of the body [\[R\]](#).

Acupressure is a similar technique, in which pressure points are used to help with stress and pain [\[R\]](#), [\[R\]](#).

How it helps

As a part of physical therapy, massage may help with back pain from low back injuries. However, the effects may only be short-term [\[R\]](#), [\[R\]](#).

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

- Lowering muscle tension
- Lowering stress
- Blocking pain signals
- Reducing inflammation

9



Alpha-Lipoic Acid

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 600-1800 mg of alpha-lipoic acid daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

100 mg

Description

[Alpha-lipoic acid](#) is a natural antioxidant found in almost every cell in your body. People use alpha-lipoic acid to help with issues like skin aging, weight loss, and high blood sugar [\[R, R, R\]](#).

People use alpha-lipoic acid to help with [\[R, R, R, R\]](#):

- Complications of high blood sugar
- Skin aging
- Weight loss
- Carpal tunnel syndrome

How it helps

Alpha-Lipoic Acid is known to promote recovery from nerve damage and can help with pain management. Therefore, in cases of low back injury, it may contribute to healing of the nerves and reduce discomfort.

In a study of 120 patients with lumbosacral radicular pain, Group II, which received PRF treatment along with oral ALA (1800 mg/day for 3 weeks, then 600 mg/day for 2 weeks), had significantly higher success rates at 3 and 6 months compared to Group I. Pain scores and disability index were also lower in Group II, with no major complications reported in either group [\[R\]](#).

10



Stability Training

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Integrate stability exercises into your workout routine 2-3 times per week. These exercises include activities such as using a stability ball, performing balance exercises on a balance board, or doing body-weight exercises that focus on balance and core strength, such as planks and single-leg stands. Spend approximately 20-30 minutes per session focusing on these exercises.

TYPICAL STARTING DOSE

30 minutes

Description

Stability training is a form of exercise that focuses on enhancing core strength and balance through targeted movements and exercises, often incorporating equipment like stability balls, balance boards, or resistance bands. It helps improve overall stability and posture while reducing the risk of falls and injury.

How it helps

A study aimed to compare the short-term effects of core stabilization exercise programs and traditional exercise programs on musculoskeletal injuries in soldiers. Those in the traditional exercise group with low back injuries had longer work restrictions (8.3 days) compared to the core stabilization group (4.2 days) [\[R\]](#).

In a study of 36 university football players with chronic low back pain, virtual reality balance training showed positive effects on radiological and biochemical aspects compared to combined physical rehabilitation and conventional exercises [\[R\]](#).

Stability training strengthens the core and lower back muscles, enhancing support to the spine and improving posture.

11



Yoga

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Practice yoga for at least 20 to 30 minutes a day, most days of the week. Choose a style that matches your fitness level and goals, and consider attending a class or using online resources to guide your practice.

TYPICAL STARTING DOSE

30 minutes

Description

Yoga is a mind-body practice that combines physical postures, breathing exercises, and meditation. It enhances flexibility, strength, and mental well-being and is used for stress reduction, relaxation, and overall health improvement.

[Yoga](#) combines breathing, stretching, and relaxation techniques. Practicing yoga may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Reduce [stress](#)
- Improve fitness
- Lower blood pressure and heart rate
- Manage pain

How it helps

Yoga (2 sessions/week for 12 weeks) may reduce pain and disability in people with low back injuries [\[R\]](#).

Yoga may help by reducing stress [\[R\]](#).

12



Agmatine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take agmatine as a dietary supplement in a dose of 1.6 to 6.4 milligrams per kilogram of body weight, daily. It can be consumed with or without food. For best results, continue taking it on a daily basis for at least two weeks to assess its effect on your body.

TYPICAL STARTING DOSE

1 g

Description

Agmatine is a naturally occurring compound found in the human body and in certain foods. It is sometimes used as a dietary supplement and is believed to have potential benefits for pain relief, mood regulation, and cognitive function.

How it helps

Agmatine might assist with low back injury by decreasing inflammation, which can reduce pain and promote healing. It also potentially increases nitric oxide production, which can improve blood flow to the injured area, facilitating recovery.

