

Low Mood

DNA Health Report

REPORT CATEGORY —



Sample Client

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Table of Contents

03

Introduction

04

Your genetics

06

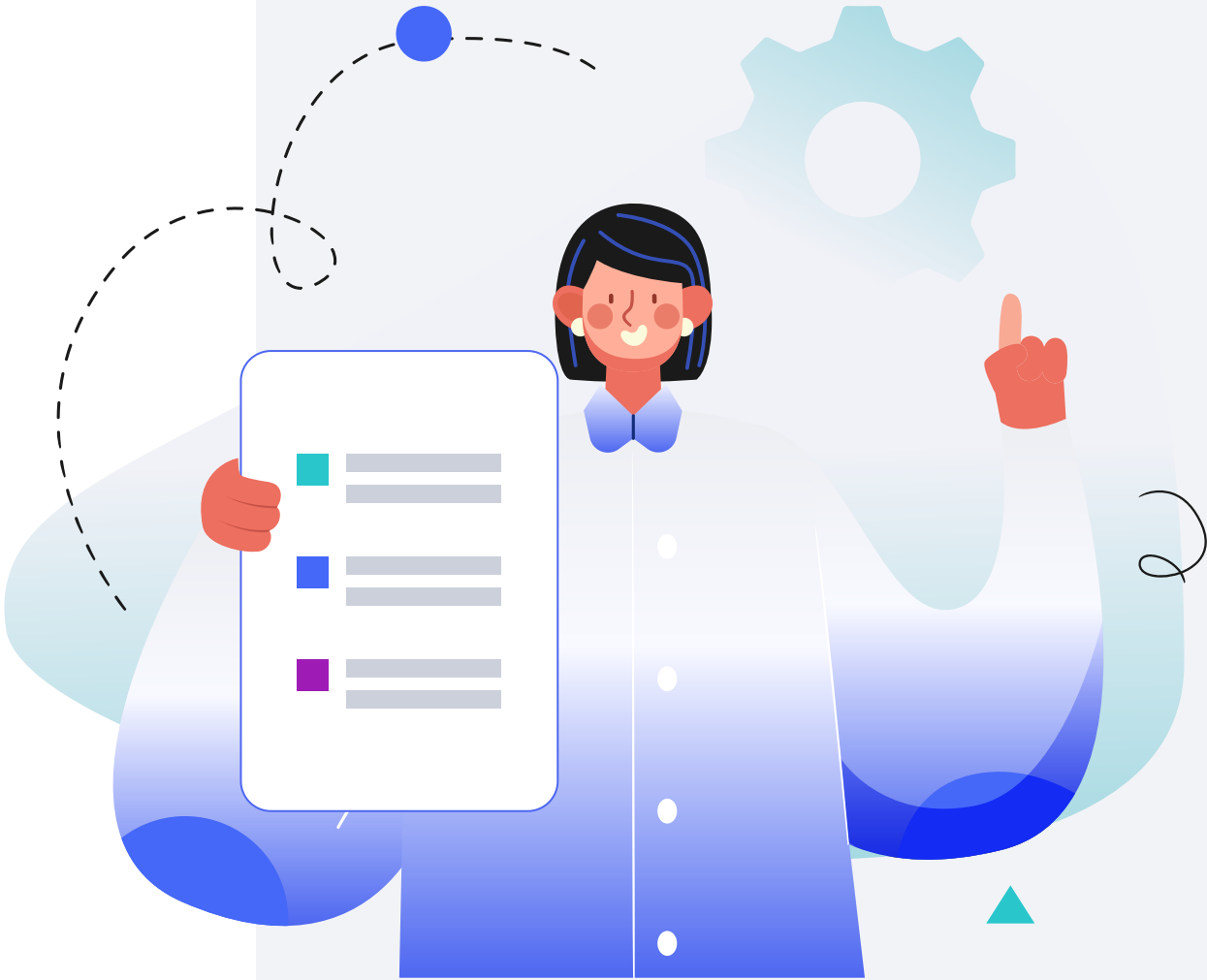
Your recommendations

Personal information

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

DISCLAIMER

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



Introduction

Feeling down? You’re not alone. Everybody feels low at some point in their lives.

