

Growth Hormone

Biohacker Report

REPORT CATEGORY —



Sample Client

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DISCLAIMER

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

Personal information

NAME

Sample Client

SEX AT BIRTH

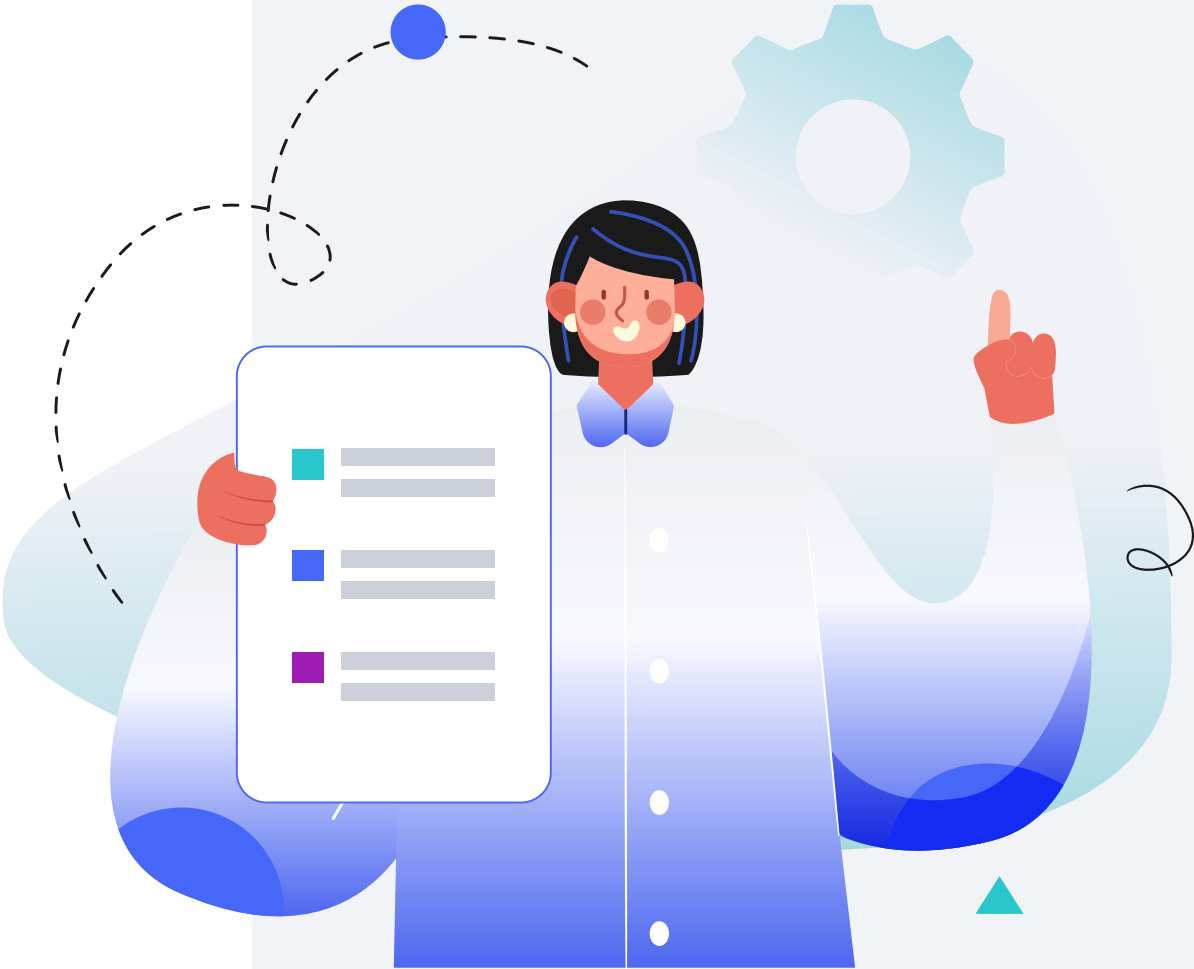
Male

HEIGHT

5ft 5" 165cm

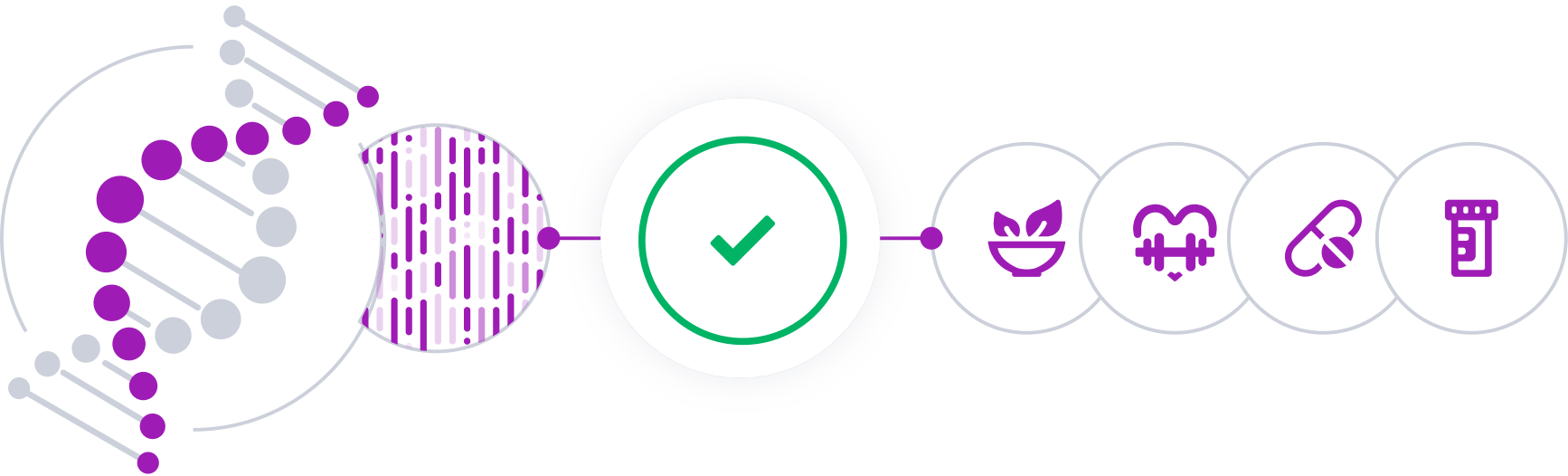
WEIGHT

137lb 62kg



How this works

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



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



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

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



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

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

