SelfDecode™

Caffeine-Related Sleep Problems

DNA Health Report

REPORT CATEGORY

SLEEP

Sample Client

Report date: 15 January 2026

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Personal information

NAME

Sample Client

SEX AT BIRTH

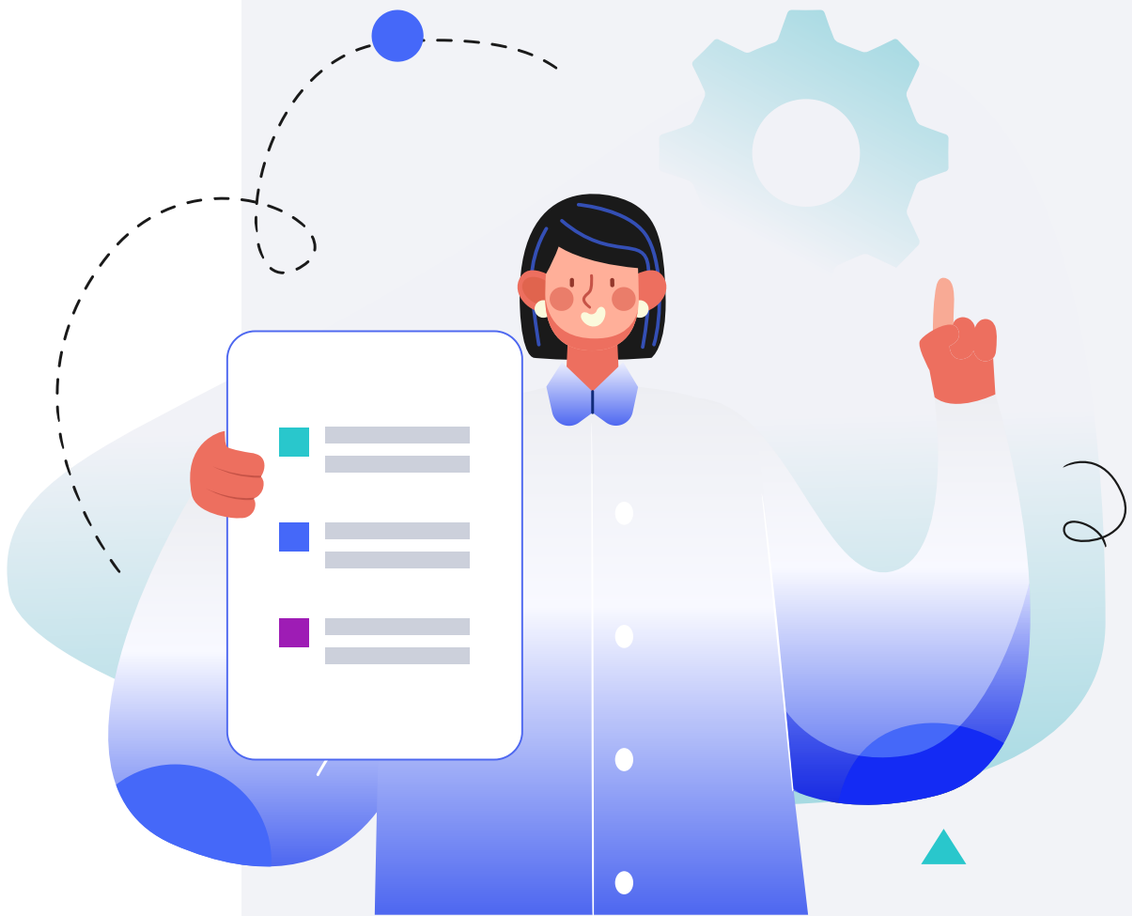
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