In a [placebo-controlled trial of 99 low back injury patients](#), supplementation with escalating agmatine sulfate doses (1335-3560 g/day) for 51 days **reduced pain and improved quality of life** [\[R\]](#).

13



Mobility Training

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate mobility exercises into your daily routine, allocating at least 10-15 minutes each morning or evening to perform stretches and mobilizations that target all major joints and muscles in your body. Consistency is key, aim to practice mobility training daily for ongoing improvements in flexibility and joint health.

TYPICAL STARTING DOSE

10 minutes

Description

Mobility training is a form of physical therapy that focuses on improving an individual's range of motion, flexibility, and functional movement patterns. It helps enhance joint mobility, reduce the risk of injuries, and promote better physical performance in daily activities or sports.

How it helps

Improving mobility through specific exercises can help in managing lower back pain and enhancing function.

14



Acupuncture

IMPACT

0 / 5

EVIDENCE

0 / 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

Acupuncture can help relieve pain and improve function in people with lower back injury by stimulating nerves and muscles.

15



Dietary Protein

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Include a variety of protein sources such as meat, fish, eggs, dairy, beans, and nuts in your diet every day, aiming for at least 0.8 grams of protein per kilogram of body weight. For more active individuals or those looking to build muscle, increase intake to 1.2 to 2.0 grams per kilogram of body weight daily, spread out over all meals to maximize absorption.

Description

Protein is essential for building and repairing tissues, supporting muscle growth, and maintaining overall bodily functions. Adequate protein intake is crucial for overall health and well-being.

Foods that are high in protein include:

- Eggs
- Nuts
- Beef
- Chicken
- Fish
- Yogurt
- Tofu
- Pork
- Cottage cheese

How it helps

Protein is vital for tissue repair and muscle recovery, which can be beneficial for healing after a low back injury.

16



Chiropractic Adjustment

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Schedule and attend chiropractic sessions 1-2 times per week for a period of 4-6 weeks initially, depending on the severity of your condition. Your chiropractor may adjust the frequency based on your progress.

TYPICAL STARTING DOSE

30 minutes

Description

Chiropractic adjustments are manual manipulation techniques used by chiropractors to improve musculoskeletal function, relieve pain, and enhance overall mobility. They are often used as part of a holistic approach to address various health concerns, primarily those related to the spine and joints.

Chiropractic adjustment involves applying pressure to different parts of the spine. It tends to help with pain and headaches [\[R\]](#), [\[R\]](#).

Only a trained specialist should perform this procedure [\[R\]](#).

How it helps

Chiropractic adjustments can align the spine, reducing pain and facilitating the healing process.

17



Practice Exercise Snacks

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Integrate short bursts of physical activity, each lasting about 1 to 2 minutes, into your daily routine at least two to three times a day. These 'exercise snacks' can include activities like doing a set of stairs, rapid bodyweight exercises, pull-ups, push-ups, sit-ups, or brisk walking.

TYPICAL STARTING DOSE

1 minutesute

Description

Staying physically active is essential for maintaining overall health and well-being. **Exercise snacks** are brief, frequent bursts of physical activity integrated into daily routines, helping combat the health risks associated with prolonged sitting and sedentary behavior, such as obesity and cardiovascular issues. Examples include taking the stairs or doing quick exercises during work breaks.

Staying active can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [\[R\]](#).

Exercise snacks are short, quick bursts of physical activity performed throughout the day, designed to break up prolonged periods of sitting or inactivity. These brief bouts of exercise can be as short as a few minutes and are incorporated into daily routines to boost overall physical activity levels.

Exercise snacks are crucial for health because they combat the negative effects of sedentary behavior, such as prolonged sitting, which is associated with an increased risk of obesity, cardiovascular diseases, diabetes, and musculoskeletal issues. They help improve blood circulation, regulate blood sugar levels, and enhance mood and cognitive function.

Examples of exercise snacks include taking the stairs instead of the elevator, doing a few minutes of bodyweight exercises (e.g., squats or push-ups) during work breaks, or walking briskly for a few minutes after meals. These short, frequent bursts of activity contribute to a more active lifestyle and can significantly benefit overall health by reducing the risks associated with excessive sitting.

How it helps

Remaining active prevents stiffness and maintains muscle strength, aiding in lower back injury recovery.

