

Adiponectin

Biohacker Report

REPORT CATEGORY —



WEIGHT & BODY FAT

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

[Adiponectin](#) is a hormone released from fat cells that is mainly involved in the control of fat and [glucose](#) metabolism. Overall, adiponectin plays an important role as a messenger to communicate between fat tissue and other organs [\[R\]](#).

Adiponectin has several functions around the body, including [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Increasing the burning of fats
- Decreasing the storage of sugars (glucose)
- Improving [insulin sensitivity](#)
- Promoting blood vessel health
- Reducing inflammation

Adiponectin levels are commonly measured to evaluate the condition of people with or at risk of metabolic syndrome and diabetes [\[R\]](#).

Factors Affecting Adiponectin Levels

Whether low adiponectin levels actually *cause* these conditions or are just a biomarker for their onset and progression remains unknown, but the production of this hormone is reduced in people with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Obesity
- Heart disease
- Diabetes
- Asthma
- Preterm birth
- Sleep deprivation

Conversely, high adiponectin levels have been associated with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Autoimmune diseases such as rheumatoid arthritis, osteoarthritis, and lupus
- Heart failure and high blood pressure
- Kidney disease
- Aging
- Calorie restriction

Therefore, focusing on improving your adiponectin levels is unlikely to improve your health. However, some beneficial steps you can take to improve your overall health will likely increase your adiponectin levels. These steps include:

- Losing weight if you are overweight [\[R\]](#)
- Regular exercise [\[R\]](#), [\[R\]](#)
- Eating a healthy, balanced, diet rich in unsaturated fats such as [olive oil](#) [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Taking cold showers [\[R\]](#)

Foods, beverages, and supplements that may increase adiponectin levels include:

- Banana [\[R\]](#)
- Berries such as grapes and raspberries [\[R\]](#), [\[R\]](#)
- [Coffee](#) [\[R\]](#)
- [Coenzyme Q10](#) [\[R\]](#)



Predisposed to typical adiponectin levels based on 37 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
WDR11	rs10886863	CC
RGMA	rs4777845	TT
ACADVL	rs222852	AA
PDE3B	rs11023332	CC
HCAR2	rs601339	AA
PDE3A	rs11045172	AA
ZNF664	rs7978610	GG
VEGFA	rs998584	CA
RFC4	rs182052	AG
/	rs4716055	TT
PEPD	rs731839	GG
IRS1	rs1515110	GT
TMEM263	rs10778506	CC
RGS17	rs596359	CC
DVL2	rs507506	GG
RBMS2	rs2657888	GG
ARL15	rs6450176	AG
TRIB1	rs2980879	AT
LYPLAL1	rs2061155	TC
FAM13A	rs13131633	CT
PDE3A	rs7955516	CA
CITED2	rs668459	TC
ZC3H11B	rs3001032	TC
CDH13	rs12051272	GG
ADIPOQ	rs17366568	GG
ITIH1	rs1108842	CC
TCTN2	rs6488898	AA
CMIP	rs2925979	CC
EIF2A	rs4301033	GG
CSF1	rs333947	GG
GRHL3	rs10794657	GG
ADRB1	rs10787516	TT

GENE	SNP	GENOTYPE
CLOCK	rs13434995	AA
ADRB1	rs10885531	TT

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	Resveratrol	150 mg	2	Low-Carbohydrate Diet	
3	Aerobic Exercise (Cardio)	1 hour	4	Omega-3 (Fish Oil)	2000 mg
5	Mediterranean Diet		6	Cranberry	
7	Extra Virgin Olive Oil (EVOO)		8	Alpha-Lipoic Acid	600 mg
9	Grapes		10	Amaranth	
11	Black Raspberry Extract	300 mg	12	Curcumin	500 mg
13	Coenzyme Q10 (CoQ10)	100 mg	14	Bananas	
15	Mangosteen and Sphaeranthus Indicus		16	Vitamin E	200 iu
17	Vitamin K2	100 mcg	18	Maintain Optimal Vitamin D Levels	1000 iu

1



Resveratrol

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Take 150-500 mg of resveratrol as a supplement daily, preferably with meals to enhance absorption. This dosage range is based on studies for various health benefits, and it's advised to not exceed 500 mg per day without medical supervision.

