

Seasonal Low Mood

DNA Health Report

REPORT CATEGORY —



Sample Client

Report date: 15 January 2026

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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

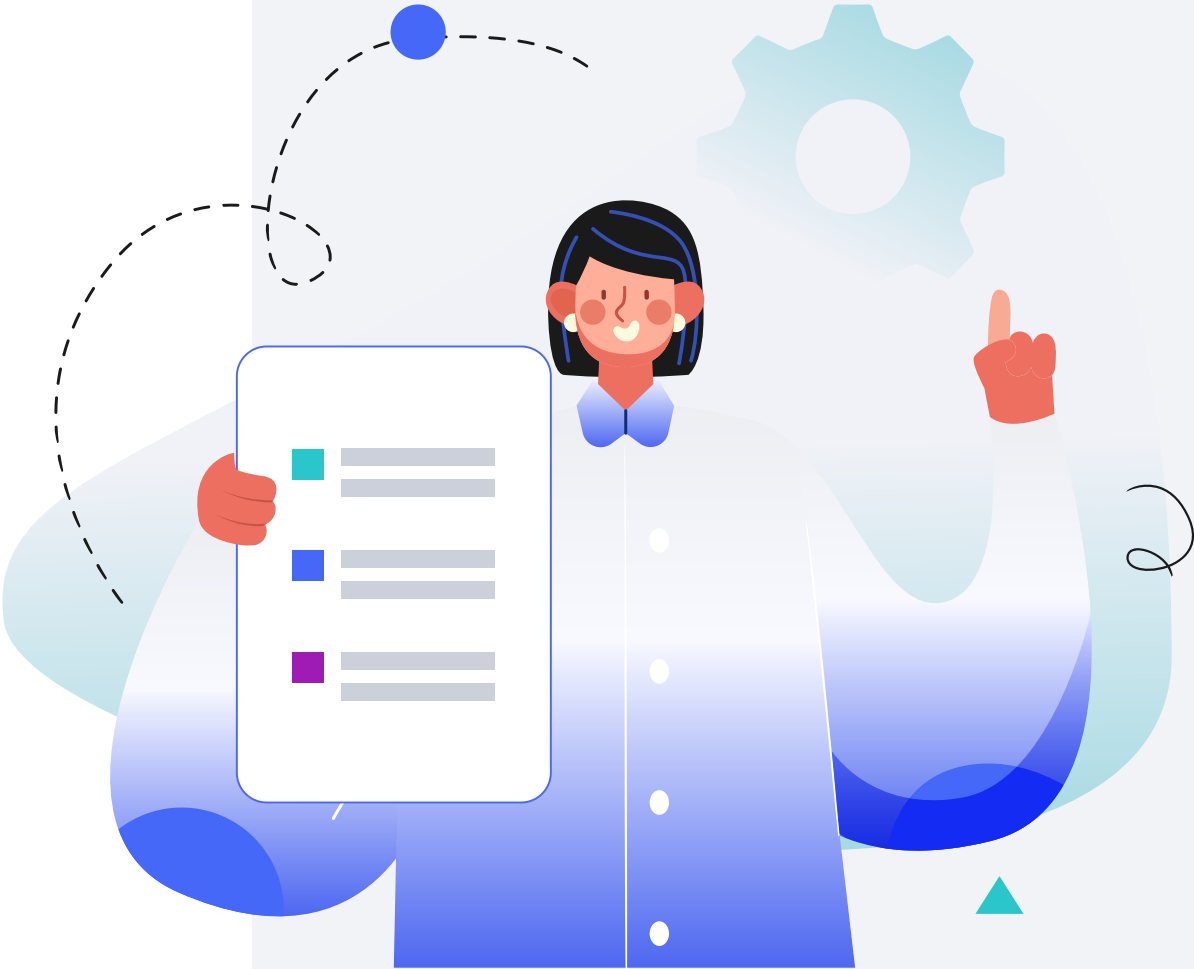