18



Gamma-Linolenic Acid (GLA) & Alpha Lipoic Acid

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a supplement containing 200-500 mg of gamma-linolenic acid (GLA) and 300-600 mg of alpha-lipoic acid daily, preferably with meals to enhance absorption. This regimen should be followed daily for at least 3-6 months to assess its effectiveness.

TYPICAL STARTING DOSE

200 mg

Description

GLA is an omega-6 fatty acid found in certain plant oils, such as evening primrose oil and borage oil. It may have anti-inflammatory properties and can potentially benefit skin health, hormonal balance, and overall well-being. [Alpha-lipoic acid](#) is a natural antioxidant found in almost every cell in your body. People use alpha-lipoic acid to help with issues like skin aging, weight loss, and high blood sugar.

How it helps

In a study with 203 patients, one group received a combination of ALA and GLA along with rehabilitation for six weeks, while the other group received only rehabilitation. The ALA and GLA group showed improved neuropathic symptoms and deficits in radicular neuropathy [\[R\]](#).

GLA helps reduce inflammation, which can alleviate pain from a low back injury. Alpha lipoic acid improves nerve function and reduces pain, which could help if your back injury involves nerve damage.

19



Stretching

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate stretching exercises into your daily routine, dedicating at least 10-15 minutes each day. Focus on major muscle groups such as the neck, shoulders, chest, back, hips, and legs. For best results, stretch both before and after other physical activities, holding each stretch for 15-30 seconds without bouncing.

TYPICAL STARTING DOSE

15 minutes

Description

Stretching involves gently elongating the muscles to improve flexibility, reduce muscle tension, and enhance joint mobility. Regular stretching can help prevent injuries, promote better posture, and increase overall physical comfort.

Stretching is a form of physical exercise that involves moving a muscle or group of muscles to their maximum range of motion. The most common types are **dynamic** (involving movement) and **static** stretching.

Stretching can help **improve flexibility, range of motion, and posture**. It may also relieve stress, reduce muscle soreness and tension, increase blood flow, and reduce the risk of injuries.

To get the most out of stretching, try to do it regularly, breathe deeply, and ease into the stretches.

How it helps

Regular stretching can improve flexibility in the spine and surrounding muscles, reducing tension and pain.

20



Turmeric

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate 500-1000 mg of turmeric into your daily diet, either by adding ground turmeric spice to your food, such as in curries, soups, and smoothies, or by taking a dietary turmeric supplement. This should be done daily for at least 8 weeks to observe potential health benefits.

Description

Turmeric is a bright yellow spice derived from the root of the *Curcuma longa* plant. It contains curcumin, a potent antioxidant and anti-inflammatory compound. Turmeric is used for various health conditions, including reducing inflammation, alleviating joint pain, and supporting digestive health.

How it helps

Turmeric contains curcumin, which has been shown to have anti-inflammatory effects that could help ease pain and swelling in a low back injury.

21



Pilates

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Engage in Pilates exercises for at least 20-30 minutes, 3 times a week. Focus on core strength, flexibility, and mindful breathing. It is suitable for both beginners and advanced individuals, adjusting the difficulty of exercises as necessary.

TYPICAL STARTING DOSE

30 minutes

Description

Pilates is a form of exercise that focuses on strengthening the core, improving flexibility, and enhancing overall body awareness through controlled movements and breathing techniques. Its health benefits include increased core strength, improved posture, enhanced flexibility, and better balance, making it a popular choice for those seeking a holistic approach to fitness.

Pilates is a type of exercise that emphasizes proper alignment, breathing techniques, and precise movements.

It involves a series of controlled movements performed on a mat or with specialized equipment, such as a reformer or Cadillac. Pilates helps strengthen the core muscles, improve flexibility, and promote mind-body awareness.

How it helps

Pilates emphasizes core strength and could support the lower back, improving posture and reducing pain.

22



Good Posture

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Ensure your back is straight, shoulders pulled back but relaxed, and your head is aligned above your shoulders when sitting or standing. When sitting, keep your feet flat on the ground, and use a chair that supports your lower back. Do this continuously throughout the day, reminding yourself to adjust your posture whenever you notice it lapsing.