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



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

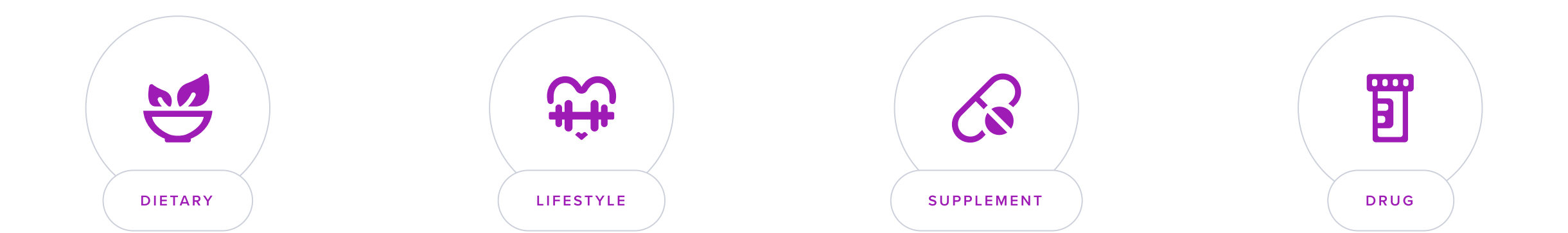
You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs. The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

- 5 / 5
- Recommendations that are considered effective and generally recommended by experts and medical bodies.
-
- 4 / 5
- Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.
-
- 3 / 5
- Recommendations that are considered possibly effective and have many studies supporting them
-
- 2 / 5
- Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.
-
- 1 / 5
- Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.
-
- 0 / 5
- No evidence in humans.