Male

HEIGHT

5ft 5" 165cm

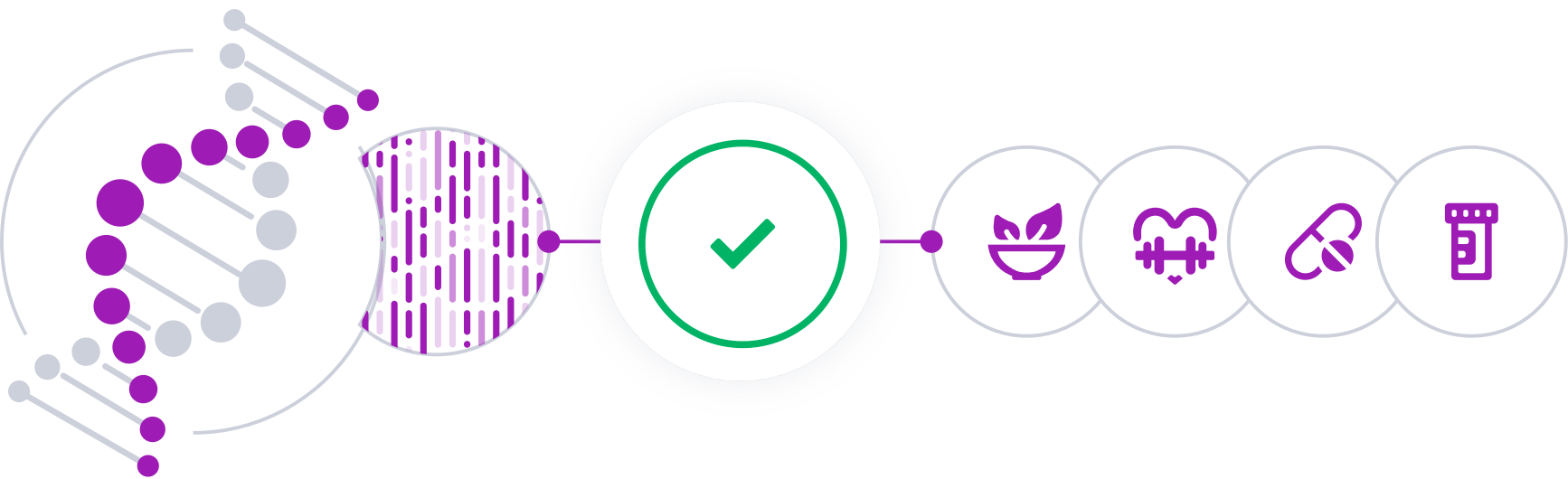
WEIGHT

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.

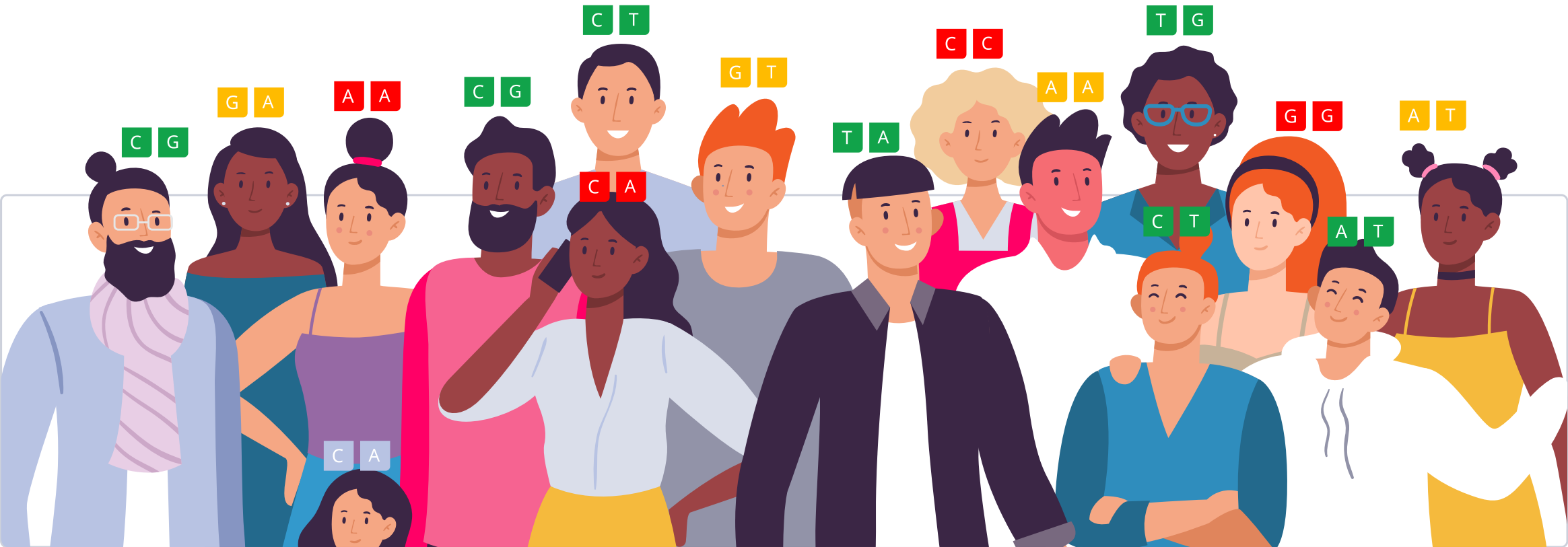


Similarly, our Trait Reports look at how your DNA influences your traits.



