

# Psychological Trauma

## DNA Health Report

REPORT CATEGORY —



Sample Client

Report date: 02 January 2026

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## Personal information

NAME

**Sample Client**

SEX AT BIRTH

**Male**

HEIGHT

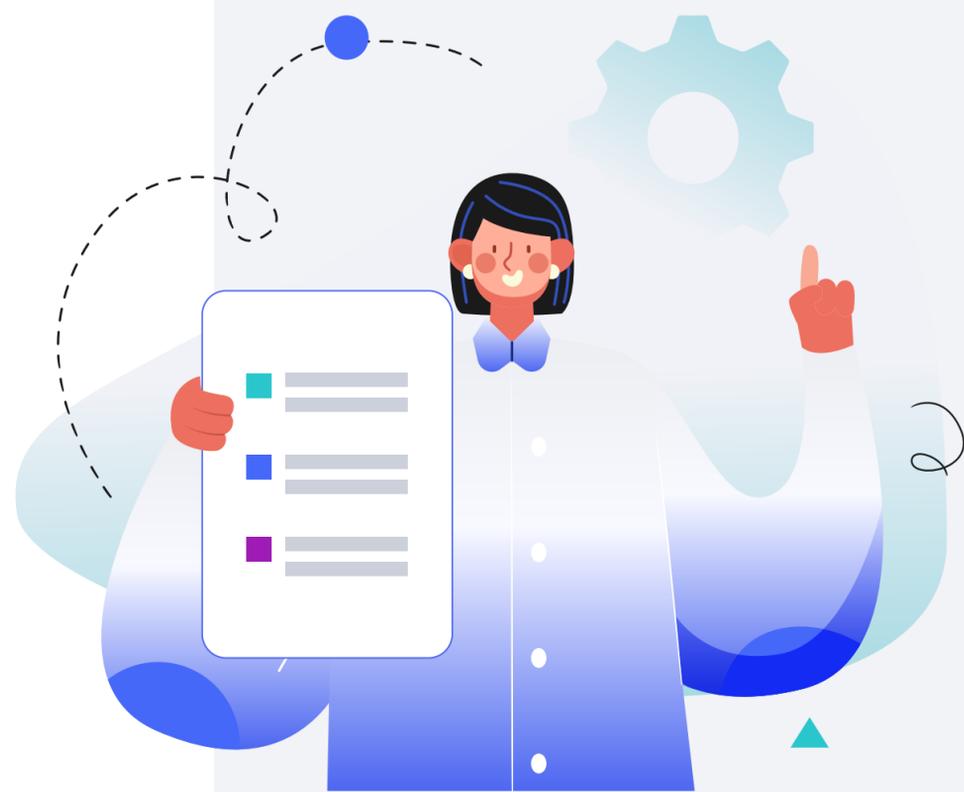
**5ft 5" 165cm**

WEIGHT

**137lb 62kg**

### DISCLAIMER

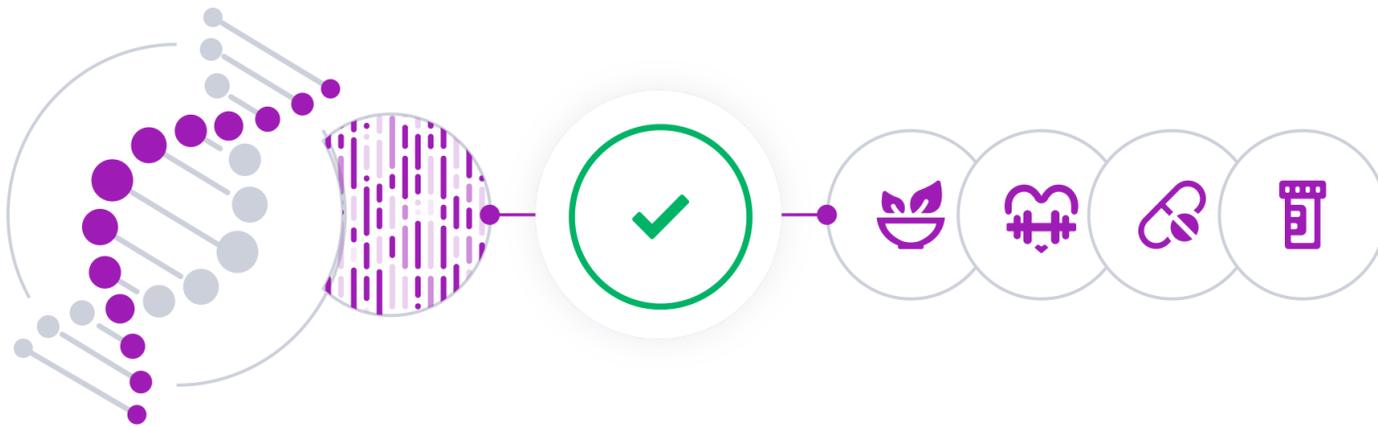
This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.