Genotype-specific Evidence

- High-quality
- Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).
-
- Medium-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).
-
- Low-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).
-
- Indirect
- A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).
-
- In theory
- A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

[Growth hormone](#) (GH), also known as somatotropin, is a hormone produced by the pituitary gland. Its primary function is to **stimulate growth and cell reproduction**.

GH is important for a number of functions, including:

- Normal growth and development during childhood and adolescence
- Metabolism of fats, carbohydrates, and proteins
- Maintaining skin elasticity

Both GH deficiency and overproduction can result in health issues for children and adults. **GH deficiency** may be [\[R\]](#):

- Congenital (born with the genetic mutations)
- Acquired (generally through damage to the pituitary gland)
- Idiopathic (unknown cause)

It can **decrease muscle mass, increase body fat, reduce bone density**, and more. If present since childhood, it can cause **short stature or dwarfism** [\[R, R\]](#).

GH therapy may be used to treat children and adults with GH deficiency. **However, it is not recommended for healthy individuals looking to enhance physical performance or appearance, due to potential side effects.**

Factors Affecting GH Levels

Growth hormone (GH), also known as somatotropin, is a hormone produced by the pituitary gland. Its primary function is to stimulate growth and cell reproduction.

GH secretion is controlled by various factors, including **sleep, exercise, stress, and nutrition**. However, low levels are mainly caused by factors that affect pituitary function, such as [\[R\]](#):

- Traumatic brain injury
- Radiation treatment in and around pituitary gland
- Pituitary or hypothalamus tumor
- Brain surgery
- Nervous system infection
- Some diseases
- Genetics

Excess GH is almost always the result of a **pituitary tumor** [\[R\]](#).

Genetics doesn't play a major role in acquired forms of low and excess GH [\[R\]](#), [\[R\]](#).



TYPICAL LEVELS

Predisposed to typical growth hormone levels based on 90 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
/	rs6474678	GG
/	rs563084885	TT
/	rs72710214	AA
FOXL3	rs139113181	CC
LRRC56	rs551640190	GG
FKBP3	rs111710182	CC
TMEM106B	rs1003433	TT
METTL4	rs116932378	AA
/	rs181584048	TT
HMSD	rs1123485	AA
PUM3	rs117939495	CC
RANBP6	rs12380605	AA
AGMO	rs74758223	GA
FAM78B	rs10918439	AG
PAM	rs35359959	CT
S100A10	rs10788813	CT
RUVBL2	rs141621458	CT
/	rs187738451	GG
PTPRD	rs143045635	CC
PTPRD	rs191387131	GG
GRIN3B	rs150528593	CC
DLGAP1	rs115812539	CC
HMGA2	rs77164510	AA
/	rs564368949	CC
DMRT1	rs74738740	CC
PTPRD	rs12351294	CC
HCN2	rs55839339	GG
WASF3	rs142978531	AA
/	rs73644906	TT
/	rs141856882	TT
ERMP1	rs182703647	GG
DOCK8	rs72705610	TT

GENE	SNP	GENOTYPE
/	rs138216058	CC
ARL4C	rs62186801	GG
KANK1	rs7031403	GG
CEP78	rs528594216	CC
CGB1	rs187724752	GG
/	rs576094927	TT
C2ORF73	rs13383338	AA
WWOX	rs151019410	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	Exercise At Least One Hour a Day	1 hour	2	Strength Training	1 hour
3	Aerobic Exercise (Cardio)	1 hour	4	Sleep for 7+ Hours	
5	Limit Calorie Intake		6	Alpha-GPC Choline	300 mg
7	Glutamine, Glycine, and Niacin		8	Vitamin C	500 mg
9	Blood Flow Restriction Training	15 minutes	10	GABA Supplement	1500 mg
11	Alpha-Ketoglutarate (AKG)	1 g	12	Avoid Rapid Weight Changes	
13	L-Ornithine		14	Glutamine	5 g
15	Dietary Protein		16	Niacin Supplements	20 mg
17	Dietary Tryptophan		18	Glycine	3 g
19	Creatine	4 g	20	Dietary Leucine	

