

# Ankle Injury

## DNA Health Report

REPORT CATEGORY —



INJURIES

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

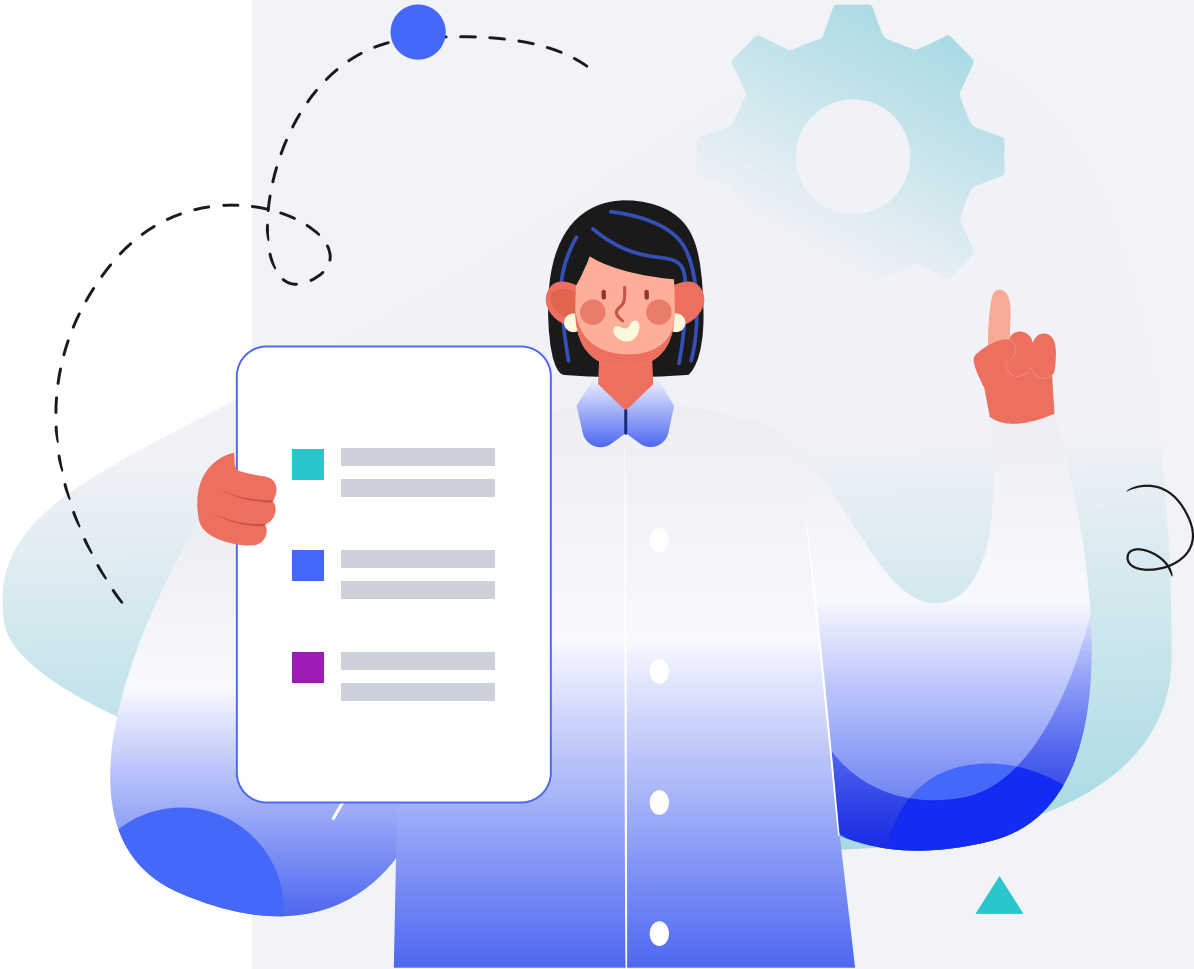