Problems with relationships, work, and health can have a huge impact on your mood. Sometimes, the reason for your low mood is not so easy to pinpoint [\[R\]](#).

When you feel low, you may experience [\[R\]](#):

- Sadness
- Anxiety
- Tiredness
- Anger

These emotions usually improve with time. However, **a low mood that lasts for more than two weeks *and* impacts your daily activities may be a sign of depression** [\[R\]](#).

Depression affects more than 264 million people around the world. It can appear at any age, but it’s often diagnosed between the ages of 18 and 25. Many adults over the age of 65 also struggle with depression [\[R\]](#), [\[R\]](#).

Fortunately, **there are many strategies that can help boost your mood.**

This report focuses on the genetics of low mood. Read more to find out:

- **How your genetics play a role in low mood**
- **Your genetic risk score based on over 84,000 genetic variants**
- **Personalized recommendations based on your genetics**

About Low Mood

Key Takeaways:

- About 40% of differences in people's odds of developing depression may be due to genetics.
- It is more likely for young adults and the elderly but can affect people of all ages.
- Other risk factors include traumatic and stressful events, serious medical conditions, and substance use problems.
- If you have high genetic risk, you may want to consider optimizing your stress management.
- Click the **next steps** tab for relevant labs and lifestyle factors.

Depression is more than just a low mood. People with depression tend to have [\[R\]](#):

- Low motivation
- Problems with concentration
- Changes in appetite
- Poor sleep quality
- Aches and pains
- Thoughts of self-harm or suicide

If any of these symptoms resonate with you, you can work with your doctor to improve them. **Psychotherapy and medication are the most effective treatments for depression.** Strategies such as [exercise](#) may also boost your mood [\[R\]](#), [\[R\]](#).

The strategies most likely to work for you may depend on your genetics. This is because genetic factors account for roughly 40% of differences in depression [\[R\]](#).

Gene variants linked to this condition may cause [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- An exaggerated stress response ([CRHR1](#), [COMT](#))



MORE LIKELY

More likely to have chronically low mood based on **84,205 genetic variants we looked at**



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
MTHFR	rs1801133	AA
NEGR1	rs1993709	GG
MICB	rs1150757	GG
MEF2C	rs409645	GG
TCF4	rs1452787	AG
TTC12	rs1554929	CC
NOX4	rs10047486	AA
ZCCHC7	rs6476606	GG
FKBP4	rs2302729	CC
RNF180	rs878567	GG
TULP1	rs9296158	GG
FAM53B	rs35936514	CC
ANKK1	rs1800497	GA
OXTR	rs2254298	GA
TERT	rs2736100	AC
SH3YL1	rs6548238	TC
FAAH	rs324420	CA
TPH1	rs1799913	GT
PUM3	rs7044150	CT
MAOA	rs909525	C

- Low levels or activity of brain chemicals ([COMT](#), [OPRM1](#), [SLC6A4](#), [DRD2](#))
- Impaired brain function ([BDNF](#), [VRK2](#))
- Inflammation ([IL6](#), [VRK2](#))
- Sleep disturbances ([CLOCK](#), [TIMELESS](#))

Genetically high white blood cell count and testosterone and low DHA may be causally associated with a higher risk of depression. Moreover, depression may also lead to increased white blood cells [\[R\]](#), [\[R\]](#), [\[R\]](#).