1



Exercise At Least One Hour a Day

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

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

TYPICAL STARTING DOSE

1 hour

Description

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

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

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

How it helps

All types of exercise may help boost GH levels and reduce their decline with age. Examples include [\[R\]](#), [\[R\]](#):

- Cardio
- Strength training
- HIIT

Strength training may be especially effective in older adults. Combined exercise programs may also help [\[R\]](#), [\[R\]](#).

A single bout of exercise may help increase GH levels in people with depression [\[R\]](#).

2

Strength Training

IMPACT

4 / 5

EVIDENCE

3 / 5

How to implement

Engage in strength training exercises, such as weight lifting or bodyweight exercises, for 60 minutes per session, 2 to 3 times per week. Ensure you work all major muscle groups and rest each muscle group for at least 48 hours before exercising it again.

TYPICAL STARTING DOSE

1 hour

Description

Strength training, also called resistance or *anaerobic* training, contracts the muscles against an external resistance for short periods of time. This helps gain muscle strength, tone, and mass. This can include activities like weight lifting, pushups, and crunches.

Strength training, also known as resistance training, is a type of physical exercise that uses resistance to build strength, anaerobic endurance, and size [R]. Some of the most common strength training methods include [R]:

- Weight lifting
- Bodyweight exercises like push-ups, pull-ups, squats, and lunges.
- Resistance bands
- Plyometrics or explosive force exercises

The benefits of strength training are numerous, and include [R]:

- Increased muscle strength
- Improved bone health
- Reduced risk of injury
- Improved balance and coordination
- Enhanced mood
- Boost metabolism

Consult with a doctor before starting any new exercise program, especially if you have any health conditions.

How it helps

An acute bout of strength training may increase GH levels **over 2.5 times**. Strength training may be most effective when including multiple sets [R, R, R, R, R].

In older adults, strength training may be the most effective exercise type at boosting GH [R].

3



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

Cardio and other types of exercise may help boost growth hormone levels and reduce their decline with age. **In women, both cardio and strength training may be similarly effective.** Combined exercise programs may also help [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

4



Sleep for 7+ Hours

IMPACT

2 / 5

EVIDENCE

3 / 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

About **70%** of GH is released during slow-wave sleep. However, GH secretion during sleep decreases after the 4th decade of life [\[R, R\]](#).

In line with this, sleep deprivation decreased growth hormone levels in one study [\[R\]](#).

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

5



Limit Calorie Intake

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Consume fewer calories than your body needs for maintenance. Calculate your daily caloric needs using an online calculator based on your sex, age, weight, height, and activity level, then reduce that number by 500-1000 calories per day to safely lose 1-2 pounds per week. Adjust the caloric intake as needed based on your progress.

Description

People often limit their calorie intake to help them lose weight [\[R, R\]](#). However, moderate calorie restriction may also help you stay healthier and age better [\[R, R, R, R, R\]](#).

There are different ways to take in fewer calories. You can:

- **Eat low-calorie foods**, such as those rich in proteins, fiber, and water. Avoid fatty and sugary foods, which tend to be high in calories [\[R\]](#).
- Try [intermittent fasting](#), which involves changing how often you eat [\[R\]](#).

If you are restricting your calories, make sure your diet remains healthy and balanced. Experts also recommend being physically active, to prevent the loss of muscle and bone mass.

How it helps

Fasting for a few days may increase growth hormone levels [\[R, R, R, R, R, R\]](#).

Limiting calorie intake for longer periods may also boost growth hormone. However, **overweight people may need to combine it with exercise** to achieve benefits [\[R, R\]](#).

Calorie restriction and intermittent fasting may be similarly effective in women [\[R\]](#).