Male

HEIGHT

5ft 5" 165cm

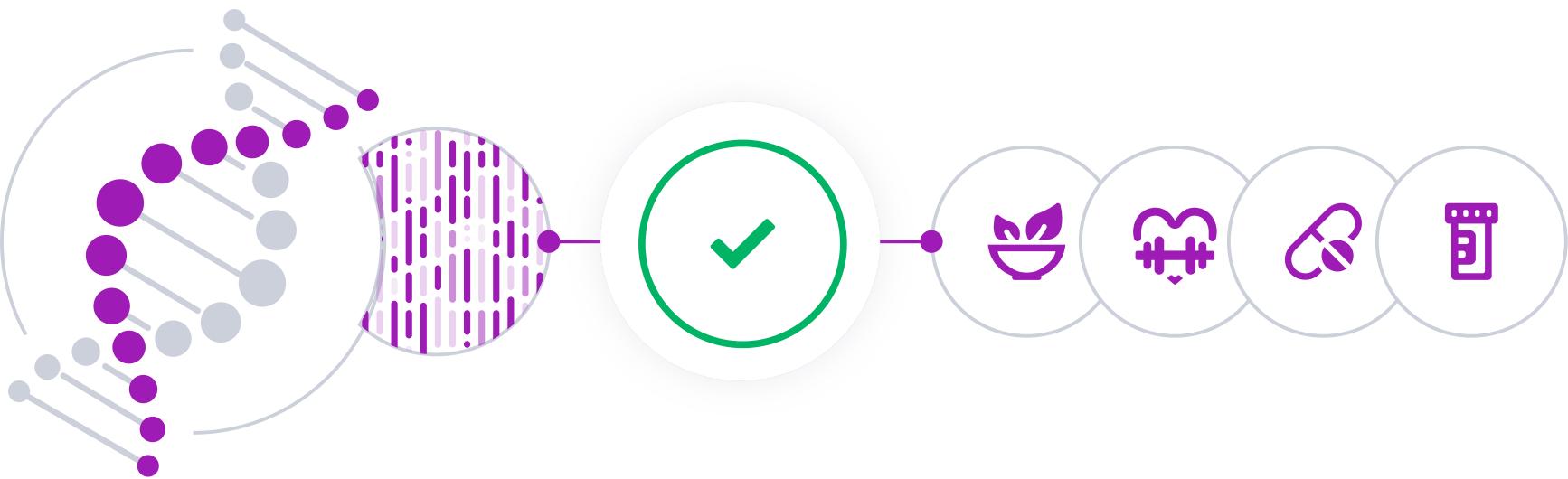
WEIGHT

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.