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

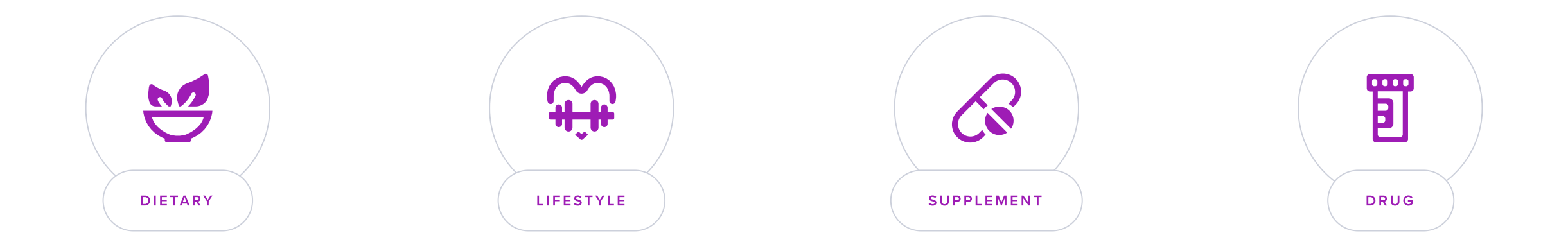
You have 2 risk alleles

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

Seasonal affective disorder (SAD) is a type of depression that occurs seasonally, usually during the fall and winter months.

Reduced exposure to **sunlight** during this period is the main cause of SAD. It can affect [\[R\]](#):

- The body’s “internal clock” (circadian rhythm)
- Serotonin levels
- Melatonin levels

SAD is a **subtype of major depressive and bipolar disorder** affecting about **5%** of the population. Symptoms include [\[R\]](#):

- Feelings of sadness, hopelessness, and worthlessness
- Decreased energy and motivation
- Trouble focusing
- Changes in appetite and sleep patterns
- Loss of interest in enjoyable activities

Treatment for SAD often includes **light therapy, psychotherapy, and medication**.

Not everyone who experiences seasonal changes in mood or energy levels has SAD. If you're experiencing symptoms of depression, it's important to speak with a healthcare professional. They can help you determine the best course of action.

Risk Factors and Genetics

Seasonal affective disorder (SAD) is a type of depression that occurs seasonally, usually during the fall and winter months when there is less sunlight.

Genetics may account for about **30%** of the differences in people’s seasonality, including mood changes. Genes involved in SAD may influence the body’s internal clock and serotonin levels [\[R\]](#), [\[R\]](#).

Other risk factors include [\[R\]](#):

- Family history
- Living at higher latitudes
- Low vitamin D levels

In some people with **depression and bipolar disorder**, symptoms tend to worsen seasonally [\[R\]](#).



TYPICAL LIKELIHOOD

Typical likelihood of seasonal affective disorder based on 90 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
PTGER3	rs113067418	CC
MYO16	rs9559377	AA
/	rs379533	CC
PSAP	rs61852182	CC
DGKB	rs190675597	GA
CAMKMT	rs17498753	AA
POLR2M	rs1808478	TC
MAP3K1	rs3936510	TG
HLCS	rs2835490	TT
HLCS	rs2835475	TT
HLCS	rs12151959	AA
MYO16	rs9555488	CT
TJP2	rs2498436	AG
SDC1	rs1131351	GC
ERAP2	rs31019	CT
TJP2	rs7870657	AG
NPAS2	rs11894671	GG
RPL31	rs6738097	CT
RPL31	rs12622050	AG
NPAS2	rs1562313	TC
NPAS2	rs2305159	CA
NPAS2	rs1542179	GA
MPHOSPH6	rs7190761	AG
CLOCK	rs1801260	AG