# 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.



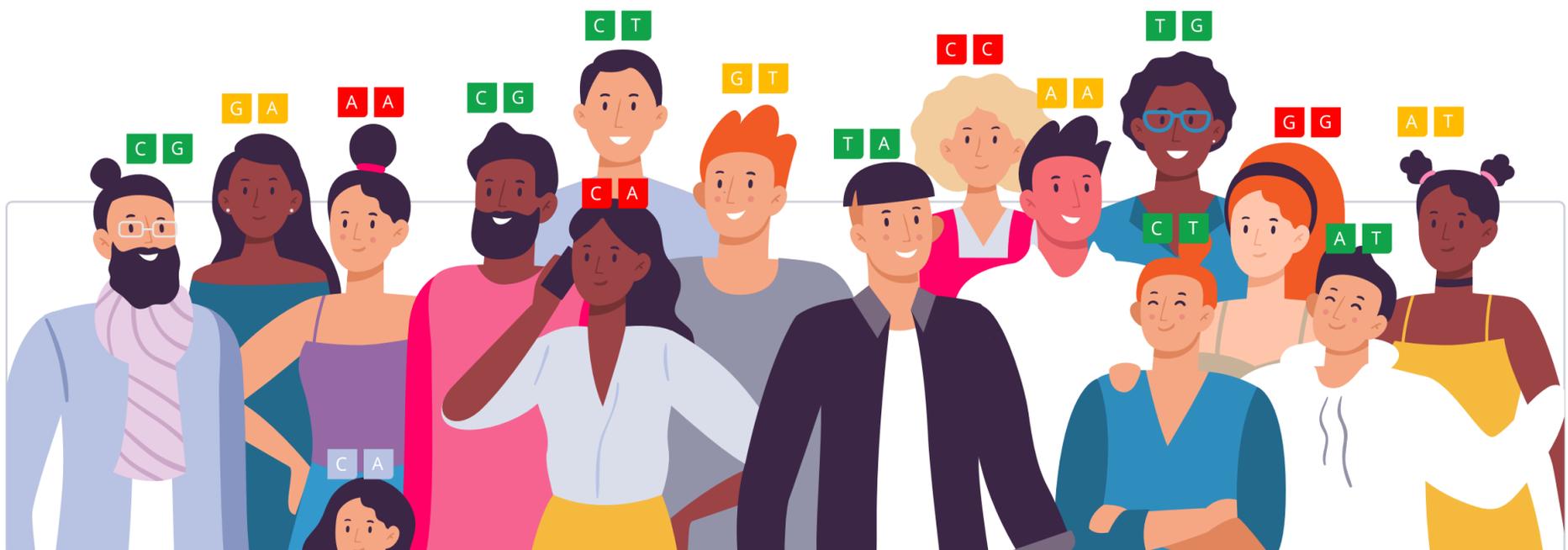
Similarly, our Trait Reports look at how your DNA influences your traits.



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 lot of people experience some form of trauma in their life, but most of them will get past it in a short period of time.

But if trauma leads to worsening symptoms that cause significant distress for months or years, you may have *post-traumatic stress disorder* (PTSD) [\[R\]](#).

A lot of negative experiences can lead to PTSD, including [\[R\]](#):

- Relationship breakdown
- Death of a loved one
- Mental, physical, or sexual abuse
- Terrorism
- War
- Serious illness
- Witnessing or being a victim of a crime

A traumatic experience is bad enough even without long-term repercussions, and living with PTSD is difficult, no matter who you are. Even celebrities like Ariana Grande and Lady Gaga have shared their struggles of living with PTSD [\[R\]](#), [\[R\]](#).

But what determines whether your trauma will lead to PTSD?

Unfortunately, we don't know for sure, but one factor may be your genetics [\[R\]](#).