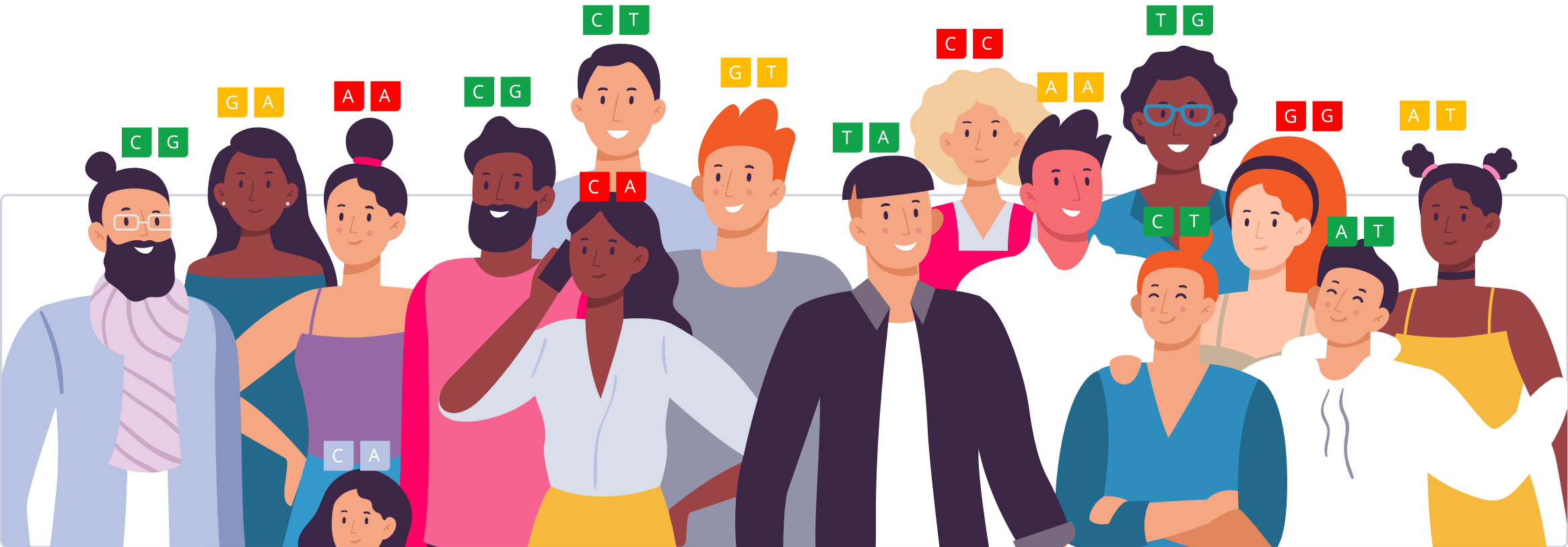


Similarly, our Trait Reports look at how your DNA influences your traits.



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

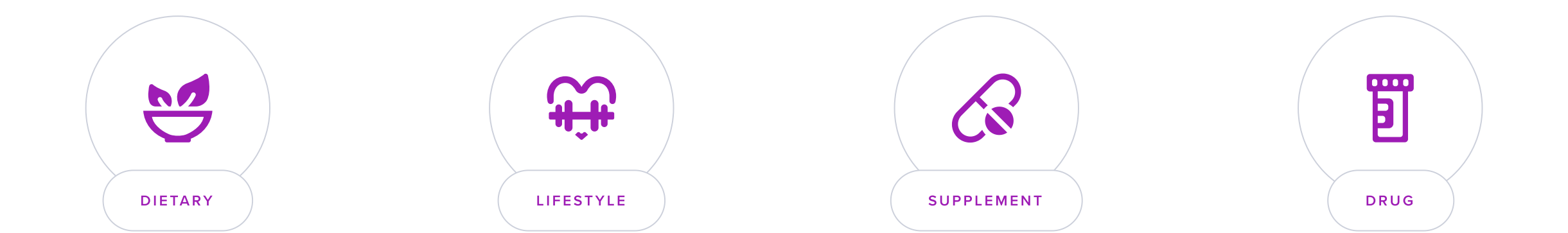
You have 2 risk alleles

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

The ankle is a joint that connects the bones of the foot to the bones of the leg. It has a wide range of motion: it can bend sideways, upward, and downward [\[R\]](#).

In addition to bones, the ankle joint contains [\[R\]](#):

- **Cartilage:** Cushions and protects the bones
- **Tendons:** Connect muscles to bones
- **Ligaments:** Connect bones and stabilize joints

If a jump, fall, pivot, or step causes the ankle to bend in an odd way, the ligaments can stretch or tear. This is called a **sprained ankle**. Sprains most often occur to the ligaments on the outer side of the ankle [\[R\]](#), [\[R\]](#).

Ankle sprains are very common. Every year, about 2 million ankle sprains are reported in the US alone [\[R\]](#).

Symptoms of ankle sprains include [\[R\]](#):

- Pain
- Swelling and bruising
- Inability to move the ankle normally
- Ankle instability

Minor sprains can be managed using the **RICE** method [\[R\]](#):

- **Resting**
- **Icing**
- **Compressing**
- **Elevating**

More serious sprains may require [\[R\]](#):

- Painkillers
- Physical therapy
- Devices (e.g., crutches, ankle braces, or sports tape)
- Surgery

Physical therapy may be especially important to help prevent another ankle sprain from reoccurring. Up to 60% of people who sprain their ankle for the first time may be at risk of another sprain [\[R\]](#).



# Ankle Injury Risk Factors

PERSONALIZED TO GENES

Based on the genetic variants we looked at, you may be more likely to develop an ankle injury.