Please note: *Limiting calorie intake too much or fasting for too long can cause malnutrition, anemia, eating disorders, and other health problems. Talk to your doctor before making any drastic changes to your calorie intake* [\[R\]](#).

6



Alpha-GPC Choline

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 300-600 mg of Alpha-GPC choline supplement daily, preferably in the morning or early afternoon to avoid interference with sleep. It can be taken with or without food. Continue this supplementation for at least 4-6 weeks to assess its effectiveness.

TYPICAL STARTING DOSE
300 mg

Description

Alpha-GPC (L-alpha glycerylphosphorylcholine) is a natural compound that can be found in small amounts in various foods, including soy, and is also produced in the body. It is a choline-containing compound that may support cognitive function and memory.

How it helps

Alpha-GPC Choline boosts your brain's production of acetylcholine, which plays a key role in maintaining growth hormone levels. Consequently, this can aid in managing and treating conditions related to growth hormone levels.

A double-blind randomized crossover study with 80 healthy male subjects found that α-Glycerophosphocholine (GPC) (1000 mg) **increased growth hormone 60 min after taking GPC** and serum acetoacetate and 3-hydroxybutyrate levels, which are indices of hepatic fat oxidation, were increased at 120 min after taking GPC [\[R\]](#).

7



Glutamine, Glycine, and Niacin

IMPACT

1 / 5

EVIDENCE

1 / 5

Description

Glutamine is an amino acid essential for protein synthesis and immune function, while glycine is a non-essential amino acid important for protein synthesis, neurotransmission, and biosynthesis of other molecules, and niacin is a B vitamin crucial for metabolism and DNA repair.

How it helps

In a placebo-controlled trial of 42 healthy subjects, supplementation with the combination of glycine, glutamine and niacin (5 g, 2x/day) for 3 weeks improved growth hormone levels by 70% [\[R\]](#).

8



Vitamin C

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

500 mg

Description

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

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

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

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

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

How it helps

According to a single study, people with the highest vitamin C intakes may have higher growth hormone levels [\[R\]](#).

Please note: *Supplementing with vitamin C is linked to a slightly higher risk of kidney stones in men. Talk to your doctor before taking vitamin C* [\[R\]](#), [\[R\]](#).

9



Blood Flow Restriction Training

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Wrap a blood flow restriction (BFR) band or cuff around the upper portion of your limbs (arms or legs) at a pressure that feels tight but not painful, aiming for a perceived tightness of 7 out of 10. Engage in low-intensity resistance training, such as lifting weights that are 20% to 30% of your one-rep max, or perform bodyweight exercises. Do this for 15-30 minutes, 2-3 times a week. Always release the bands after each exercise set to restore normal circulation.

TYPICAL STARTING DOSE

15 minutes

Description

Blood flow restriction (BFR) training is a specialized fitness and rehabilitation technique that involves applying pressure to restrict blood flow to specific muscles during exercise. This is typically achieved using cuffs or wraps placed on the limbs and then inflated to a controlled pressure. By temporarily reducing blood flow while allowing arterial inflow, BFR training creates a unique physiological response. It induces metabolic stress and muscle fatigue, leading to muscle growth and strength gains, even with lighter weights.

BFR is widely used in rehabilitation settings to aid in the recovery of injured individuals, helping them rebuild muscle strength without overloading compromised areas. It also has applications in improving muscular endurance and may have potential cardiovascular benefits, such as lowering blood pressure and enhancing vascular function. However, it should be performed under the guidance of a trained professional, as it's not suitable for everyone and has specific safety considerations.

How it helps

In a non-placebo-controlled trial of 25 healthy young men, practicing BFR training increased growth hormone levels [\[R\]](#).

10



GABA Supplement

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a GABA supplement in a dose up to 500 mg, three times daily. This supplementation should be taken with water, preferably with food to minimize gastrointestinal discomfort. The duration of supplementation can vary, but many users may start to see benefits within a few weeks of consistent use.