Variants of genes such as [ADCYAP1R1](#) and [BDNF](#) may increase your risk of developing PTSD or having more severe symptoms, respectively. However, by using talk therapy or exercise, you may be able to cancel out their negative effects [\[R\]](#), [\[R\]](#), [\[R\]](#).

**Reliving trauma is hard, and your genes shouldn't make it harder.**

**Read on to find out more about:**

- **How your genetics play a role in PTSD**
- **Your genetic risk score based on over 462,000 genetic variants**
- **Personalized recommendations based on your genetics**

# About Psychological Trauma

## Key Takeaways:

- Up to **40%** of differences in people's chances of developing PTSD may be due to genetics.
- Risk factors include being female, events that cause fear and/or helplessness, lack of support after trauma, additional stressful events, history of mental health conditions or substance abuse, genetics.
- If you have high genetic risk or symptoms, you may want to take action on your modifiable factors to reduce your overall risk.
- Click the **next steps** tab for relevant labs and lifestyle factors.

Post-traumatic stress disorder (PTSD) is a mental health condition that commonly affects war veterans. **However, anyone who has experienced trauma can develop PTSD** [\[R, R\]](#).

**About 1 in 12 people develop PTSD in their lifetime.**

Women are more prone to PTSD than men [\[R\]](#).

Risk factors for PTSD include [\[R\]](#):

- Experiencing events that cause extreme fear or helplessness
- Lack of support after traumatic events
- Experiencing additional stressful events after the initial trauma
- A history of mental health conditions or substance abuse

**Flashbacks are the classic symptom of PTSD. They cause a person to relive previous trauma.** A common trigger is the sound of fireworks, which can remind war veterans of gunfire. Flashbacks can include **physical symptoms, such as sweating and fast heart rate** [\[R, R\]](#).

Other symptoms of PTSD include [\[R, R\]](#):



MORE LIKELY

**More likely to have PTSD based on 443,168 genetic variants we looked at**



**Your top variants that most likely impact your genetic predisposition:**

GENE	SNP	GENOTYPE
CRHR2	rs2267715	AA
UST	rs10457838	TC
RORA	rs8041061	TG
MAPT	rs12938031	GA
/	rs58649573	CT
RGS2	rs4606	CC
ANKK1	rs1800497	GA
/	rs61793204	GA
TBC1D2	rs7866350	GC
CSMD1	rs2616978	CT
FBLL1	rs10038727	GA
SH2D1B	rs386231	TC
NOS1AP	rs10918936	AA
TNF	rs1800629	GG
C10RF226	rs12027674	GA
ARHGAP27	rs4792887	CC
BDNF	rs6265	TC
FAAH	rs324420	CA
NOS1	rs10744891	TG
ESR1	rs9340799	GA
KIAA1109	rs45510091	AA
IL1B	rs16944	AG
TERT	rs2736100	AC
TCF4	rs599550	AA

- Nightmares or frightening thoughts
- Avoiding places, situations, objects, or thoughts that remind you of the traumatic event
- Being easily startled
- Tension
- Poor or disrupted sleep
- Negative feelings about oneself or the world
- Feelings of guilt

It's normal to experience some of the above symptoms after a traumatic event. **However, it's important to seek professional help if the symptoms last for longer than one month and affect daily activities** [R].

People with PTSD may be at a higher risk of [R]:

- Panic disorder
- Depression
- Substance abuse
- Suicide

**Treatment for PTSD usually includes talk therapy and medication** [R, R, R].

**Up to 40% of differences in people's chances of developing PTSD may be attributed to genetics.** Genes involved in PTSD may influence [R, R, R]:

- [Dopamine](#) activity ([DRD2](#), [PARK2](#))
- [Serotonin](#) activity ([SLC6A4](#))
- Brain cell communication ([PODXL](#))
- [Adrenaline](#) (epinephrine) activity ([ZDHHC14](#))

GENE	SNP	GENOTYPE
MLKL	rs62056018	GA
SOX6	rs931774	CT
SERPING1	rs2509805	CT
FAM120AOS	rs10992729	TC
/	rs11933210	CT
ZNF804A	rs62176173	GT
ACE	rs4311	CC
IL6	rs1800795	GG
FAAH	rs2295633	AA
TULP1	rs3800373	AA
DUSP23	rs1130864	GG
PTPN7	rs3100127	CC
PTPN7	rs4511180	GG
POGK	rs2312236	CC
ATP10B	rs17504106	GG
ADRB2	rs2400707	AG
SRR	rs4523957	GG
OXTR	rs53576	GG
UNC13C	rs73419609	AA
TTC12	rs2075652	GG
LRRC4C	rs10768747	GG
PRTFDC1	rs1033962	TT
DUSP23	rs3091244	GG
TRIM27	rs145108206	GG
/	rs1246683	GG
MAPT	rs62056789	AA