TYPICAL STARTING DOSE
150 mg

Description

Resveratrol is a natural compound found in red grapes, red wine, and some berries. It is known for its potential antioxidant properties and its role in promoting heart health.

[Resveratrol](#) is an antioxidant found mainly in [\[R\]](#):

- Berries
- Red grapes
- Red wine
- Peanuts

It’s purported to have anti-inflammatory and antioxidant effects [\[R, R, R\]](#).

How it helps

A meta-analysis of 9 trials concluded that supplementation with resveratrol lowers adiponectin levels (by 1.10 µg/mL), especially at doses above 100 mg/day [\[R\]](#).

2



Low-Carbohydrate Diet

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Limit your daily intake of carbohydrates to less than 26% of your total daily calories. For a standard 2000-calorie diet, this means consuming no more than 130 grams of carbohydrates per day. Focus on including non-starchy vegetables, lean proteins, and healthy fats in your meals while minimizing the intake of sugars, bread, pasta, and other high-carb foods.

Description

Low-carbohydrate diets can promote weight loss, improve blood sugar control, and support heart health. They may also be beneficial for individuals with certain medical conditions, such as epilepsy or metabolic syndrome.

How it helps

A [meta-analysis of 11 studies and 1047 participants](#) concluded that eating a **low-carb diet mildly but significantly increases adiponectin levels (by 0.02 µg/mL)**. Diets with **carbohydrate content below 30% significantly increase it (by 0.12 µg/mL)**, while those with **higher content have no significant effects** [\[R\]](#).

 PERSONALIZED TO YOUR GENES

Eating a low-carbohydrate, low-calorie diet may raise adiponectin levels more in people with your [ADIPOQ](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
ST6GAL1	rs1501299	GG	

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 exercises like running or biking can help increase your body's production of adiponectin, a hormone that regulates glucose levels and fatty acid breakdown. This makes it beneficial for weight management, blood sugar control, and cardiovascular health.

A [meta-analysis of 28 trials](#) concluded that aerobic exercise **reduces serum leptin (by 2.24 ng/mL) and increases adiponectin (by 0.44 µg/mL)** [\[R\]](#).

4



Omega-3 (Fish Oil)

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Take 1-2 g of omega-3 (fish oil) supplement daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

2000 mg

Description

Omega-3 fatty acids are essential fats found in fatty fish like salmon, flaxseeds, and walnuts. They are known for their potential cardiovascular and brain health benefits, including reducing the risk of heart disease and supporting cognitive function.

[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 [\[R\]](#), [\[R\]](#).

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

- Salmon
- Tuna
- Herring
- Sardines

For optimal protection, 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

Supplementation with omega-3 fatty acids may increase adiponectin, especially when taken for over 10 weeks at doses above 2000 mg/day [\[R\]](#), [\[R\]](#), [\[R\]](#).

Omega-3s may also raise adiponectin levels in people with type 2 diabetes or PCOS [\[R\]](#), [\[R\]](#).

5



Mediterranean Diet

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate a variety of primarily plant-based foods, such as fruits, vegetables, whole grains, nuts, and legumes, into every meal. Choose healthy fats, like olive oil, over saturated fats and consume fish and poultry at least twice a week. Limit red meat to a few times a month and include a moderate amount of dairy products. Opt for water and red wine in moderation as your beverages.

Description

The [Mediterranean diet](#) is based on the traditional cuisine from the Mediterranean regions. It moderates the intake of red meat and dairy, while being rich in fruits and vegetables, whole grains, and healthy fats ([olive oil](#)).

The [Mediterranean diet](#) focuses on traditional cuisine from the Mediterranean regions. It’s rich in [\[R\]](#):

- [Olive oil](#)
- Fruits and vegetables
- Whole grains
- Nuts and seeds
- Fish

This type of diet may **reduce inflammation and protect the brain and heart** [\[R, R, R, R\]](#).

Limited intake of animal products, saturated fat, and refined sugar likely contribute to the health benefits of the Mediterranean diet [\[R\]](#).

How it helps

Adopting a Mediterranean diet may increase adiponectin levels [\[R\]](#).

6



Cranberry

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Consume one to two 8-ounce servings of unsweetened cranberry juice daily, or take 500 mg of cranberry supplements twice daily. Continue this practice consistently for at least several weeks to potentially observe benefits.