To prevent an ankle injury, try to [R](#), [R](#):

- Maintain a healthy weight
- Be careful with sports that involve jumping or sudden changes in movement (e.g., basketball and soccer)
- Stretch and warm up properly and ease into your workout
- Work on your balance and core strength
- Strengthen your ankle and leg muscles with single-leg exercises
- Wear proper sports shoes and equipment (e.g., an ankle brace)
- Avoid exercising on uneven surfaces

The ankle is a joint that connects the bones of the foot to the bones of the leg. It can bend sideways, upward, and downward. If a jump, fall, pivot, or step causes the ankle to bend in an odd way, the ligaments can stretch or tear. This is called a **sprained ankle** [R](#), [R](#), [R](#).

Some factors may increase the risk of ankle sprains. These include [R](#), [R](#):

- Taking part in sports that involve jumping or sudden changes in movement (e.g., basketball and soccer)
- Poor ankle strength, flexibility, or stability
- A previous ankle injury
- Wearing improper shoes
- Uneven surfaces
- Excess weight
- **Genetics**



MORE LIKELY

More likely to have an ankle injury based on 19,077 genetic variants we looked at



PERCENTILE



Your risk is greater than 91% of the population and lower than 9% of the population.

Your top variants that most likely impact your genetic predisposition:

| GENE    | SNP         | GENOTYPE |
|---------|-------------|----------|
| COL5A2  | rs62182422  | TC       |
| SLC40A1 | rs62187073  | TC       |
| HIVEP1  | rs1569733   | TC       |
| /       | rs270481    | GA       |
| EFNB2   | rs74576663  | TG       |
| CCSER1  | rs62309831  | GA       |
| TENM3   | rs35619804  | AG       |
| UGDH    | rs56118664  | CC       |
| /       | rs139095264 | GG       |
| PRR16   | rs4340940   | CC       |
| CHD9    | rs72797642  | AA       |
| GATA3   | rs142347570 | AA       |
| NPY2R   | rs115005126 | TT       |
| RALGPS2 | rs187271145 | GG       |
| NFIB    | rs13286037  | TT       |
| SGO1    | rs12489876  | GG       |
| RABEPK  | rs117724125 | CC       |
| ASB18   | rs78681719  | TT       |
| C8ORF48 | rs73210044  | GG       |
| GRIA1   | rs140053818 | GG       |
| DLC1    | rs73208003  | GG       |
| NTS     | rs10506913  | AA       |
| /       | rs75670712  | TT       |
| DEPTOR  | rs149163456 | CC       |



| GENE    | SNP        | GENOTYPE |
|---------|------------|----------|
| GTF3A   | rs67227314 | CC       |
| SLC20A2 | rs7459609  | CC       |
| HAS2    | rs13259692 | AA       |
| TCF12   | rs3803452  | TT       |
| ISOC1   | rs35100037 | CC       |
| SOX2    | rs34308817 | GG       |
| BCHE    | rs34324672 | CC       |
| PRPSAP2 | rs1634423  | CC       |
| SRPRB   | rs2718798  | CC       |

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 Ankle Strain          | 2      | Exercise At Least One Hour a Day1 hour  |
| 3      | Physical Therapy30 minutes   | 4      | Stability Training30 minutes            |
| 5      | Jumping15 minutes            | 6      | Vitamin C2000 mg                        |
| 7      | Topical Arnica               | 8      | Hydrogen Water                          |
| 9      | Collagen Peptides10 g        | 10     | Compression Stockings                   |
| 11     | Strength Training1 hour      | 12     | Dietary Protein                         |
| 13     | Massage30 minutes            | 14     | Flexibility Training20 minutes          |
| 15     | Stretching15 minutes         | 16     | Bromelain                               |
| 17     | Use Cushioned Shoes          | 18     | Balance And Mobility Training30 minutes |
| 19     | Aquatic Therapy30 minutes    | 20     | Core-Strengthening Exercises20 minutes  |
| 21     | Low-Intensity Exercise1 hour | 22     | Manual Therapy                          |

1



Reduce Ankle Strain

IMPACT4 / 5

EVIDENCE4 / 5

## How to implement

Wear supportive shoes that fit well, and avoid high heels or shoes with little cushioning. Incorporate daily exercises that strengthen the muscles around your ankles, like calf raises or ankle circles, and avoid activities that excessively stress your ankles, such as running on uneven surfaces. Aim for at least 20 minutes of ankle-strengthening exercises three times a week.