Description

Maintaining good posture helps prevent musculoskeletal problems, reduces the risk of back and neck pain, and supports overall spinal health. Proper posture can also enhance self-confidence and improve breathing and digestion.

Good posture may help lessen strain on your body. It involves keeping your head, shoulders, and hips aligned [\[R\]](#).

Forward head posture is a type of poor posture in which the head is pushed forward or tilted down toward the chest. This posture is common when using computers or smartphones [\[R\]](#).

Poor posture may lead to [\[R\]](#), [\[R\]](#):

- Muscle pain
- Headaches
- Breathing problems

How it helps

Maintaining good posture reduces strain on the lower back and can prevent additional injuries.

23



Exercise Therapy

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Begin by consulting with a physical therapist to assess your condition and create a personalized exercise plan. Follow the prescribed exercises consistently, focusing on areas needing improvement, such as strength, flexibility, or mobility. Start with gentle exercises, gradually increasing the intensity as you build strength. Ensure you perform the exercises correctly to avoid injury. Regularly check in with your therapist to adjust the plan based on your progress and feedback. Stay committed to the routine for the best results.

TYPICAL STARTING DOSE

1 hour

Description

Exercise therapy is a tailored approach to physical activity designed to improve mobility, strength, and overall health. It is often used to rehabilitate injuries, manage chronic conditions, and promote cardiovascular fitness.

How it helps

Exercise therapy focuses on specific movements and exercises to restore function and reduce pain after a lower back injury.

24



Spinal Manipulation

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Schedule regular appointments with a licensed chiropractor or physical therapist trained in spinal manipulation. These sessions should occur 1-2 times per week for 4-6 weeks to assess effectiveness for your condition.

Description

Spinal manipulation is a therapeutic technique performed by chiropractors or physical therapists to address musculoskeletal issues, improve spinal alignment, and alleviate back pain and discomfort.

How it helps

Spinal manipulation by a trained professional can align the spine and alleviate lower back pain.

25



Aquatic Exercise

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Participate in aquatic exercise sessions, such as swimming or water aerobics, for 60 minutes, 3 to 5 times per week. Ensure the exercise intensity is moderate, allowing you to talk but not sing during the activity. Consistency over time is key, so aim to incorporate this into your weekly routine for at least 3 to 6 months to observe benefits.

TYPICAL STARTING DOSE

1 hour

Description

Aquatic exercise involves physical activity performed in water, such as swimming, water aerobics, or aquatic therapy. It is gentle on the joints, making it suitable for individuals with mobility issues, and can help improve cardiovascular fitness and muscle strength.

Aquatic exercise is any type of low-impact physical activity performed in a pool. In this type of cardio exercise, water helps the body float, which reduces gravity and makes the practice more comfortable and tolerable [\[R\]](#), [\[R\]](#).

Compared to land-based exercise, aquatic exercise may be better by [\[R\]](#):

- Reducing the stress and impact on joints
- Lowering fracture risk

Hence, it is usually **recommended for the elderly**. Aquatic exercise is also suitable for people who don't know how to swim [\[R\]](#).

How it helps

Performing exercises in water reduces the impact on the lower back, allowing for gentle strengthening and mobility improvement.

26



Tai Chi

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Practice Tai Chi for 30 to 60 minutes at least twice a week. Choose a quiet, spacious area and follow along with a qualified instructor, either in person at a class or through an online video tutorial, to ensure proper technique and maximum benefit.

TYPICAL STARTING DOSE

1 hour

Description

Tai Chi is a traditional Chinese mind-body practice involving slow, flowing movements and deep breathing. It is known for its potential to reduce stress, improve balance, and enhance overall physical and mental well-being.

Tai chi involves gentle movements and breathing to strengthen and relax the mind and body. Practicing tai chi may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Manage pain
- Improve fitness
- Increase well-being
- Improve sleep and mood

How it helps

Tai Chi promotes balance and flexibility, which may alleviate lower back pain and support recovery.

27



McKenzie Method

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Perform the McKenzie method exercises daily, ideally under the guidance of a certified McKenzie therapist. Begin with 5-10 minutes per session, gradually increasing as advised. Continue as long as necessary to improve symptoms, maintaining regular sessions for at least 4-6 weeks for noticeable results.