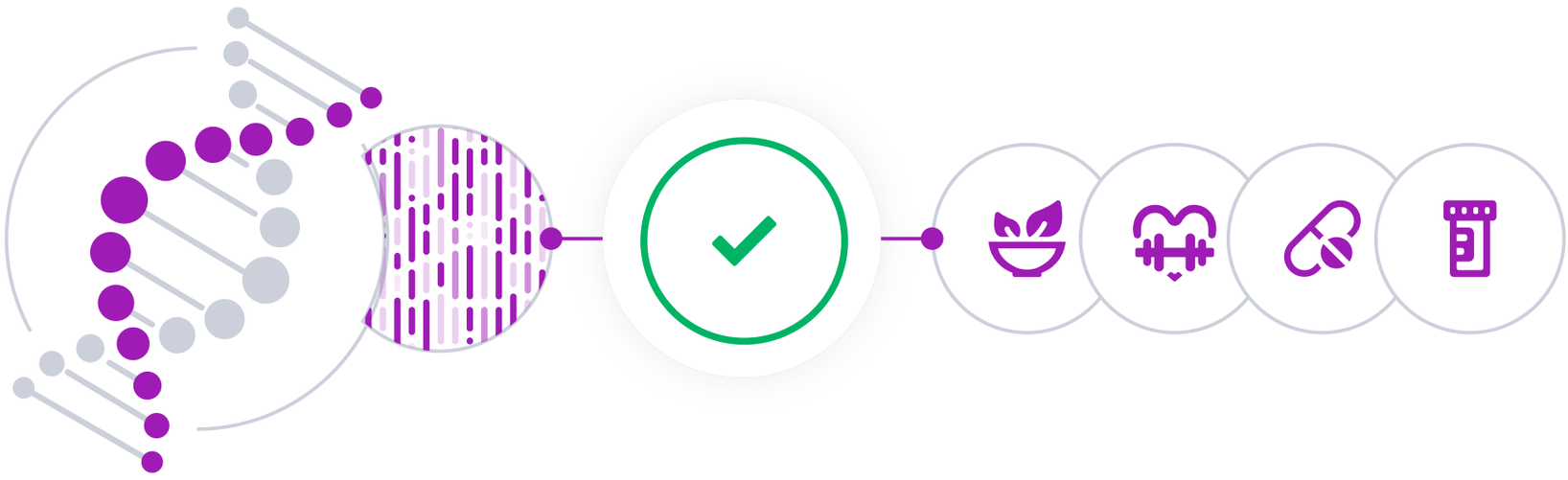


DISCLAIMER

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

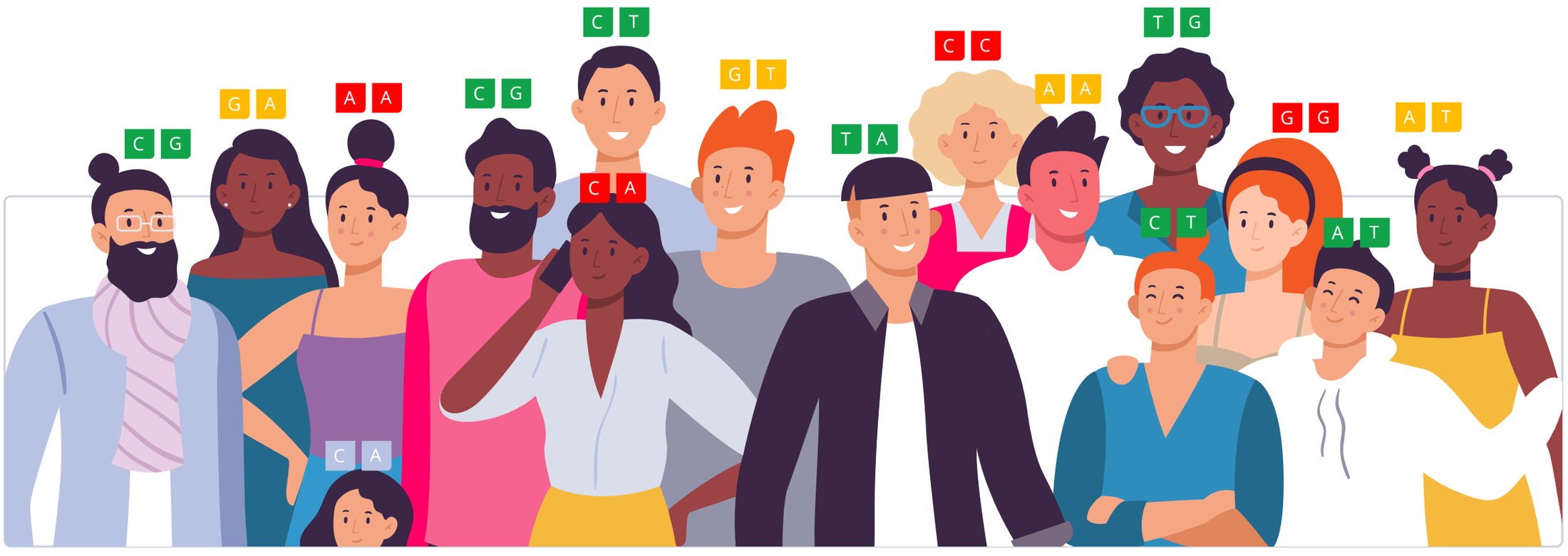
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