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

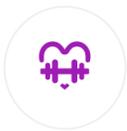
# Your Recommendations

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	Psychotherapy	1 hour	2	EMDR	90 minutes
3	Cognitive-Behavioral Therapy (CBT)		4	Exposure Therapy	
5	Mindfulness-Based Cognitive Therapy (MBCT)	2 hours	6	Attention Bias Modification	10 minutes
7	Exercise At Least One Hour a Day	1 hour	8	Yoga	30 minutes
9	Mindfulness-Based Stress Reduction (MBSR)	2 hours	10	Dance	30 minutes
11	Aerobic Exercise (Cardio)	1 hour	12	Expressive Writing	15 minutes
13	Mindfulness	30 minutes	14	Strength Training	1 hour
15	Biofeedback				

1



## Psychotherapy

IMPACT

5 / 5

EVIDENCE

5 / 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

**Experts agree that talk therapy is the most effective way to manage PTSD.** Exposure therapy and cognitive-behavioral therapy (CBT) are often part of a treatment plan for PTSD [\[R, R, R, R\]](#).

In **exposure therapy**, patients face their fears in a safe environment. It may be helpful for flashbacks and nightmares in people with PTSD [\[R, R, R, R, R, R, R\]](#).

**CBT** is sometimes used in combination with exposure therapy for PTSD. Through CBT, a therapist can help you develop healthy coping mechanisms [\[R, R, R, R, R, R\]](#).

**Eye movement desensitization and reprocessing (EMDR)** is another option. It combines exposure therapy with therapist-guided eye movements. This may help with PTSD by making memories less stressful [\[R, R, R, R, R\]](#).

Other techniques may help with PTSD but have less evidence supporting them. These include:

- Mindfulness-based interventions [\[R, R, R, R, R\]](#)
- Attention bias modification [\[R, R, R, R\]](#)
- Animal-assisted therapy [\[R, R, R, R, R, R\]](#)

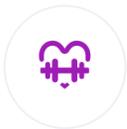


PERSONALIZED TO YOUR GENES

Your **ADCYAP1R1** gene variant is linked to higher odds of PTSD. Talk therapy may cancel out the effects of this variant [R, R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
ADCYAP1R1	rs2267735	GG	<span style="display: inline-block; width: 10px; height: 10px; background-color: #800080; border-radius: 50%;"></span> <span style="display: inline-block; width: 10px; height: 10px; background-color: #800080; border-radius: 50%;"></span> <span style="display: inline-block; width: 10px; height: 10px; background-color: #800080; border-radius: 50%;"></span> <span style="display: inline-block; width: 10px; height: 10px; background-color: #ccc; border-radius: 50%;"></span> <span style="display: inline-block; width: 10px; height: 10px; background-color: #ccc; border-radius: 50%;"></span>



EMDR



## How to implement

To incorporate EMDR (Eye Movement Desensitization and Reprocessing) into your lifestyle, schedule a session with a certified EMDR therapist. Initially, weekly sessions are common and can last between 60 to 90 minutes each. The total number of sessions needed varies by individual, but treatment often spans from a few sessions to several months depending on the severity and complexity of the issue being addressed.

**TYPICAL STARTING DOSE**  
**90 minutes**

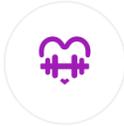
## Description

EMDR is a psychotherapy approach used to treat trauma and post-traumatic stress disorder (PTSD). It involves guided eye movements to process and reduce emotional distress related to traumatic memories, ultimately promoting emotional healing and well-being.

## How it helps

Eye movement desensitization and reprocessing (EMDR) is an approved psychotherapy consisting of reliving traumatic experiences while a therapist guides your eye movements. Over time, this therapy makes the traumatic memories less distressing [R, R].

Three meta-analyses (the largest one with 76 trials) found EMDR as effective as cognitive-behavioral therapy in people with PTSD. However, the most recent one warned about the low quality and high risk of bias of most studies [R, R, R].