TYPICAL STARTING DOSE

5 minutes

Description

The McKenzie Method is a physical therapy approach designed to manage musculoskeletal pain, especially in the back and neck. It focuses on exercises and movements that promote pain relief and spinal health.

How it helps

The McKenzie Method uses specific movements and postures to alleviate lower back pain and expedite recovery.

28



Manual Therapy

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Schedule a session with a certified manual therapist, such as a physical therapist or chiropractor, once a week for at least 3 to 6 weeks. During these sessions, allow the therapist to apply hands-on techniques to manipulate muscles and joints aiming to improve mobility and reduce pain.

Description

Manual therapy encompasses various hands-on techniques used by healthcare professionals, including physical therapists and massage therapists, to alleviate pain, improve mobility, and promote overall musculoskeletal health. It can be effective for addressing a wide range of conditions, from muscle tension to joint disorders.

How it helps

Manual therapy includes hands-on techniques that can mobilize the spine and soft tissues, aiding in recovery.

29



Curcumin

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a 500 mg curcumin supplement daily with food. To enhance absorption, take it with a meal that contains fats or oils since curcumin is fat-soluble.

TYPICAL STARTING DOSE

500 mg

Description

Curcumin is a compound found in turmeric known for its anti-inflammatory and antioxidant properties. It has been studied for its potential to reduce inflammation, support joint health, and contribute to overall well-being.

[Turmeric](#) is a yellow spice from India. It may reduce inflammation and [oxidative stress](#) [R].

The most important active compound in turmeric is **curcumin**. People use curcumin for [R, R, R, R, R, R]:

- Joint pain
- Hay fever
- Mood
- High blood sugar
- Gut health
- Liver health

How it helps

Curcumin, the active compound in turmeric, has anti-inflammatory properties that can assist in reducing pain and inflammation in back injuries.

30



Myofascial Release

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate myofascial release into your routine by using tools like foam rollers or massage balls, focusing on tense areas for about 5-20 minutes daily. You can also seek professional myofascial release therapy sessions, which typically last about 30-60 minutes, 1-2 times per week for targeted treatment.

TYPICAL STARTING DOSE

5 minutes

Description

Myofascial release is a type of massage therapy that can help to improve range of motion, reduce pain, and increase circulation. It can also help to improve posture and reduce stress.

How it helps

Myofascial release involves manual pressure on connective tissues to reduce pain and tightness in the lower back.

31



Aquatic Therapy

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Participate in aquatic therapy sessions 2-3 times a week for at least 30 minutes. These sessions should be guided by a professional therapist who specializes in aquatic therapy, and the program should be tailored to your specific health condition and physical capabilities.

TYPICAL STARTING DOSE

30 minutes

Description

Aquatic therapy involves performing exercises and rehabilitation activities in a water environment. It is particularly beneficial for individuals recovering from injuries, surgeries, or certain medical conditions, as the buoyancy of water reduces the impact on joints, eases pain, and improves mobility and muscle strength.

How it helps

Aquatic therapy utilizes water's buoyancy to reduce stress on the lower back, providing a safe environment for rehabilitation.

32

Walking

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate at least 30 minutes of brisk walking into your daily routine, aiming for a minimum of five days a week. This can be done in one continuous session or broken into shorter periods, such as three 10-minute walks throughout the day.

TYPICAL STARTING DOSE

30 minutes

Description

Walking is a low-impact form of exercise that can contribute to cardiovascular fitness, weight management, and improved overall health. It is used to support physical activity goals, enhance mood, and promote better cardiovascular health.

How it helps

Walking is a low-impact activity that increases blood flow and can aid in the healing process for lower back injuries.

33

Apply Heat

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Place a warm, not hot, heating pad or a warm wet towel on the affected area for 15-20 minutes at a time. Do this several times a day, ensuring there's at least a 1-hour interval between sessions to avoid skin damage.

TYPICAL STARTING DOSE

15 minutes

Description

Applying heat, such as through heating pads or warm baths, can help relieve muscle tension and soothe pain. It is a common method for managing muscle aches, menstrual cramps, and minor injuries.