It's important to note that **genetics is only one piece of the puzzle**. Other risk factors for depression include [\[R\]](#):

- Stressful or traumatic events
- Serious medical conditions, such as cancer
- Heavy drug and alcohol use

GENE	SNP	GENOTYPE
TTC12	rs2283265	CA
CES1	rs1566652	GT
TTC12	rs1079727	TC
TTC12	rs1079597	CT
TTC12	rs1076560	CA
ANK3	rs10761482	CT
CRHR2	rs3779250	TC
CNR1	rs806371	TT
CNR1	rs1049353	TT
SLC25A21	rs17105696	AA
PTPRR	rs4760933	AA
UGT2B4	rs6832167	AA
ARNTL	rs7107287	TT
CHRM2	rs1824024	CC
ATG9A	rs7596956	TT
HCN4	rs12905211	TT
TMEM263	rs10861683	TA
BHLHE40	rs9311395	AA
TPH2	rs1843809	TT
CHRM2	rs2061174	GG
EHD3	rs590557	GA
CNIH4	rs11579964	CC
GNB3	rs5443	CT
VPS8	rs7647854	GG
VGLL4	rs6781822	CT
GYPE	rs7676614	AG
CHST11	rs1344677	CT
PHACTR3	rs8122984	GA
UGGT2	rs17767562	CT
LHFPL2	rs12651937	TC

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	Cognitive-Behavioral Therapy (CBT)	2	Psychotherapy1 hour
3	Psychodynamic Therapy	4	Interpersonal Therapy50 minutes
5	St. John's Wort300 mg	6	Sunlight Exposure20 minutes
7	Repetitive Transcranial Magnetic Stimulation	8	Strength Training1 hour
9	Practice Exercise Snacks1 minutesute	10	Morning Bright Light Therapy20 minutes
11	Acceptance and Commitment Therapy (ACT)	12	5-HTP100 mg
13	Probiotics10 billion	14	DHEA (Dehydroepiandrosterone)25 mg
15	Tryptophan500 mg		

1



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) may help with depression. It may help by reducing negative thoughts and behaviors [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

CBT may help when delivered face-to-face or online [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

2



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

Psychotherapy can boost your mood by helping you [\[R, R, R, R, R\]](#):

- Cope with stress
- Control negative thoughts and emotions
- Improve social skills
- Build stronger relationships

Types of psychotherapy that can help with depression include:

- **Cognitive-behavioral therapy (CBT):** aims to improve your coping mechanisms by altering thinking patterns and behavior [\[R, R, R\]](#)
- **Psychodynamic therapy:** tries to reduce the negative impact of feelings from your past experiences [\[R, R, R\]](#)
- **Interpersonal therapy:** focuses on improving your communication, relationships, and emotional control [\[R, R, R\]](#)

CBT is part of the “gold standard” treatment for depression, recommended by health experts worldwide [\[R, R, R, R\]](#).



PERSONALIZED TO YOUR GENES

People with your [COMT](#) gene variant may experience greater mental health improvements from CBT [\[R\]](#). Ask your doctor about CBT. CBT may be more effective for depression in people with your [BDNF](#) gene variant [\[R\]](#). Ask your doctor about CBT.

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
COMT	rs4680	AG	
GENE	SNP	GENOTYPE	EVIDENCE
BDNF	rs6265	TC	



Psychodynamic Therapy



How to implement

Schedule and attend weekly sessions with a trained psychodynamic therapist for a minimum duration of 6 months to several years, depending on individual needs and progress.

Description

Psychodynamic therapy is a form of psychotherapy that focuses on exploring unconscious thoughts and emotions to gain insight into a person's psychological issues and improve mental well-being.

Psychodynamic therapy is **a form of psychotherapy or talk therapy**. It focuses on conscious and subconscious feelings from past experiences and how they affect the patient [\[R\]](#).

Psychodynamic therapy can boost your mood and help build a more resilient personality [\[R\]](#).

How it helps

Psychodynamic therapy may help with depression by reducing the negative impact of feelings from your past experiences [\[R\]](#), [\[R\]](#), [\[R\]](#).

Both short-term (a few weeks) and long-term (typically 1 year) therapy may help and benefits may remain for up to 1 year. Individual therapy and combination with standard care may offer greater benefits [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

4



Interpersonal Therapy

IMPACT

5 / 5

EVIDENCE

5 / 5

How to implement

Engage in weekly 50-minute sessions with a certified therapist trained in interpersonal therapy for a duration of 12-16 weeks. During these sessions, focus on improving your interpersonal relationships and communication skills to address specific issues such as unresolved grief, role transitions, interpersonal disputes, or social deficits.