GENE	SNP	GENOTYPE
ARNTL	rs7107287	TT
TARS1	rs55685444	GC
RPL31	rs2278722	GA
DNAJB4	rs1323097	TC
NRDE2	rs4904644	GA
DNAJB4	rs2351912	TA
DNAJB4	rs2181453	TC
FGGY	rs835365	CT
NRDE2	rs4900029	TA
GSTM3	rs3754450	CT
NRDE2	rs2184281	GA
GSTM3	rs11101980	GT
PSMC1	rs9743577	TG
PSMC1	rs7153255	GA
NRDE2	rs2183189	AG
NRDE2	rs2104704	GA
NRDE2	rs12889902	CT
RORB	rs1327836	TG
MTERF2	rs2287161	CG
PER2	rs934945	TC
OPN4	rs2014084	TC
SRD5A3	rs11932595	AG
OPN4	rs1079610	TC
BTBD10	rs2278749	TC
MYC	rs13257657	TT
SATB2	rs1813849	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	Morning Bright Light Therapy	20 minutes	2	Cognitive-Behavioral Therapy (CBT)	
3	Exercise At Least One Hour a Day	1 hour	4	Avoid Sugary Foods At Night	
5	Aerobic Exercise (Cardio)	1 hour	6	Mindfulness Meditation	30 minutes
7	Dietary Omega-3 Fatty Acids		8	Art Therapy	1 hour
9	Sleep for 7+ Hours		10	Magnesium	350 mg
11	Music Therapy	30 minutes	12	Tryptophan	500 mg
13	Social Activity	1 hour	14	Phosphatidylserine And Phosphatidic Acid	300 mg
15	Berries		16	Acceptance and Commitment Therapy (ACT)	
17	Avoid Meals 3-4 Hours Before Bedtime		18	Spend Time in Nature	2 hours
19	Phosphatidylserine	300 mg	20	Phosphatidic Acid	

1



Morning Bright Light Therapy

IMPACT

5 / 5

EVIDENCE

5 / 5

How to implement

Expose yourself to a light therapy box, which mimics natural sunlight, for about 20-30 minutes each morning within the first hour of waking up. It's important to do this daily, especially during months with less natural sunlight, to help manage symptoms of Seasonal Affective Disorder (SAD) or other conditions influenced by light exposure.

TYPICAL STARTING DOSE

20 minutes

Description

Bright light therapy, often used to treat conditions like seasonal affective disorder (SAD) and certain sleep disorders, involves exposure to specific wavelengths of light. It can help regulate sleep patterns, improve mood, and alleviate symptoms associated with mood disorders.

[Bright light therapy](#) involves exposing people to artificial indoor light via a “light box.” This box is often placed nearby for 30 minutes each morning. A light therapy box should [\[R, R, R\]](#):

- Provide 10,000 lux of light
- Filter out UV light

Light therapy may improve mood and help with certain mental health conditions [\[R, R\]](#).

How it helps

The lack of sunlight exposure is the main cause of seasonal affective disorder [\[R, R, R\]](#).

Light therapy is the first-line treatment for SAD. It targets the root cause of the issue by replacing sunlight exposure. People can expect notable improvements in **1-2 weeks** [\[R, R, R, R, R, R\]](#).

Light therapy typically involves sitting a few feet from a special light box within the first hour of waking up. A light therapy box should [\[R, R, R, R\]](#):

- Provide 10,000 lux of light
- Provide a spectrum of visible light (typically, blue to yellow)
- Filter out UV light

Single-color light therapy may not be as effective [\[R, R\]](#).

Light therapy may provide faster improvements than psychotherapy, but it may be less effective in the long run. Combining them may be the best option [\[R, R, R, R, R, R\]](#).

You should still **try to get as much natural light as possible** during the cold months, especially in the morning. Some ways to achieve this include [\[R, R\]](#):

- Spending more time outside
- Increasing light in your home
- Visiting sunnier and warmer areas

2



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

In people with SAD, **cognitive-behavioral therapy** may help [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Improve coping mechanisms
- Maintain social and other activities
- Identify and change negative thoughts and behaviors
- Encourage healthy behaviors like exercise
- Reduce stress

It may also help prevent future episodes of SAD [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Psychotherapy may be more effective than light therapy in the long run, while light therapy may provide faster improvements. Combining them may be the best option [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

3



Exercise At Least One Hour a Day

IMPACT

3 / 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

People who work out more may be less prone to SAD [\[R\]](#).

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

- Stress
- Anxiety
- Self-image

Combining exercise with light therapy may be particularly beneficial [\[R, R\]](#).

 PERSONALIZED TO YOUR GENES

NPAS2 is a part of the family of genes that help regulate your circadian rhythm [\[R, R\]](#).

Your genotype for **rs1562313** is associated with altered dopamine activity, which may increase the risk of experiencing seasonal mood disruptions [\[R, R\]](#).

One of the best lifestyle hacks for your genotype is regular [exercise](#) [\[R, R, R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
NPAS2	rs1562313	TC	

4



Avoid Sugary Foods At Night

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Stop consuming foods and drinks high in sugar at least 3 hours before your bedtime. This includes desserts, soda, and sweetened beverages. Stick to this habit nightly for an ongoing basis to notice improvements in sleep quality and overall health.