## Description

Reducing ankle strain typically refers to taking measures to prevent or alleviate stress and discomfort in the ankle joint. These measures may include proper footwear, exercises, and rest to promote joint health and reduce the risk of injury.

The ankle can bend in multiple directions. If a jump, fall, pivot, or step causes it to bend in an odd way, the ligaments can stretch or tear [\[R, R, R\]](#).

Ankle sprains are a common sports injury, especially in those that require jumping, cutting action, or rolling or twisting of the foot. Sports most commonly associated with ankle sprains include [\[R, R, R\]](#):

- Basketball
- Tennis
- Football
- Soccer
- Trail running
- Volleyball
- Climbing

## How it helps

Experts recommend the following strategies to minimize the risk of ankle sprains [\[R, R\]](#):

- Being mindful of your technique when you change direction or land from a jump
- Warming up and stretching before physical activity
- Wearing properly-fitting, appropriate sports shoes
- Avoiding high-heeled shoes
- Avoiding exercise on uneven surfaces



2



Exercise At Least One Hour a Day

IMPACT

4 / 5

EVIDENCE

4 / 5

## How to implement

Dedicate a minimum of 60 minutes to moderate-intensity activities such as brisk walking, swimming, or cycling. Do this most days of the week, aiming for at least 5 days to optimize benefits.

TYPICAL STARTING DOSE

1 hour

## Description

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

There are many ways you can be active. You can walk, run, swim, dance, or play team sports. **Everything counts, and it's never too late to start!**

Try to get at least **60 minutes of moderate physical activity on most days**, including walking. **Getting a mix of cardio (min 150 min/day) and strength training (min 2 times a week) may be optimal.**

## How it helps

Poor strength, flexibility, and balance in the ankles increases the risk of ankle sprains. Exercise-based injury prevention programs may reduce the risk of ankle injuries in athletes. These programs typically include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Leg strengthening exercises
- Balance training exercises
- Training to improve technique when jumping, landing, and changing direction

**Experts especially recommend these programs to prevent recurrent ankle sprains [\[R\]](#).**

3

Physical Therapy

IMPACT

3 / 5

EVIDENCE

4 / 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

Serious ankle sprains may require immobilization and stabilization with braces, bandages, sports tapes, or even casts during the first days [\[R\]](#), [\[R\]](#), [\[R\]](#).

Once the pain and swelling are lessened enough, a healthcare professional may recommend exercise therapy to regain ankle strength, function, and stability. Exercise therapy may also reduce the risk of recurrent ankle sprains [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

4



Stability Training

IMPACT3 / 5

EVIDENCE3 / 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 meta-analysis of 12 trials found balance training effective in improving the dynamic posture stability of chronic ankle instability patients [\[R\]](#).

Injury prevention programs with balance training reduced ankle injuries by 36% in a study of 4,959 soccer players. FIFA programs reduced injuries by 37%, while balance exercises alone reduced them by 42% [\[R\]](#).

A meta-analysis of 15 trials and 457 volunteers found balance training more effective than regular exercise in improving functionality, ankle instability, and dynamic balance. Compared to strength training, balance training was only more effective for functionality improvement [\[R\]](#).

Stability training enhances ankle strength and flexibility, which can accelerate healing and reduce the risk of future injuries.

5



Jumping

IMPACT

3 / 5

EVIDENCE

3 / 5

## How to implement

Incorporate jumping exercises, such as jump squats or jumping jacks, into your fitness routine. Aim for at least 3 sessions per week, each session lasting 10-15 minutes. Ensure to have rest days in between to allow for muscle recovery.

TYPICAL STARTING DOSE

15 minutes

## Description

Jumping, such as through activities like jumping jacks or trampolining, is a cardiovascular exercise that can improve heart health, strengthen muscles, and boost overall fitness. It's an effective way to increase physical activity and promote a healthy lifestyle.

## How it helps

Poor strength, flexibility, and balance in the ankles increases the risk of ankle sprains. Exercise-based injury prevention programs may reduce the risk of ankle injuries in athletes. These programs typically include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Leg strengthening exercises
- Balance training exercises
- Training to improve technique when jumping, landing, and changing direction

Experts especially recommend these programs to prevent recurrent ankle sprains [\[R\]](#).