Description

Cranberries are known for their high antioxidant content and potential to promote urinary tract health by preventing bacterial adhesion. Consuming cranberries or cranberry products may help reduce the risk of urinary tract infections and provide antioxidant benefits.

Cranberries are fruits rich in vitamins, minerals, and antioxidants. They are available in different forms, including [\[R\]](#):

- Dried fruits
- Juice
- Powder
- Pills

How it helps

In a [non-placebo-controlled trial of 56 patients with metabolic syndrome](#), consuming low-energy cranberry juice (0.7 L/day) for 60 days **increased adiponectin levels** [\[R\]](#).

Antioxidants in cranberries may be responsible for lowering adiponectin.

7



Extra Virgin Olive Oil (EVOO)

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Incorporate 1-2 tablespoons of extra virgin olive oil into your daily diet. Use it as a dressing for salads, vegetables, or incorporate it into cooking, but avoid using it at high temperatures to preserve its health benefits.

Description

Extra virgin olive oil is a high-quality olive oil obtained from the first pressing of olives. It is rich in monounsaturated fats and antioxidants, like polyphenols, and is associated with various health benefits, including heart health and anti-inflammatory properties.

[Olive oil](#) is fat from the olive, a traditional tree of the Mediterranean Basin [\[R\]](#).

Olive oil has anti-inflammatory and antioxidant properties. It may also reduce the risk of [\[R\]](#), [\[R\]](#):

- Heart disease
- Diabetes
- Cancer

Olive oil is also the primary fat source in the [Mediterranean diet](#), which may improve brain and heart health [\[R\]](#).

How it helps

In a [non-placebo-controlled trial of 17 overweight women](#), eating an olive oil-rich diet (16% MUFA) for 6 weeks **increased adiponectin levels (by 13.4 µg/mL)** [\[R\]](#).

Consuming olive oil (6.5 mL/day) for 12 months **increased adiponectin levels (by 345 µg/mL)** in a [non-placebo-controlled trial of 11 patients with alcoholic fatty liver](#) [\[R\]](#).

8



Alpha-Lipoic Acid

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 600-1800 mg of alpha-lipoic acid daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

600 mg

Description

[Alpha-lipoic acid](#) is a natural antioxidant found in almost every cell in your body. People use alpha-lipoic acid to help with issues like skin aging, weight loss, and high blood sugar [\[R\]](#), [\[R\]](#), [\[R\]](#).

People use alpha-lipoic acid to help with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Complications of high blood sugar
- Skin aging
- Weight loss
- Carpal tunnel syndrome

How it helps

A systematic review and meta-analysis of eight studies found that ALA reduced leptin and increased adiponectin levels, especially in studies lasting more than 8 weeks [\[R\]](#).

ALA may influence the cellular processes related to glucose metabolism and play a role in modulating insulin sensitivity.

9



Grapes

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a serving of grapes, which is about 32 seedless grapes or approximately 1 cup, into your daily diet. You can eat them as a snack, add them to salads, or blend them into smoothies. Do this consistently for a period of at least 3 months to observe potential health benefits.

Description

Grapes are a nutrient-dense fruit rich in vitamins, fiber, and antioxidants like resveratrol. Regular consumption of grapes is associated with potential benefits for heart health, skin health, and overall well-being.

How it helps

According to one study, lyophilized grape powder (46g/day equivalent to 252 g fresh grapes for 4 weeks) may increase anti-inflammatory markers, such as plasma adiponectin and interleukin-10 [\[R\]](#).

10



Amaranth

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate amaranth into your diet by adding it to your daily meals. You can use amaranth grains as a substitute for rice in dishes, add them to your morning porridge, or use amaranth flour in your baking recipes. Aim to include amaranth 2-3 times per week to reap its benefits.

Description

Amaranth is a nutritious, gluten-free grain-like seed that has been a staple in the diets of various cultures for centuries. It is rich in protein, fiber, vitamins, and minerals like calcium and iron. Amaranth is used to promote heart health, support digestion, and provide sustained energy.

How it helps

In a non-placebo-controlled trial of 44 overweight and obese participants, consuming amaranth oil (20 mL/day) for 3 weeks increased adiponectin levels more than rapeseed oil [\[R\]](#).

11



Black Raspberry Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 300 to 600 milligrams of black raspberry extract daily, divided into two or three doses. It can be taken with or without food. Continue for at least 6 to 12 weeks to assess its benefits.