TYPICAL STARTING DOSE

50 minutes

Description

Interpersonal therapy is a form of psychotherapy or talk therapy. It helps analyze the life events that may contribute to the depressive state. Interpersonal therapy aims to improve communication and personal relationships.

Interpersonal therapy is a form of psychotherapy or talk therapy. It helps analyze the life events that may contribute to the depressive state. Interpersonal therapy aims to improve communication and personal relationships [\[R\]](#), [\[R\]](#).

Interpersonal therapy is used to approach several conditions, including [\[R\]](#):

- Depression
- Anxiety disorders
- Eating disorders
- PTSD

How it helps

Interpersonal therapy (typically for at least 12 weeks) may help with depression. It may help when delivered personally, via the internet, or self-guided. Combination with standard care may offer greater benefits [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Interpersonal therapy may help with depression by helping improve [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Communication
- Relationships
- Emotional control

Keep in mind that interpersonal therapy may help less than cognitive-behavioral therapy (CBT) [\[R\]](#).

5



St. John's Wort

IMPACT

5 / 5

EVIDENCE

4 / 5

How to implement

Take 300 mg of St. John's Wort supplement three times a day with meals for a duration typically ranging from four to six weeks to assess its effects on your mood and anxiety levels. Consistency is key for optimal benefits.

TYPICAL STARTING DOSE

300 mg

Description

St. John's Wort is a plant native to Europe and Asia, traditionally used for various medicinal purposes. It is typically consumed as an herbal supplement made from the plant's flowers and leaves. This supplement has been used for centuries to address conditions like mild to moderate depression, anxiety, and sleep disturbances. The plant contains several compounds, including hypericin and hyperforin, believed to have mood-regulating properties.

[St. John's wort](#) (*Hypericum perforatum*) is one of the most popular herbs for mood problems. People also apply it on the skin to treat cuts, wounds, and burns [\[R, R\]](#).

Please note: *St. John's wort can interact with 5-HTP, SAM-e, birth control pills, and different medications. Combining it with antidepressants can be dangerous and even life-threatening. Never take St John's wort without consulting your doctor* [\[R, R\]](#).

How it helps

St John's wort may improve depression symptoms with few adverse effects. Pills providing **900 mg of extract per day** for 4-12 weeks may deliver the most benefits [\[R, R, R, R, R\]](#).

St. John's wort supports healthy mood by [\[R, R, R, R, R\]](#):

- Increasing [serotonin](#) and [dopamine](#) levels
- Reducing inflammation
- Protecting the brain from toxins

Please note: *St. John's wort can interact with 5-HTP, SAM-e, birth control pills, and different medications. Combining it with antidepressants can be dangerous and even life-threatening. Never take St John's wort without consulting your doctor* [\[R, R\]](#).



PERSONALIZED TO YOUR GENES

Your [DRD2](#) gene variant is linked to depression. This gene affects brain [dopamine](#) levels. St John’s wort may improve mood by boosting dopamine in the brain [[R](#), [R](#), [R](#), [R](#), [R](#)].

St John’s wort may reduce the effectiveness of certain drugs in people with your [CYP2C19](#) gene variant. These include [[R](#)]:

- Anti-anxiety drugs such as diazepam
- Antidepressants such as citalopram or fluoxetine
- Proton pump inhibitors such as omeprazole or pantoprazole
- Anticoagulants such as warfarin
- Barbiturate sedatives such as phenobarbital
- Antimalarial drugs such as chloroguanide

Always let your doctor know if you’re taking St John’s wort to avoid drug interactions.

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
TTC12	rs1554929	CC	
CYP2C19	rs4244285	GG	

6



Sunlight Exposure

IMPACT

5 / 5

EVIDENCE

4 / 5

How to implement

Expose your skin to direct sunlight for about 10-30 minutes several times per week, preferably during midday when the sun is strongest. Adjust duration based on your skin sensitivity and local climate to avoid sunburn.