Description

Avoiding sugary foods at night can promote better sleep quality and prevent potential sleep disturbances caused by blood sugar fluctuations.

How it helps

People with seasonal affective disorder (SAD) may eat more carbs and sweets during their depression in Winter, contributing to weight gain [\[R\]](#), [\[R\]](#), [\[R\]](#).

Interestingly, a high intake of sweets in the second half of the day in people with SAD predicts a rapid and persistent response to light therapy in Winter depression. This implies that sweet intake may provide a marker for people susceptible to light response [\[R\]](#).

Moreover, evening carbohydrate-rich meals may phase delay circadian rhythms and glucose may increase retinal response to light in people with SAD [\[R\]](#).

5



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

People who work out more may be less prone to SAD [\[R\]](#).

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

- Stress
- Anxiety
- Self-image

The following types of cardio may be beneficial, especially when combined with light therapy [\[R, R\]](#):

- Cycling (1 h/day for at least 1 week)
- Group cardio training (2x/week for at least 8 weeks)

6

Mindfulness Meditation

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Practice mindfulness meditation for 10-20 minutes daily. Find a quiet, comfortable place to sit or lie down, then focus on your breath, observing thoughts and sensations without judgment. Consistency is key, so try to incorporate it into your daily routine, perhaps in the morning or before bed.

TYPICAL STARTING DOSE
30 minutes

Description

Mindfulness meditation involves focused attention on the breath or a specific point of focus to cultivate mindfulness and reduce stress. Regular meditation practice is associated with improved mental clarity, emotional regulation, and overall well-being.

How it helps

Mindfulness-based interventions with meditation and cognitive therapy may **moderately alleviate depression and prevent relapses** according to multiple meta-analyses. The interventions were **most effective in patients with severe symptoms** [R, R, R, R, R, R].

Mindfulness meditation has been reported to improve attention and emotional self-control, both of which are important for healthy mood [R].

People who practice mindfulness tend to have **lower levels of the stress hormone** [cortisol](#) [R, R].

7



Dietary Omega-3 Fatty Acids

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Incorporate foods high in omega-3 fatty acids into your diet daily. This includes eating fish such as salmon, mackerel, and sardines at least twice a week. Alternatively, include a tablespoon of flaxseed oil or chia seeds in your daily diet.

Description

[Omega-3 fatty acids](#) are some of the healthiest fats we can eat. They help lower inflammation and protect the heart, brain, and eyes. Our bodies produce less omega-3s than we need for optimal health, so it's important to get enough through food or supplements [\[R\]](#), [\[R\]](#), [\[R\]](#).

There are three major types of omega-3s: ALA, EPA, and DHA. **EPA and DHA are vital for mental and heart health** [\[R\]](#), [\[R\]](#), [\[R\]](#).

Fatty fish are rich in EPA and DHA. They include [\[R\]](#):

- Salmon
- Tuna
- Herring
- Sardines

For optimal health, try to get at least **two servings of fatty fish per week**. Fish oil supplements are available for those who don't eat fish regularly [\[R\]](#).

How it helps

Omega-3s help **support brain function and reduce inflammation** [\[R\]](#), [\[R\]](#).

People with higher omega-3 intakes and blood levels may be less prone to depression [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

8



Art Therapy

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Participate in art therapy sessions, which can include activities such as painting, sculpting, or drawing, for 1-2 hours per week. These sessions can be done either in group settings guided by a trained art therapist or individually, depending on your comfort level and goals. It is beneficial to engage in this practice consistently for several months to observe the therapeutic benefits.

TYPICAL STARTING DOSE

1 hour

Description

Art therapy is a type of therapy that encourages free self-expression and reflection through [\[R\]](#):

- Painting
- Drawing
- Clay modeling

It may be combined with mindfulness. Mindfulness is the practice of being aware of the present moment without any judgment [\[R\]](#).

Art therapy is used to improve [\[R\]](#):

- Self-esteem
- Self-awareness
- Emotional resilience
- Social skills

How it helps

Art therapy significantly reduced depressive symptoms in several clinical trials of over 600 people with depression, both primary and associated with cancer [\[R, R, R, R, R, R, R, R, R, R, R, R, R\]](#).

Although a meta-analysis of 13 studies and 606 patients found art therapy only effective for anxiety but not depression, its mindfulness-based variant was considered a promising intervention in another meta-analysis of 14 studies [\[R, R\]](#).

Creating art in a therapeutic setting can be a way to express feelings non-verbally, reduce stress, and improve mood through engagement and creativity.