6



Vitamin C

IMPACT

2 / 5

EVIDENCE

2 / 5

## How to implement

Take 500-2000 mg of vitamin C supplement daily. It can be taken at any time of the day, with or without food, according to personal preference or tolerance.

TYPICAL STARTING DOSE

2000 mg

## Description

[Vitamin C](#) is an essential nutrient. This means that our bodies can’t produce it on their own, so we have to get it from food or supplements [\[R\]](#).

Foods rich in Vitamin C include: [\[R\]](#)

- Citrus Fruits
- Peppers
- Brussel sprouts
- Kiwi
- Broccoli
- Tomato
- Cantaloupe
- Cauliflower
- Spinach

Vitamin C has antioxidant properties. It supports immunity, heart health, and wound healing [\[R\]](#), [\[R\]](#).

Vitamin C deficiency is called *scurvy*. In the past, many sailors suffered from it [\[R\]](#).

## How it helps

Vitamin C, particularly when used in combination with other supplements, may offer benefits for tendinopathies and connective tissue injuries by [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Enhancing collagen production
- Reducing inflammation
- Improving tendon healing

7



Topical Arnica

IMPACT

2 / 5

EVIDENCE

1 / 5

## How to implement

Apply arnica cream or gel to the affected area 2 to 3 times daily for up to 3 weeks. Ensure the skin is clean and unbroken before application.

## Description

Arnica is a natural plant-derived remedy often used topically for its potential to reduce bruising, inflammation, and muscle soreness. It can be applied to areas of the body experiencing minor injuries or trauma.

[Arnica](#) is a daisy-like flower that grows in the mountains. People use arnica creams for [\[R, R\]](#):

- Muscle or joint pain
- Swelling
- Bruises

## How it helps

A spray for sports injuries with 10% arnica tincture and an anti-inflammatory painkiller (hydroxyethyl salicylate) **reduced the pain from ankle distortion and sports injuries** in two clinical trials of over 600 people. The combination worked better than either substance alone [\[R, R\]](#).

8



Hydrogen Water

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Drink 1.5 to 2 liters of hydrogen-rich water daily, spread out over the course of the day. It is best to start with a lower volume and gradually increase it to allow your body to adjust. This practice should be continued daily as a part of your lifestyle to maintain its potential benefits.

## Description

Drinking hydrogen-rich water is believed to have antioxidant properties and may help combat oxidative stress in the body. Some studies suggest it could potentially support overall health and well-being.

## How it helps

Drinking hydrogen-rich water can help ankle injuries by reducing inflammation and promoting faster healing, as it carries anti-inflammatory properties and further boosts antioxidant activity. It also aids in managing pain by decreasing oxidative stress, contributing to overall recovery.

In a non-placebo-controlled trial of 18 professional athletes with acute ankle sprains, receiving six 30-minute ankle baths with hydrogen-rich water was as effective as the RICE protocol at improving swelling, range of motion, and single-leg balance [\[R\]](#).

9



Collagen Peptides

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Take 10-20 grams of collagen peptides daily, mixing the powder into a glass of water, juice, or a smoothie. It is recommended to consume this supplement on an empty stomach to improve absorption, ideally first thing in the morning or right before bedtime for a period of at least 8-12 weeks to observe beneficial effects.

TYPICAL STARTING DOSE

10 g

## Description

Collagen peptides are a form of collagen that is broken down into smaller, more easily absorbed molecules. They are commonly used in supplements and skincare products for their potential to promote skin elasticity, hair strength, and nail health.

[Collagen](#) is a protein that helps build skin, bones, and joints [\[R\]](#), [\[R\]](#).

People use collagen supplements for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Joint pain
- Skin health
- Hair growth

## How it helps

Taking collagen peptides (5 g/day for 6 months) may reduce recurrent ankle injuries in people at risk [\[R\]](#).

10



Compression Stockings

IMPACT

0 / 5

EVIDENCE

0 / 5

## How to implement

Wear compression stockings during the day, especially when you expect to be sitting or standing for long periods. They should be put on before getting out of bed in the morning and removed before going to bed at night. Ensure they are the correct size and compression level as advised by a healthcare professional.