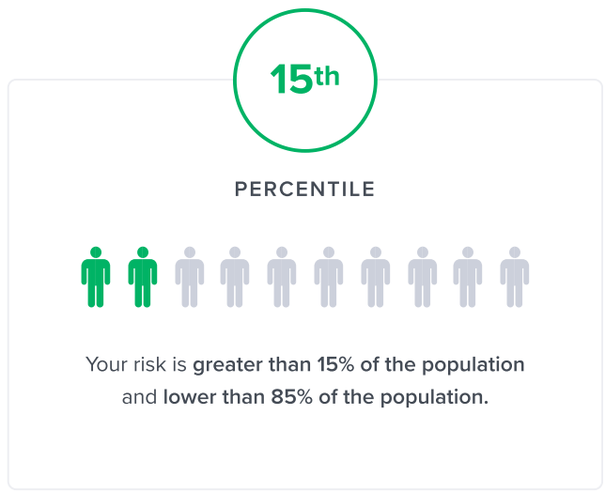
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.

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

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



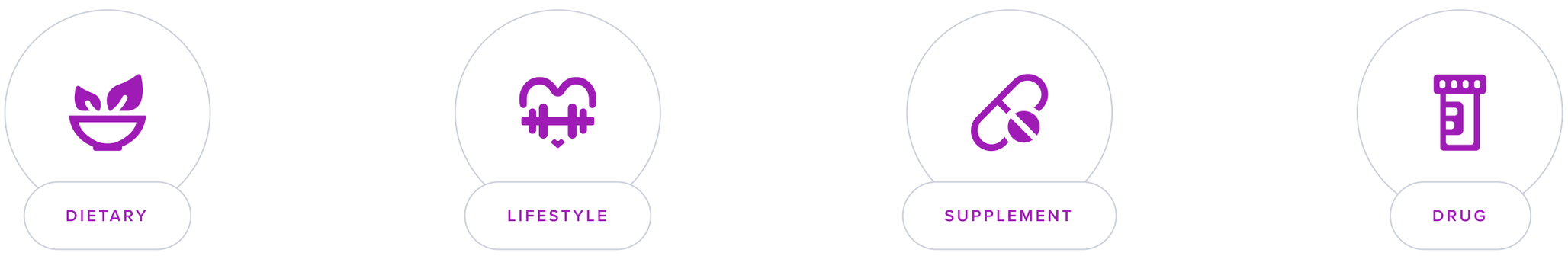
Genotype color info: AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

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, afew 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

About 1 in 3 people in the US experience sleep problems. But thankfully, these problems are short-lived for most [R, R].

If you've ever struggled to fall or stay asleep, you're likely to [R, R]:

- Feel tired
- Have trouble focusing
- Have trouble remembering things
- Feel irritable

A compound called adenosine builds up in the brain while we are awake and peaks at bedtime, causing us to feel sleepy. The longer we stay awake, the sleepier we get. Adenosine decreases while we sleep, so we feel rested when we wake up [R].

Caffeine is a well-known stimulant. It can promote wakefulness and interrupt sleep by reducing adenosine activity [R, R, R, R].

Caffeine's effects on sleep tend to be strongest in the evening, before bedtime. Older people and those who sleep less may be more sensitive to caffeine [R, R, R, R, R].

For the average person, **coffee and tea are the main sources of caffeine**. You may also be ingesting caffeine in chocolate, energy drinks, or supplements [R].

Genetic Background

Caffeine is a well-known stimulant. It can promote wakefulness and interrupt sleep by reducing the activity of adenosine, a sleep-promoting compound that builds up while we are awake and decreases while we sleep. **Caffeine's effects on sleep tend to be strongest in the evening, before bedtime.** Older people and those who sleep less may be more sensitive to caffeine [R, R, R, R].

Up to **40%** of differences in caffeine-related sleep problems may be due to genetics. Interestingly, the majority of these genetic factors are specific to caffeine, and they don't affect sleep in general [R].

A gene called *ADORA2A* helps make a receptor for adenosine. Caffeine promotes wakefulness and interrupts sleep by blocking this receptor. Unsurprisingly, a variant belonging to this gene, rs5751876, is linked to caffeine-related sleep problems [R, R, R, R].

What's surprising is the opposite effect of this variant on caffeine-related anxiety. **People carrying the "T" allele may be less prone to sleep problems but more prone to anxiety due to caffeine intake** [R, R, R].

Other gene variants linked to caffeine-related sleep problems may affect:

- Melatonin (*MTNR1B*)
- Compounds similar to adenosine (*GBP1*, *GBP4*)
- Brain function (*ADGRL2*)
- Heart function (*NEBL*)

Please note: Your other gene variants, lifestyle, and environment may also affect caffeine-related sleep problems.