3  **Cognitive-Behavioral Therapy (CBT)**

**IMPACT**  5 / 5

**EVIDENCE**  5 / 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 approved for different anxiety disorders, including PTSD. CBT is especially effective if combined with medication. Multiple meta-analyses (the largest one with 70 studies and 4761 participants) concluded that this therapy can produce large improvements and its effects are long-lasting [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

4



## Exposure Therapy

IMPACT  
 5 / 5

EVIDENCE  
 5 / 5

## How to implement

Gradually and repeatedly expose yourself to the object or situation that causes you fear, starting with less intimidating scenarios and working up to more challenging ones. This should be done over several weeks or months, under the guidance of a trained therapist, to slowly reduce your fear response.

## Description

Exposure therapy is a psychological treatment used to reduce anxiety and phobias by gradually exposing individuals to their feared objects or situations in a controlled and therapeutic manner. It can help individuals learn to manage their emotional responses and improve their overall mental well-being.

## How it helps

Exposure therapy is a type of behavioral therapy that consists of retelling memories or safely facing situations that serve as reminders of the trauma to learn how to cope with them. Virtual reality technologies can be used to re-enter the setting where the trauma occurred. Multiple meta-analyses (the largest one with 64 trials) found exposure therapy highly effective at reducing PTSD symptoms [\[R, R, R, R, R, R\]](#).

5



## Mindfulness-Based Cognitive Therapy (MBCT)

IMPACT  
 4 / 5

EVIDENCE  
 3 / 5

## How to implement

Participate in an 8-week course of Mindfulness-Based Cognitive Therapy (MBCT), which typically includes weekly group sessions (each lasting about 2 hours), daily homework practices (about 1 hour per day), and one all-day session after the fifth week. Sessions are led by trained instructors and focus on mindfulness meditation practices and cognitive behavioral exercises.

**TYPICAL STARTING DOSE**

**2 hours**

## Description

Mindfulness-Based Cognitive Therapy (MBCT) is a therapeutic approach that combines mindfulness practices with cognitive-behavioral techniques to help individuals manage and prevent recurring episodes of depression and anxiety.

## How it helps

Three meta-analyses (the largest one with 20 studies and 898 participants) concluded that mindfulness-based interventions can improve PTSD psychological symptoms such as intrusive memories, avoidance, and increased emotional arousal, with the duration increasing their effectiveness [\[R, R, R\]](#).

An 8-week mindfulness-based cognitive intervention used as an add-on to conventional therapy with citalopram further reduced PTSD, anxiety, depression, and stress symptoms in a non-placebo-controlled trial of 48 male veterans with PTSD [\[R\]](#).

In a non-placebo-controlled trial of 80 discharged ICU patients with PTSD, a 3-month mindfulness program self-directed by a mobile app was as effective as a therapist-led program [\[R\]](#).

6



## Attention Bias Modification

IMPACT

 4 / 5

EVIDENCE

 3 / 5

### How to implement

Engage in daily sessions of attention bias modification training for 10-15 minutes. Use computerized programs or mobile apps specifically designed for this purpose, focusing on redirecting your attention away from negative stimuli towards neutral or positive stimuli. Continue this practice for a minimum of 4 weeks to observe potential changes in anxiety or stress levels.

TYPICAL STARTING DOSE

**10 minutes**

### Description

Attention Bias Modification (ABM) is a psychological technique designed to modify automatic attentional biases, often used in the treatment of conditions like anxiety disorders. It aims to shift attention away from negative stimuli, potentially reducing anxiety symptoms.

### How it helps

People with PTSD and other anxiety issues tend to preferentially pay attention to threatening information (this is called *attention bias*) [\[R, R, R\]](#).

Attention bias modification is the practice of “re-training” this type of bias. Attention bias modification programs lasting for 3-4 weeks improved PTSD and depressive symptoms in 5 non-placebo-controlled trials of 421 people [\[R, R, R, R, R\]](#).

These programs also helped prevent the development of PTSD in 2 non-placebo-controlled trials of 818 soldiers [\[R, R\]](#).

A meta-analysis of 85 trials of over 5k people with anxiety (including PTSD) and mood disorders concluded that attention bias modification has consistent but small benefits and warned about the high heterogeneity and risk of bias of the studies [\[R\]](#).

7

## Exercise At Least One Hour a Day

IMPACT
EVIDENCE

4 / 5

3 / 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

People with PTSD tend to move less. **Increased exercise, as part of a treatment plan, may help with PTSD symptoms.** It may also improve sleep and the quality of life [R, R, R, R, R, R, R, R, R].

