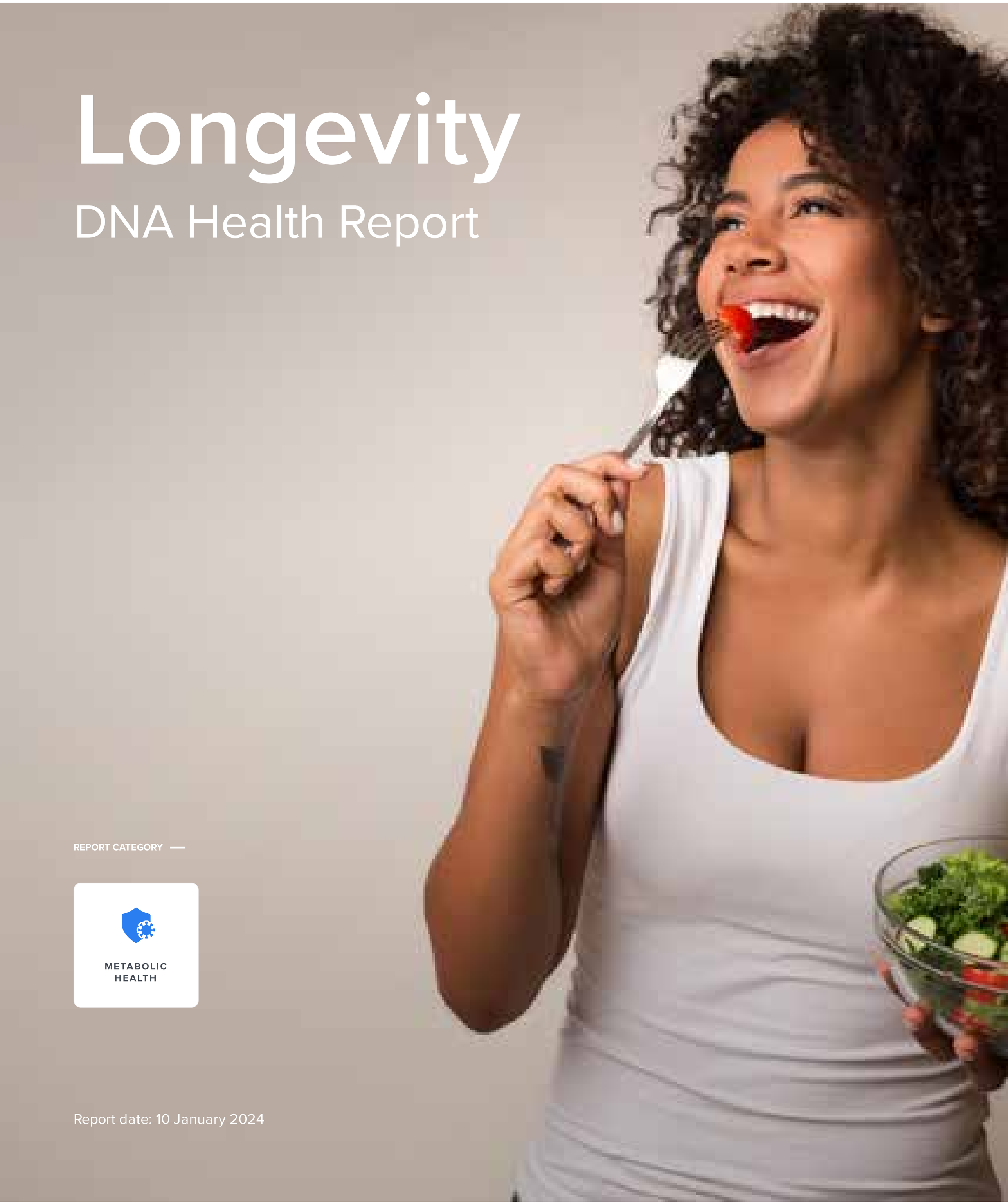
getTested

Longevity

DNA Health Report



REPORT CATEGORY —

METABOLIC HEALTH

Report date: 10 January 2024

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REPORT PROVIDED BY

Get Tested International AB

for Dummy Persson

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How this works

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

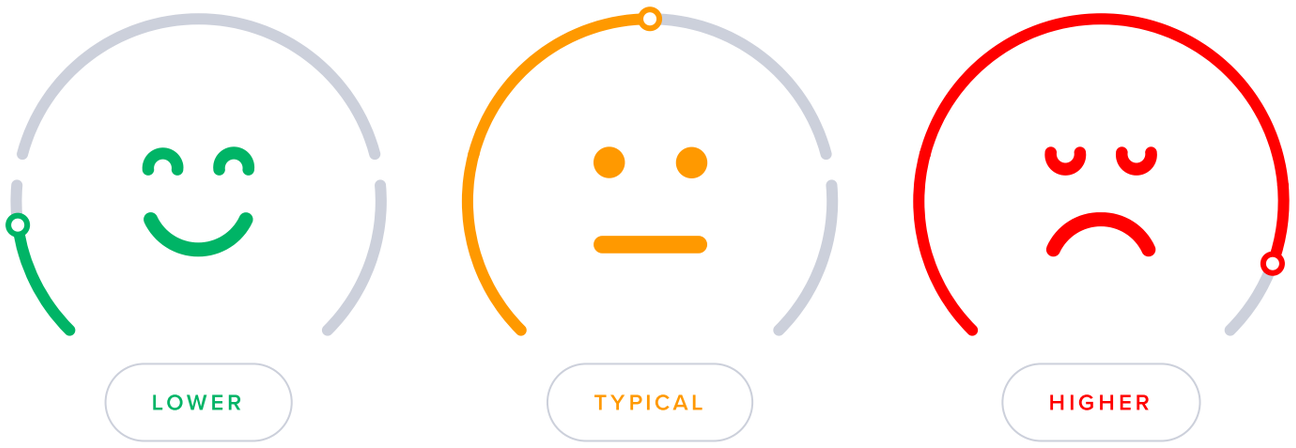
Similarly, our Trait Reports look at how your DNA influences your traits.

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.



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: diet, lifestyle, 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 strength of evidence.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence reflects how much scientific support there is for the recommendation in the medical literature. 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:

- The scores/gauges use the latest scientific studies. But they are not perfect and will change as the models improve.
- Not everyone with risk variants will develop a health condition.
- Genetics is not the whole story. Your health is most often a combination of genetics, lifestyle, and environmental factors. Great news, as this means that you can often change your lifestyle to lower your risk.
- Results might be more accurate for some ethnic groups than others. This depends on the studies used in each report.
- People without risk variants can also develop health conditions.
- It's important to work with your doctor to better understand your risks. Our reports do not diagnose or treat any health condition. They are not a substitute for medical advice. If you're diagnosed with a certain health condition, follow your doctor's advice.

Introduction

The only two things that are said to be certain in life are death and taxes.

We've all heard the famous quote. But some people avoid taxes, so why not death?

Throughout history, there have been those who claim to be masters of evading death, and they fascinate us.

One of the most famous claimants of immortality is Nicolas Flamel, a French scribe from the 1300s. Flamel was the inspiration for his namesake in *Harry Potter and the Sorcerer's Stone*!