9



Sleep for 7+ Hours

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Ensure you allocate enough time in your schedule to achieve a minimum of 7 hours of sleep each night. This might involve going to bed earlier or adjusting your evening routine to promote relaxation and make it easier to fall asleep.

Description

Optimizing sleep involves adopting healthy sleep habits and creating a sleep-conducive environment to ensure restorative and sufficient sleep duration. It supports cognitive function, mood stability, and overall physical health. Most experts recommend getting **at least 7 hours of good-quality sleep each night**.

[Sleep](#) supports your body and mind [\[R, R\]](#). More precisely, sleep helps:

- Support brain health [\[R, R\]](#)
- Maintain a healthy weight and appetite [\[R, R, R\]](#)
- Regulate blood pressure [\[R, R\]](#)
- Balance blood sugar [\[R, R\]](#)

Ways to sleep better include [\[R\]](#):

- Reducing your bright light exposure (screen time) in the evenings
- Sticking to a regular sleep schedule
- Avoiding hunger or large meals before bed
- Avoiding nicotine, caffeine, and alcohol before bed
- Maintaining a sleep area that’s cool, dark, and quiet

How it helps

People with SAD may be more likely to **have sleep disturbances and to be night owls**. Sleep problems may be particularly common in those with combined SAD and alcohol use disorder [\[R, R, R\]](#).

To improve SAD, some experts suggest [\[R\]](#):

- Maintaining a regular sleep schedule
- Avoiding napping and sleeping too much

Most people need **7-9 hours** of high-quality sleep each night [\[R, R\]](#).

Other ways to sleep better include [\[R\]](#):

- Reducing your bright light exposure (screen time) in the evenings
- Avoiding hunger or large meals before bed
- Avoiding nicotine, caffeine, and alcohol before bed
- Maintaining a sleep area that’s cool, dark, and quiet

10



Magnesium

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take up to 350 mg of magnesium daily as a supplement, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

350 mg

Description

Magnesium is an essential mineral involved in various bodily functions, including muscle contractions, nerve signaling, and bone health. Maintaining adequate magnesium levels through diet or supplements can support overall well-being and reduce the risk of magnesium deficiency-related health issues.

[Magnesium](#) is an essential mineral. Your body needs it for [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Muscle, nerve, and bone function
- Blood sugar and blood pressure control
- DNA and protein production
- Strong immunity

Women need **310-320 mg** of magnesium per day, while men need **400-420 mg** [\[R\]](#).

Foods rich in magnesium include **nuts, seeds, and leafy greens**. Magnesium is also available as a supplement [\[R\]](#).

How it helps

Magnesium may help with affective disorders including seasonal affective disorder. Some evidence points to benefits in reducing symptoms of fatigue, anxiety, and depression, although the quality of evidence and consistency of results vary [\[R\]](#), [\[R\]](#), [\[R\]](#).

11



Music Therapy

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Engage in music therapy sessions for at least 30 minutes a day, three times a week. These sessions can involve listening to music, playing an instrument, singing, or writing songs, facilitated by a certified music therapist if possible.

TYPICAL STARTING DOSE

30 minutes

Description

Music therapy is a therapeutic approach that uses music to address physical, emotional, cognitive, and social needs. It can improve mental health, enhance emotional expression, and support overall well-being.

[Music](#) therapy is a form of therapy that involves making, reflecting on, and/or listening to music. It can be applied individually or in groups and may not require the presence of a therapist [\[R\]](#).

Music therapy provides tools for body relaxation and positive imagery. It aims to improve communication, quality of life, and well-being [\[R, R\]](#).

How it helps

In one study, music therapy based on **Chinese five-element music** (1-2 h/week for 8 weeks) helped with SAD by improving [\[R\]](#):

- Symptom severity
- Stress
- Inner peace
- Life satisfaction

12



Tryptophan

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 500 mg of tryptophan supplement daily. This dosage can be taken all at once, preferably before bedtime to support sleep, or as directed by a healthcare professional.

TYPICAL STARTING DOSE

500 mg

Description

Tryptophan is an essential amino acid found in various protein-rich foods. It serves as a precursor for serotonin, a neurotransmitter that plays a role in mood regulation. Tryptophan is used in dietary supplements to potentially support mood and sleep disorders, although its effectiveness can vary among individuals.

[Tryptophan](#) is an amino acid. Your body uses it to make proteins and some hormones. **Humans can’t make tryptophan, so we need to get it from protein-rich foods** [\[R, R\]](#).

Your body uses tryptophan to make [serotonin](#) and [melatonin](#). **These brain chemicals are important for mood and sleep** [\[R, R\]](#).