TYPICAL STARTING DOSE

1500 mg

Description

GABA is an amino acid that acts as an inhibitory neurotransmitter in the brain. It is used in some supplements for its potential to promote relaxation and reduce anxiety.

How it helps

A single oral dose of 5 g GABA was given to 19 subjects and serial venous blood samples were obtained before and 3 h after drug administration in a placebo-controlled trial. GABA caused a significant elevation of plasma growth hormone levels [\[R\]](#).

In a study with 11 resistance-trained men, ingesting 3 g of GABA increased irGH and ifGH levels at rest by about 400%. Resistance exercise also elevated these hormones, and combining GABA with exercise showed even greater increases [\[R\]](#).

GABA stimulates the pituitary gland to secrete growth hormone, which plays a critical role in growth, body composition, and metabolism.

12



Avoid Rapid Weight Changes

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Maintain a consistent, healthy weight by avoiding extreme dieting or sudden increases in food intake. Aim for gradual weight changes, not exceeding 1-2 pounds per week, by adjusting your diet and physical activity levels accordingly. This approach should be sustained over a long-term period to ensure health and prevent potential adverse effects on the body.

Description

Avoiding extreme and rapid weight changes, whether through crash diets or excessive calorie restriction, is essential for preventing negative health consequences such as nutritional deficiencies and metabolic disruptions.

Your weight is determined by the number of calories you consume compared to those you burn. Changes in exercise frequency, amount and type of food consumed, and alcohol intake may alter your energy expenditure. This may cause small weight fluctuations [\[R\]](#).

Some people may gain or lose weight at a faster rate. Rapid weight fluctuations may be due to [\[R\]](#), [\[R\]](#):

- Very drastic diets
- Water retention or dehydration
- Hormonal changes
- Pregnancy
- Taking certain medications
- Certain health conditions

How it helps

Helps maintain hormonal balance and avoid unnecessary stress on the endocrine system.

13



L-Ornithine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 500mg to 2g of L-ornithine supplement daily before bed or as directed by your healthcare provider. This regimen can be continued on a long-term basis to support liver health and to potentially aid in improving sleep quality.

Description

L-ornithine is an amino acid often used in sports supplements for its potential to reduce exercise-related fatigue and support muscle recovery. It is also studied for its role in promoting detoxification processes in the body.

How it helps

L-Ornithine has been studied for its potential to induce the release of growth hormone, potentially supporting the body's ability to build and maintain muscle tissue.

How to implement

TYPICAL STARTING DOSE

5 g

Description

L-glutamine is an amino acid produced by the body. Its levels may decrease during periods of stress or illness. It is important for protein and energy production, and helps control kidney pH balance [R].

- Gut health
- Immunity
- Exercise recovery and muscle performance
- Brain health

How it helps

In a placebo-controlled trial of 42 healthy subjects, supplementation with the combination of glycine, glutamine and niacin (5 g, 2x/day) for 3 weeks improved growth hormone levels by 70% [R].

15



Dietary Protein

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Include a variety of protein sources such as meat, fish, eggs, dairy, beans, and nuts in your diet every day, aiming for at least 0.8 grams of protein per kilogram of body weight. For more active individuals or those looking to build muscle, increase intake to 1.2 to 2.0 grams per kilogram of body weight daily, spread out over all meals to maximize absorption.

Description

Protein is essential for building and repairing tissues, supporting muscle growth, and maintaining overall bodily functions. Adequate protein intake is crucial for overall health and well-being.

Foods that are high in protein include:

- Eggs
- Nuts
- Beef
- Chicken
- Fish
- Yogurt
- Tofu
- Pork
- Cottage cheese

How it helps

Protein provides amino acids that are vital for the body's growth hormone production and thus supports overall growth.

16



Niacin Supplements

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a 20 mg niacin supplement daily, preferably with a meal to aid in absorption and minimize potential stomach upset.