While these individuals may fascinate us and even inspire works of fiction, immortality remains just that – fictitious.

The best we can all strive for now is living longer. Potential solutions have ranged from practical to strange. One of the strangest thus far is the '*Brown-Séquard Elixir*,' invented by Charles-Edouard Brown-Séquard, a respected physician.

The elixir was made from the testicles of guinea pigs and dogs! Of course, this elixir has since been proven to not work and even be lethal [R].

A lot of potential "Fountains of Youth" have been tried over the years to varying degrees of success, but one fact remains: some people certainly live longer than others.

Today, the best advice for living longer is maintaining healthy habits, such as regular exercise and a healthy diet.

However, even those who follow this advice rarely live past 110 years old. The oldest person on record was a woman named Jeanne Calment, who reached the age of 122 [R, R].

So what sets apart these supercentenarians from the average Joe?

One thing that may be playing a role is **genetics**.

For example, if you carry a particular variant of the APOE gene, you may be more likely to live longer if you exercise [R].

Similarly, if you carry a certain variant of the CHRNA3 gene, avoiding cigarette smoke may be especially important for your longevity [R, R].

Lots of other genes have also been linked to longevity.

Read on to find out more about:

- **How your genetics play a role in longevity**
- **Your genetic risk score based on over 992,000 genetic variants**
- **Personalized recommendations based on your genetics**

About Longevity

Key Takeaways:

● Factors that help you live longer include a healthy diet,
physical activity, not smoking, limiting alcohol intake, being
a financially stable female, and having good mental health.
● Whether your genetics predispose you to living longer or not,
you will benefit from taking action on the risk factors that you
can control.
● Genes that influence your longevity may influence heart and
brain health, cholesterol levels, and body fat.