TYPICAL LIKELIHOOD

Typical likelihood of caffeine-related sleep problems based on 18 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
ADORA2A	rs5751876	CT
NEBL	rs9665295	CC
ALDH7A1	rs13172305	GG
FCHSD2	rs1791933	CT
KCTD15	rs11878836	TT
MDFIC2	rs7628219	CC
GBP7	rs521704	CA
ADGRL2	rs12725617	CT
COMT	rs4680	AG
PRIMA1	rs6575353	GA
PRIMA1	rs12895096	TG
/	rs16905439	CC
TMEM51	rs2103117	GG
GBP3	rs12407812	CC
ADRA2A	rs2065779	GG
SLC7A1	rs2388082	CC
MTNR1B	rs10830964	CC
LRTM1	rs11706236	AA
NEDD4L	rs158856	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
1	Limit Caffeine Intake	
2	Exercise At Least One Hour a Day	1 hour
3	Walking	30 minutes
4	Valerian	500 mg
5	Morning Sunlight Exposure	30 minutes
6	Avoid Sugary Foods At Night	
7	Avoid Meals 3-4 Hours Before Bedtime	
8	Blue-Blocking Glasses	
9	Melatonin	500 mcg
10	Decaffeinated Coffee	
11	Avoid Long Naps	
12	Magnesium	350 mg
13	L-Theanine	100 mg
14	Cognitive-Behavioral Therapy (CBT)	

1

Limit Caffeine Intake

IMPACT 5 / 5

EVIDENCE 5 / 5

How to implement

Limit your caffeine consumption to less than 200 milligrams per day, equivalent to about two 6-ounce cups of coffee. Aim to avoid caffeine-containing foods and beverages such as tea, chocolate, and some soft drinks, especially in the late afternoon and evening to minimize sleep disturbances.

Description

Although caffeine is the world's most popular stimulant, some people choose to limit or avoid it due to potential adverse effects on their sleep, mood, or blood pressure.

How it helps

Caffeine is a well-known stimulant. It blocks adenosine and melatonin, two chemicals that induce sleep. As a result, caffeine may **reduce your sleep length and quality** [R, R, R, R].

People who are more sensitive to caffeine may want to **limit its daily intake to 100-200 mg**. This equals 1-2 cups of coffee, 2-4 cans of cola, or 2-4 cups of black tea [R].

Caffeine's effects on sleep tend to be strongest 3-6 hours before bedtime. Thus, if you plan to go to sleep at 11:00 pm, you should avoid caffeine any time after 5:00 pm [R, R, R].

Older people and those who sleep less may be more sensitive to caffeine [R, R].

2 Exercise At Least One Hour a Day

IMPACT 2 / 5

EVIDENCE 2 / 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

Exercise may slightly reduce sleep disturbances caused by high caffeine intake [R].

In people with fatigue due to poor sleep, a brief bout of stair walking may be more energizing than a low dose of caffeine [R].

3 Walking

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

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

TYPICAL STARTING DOSE

30 minutes

Description

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

How it helps

Exercise may slightly reduce sleep disturbances caused by high caffeine intake [R].

In people with fatigue due to poor sleep, a brief bout of stair walking may be more energizing than a low dose of caffeine [R].

4

Valerian

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 500 mg of valerian supplement about 30 minutes to an hour before bedtime to help improve sleep quality. Do this daily for best results.

TYPICAL STARTING DOSE

500 mg

Description

Valerian is an herbal supplement made from the roots of the Valeriana officinalis plant. It is commonly used as a natural remedy for sleep disorders and anxiety due to its potential to induce relaxation and improve sleep quality.

Valerian root is a medicinal herb with relaxing properties. People use it to improve [R, R, R, R, R]:

- Sleep
- Seizures
- Anxiety
- Headaches

Compounds in valerian help [R, R, R, R, R, R]:

- Reduce stress
- Suppress inflammation
- Relax muscles

How it helps

Valerian root is commonly used as a natural remedy to improve sleep quality and might help individuals fall asleep more easily despite caffeine intake.

5

Morning Sunlight Exposure

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Expose yourself to natural sunlight for at least 20 to 30 minutes immediately after waking up. Try to do this consistently every day to help regulate your body's internal clock.

TYPICAL STARTING DOSE

30 minutes

Description

Exposure to natural morning light can help regulate circadian rhythms, improve mood, and enhance wakefulness, as it signals the body to produce serotonin, a hormone associated with well-being and alertness.