TYPICAL STARTING DOSE

20 mg

Description

Niacin is an essential B vitamin that plays a vital role in metabolism, supporting heart health, maintaining healthy cholesterol levels, and promoting overall cellular function when included in a balanced diet or as a supplement.

[Niacin](#) (vitamin B3) is found in many foods. It supports your nervous system, skin, gut, and more [\[R\]](#).

Adults should get **16 mg** of niacin a day, and most people get enough from their diets [\[R\]](#).

Experts recommend getting niacin from food rather than supplements [\[R, R\]](#).

How it helps

In a placebo-controlled trial of 42 healthy subjects, supplementation with the combination of glycine, glutamine and niacin (5 g, 2x/day) for 3 weeks improved growth hormone levels by 70% [\[R\]](#).

17



Dietary Tryptophan

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Increase your intake of tryptophan-rich foods in your daily diet. Examples include turkey, chicken, milk, cheese, yogurt, eggs, bananas, tofu, salmon, and nuts such as almonds and peanuts. Aim to incorporate these foods into at least one meal per day to meet the dietary recommendation for tryptophan.

Description

Tryptophan is an essential amino acid that plays a crucial role in serotonin production, contributing to mood regulation and sleep quality. Adequate tryptophan intake through diet supports emotional well-being and overall mental health.

[Tryptophan](#) is an amino acid, or a protein building block. **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 [\[R\]](#).

How it helps

Tryptophan can boost serotonin levels which may indirectly influence growth hormone secretion patterns.

18



Glycine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 3 to 5 grams of glycine supplement per day with water, preferably before bedtime for sleep improvement or spread throughout the day for general health benefits. Continue indefinitely as needed, but consult a healthcare provider for long-term use beyond three months.

TYPICAL STARTING DOSE

3 g

Description

Glycine is an amino acid that may have calming and anti-inflammatory effects, potentially benefiting sleep quality and joint health.

If you can't get enough glycine from food sources, glycine supplements are available. Daily doses of up to **6 g** have been safely used for up to **4 weeks**. Consult your doctor before supplementing.

How it helps

Glycine is suggested to stimulate the production of growth hormone, which could be beneficial for supporting growth and repair processes in the body.

In a placebo-controlled trial of 42 healthy subjects, supplementation with the combination of glycine, glutamine and niacin (5 g, 2x/day) for 3 weeks improved growth hormone levels by 70% [\[R\]](#).

19



Creatine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 4 grams of creatine supplement daily, ideally mixed with water or juice. This dosage can be maintained consistently without needing specific periods of cycling on or off.

TYPICAL STARTING DOSE

4 g

Description

Creatine is a popular dietary supplement among athletes and bodybuilders, known to enhance muscle performance during short bursts of high-intensity activities. It may help improve exercise performance and support muscle growth when used as directed.

[Creatine](#) is a compound naturally produced by the body. It’s stored in the muscles and brain [\[R\]](#).

During exercise, creatine is released to boost performance and help build muscles. For this reason, it’s a popular supplement among athletes [\[R, R\]](#).

Sources of creatine include [\[R\]](#):

- Red meat
- Seafood
- Supplements

How it helps

While primarily known for its muscle energy support, creatine may increase growth hormone levels acutely following intense exercise.

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Dietary Leucine

IMPACT

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EVIDENCE

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How to implement

Incorporate foods high in leucine into your diet daily. Leucine is particularly abundant in dairy products, soy products, beans, and meat. Aiming for a daily intake of about 2 to 3 grams of leucine, evenly distributed across meals, can be beneficial. Include a serving of leucine-rich foods like chicken breast, tofu, or a glass of milk at each meal.

Description

Leucine is an essential amino acid that plays a key role in protein synthesis and muscle repair. It's particularly important for athletes and individuals looking to build and maintain muscle mass.

Good dietary sources of leucine include:

- Cottage Cheese
- Pork
- Soy
- Tuna
- Turkey
- Egg Whites
- Chicken

How it helps

The amino acid leucine can stimulate growth hormone production and is pivotal in protein synthesis.

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.