An average adult needs at least **250-425 mg** of tryptophan per day, which is the amount you can get from [\[R\]](#):

- A pound of turkey or chicken
- Two cups of milk
- An ounce of canned tuna
- Two cups of oatmeal

Other foods high in tryptophan include **cheddar cheese, peanuts, pumpkin seeds, and seafood**. Most people get enough tryptophan from their diets, but supplements are also available [\[R, R\]](#).

How it helps

Depleting dietary tryptophan may worsen SAD symptoms. However, some studies didn’t find this effect [\[R, R, R, R, R, R\]](#).

Tryptophan supplementation (3-4.5 g/day for 1-2 weeks) may improve SAD symptoms. **However, the available evidence is limited and of low quality** [\[R, R, R\]](#).

13



Social Activity

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Participate in group activities or gatherings with friends, family, or community members at least twice a week. This could include joining clubs, attending local events, or scheduling regular outings with friends. Aim for these social engagements to last at least an hour each time to foster meaningful connections and conversations.

TYPICAL STARTING DOSE

1 hour

Description

Engaging in social activities, such as spending time with friends and family or participating in group events, can have numerous mental and emotional health benefits. It helps reduce feelings of loneliness, enhances mood, and promotes a sense of belonging and well-being.

Social activities involve physical and mental activities with others that you enjoy and find meaningful. There are plenty of ways to stay socially active and maintain social well-being as you age.

Research has shown that a socially active lifestyle [\[R\]](#):

- Makes you less likely to develop certain chronic conditions.
- May promote a longer lifespan.
- Can improve mood and mental health.
- Can improve memory and other aspects of cognition.

How it helps

Social activity levels may be associated with depression severity in SAD [\[R\]](#).

People with SAD may have lower activity enjoyment during fall and reduced activity frequency during winter [\[R\]](#).

14



Phosphatidylserine And Phosphatidic Acid

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a combined supplement of phosphatidylserine and phosphatidic acid, with a typical dosage of 300-600 mg of phosphatidylserine and 600-1200 mg of phosphatidic acid daily, divided into two or three doses. This regimen should be followed consistently every day for at least 12 weeks to assess its effectiveness.

TYPICAL STARTING DOSE

300 mg

Description

Phosphatidylserine is a naturally occurring phospholipid found in cell membranes, primarily in animal-based sources such as meat and fish. It is commonly used as a dietary supplement to potentially support cognitive function and memory, as well as age-related cognitive decline and improving focus and mental clarity. Phosphatidic acid is a phospholipid naturally found in cell membranes, and is particularly abundant in soybeans. It plays a role in cell signaling and may have potential benefits in supporting muscle growth and recovery, as well as improving memory and mood.

How it helps

Phosphatidylserine and phosphatidic acid can improve brain functions like memory and mood, which are often negatively impacted in Seasonal Low Mood. This duo can enhance the body's stress response, potentially reducing symptoms of this condition.

A 3-month double-blind, placebo-controlled study assessed the influence of three PS+PA capsules/day, (300 mg PS + 240 mg PA/day) [phosphatidylserine (PS) and phosphatidic acid (PA)] or placebo on memory and mood in functioning, non-depressive elderly people with memory problems. In the elderly, PS+PA significantly improved memory and prevented "winter blues" in a pre-post comparison. [\[R\]](#)

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Berries

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a variety of berries such as strawberries, blueberries, raspberries, and blackberries into your daily diet. Aim for at least one cup of fresh or frozen berries every day, either as a snack, part of your breakfast (such as in oatmeal or yogurt), or as a dessert.

Description

Berries, such as strawberries, blueberries, and raspberries, are packed with antioxidants, vitamins, and fiber. Regular consumption of berries may support heart health, improve cognitive function, and contribute to overall well-being.

How it helps

Berry fruit supplementation has potential health effects as an antioxidant. It may also reduce and prevent symptoms of anxiety, depression, Alzheimer's, and Parkinson's diseases [\[R\]](#).

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Acceptance and Commitment Therapy (ACT)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

Description

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

How it helps

Acceptance and Commitment Therapy (ACT) may help improve various affective and anxiety-related symptoms, which may indicate potential usefulness for seasonal affective disorder. However, studies on seasonal affective disorder are needed to confirm it [\[R\]](#), [\[R\]](#), [\[R\]](#).

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Avoid Meals 3-4 Hours Before Bedtime

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Finish your last meal of the day at least 3 to 4 hours before you go to sleep. For example, if you usually go to bed at 10 pm, aim to have dinner no later than 6 pm to 7 pm.