TYPICAL STARTING DOSE

300 mg

Description

Black raspberry extract is derived from black raspberries, which are rich in antioxidants like anthocyanins. This extract is used for its potential to promote heart health, protect cells from oxidative stress, and support overall health.

How it helps

In people with metabolic syndrome, 12 weeks of black raspberry supplementation (750 mg/day) lowered inflammatory markers such as IL-6 and TNF. Additionally, it significantly increased adiponectin levels, indicating improved cardiovascular risk factors [\[R\]](#).

12



Curcumin

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a 500 mg curcumin supplement daily with food. To enhance absorption, take it with a meal that contains fats or oils since curcumin is fat-soluble.

TYPICAL STARTING DOSE
500 mg

Description

Curcumin is a compound found in turmeric known for its anti-inflammatory and antioxidant properties. It has been studied for its potential to reduce inflammation, support joint health, and contribute to overall well-being.

[Turmeric](#) is a yellow spice from India. It may reduce inflammation and [oxidative stress](#) [\[R\]](#).

The most important active compound in turmeric is **curcumin**. People use curcumin for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Joint pain
- Hay fever
- Mood
- High blood sugar
- Gut health
- Liver health

How it helps

A meta-analysis of five randomized clinical trials (686 participants) found that curcuminoid supplementation significantly increased plasma adiponectin concentrations (by 6.47 ng/mL). This suggests that the anti-inflammatory effects of curcumin may be mediated by increased adiponectin levels [\[R\]](#).

13



Coenzyme Q10 (CoQ10)

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a 100 mg Coenzyme Q10 (CoQ10) supplement once daily with a meal that contains fat for better absorption.

TYPICAL STARTING DOSE

100 mg

Description

Coenzyme Q10 (CoQ10) is a naturally occurring antioxidant that plays a crucial role in cellular energy production. It is often taken as a supplement to support heart health, improve energy levels, and provide antioxidant protection, especially for individuals with certain medical conditions or as they age.

[Coenzyme Q10](#) (CoQ10) is a compound that helps enzymes work better. By doing so, CoQ10 helps improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Energy levels
- Antioxidant protection
- Heart health
- Muscle strength
- Blood sugar control

The amount of CoQ10 made by your body decreases as you get older. Luckily, you can also get it from food or supplements. Good sources of CoQ10 include [\[R\]](#), [\[R\]](#):

- Organ meats
- Fatty fish
- Whole grains

How it helps

A meta-analysis of 318 participants with metabolic syndrome found that CoQ10 supplementation increased adiponectin levels and reduced inflammation markers compared to placebo. This improvement was linked to reduced lipid peroxidation, better glucose control, and improved liver function, emphasizing the importance of regulating adipokine function for metabolic health benefits from CoQ10 [\[R\]](#).

14



Bananas

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate 1-2 bananas into your daily diet. Bananas can be eaten as a standalone snack, added to cereal, oatmeal, or smoothies, or used as an ingredient in baking. Aim to include them regularly for ongoing dietary benefits.

Description

Bananas are a nutrient-rich fruit packed with potassium, fiber, and essential vitamins. They are a convenient and healthy snack option that can help support heart health, digestive regularity, and overall well-being.

Bananas are a good source of vitamins B6 and C, as well as numerous minerals, including potassium, copper, and magnesium. A single banana provides 0.4 mg of vitamin B6 or 25%DV.

How it helps

In a study with hypercholesterolemic and type 2 diabetic subjects, consuming 250 or 500 grams of banana daily for 12 weeks resulted in significantly lower fasting blood glucose and LDL-cholesterol/HDL-cholesterol ratio in hypercholesterolemic individuals. While the changes in blood glucose and lipid profile in diabetic patients were not statistically significant, plasma adiponectin levels increased significantly. The study suggests that daily banana consumption, especially at 250 g/day, is safe and potentially beneficial for hypercholesterolemic individuals, with potential benefits for diabetic individuals as well [\[R\]](#).

15



Mangosteen and Sphaeranthus Indicus

IMPACT

0 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement containing a blend of mangosteen and sphaeranthus indicus, usually available in capsule form. Follow the manufacturer's instructions, typically involving taking one capsule twice daily, 30 minutes before meals with water.

Description

A combination of mangosteen and sphaeranthus indicus is sometimes used in dietary supplements for its potential to support weight management and metabolic health. These natural ingredients may help regulate appetite and metabolism.