Researchers have spent a lot of time trying to figure out why some people live such long lives. Some of the factors that may play a role include [R, R, R, R, R, R, R]:

- Healthy diet
- Physical activity
- Not smoking
- Limited alcohol intake
- Mental health
- Female sex
- Higher socioeconomic status
- **Genetics**

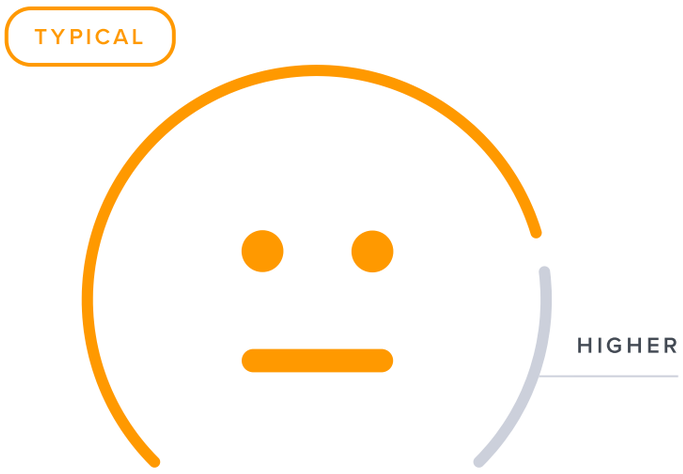
Healthy habits seem to have a relatively large impact on longevity [R].

Exercise is especially important as the body ages. People who keep moving not only live longer; they can maintain their independence as they get older [R].

Following a healthy diet is also important. This includes eating a lot of fruits, vegetables, and healthy fats (such as omega-3s). It also includes limiting the intake of red and processed meats, added sugars, and salt [R].

Research suggests that genetics also plays a role in human lifespan. Genes involved in longevity may influence [R, R]:

- Heart health (IL6R, LDLR, APOE)
- Brain health (APOE)
- Cholesterol levels (LDLR, APOE)
- Body fat (KCNK3, PGPEP1)



Likely typical longevity based on 884,680 genetic variants we looked at

VARIANTS THAT HAVE THE BIGGEST IMPACT ON YOUR GENETIC PREDISPOSITION

GENE	SNP	GENOTYPE
PON1	**rs662**	TT
TP53	**rs1042522**	CC
FOXO3	**rs9398171**	TC
SDHAF3	**rs799605**	GG
SIRT1	**rs12778366**	CT
SOD3	**rs2536512**	GA
SPATA2L	**rs445537**	GG
POGZ	**rs11578888**	AG
FGF13	**rs7060413**	A
GBE1	**rs1406549**	GA
FAAP24	**rs892024**	AG
APOE	**rs4420638**	AA
FOXO3	**rs2802288**	AA
IL6	**rs2069837**	AA
APOE	**rs429358**	TT
SIVA1	**rs3803304**	CC
STEAP2	**rs9691522**	CC
/	**rs6530093**	C
SLC12A1	**rs9920281**	AA
PRDM16	**rs12562988**	GG

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

Genetically lower IGF-1 and higher glucosamine (in women) may be causally associated with longevity. In contrast, genetically high ApoB, total testosterone (in women), and bioavailable testosterone (in men) may be causally associated with shorter longevity [R, R, R, R].

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.

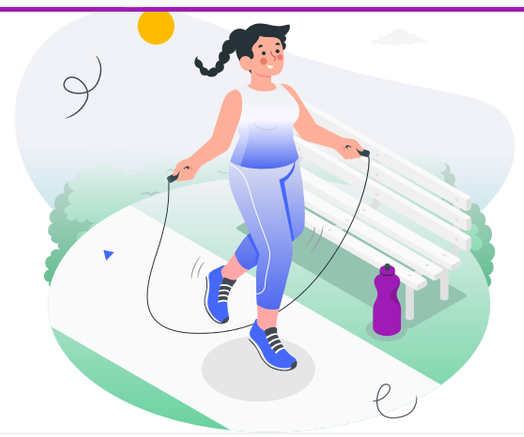
You'll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

1

Exercise

IMPACT 5 / 5

EVIDENCE 5 / 5



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 getting a mix of cardio (at least 150 min/week) and strength training (2 times/week) [R].