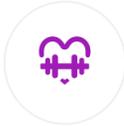
Exercise may help by [R, R]:

- Reducing anxiety and depression
- Protecting the brain

**PERSONALIZED TO YOUR GENES**

People with your **BDNF** gene variant may have worse PTSD symptoms. Exercise may cancel out the negative effects of this variant [R].

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
BDNF	rs6265	TC	

8  **Yoga**

IMPACT  3 / 5

EVIDENCE  3 / 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

Different yoga interventions improved PTSD and depressive symptoms, substance abuse, sleep quality, and social relations in 9 non-placebo-controlled trials of 184 women with a history of traumatic experiences, 72 war veterans, 88 survivors of natural catastrophes, and 76 children living in orphanages [\[R, R, R, R, R, R, R, R, R\]](#).

Similarly, engaging in a yoga program called *trauma-sensitive yoga* for 8-20 weeks was found to reduce symptoms of PTSD, depression, and anxiety in 4 non-placebo controlled trials of 141 people with PTSD [\[R, R, R, R\]](#).

Three meta-analyses (the largest one being a meta-review of 13 reviews) concluded that the evidence to support yoga for PTSD is encouraging but preliminary due to the low quality of most studies and pointed out the need for more high-quality research [\[R, R, R\]](#).

Yoga and other forms of meditation have a natural stress-relieving effect, which could help mitigate the hyperarousal symptoms of PTSD [\[R, R, R\]](#).

9



## Mindfulness-Based Stress Reduction (MBSR)

IMPACT  


EVIDENCE  


## How to implement

Enroll in an 8-week MBSR course, which includes a weekly 2.5-hour class, one all-day class after the sixth week, and 45 minutes of daily home practice guided by assignments and instructional recordings.

**TYPICAL STARTING DOSE**

**2 hours**

## Description

Mindfulness-Based Stress Reduction (MBSR) is a structured program that teaches mindfulness techniques to reduce stress and improve overall mental and emotional health. MBSR has been shown to help individuals cope with chronic pain, anxiety, and other stress-related conditions.

## How it helps

Three meta-analyses (the largest one with 20 studies and 898 participants) concluded that mindfulness-based interventions (including mindfulness-based stress reduction) can improve PTSD psychological symptoms such as intrusive memories, avoidance, and increased emotional arousal, with the duration increasing their effectiveness [\[R, R, R\]](#).

10



## Dance

IMPACT  


EVIDENCE  


## 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:

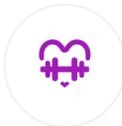
- Ballet
- Zumba
- Belly dancing
- Hip hop
- Salsa

**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

A systematic review of 15 studies concluded that dance interventions improve pathognomonic symptoms of trauma, bodily sensations and perceptions, psychological processes, and interpersonal skills [\[R\]](#).

11



## Aerobic Exercise (Cardio)

IMPACT

3 / 5

EVIDENCE

3 / 5

### How to implement

Engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity each week. Distribute this time over at least 3 days per week, avoiding consecutive days of vigorous exercise to allow for recovery.

TYPICAL STARTING DOSE

1 hour

### Description

Engaging in regular aerobic exercise, such as running, swimming, or cycling, offers numerous health benefits, including improved cardiovascular fitness, weight management, and mood enhancement. It supports overall physical and mental well-being while reducing the risk of chronic diseases.

Cardio, short for cardiovascular exercise, is any type of physical activity that temporarily increases your heart rate. Examples include **running, cycling, swimming, and brisk walking**.

Regular cardio exercise has many benefits for your overall health. It can help lower your risk of heart disease and diabetes, support weight loss, and improve your mood and energy levels. To get the most out of cardio, try to do it for at **least 30 minutes, 3-5 times a week**.

**Interval training** is a type of cardio that combines periods of high-intensity training with brief rest periods.

### How it helps

Exercise interventions based on aerobic exercise, resistance training, or both and lasting 2-12 weeks improved PTSD in 8 non-placebo-controlled trials of almost 300 people. While aerobic exercise was more effective at improving anxiety and overall psychological distress, resistance training also helped with specific PTSD symptoms, distress tolerance, and sleep quality [[R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#)].