TYPICAL STARTING DOSE

20 minutes

Description

Sunlight exposure provides the body with essential vitamin D when the skin is exposed to UVB rays. Vitamin D is crucial for bone health, immune function, and mood regulation. It can also help regulate circadian rhythms.

[Sunlight](#) or bright light during the day can benefit your body and mind. It may [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Boost your mood
- Boost your performance and energy
- Improve sleep quality

Experts recommend getting **at least 5-15 minutes of midday sun, 2-3 times per week**. People with darker skin and those living at high latitudes may need longer periods of sun exposure [\[R\]](#), [\[R\]](#).

However, **excessive sun exposure may lead to sunburn, skin aging, and skin cancer**, so make sure to find the right balance [\[R\]](#), [\[R\]](#).

Light therapy is an option when you can’t get sufficient sunlight. It typically involves placing a “light box” nearby for 30 minutes each morning. A light therapy box should [\[R\]](#), [\[R\]](#), [\[R\]](#):

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

How it helps

Mood problems tend to worsen during the winter, mostly due to reduced sunlight exposure. Light exposure may improve your mood by **balancing brain chemicals**, such as [serotonin](#) [\[R\]](#), [\[R\]](#), [\[R\]](#).

Health experts recommend light therapy for low mood during the winter. The *American Psychological Association* suggests bright light therapy for depression. [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

The sun’s UV rays also help you produce [vitamin D](#). People with mood problems tend to have low levels of this vitamin, which is crucial for mental health [\[R\]](#), [\[R\]](#), [\[R\]](#).

 PERSONALIZED TO YOUR GENES

In people with your [DGKB](#) gene variant, the lack of light exposure may cause mood problems [\[R, R\]](#). Make sure to get enough sunlight, or consider trying light therapy.

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
DGKB	rs190675597	GA	

7



Repetitive Transcranial Magnetic Stimulation

IMPACT4 / 5

EVIDENCE5 / 5

How to implement

Attend sessions at a certified medical facility, where a healthcare professional will use a coil placed near your head to generate brief magnetic pulses. Typically, sessions occur 5 days a week for 4-6 weeks.

Description

Repetitive transcranial magnetic stimulation (rTMS) is a noninvasive procedure that stimulates the brain to improve symptoms of [\[R, R\]](#):

- Depression
- Muscle disease
- Parkinson's disease

rTMS delivers several magnetic pulses through an electromagnetic coil placed on the scalp. The pulses stimulate the region of the brain involved in mood and depression [\[R, R\]](#).

This technique is used in people who don’t respond to standard care. rTMS is generally painless and safe when performed by trained professionals [\[R, R\]](#).

How it helps

rTMS (3-5 sessions/week for 1-4 weeks) may help improve depression symptoms in people that didn’t respond to standard care. However, more research is needed to confirm this benefit, especially in the long term [\[R, R, R, R\]](#).

Other types of TMS such as deep and accelerated TMS may also help [\[R, R\]](#).

TMS may help by reducing inflammation and increasing the brain production of [\[R\]](#):

- [Dopamine](#)
- [BDNF](#)

8



Strength Training

IMPACT

4 / 5

EVIDENCE

5 / 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

People who exercise regularly have lower rates of depression and milder depression symptoms [\[R, R, R\]](#).

Exercise may boost your mood by improving [\[R\]](#):

- Stress levels
- Self-esteem
- Energy and sleep quality
- Sex drive
- Alertness
- Weight and fitness

Cardio, resistance training, and their combination can help you prevent or reduce depression [\[R, R\]](#).

The *American Psychological Association* suggests exercise for depression [\[R\]](#).

9



Practice Exercise Snacks

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

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

TYPICAL STARTING DOSE

1 minutesute

Description

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

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

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

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

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

How it helps

People who exercise regularly have lower rates of depression and milder depression symptoms [\[R\]](#), [\[R\]](#), [\[R\]](#).