Description

Avoiding meals, especially heavy meals, close to bedtime can help prevent digestive discomfort, indigestion, and disrupted sleep patterns. Opting for lighter evening meals promotes better digestion and overall sleep quality.

How it helps

People with SAD often consume more carbohydrates, especially in the evening. This intake can phase delay circadian rhythms. The study observed no significant effects from the timing of these meals on depressive symptoms, suggesting that other factors like seasonal light exposure might play more substantial roles in mood changes [\[R\]](#).

Night eating syndrome, which involves consuming a significant portion of daily calories in the evening and night, shares some symptoms with SAD, like increased carbohydrate cravings. However, a study found that these conditions do not necessarily overlap, indicating that while they may share some eating patterns, they are distinct in their clinical manifestations [\[R\]](#).

18



Spend Time in Nature

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Aim to spend at least 120 minutes per week in natural environments, such as parks, forests, or beaches. This can be divided into short durations throughout the week, for example, 17 minutes per day or longer sessions on weekends.

TYPICAL STARTING DOSE

2 hours

Description

Spending time in nature, also known as ecotherapy or forest bathing, is a wellness practice that involves immersing oneself in natural environments. It offers mental and physical health benefits, including reduced stress, improved mood and eye health, healthier weight, and blood sugar control.

Spending over 2 hours in nature every week is linked to better health and well-being [R].

Spending more time in nature or in urban green areas may help support [R, R, R, R, R]:

- Healthy weight
- Blood sugar control
- Heart health
- Mental health
- Eye health

To get in touch with nature, you can [R, R]:

- Go on a walk
- Go biking or camping
- Garden
- Visit a park

How it helps

Experts recommend exposure to natural light [R].

Spending time outdoors in natural light (1 hour/day for 1 week), especially through morning walks and increased exercise, may improve symptoms of seasonal affective disorder [R].

The benefits of being outdoors may be linked to natural light exposure. Women with SAD may spend about the same amount of time outdoors during Winter as healthy women. They may spend even more time outdoors during Summer than healthy women, which may indicate a higher sensitivity to the amount of light received in people with SAD instead of a lack of exposure to natural light [R].

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Phosphatidylserine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 100 mg of phosphatidylserine three times daily with meals. Continue this regimen for up to 6 months to evaluate its effectiveness.

TYPICAL STARTING DOSE
300 mg

Description

Phosphatidylserine is a naturally occurring phospholipid found in cell membranes, primarily in animal-based sources such as meat and fish. It is commonly used as a dietary supplement to potentially support cognitive function and memory, as well as age-related cognitive decline and improving focus and mental clarity.

[Phosphatidylserine](#) is a major component of all cell membranes. It’s found in high amounts in the brain, and it helps support brain function.

People use phosphatidylserine as a supplement to improve mental focus, memory, and mood.

How it helps

Phosphatidylserine is a supplement thought to help regulate mood. It may increase the production of brain chemicals linked to mood, potentially improving symptoms of Seasonal Low Mood.

A 3-month double-blind, placebo-controlled study assessed the influence of three PS+PA capsules/day, (300 mg PS + 240 mg PA/day) [phosphatidylserine (PS) and phosphatidic acid (PA)] or placebo on memory and mood in functioning, non-depressive elderly people with memory problems. In the elderly, PS+PA significantly improved memory and prevented "winter blues" in a pre-post comparison. [\[R\]](#)

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Phosphatidic Acid

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Consume 750mg of phosphatidic acid supplement daily, preferably with a meal to enhance absorption. Continue this regimen for at least 8 weeks to evaluate its effectiveness in supporting muscle mass and strength gains.

Description

Phosphatidic acid is a phospholipid naturally found in cell membranes, and is particularly abundant in soybeans. It plays a role in cell signaling and may have potential benefits in supporting muscle growth and recovery, as well as improving memory and mood.

How it helps

Phosphatidic Acid may help manage Seasonal Low Mood by stimulating the release of neurotransmitter chemicals in the brain like dopamine and serotonin, which significantly influence mood. This potential increase in these "mood-boosting" chemicals could lessen symptoms of depression commonly seen in Seasonal Affective Disorder.

A 3-month double-blind, placebo-controlled study assessed the influence of three PS+PA capsules/day, (300 mg PS + 240 mg PA/day) [phosphatidylserine (PS) and phosphatidic acid (PA)] or placebo on memory and mood in functioning, non-depressive elderly people with memory problems. In the elderly, PS+PA significantly improved memory and prevented "winter blues" in a pre-post comparison. [\[R\]](#)

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 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.