Exercise may help by [[R](#), [R](#)]:

- Reducing anxiety and depression
- Protecting the brain

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## Expressive Writing

IMPACT

 3 / 5

EVIDENCE

 3 / 5

## How to implement

Set aside 15-20 minutes on 3-4 days each week to write about your deepest thoughts and feelings related to traumatic, stressful, or emotional events. It's important to find a quiet, private space where you won't be disturbed. This practice should be continued for at least four weeks to potentially begin noticing benefits in emotional well-being.

TYPICAL STARTING DOSE

**15 minutes**

## Description

Expressive writing involves the practice of writing about one's thoughts and feelings to promote emotional processing and stress reduction. It has been shown to have potential psychological benefits, including improved mood and mental clarity.

Expressive writing consists of free writing about thoughts and feelings related to important [\[R, R\]](#):

- Emotional issues
- Stressful events
- Traumatic experiences

It may include information about [\[R, R\]](#):

- Childhood experiences
- Expectations
- Relationships with others
- The past, the present, and the future

After writing, the writer should reflect on their work [\[R, R\]](#).

Expressive writing may be unpleasant at first, but it aims at improving your ability to cope with negative emotions [\[R, R\]](#).

## How it helps

A meta-analysis of 44 trials and 7724 patients with PTSD concluded that expressive writing helps improve the symptoms in the medium and long term. Expressive writing may help people with PTSD symptoms due to [\[R\]](#):

- Military combat [\[R\]](#)
- Childhood abuse [\[R\]](#)
- Intimate partner abuse [\[R\]](#)
- Cancer [\[R\]](#)

Writing about traumatic experiences may help in processing them and reducing the intensity of negative emotions.

13  **Mindfulness**

**IMPACT**  **EVIDENCE** 

## How to implement

Set aside 5-10 minutes each day to practice mindfulness meditation. Find a quiet place, assume a comfortable seated position, close your eyes, focus on your breathing, and observe your thoughts and sensations without judgment.

TYPICAL STARTING DOSE

**30 minutes**

## Description

Mindfulness involves paying focused and non-judgmental attention to the present moment. It can reduce stress, improve emotional regulation, and enhance overall mental clarity and well-being.

**Mindfulness is the practice of being aware of the present moment.** When practicing mindfulness, a person acknowledges their thoughts, feelings, and sensations without any judgment [\[R\]](#).

Mindfulness and other types of [meditation](#) may improve [\[R\]](#):

- Weight and anxiety
- Low mood
- Sleep disturbances
- Pain
- High blood pressure

## How it helps

Three meta-analyses (the largest one with 20 studies and 898 participants) concluded that mindfulness-based interventions can improve PTSD psychological symptoms such as intrusive memories, avoidance, and increased emotional arousal, with the duration increasing their effectiveness [\[R\]](#), [\[R\]](#), [\[R\]](#).

An 8-week mindfulness-based cognitive intervention used as an add-on to conventional therapy with citalopram further reduced PTSD, anxiety, depression, and stress symptoms in a non-placebo-controlled trial of 48 male veterans with PTSD [\[R\]](#).

In a non-placebo-controlled trial of 80 discharged ICU patients with PTSD, a 3-month mindfulness program self-directed by a mobile app was as effective as a therapist-led program [\[R\]](#).

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## Strength Training

IMPACT

3 / 5

EVIDENCE

3 / 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

Exercise interventions based on aerobic exercise, resistance training, or both and lasting 2-12 weeks improved PTSD in 8 non-placebo-controlled trials of almost 300 people. While aerobic exercise was more effective at improving anxiety and overall psychological distress, resistance training also helped with specific PTSD symptoms, distress tolerance, and sleep quality [\[R, R, R, R, R, R, R, R\]](#).

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

- Reducing anxiety and depression
- Protecting the brain

15  **Biofeedback**

**IMPACT**  **EVIDENCE** 

## 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

A lower heart rate variability from a normal “baseline” heart rate indicates a dominance of the “fight-or-flight” (*sympathetic*) nervous system, which is associated with increased stress and many forms of anxiety, as seen in a meta-analysis of 36 trials and 2,086 patients. In the case of PTSD it predicts poorer response to cognitive-behavioral therapy, as seen in a study of 37 patients [\[R, R\]](#).

Heart rate variability biofeedback training consists of learning to modify heart rate variability to adjust it to the breathing pattern. This therapy improved PTSD symptoms in 3 non-placebo-controlled trials of 400 soldiers. Those in their late 30s benefited more from this technique than younger soldiers [\[R, R, R, R\]](#).