Exercise may boost your mood by improving [\[R\]](#):

- Stress levels
- Self-esteem
- Energy and sleep quality
- Sex drive
- Alertness
- Weight and fitness

10



Morning Bright Light Therapy

IMPACT

4 / 5

EVIDENCE

4 / 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

Mood problems tend to worsen during the winter, mostly due to reduced sunlight exposure. Light exposure may improve your mood by **balancing brain chemicals**, such as [serotonin](#) [\[R\]](#), [\[R\]](#), [\[R\]](#).

Health experts recommend light therapy for low mood during the winter. The *American Psychological Association* suggests bright light therapy for depression. [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

11



Acceptance and Commitment Therapy (ACT)

IMPACT4 / 5

EVIDENCE4 / 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

Two meta-analyses (the largest one with 18 trials and 1088 participants) concluded that ACT helps improve depression, especially at 3-month follow-up and in those with mild symptoms. Internet-delivered ACT may also help according to a meta-analysis of 39 trials [\[R, R, R\]](#).

Group ACT may even be more effective than cognitive-behavioral therapy according to a meta-analysis of 40 trials [\[R\]](#).

ACT can enhance psychological flexibility and help individuals engage in values-based actions, improving mood.

12



5-HTP

IMPACT

4 / 5

EVIDENCE

3 / 5

How to implement

Take 100 mg of 5-HTP as a supplement daily, ideally with a glass of water. It can be taken at any time of the day but taking it at the same time each day may help establish a routine.

TYPICAL STARTING DOSE

100 mg

Description

5-HTP is a building block for serotonin. 5-HTP and serotonin help make melatonin, a hormone that promotes sleep. People mainly use 5-HTP as a mood-boosting supplement. It may also help reduce appetite, help with chronic pain and fatigue, and improve sleep quality.

5-HTP is a building block for the “happiness hormone” **serotonin**. 5-HTP and serotonin help make **melatonin**, a hormone that promotes sleep [\[R\]](#).

People mainly use 5-HTP as a mood-boosting supplement [\[R, R\]](#). According to early research, it may also:

- Reduce appetite [\[R, R, R\]](#)
- Help with chronic pain and fatigue [\[R, R, R\]](#)
- Improve sleep quality [\[R, R\]](#)

Please note: 5-HTP can interact with SAM-e, St. John’s wort, and different medications. Combining it with antidepressants can be dangerous and even life-threatening. Never take 5-HTP without consulting your doctor [\[R, R, R\]](#).

How it helps

5-HTP supplements (150-800 mg/day for up to 8 weeks) may reduce depression symptoms [\[R, R, R\]](#).

They work by boosting serotonin levels. Lack of serotonin may play a major role in mood problems [\[R, R, R, R\]](#).

Please note: 5-HTP can interact with St. John’s wort, and different medications. Combining it with antidepressants can be dangerous and even life-threatening. Never take 5-HTP without consulting your doctor [\[R, R, R\]](#).



PERSONALIZED TO YOUR GENES

Your [TPH2](#) gene variant is associated with depression. This gene affects 5-HTP and serotonin production in the brain [\[R\]](#), [\[R\]](#). 5-HTP supplements may help make up for this effect.

TPH1 codes for one of the “raw materials” your brain needs in order to make serotonin [\[R\]](#).

Your **rs1799913** genotype is associated with increased risk of mood problems [\[R\]](#).

One of the best lifestyle hacks for your genotype is to increase the amount of [sunlight exposure](#) you get.

The best supplement for counteracting your genotype is the serotonin precursor [5-HTP](#) [\[R\]](#).

The *TERT* gene is involved in protecting DNA during cell division. It also affects how sensitive your brain is to serotonin [\[R\]](#), [\[R\]](#), [\[R\]](#).

Your **rs2736100** genotype is associated with increased risk of mood problems [\[R\]](#).

You may counteract your genotype by supplementing with [5-HTP](#), which helps boost serotonin [\[R\]](#), [\[R\]](#), [\[R\]](#).