## Description

Compression stockings are often worn to improve blood circulation in the legs and reduce the risk of conditions like varicose veins and deep vein thrombosis. They can be beneficial for individuals who spend long periods sitting or standing and those with certain medical conditions that affect blood flow.

## How it helps

Compression can help reduce swelling and provide support to the injured ankle.

11



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

Strengthening the muscles around the ankle can provide better support and prevent future injuries.



12



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

Adequate protein intake is essential for tissue repair and muscle recovery following an ankle injury. Protein provides the building blocks for new tissue formation.

13



Massage

IMPACT

0 / 5

EVIDENCE

0 / 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

Massage can promote relaxation, ease pain, and improve blood flow to the injured area.

14



Flexibility Training

IMPACT

0 / 5

EVIDENCE

0 / 5

## How to implement

Incorporate flexibility training exercises, such as yoga or static stretching, into your routine for at least 20-30 minutes a day, three to five times a week. Focus on stretching all major muscle groups, holding each stretch for 10-30 seconds without bouncing, and breathing deeply to maximize benefits.

TYPICAL STARTING DOSE

20 minutes

## Description

Flexibility training, such as yoga and stretching exercises, can improve joint range of motion, reduce the risk of injury, and promote better posture. Incorporating flexibility exercises into a fitness routine supports physical comfort and overall mobility.

## How it helps

Improving flexibility can aid in the recovery process and prevent future injuries.

15



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 help maintain flexibility and range of motion in the healing ankle.

16



Bromelain

IMPACT

0 / 5

EVIDENCE

0 / 5

## How to implement

Take 500mg of bromelain supplement two to three times daily, preferably with food to reduce the risk of gastrointestinal discomfort. It is recommended to use for short-term relief, typically not exceeding several months, unless supervised by a healthcare provider.

## Description

Bromelain is an enzyme found in pineapple that may have anti-inflammatory and digestive benefits. It's often used as a dietary supplement to aid digestion and reduce swelling associated with injuries or surgery.

[Bromelain](#) is an extract from pineapples. It's rich in enzymes that break down proteins [\[R\]](#).

**Bromelain may have some health benefits.** People use it to [\[R\]](#):

- Maintain joint health
- Help with burns
- Support heart health

## How it helps

Bromelain, an enzyme found in pineapples, is known for its anti-inflammatory effects, which can assist in reducing swelling and pain associated with ankle injuries.

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Use Cushioned Shoes

IMPACT

0 / 5

EVIDENCE

0 / 5

## How to implement

Wear shoes with cushioned soles whenever you are walking or standing, especially on hard surfaces. It is beneficial to replace them once you notice the cushioning has worn out, typically every 300 to 500 miles for runners or every six months for regular use.

## Description

Cushioned shoes are footwear designed with added padding and support, commonly used to provide comfort and reduce the impact on joints and feet during walking or physical activities. They can help alleviate foot pain and discomfort, making them suitable for individuals with various foot conditions.

## How it helps

Cushioned shoes provide support and may absorb impact better, reducing stress on the injured ankle.



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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

This improves proprioception and coordination, which can help prevent future injuries and aid in recovery.

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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

Exercising in water can lessen the impact on the injured ankle while allowing mobility and strength training.



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Core-Strengthening Exercises

IMPACT

0 / 5

EVIDENCE

0 / 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

Strengthening the core can improve overall stability and reduce the stress on the injured ankle.

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Low-Intensity Exercise

IMPACT

0 / 5

EVIDENCE

0 / 5

## How to implement

Incorporate 60 minutes of low-intensity activities, such as walking or gentle yoga, into your daily routine. Aim to do this 5 days a week to achieve the best results.

TYPICAL STARTING DOSE

1 hour

## Description

Low-intensity exercise, such as walking or gentle yoga, provides numerous health benefits, including improved cardiovascular health, stress reduction, and enhanced overall fitness without the strain of high-intensity workouts.

## How it helps

Gentle exercises can aid in maintaining mobility and circulation without putting too much strain on the injury.

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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

Manually manipulating the tissues can increase range of motion and decrease pain.