How it helps

In [2 placebo-controlled trials of 160 obese participants](#), supplementation with a combination of mangosteen and *Sphaeranthus indicus* (400 mg, 2x/day) for 8-16 weeks **increased adiponectin** [\[R, R\]](#).

Taking Mangosteen and Sphaeranthus Indicus supplements may help increase Adiponectin levels in the body. This increase is beneficial as Adiponectin is a hormone that regulates glucose levels and fatty acid breakdown which can help counteract symptoms related to obesity and diabetes.

16



Vitamin E

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 200 IU of Vitamin E daily as a supplement, preferably with a meal that contains fat to enhance absorption.

TYPICAL STARTING DOSE

200 iu

Description

Vitamin E is a fat-soluble antioxidant found in various foods, such as nuts and seeds. It is known for its ability to protect cells from oxidative damage, support immune function, and may play a role in skin health. Vitamin E supplements are used to bolster antioxidant defenses and may be beneficial for conditions related to oxidative stress.

[Vitamin E](#) is an antioxidant important for the immune system and for heart health [\[R\]](#).

Plant-based foods have the most vitamin E. These include [\[R\]](#):

- Wheat germ
- Sunflower seeds
- Almonds
- Plant oils

Adults need about **15 mg** of vitamin E per day [\[R\]](#).

How it helps

High vitamin E intake may increase adiponectin levels more in people with certain gene variants [\[R\]](#).

17



Vitamin K2

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a vitamin K2 supplement once daily with a meal that contains fat, as fat increases its absorption. The recommended dosage can vary depending on the specific supplement but typically ranges from 100 to 300 micrograms per day. It is important to continue this supplementation daily for ongoing benefits to bone and cardiovascular health.

TYPICAL STARTING DOSE
100 mcg

Description

Vitamin K2 is a beneficial nutrient we often lack. It's like a traffic cop for your body, directing calcium to your bones and teeth where it's needed, rather than letting it clog up your arteries and organs. Ensuring you get enough Vitamin K2 boosts your bone and heart health.

How it helps

In another RCT with 214 postmenopausal women, vitamin K (180 mcg/day for 3 years) **increased carboxylated OC (cOC) and total and human molecular weight adiponectin and decrease abdominal fat mass and estimated visceral adipose tissue** area [\[R\]](#).

In a randomized placebo-controlled trial with 148 postmenopausal women, MK-7 (375 µg/day for 12 months), as an add-on to calcium (800 mg) and vitamin D (38 µg) **decreased ucOC (by -70.3 %)** compared to the placebo group (-7.2 %) and **increased adiponectin (by 6.1 ± 20.1%)** compared to the placebo group (-0.7 ± 15.5%), **without changing HOMA-IR or p-leptin** [\[R\]](#).

Please note: *Vitamin K can interact with blood thinners (e.g., Coumadin). Make sure to consult your doctor before supplementing with vitamin K or drastically changing your dietary intake.*

18

Maintain Optimal Vitamin D Levels

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Check your vitamin D levels, they should ideally be in the 30-66 ng/mL range. If your levels are lower than that, take a vitamin D supplement, 1000-4000 IU daily, to reach an optimal range.

TYPICAL STARTING DOSE
1000 iu

Description

Vitamin D, often referred to as the "sunshine vitamin," can be synthesized by the skin when exposed to sunlight, as well as being found in fish, eggs, and fortified milk. It helps regulate calcium absorption, promoting strong bones and a healthy immune system. Vitamin D deficiency can lead to conditions like rickets in children and osteoporosis in adults.

Your body needs [vitamin D](#) for strong bones. Vitamin D also plays a role in [\[R\]](#):

- Mood
- Immunity
- Heart health
- Blood sugar control

[Sunlight](#) is our main source of vitamin D. 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 [\[R\]](#), [\[R\]](#).

Foods like fish, eggs, and fortified milk provide small amounts of vitamin D. **People lacking vitamin D should consider taking a supplement** [\[R\]](#).

How it helps

Genetically predicted higher vitamin D levels may be associated with higher adiponectin levels [\[R\]](#).

Please note: *There is no evidence from controlled clinical trials to support this recommendation. It is included based on uncontrolled clinical trials, animal or cell studies, or non-scientific criteria. Please take this recommendation with a grain of salt until more research is available.*