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
TPH2	rs4290270	TT	
TPH1	rs1799913	GT	
TERT	rs2736100	AC	

13



Probiotics

IMPACT

4 / 5

EVIDENCE

3 / 5

How to implement

Take a probiotic supplement containing 10 billion or more live cultures once daily, preferably with a meal or as directed by the packaging or a healthcare provider.

TYPICAL STARTING DOSE

10 billion

Description

Probiotics are live beneficial bacteria and yeasts that can support gut health and digestive function when consumed as supplements or found in fermented foods like yogurt and sauerkraut. They may be beneficial to gut health, immune function, blood sugar, and mood.

Probiotic bacteria are “good” bacteria found mainly in the large intestine. They support your body and mind by [\[R, R, R, R, R, R, R, R\]](#):

- Maintaining gut health
- Supporting a healthy immune system
- Improving your mood
- Helping to maintain healthy blood sugar

Prebiotics are certain types of fiber and other complex carbs that serve as food for gut bacteria. **They support gut health by helping boost the activity and growth of “good” bacteria** [\[R, R\]](#).

Prebiotics are also added to foods and supplements. Common prebiotic ingredients are [\[R, R\]](#):

- Oligo-fructose
- Oligo-galactose
- [Inulin](#)

Mixtures of probiotics and prebiotics are known as **synbiotics** [\[R\]](#).

How it helps

Your gut bacteria can affect your mood! People with mental illness tend to have different gut bacteria compared to healthy people [\[R, R\]](#).

Probiotic supplements may improve your mood by restoring “good” gut bacteria. They may also benefit people with depression [\[R, R, R, R, R\]](#).

Supplements used for mood problems contained one or more of the following probiotics [\[R, R, R, R, R, R\]](#):

- [L. helveticus](#)
- [B. longum](#)
- [L. acidophilus](#)
- [L. rhamnosus](#)
- [B. bifidum](#)
- [L. casei](#)



PERSONALIZED TO YOUR GENES

Probiotics may be more likely to improve mood in people with your *IL1B* variant [R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
IL1B	rs16944	AG	

14



DHEA (Dehydroepiandrosterone)

IMPACT

4 / 5

EVIDENCE

3 / 5

How to implement

Take 25-50 mg of DHEA orally with water daily, preferably in the morning to mimic the body's natural rhythm of DHEA production. It is advisable to start at the lower dose to assess tolerance and adjust as needed. Consult a healthcare provider for personalized advice and before starting a new supplement regimen.

TYPICAL STARTING DOSE

25 mg

Description

DHEA is a hormone produced by the adrenal glands and has been used as a dietary supplement for various purposes, including supporting hormonal balance and energy levels. It may have potential benefits for specific individuals, but its use should be supervised by a healthcare professional due to its hormonal nature.

DHEA is a steroid hormone produced primarily by the adrenal glands. It is also produced to a much lesser extent by the testes and ovaries and, possibly, the brain [\[R\]](#), [\[R\]](#).

DHEA helps make the sex hormones [testosterone](#) and [estrogen](#). DHEA is important for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Mood
- Immunity
- Muscle strength
- Bone health
- Skin health

DHEA is released in response to stress. In fact, one of DHEA's important roles is to protect against the adverse effects of prolonged and excessive exposure to cortisol, the stress hormone [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Low DHEA levels are associated with depression in some people [\[R\]](#).

DHEA (30-450 mg/day for 6 weeks) may reduce depressive symptoms and improve mood [\[R\]](#), [\[R\]](#).

DHEA may help by stimulating the brain activity of [serotonin](#) and [GABA](#) [\[R\]](#).

Please note: DHEA has been banned by sport associations and anti-doping agencies. DHEA should not be used at high doses or long-term and is contraindicated in patients with hormone-responsive cancers. DHEA supplements should only be used with the prescription of a medical professional. Discuss risks and side effects with your doctor [\[R\]](#).

15



Tryptophan

IMPACT

4 / 5

EVIDENCE

2 / 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

Low tryptophan levels are associated with depression [\[R, R, R\]](#).

Consider increasing your intake of tryptophan-rich foods.