How it helps

Exposure to morning light helps to regulate your body's natural biological clock, the circadian rhythm, thus improving sleep. It does this by reducing the stimulating effects of caffeine on your nervous system and promoting a healthy sleep-wake cycle.

6

Avoid Sugary Foods At Night

IMPACT 0 / 5

EVIDENCE 0 / 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

Consuming sugary foods before bed can cause blood sugar spikes and crashes that may disturb sleep. Stable blood sugar levels contribute to better sleep.

7

Avoid Meals 3-4 Hours Before Bedtime

IMPACT 0 / 5

EVIDENCE 0 / 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

Eating heavy meals before bedtime can lead to discomfort and indigestion, which may exacerbate sleep problems. Lighter meals are recommended to promote better sleep hygiene.

8

Blue-Blocking Glasses

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Wear blue-blocking glasses starting two to three hours before bedtime every night to help improve sleep quality by reducing blue light exposure from screens and indoor lighting.

Description

Blue-blocking sunglasses help reduce exposure to blue light emitted by screens and artificial lighting, potentially improving sleep quality and reducing eye strain. Wearing them in the evening can promote better circadian rhythm regulation and overall eye comfort.

How it helps

Wearing glasses that block blue light can reduce the impact of artificial lighting on the body's melatonin production, aiding in better sleep preparation.

9

Melatonin

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 500 mcg of melatonin orally, about 30 minutes before bedtime, to help with sleep. It can be taken daily as needed.

TYPICAL STARTING DOSE

500 mcg

Description

Melatonin is a natural hormone produced by the pineal gland in the brain that helps regulate the sleep-wake cycle. It plays a crucial role in promoting sleep onset and maintaining a consistent sleep pattern, making it a commonly used supplement for managing sleep disorders and jet lag.

Melatonin is an important sleep hormone. Bright light at night may prevent your body from making enough melatonin [R, R, R].

Your body makes melatonin on its own. However, some people take melatonin supplements to help them sleep. It may help with jet lag in particular [R, R, R].

How it helps

Melatonin supplements can help regulate the sleep-wake cycle, making it easier to fall asleep if caffeine has disrupted the body's natural melatonin production.

10

Decaffeinated Coffee

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Replace your regular coffee intake with decaffeinated coffee. Aim to consume it in the same quantities and at the same times you would normally drink caffeinated coffee. This adjustment can be made indefinitely to reduce caffeine intake without altering your routine significantly.

Description

Decaffeinated coffee allows individuals to enjoy the flavor and aroma of coffee without the stimulating effects of caffeine, making it a suitable choice for those who are sensitive to caffeine or want to reduce their intake. It can still provide antioxidants and potential benefits like improved alertness.

How it helps

Opting for decaffeinated coffee can reduce caffeine intake, making it a better choice for individuals with sleep problems linked to caffeine.

11

Avoid Long Naps

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Limit your daily naps to 20-30 minutes. Try to nap before 3 pm to avoid interfering with nighttime sleep.

Description

Limiting long naps during the day can help improve nighttime sleep quality and reduce the risk of sleep disturbances. Shorter naps are generally more beneficial for enhancing daytime alertness without interfering with nighttime rest.

How it helps

Limiting the duration of naps, especially in the afternoon, can help maintain the body's natural sleep-wake cycle and improve nighttime sleep quality.

12

Magnesium

IMPACT 0 / 5

EVIDENCE 0 / 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 plays a role in supporting deep, restorative sleep by maintaining healthy levels of GABA, a neurotransmitter that promotes sleep. Supplementing with magnesium may improve sleep quality, particularly in those with a deficiency.

13

L-Theanine

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 100-400 mg of L-theanine supplement daily. It can be consumed at any time of the day, with or without food.

TYPICAL STARTING DOSE

100 mg

Description

L-theanine is an amino acid found in tea leaves, known for its calming and relaxation-promoting effects. It is often used to reduce stress and anxiety and may contribute to improved focus and cognitive performance.

L-theanine is an amino acid found in black and green tea [R].

People take L-theanine as a supplement to [R, R, R, R]:

- Improve cognition
- Boost immunity
- Relieve anxiety and stress

How it helps

L-Theanine, often found in tea, may help promote relaxation and reduce stress. This could possibly counteract the stimulating effects of caffeine and promote better sleep.

14

Cognitive-Behavioral Therapy (CBT)

IMPACT 0 / 5

EVIDENCE 0 / 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

CBT can address the psychological factors related to caffeine-induced sleep disturbances, providing strategies for better sleep habits and stress reduction.

Next Steps

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

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

Your lab results

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

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