People use hot applications to relieve pain, improve blood flow, and more [\[R, R\]](#).

Types of hot applications include [\[R, R\]](#):

- Heating pads
- Hot baths
- Saunas
- Hot water bottles

How it helps

Applying heat to an injured lower back can promote blood flow, which aids in the healing process and reduces discomfort.

34

Strength Training

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Engage in strength training exercises, such as weight lifting or bodyweight exercises, for 60 minutes per session, 2 to 3 times per week. Ensure you work all major muscle groups and rest each muscle group for at least 48 hours before exercising it again.

TYPICAL STARTING DOSE

1 hour

Description

Strength training, also called resistance or *anaerobic* training, contracts the muscles against an external resistance for short periods of time. This helps gain muscle strength, tone, and mass. This can include activities like weight lifting, pushups, and crunches.

Strength training, also known as resistance training, is a type of physical exercise that uses resistance to build strength, anaerobic endurance, and size [R]. Some of the most common strength training methods include [R]:

- Weight lifting
- Bodyweight exercises like push-ups, pull-ups, squats, and lunges.
- Resistance bands
- Plyometrics or explosive force exercises

The benefits of strength training are numerous, and include [R]:

- Increased muscle strength
- Improved bone health
- Reduced risk of injury
- Improved balance and coordination
- Enhanced mood
- Boost metabolism

Consult with a doctor before starting any new exercise program, especially if you have any health conditions.

How it helps

Strength training for the core and back muscles can provide better support for the spine and reduce injury recurrence.

35



Balance And Mobility Training

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate balance and mobility exercises into your routine three to four times per week. Each session should last approximately 30 minutes and include activities such as standing on one foot, walking heel to toe, and tai chi or yoga. Start with simple exercises and gradually increase difficulty as your balance improves.

TYPICAL STARTING DOSE

30 minutes

Description

Balance and mobility training exercises, such as yoga or tai chi, can improve stability and reduce the risk of falls, particularly among older adults. These exercises enhance overall physical function.

How it helps

Balance and mobility training can restore function and reduce the risk of further injury by improving stability.

36



Biofeedback

IMPACT

0 / 5

EVIDENCE

0 / 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

Biofeedback helps you understand your body's signals and teaches you to control responses such as pain. For a low back injury, it can help reduce pain and tension by improving your muscle control and relaxation, supporting recovery.

Next Steps

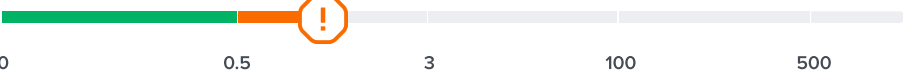
Remember, your genes only tell one important part of your health story!

Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

Your lab results

Your lab results are impacted by the combined effect of your genes, environment and lifestyle.

Lab tests will give you the best picture of your current health status, while your genes provide insight into your health predispositions and which recommendations are best for you.

	Vitamin D, 25-Hydroxy, Total	58.59 ng/mL		9 Nov 2025
	Creatine Kinase	173 IU/L		9 Nov 2025
	hs-CRP	1.6 mg/L		9 Nov 2025

Your Lifestyle Assessments

Ever heard of the term Nature vs. Nurture?

The thing is, both DNA and environment play a role in determining your health risks. The following assessments shows how much of an impact your lifestyle, environment and medical history are having on your health risks.

✓

LIFESTYLE

You have a **reduced risk** of low back injury based on the answers you provided.

Your Lifestyle Risk

Low

Decreased

Average

Increased

High

Factors impacting your risk:

Do you work at an unadjusted chair, computer, or desk? No	Decreasing Risk ✓
Do you often feel stressed, unmotivated, or unsupported at work? No	Decreasing Risk ✓
Do you smoke tobacco? No, never	Decreasing Risk ✓
Do you have a job that requires you to do physically demanding or repetitive work? No	Decreasing Risk ✓
What is your age? 41	Decreasing Risk ✓
How many hours do you drive in a typical week? 10-19 hours	Decreasing Risk ✓
Your BMI: 22.77	Decreasing Risk ✓
What is your height? 165 cm	No impact -
What is your current weight? 62.0 kg	No impact -