How Exercise Helps Increase Longevity

A sedentary lifestyle is linked to reduced longevity. For example, spending hours watching TV every day may be harmful [R, R, R, R, R, R].

In line with this, **getting more exercise may increase lifespan**. The more people exercise, the more longevity tends to improve [R, R, R, R, R].

Both cardio and resistance exercises may help. Some studies suggest that higher intensity exercise may be more beneficial [R, R, R, R, R].

In line with this, elite athletes tend to live longer [R, R, R].

Fortunately, you don't have to be an athlete to benefit from physical activity. Moving more as part of daily living is linked to increased lifespan. Activities that may help include [R, R, R]:

- Cycling to work
- Playing recreational sports
- Gardening and yard work
- Walking or hiking

Exercise may help by improving and maintaining physical, heart, and lung performance [R, R, R, R].

PERSONALIZED TO YOUR GENES

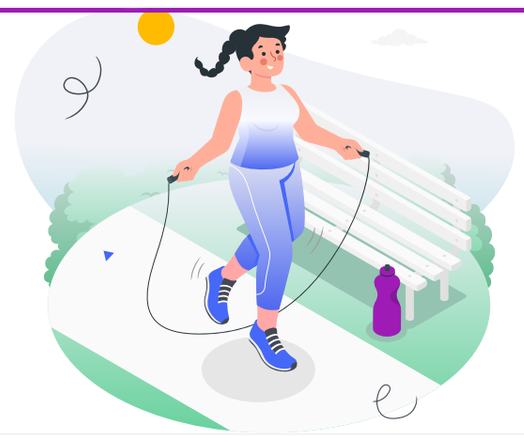
Exercise can support longevity by targeting many of your gene variants at once [R].

2

Avoid Cigarette Smoke

IMPACT 5 / 5

EVIDENCE 5 / 5



You already know that tobacco is not great for your health. **Smoking affects your entire body.** It can damage your brain, heart, lungs, and more [R].

And even if you're not a smoker, **take care to avoid secondhand smoke. It can cause health issues similar to smoking** [R, R].

But, there's good news: **avoiding cigarette smoke can reverse many of its negative effects**. It's a great way to dramatically improve your health [R].

How Avoiding Cigarette Smoke Helps Increase Longevity

Tobacco contributes to chronic health conditions that are linked to reduced longevity. These include lung disease, heart disease, and several types of cancer. In line with this, **smokers may be at a much higher risk of a reduced lifespan**. On average, lifespan may decrease by about **6 years** in people who smoke [R, R, R, R].

Smokeless tobacco products and **exposure to secondhand cigarette smoke** may also reduce longevity [R, R, R].

Quitting smoking at any age may help. Longevity tends to increase gradually as more years pass after quitting [R, R].

PERSONALIZED TO YOUR GENES

Your CHRNA3 **gene variant may be linked to reduced longevity in smokers** [R, R]. **Do your best to avoid cigarette smoke.**

Your BDNF **gene variant may be linked to reduced longevity in smokers** [R]. **Take special care to avoid cigarette smoke.**

YOUR GENETIC VARIANTS

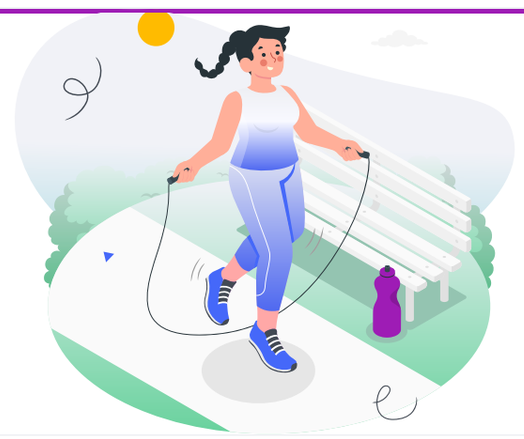
GENE	SNP	GENOTYPE	EVIDENCE
CHRNA3	**rs1051730**	/	
LGR4	**rs4923461**	/	

3

Maintain a Healthy Weight

IMPACT 4 / 5

EVIDENCE 5 / 5



People have a healthy weight when they don't have too much or too little body fat [R].

Body mass index (BMI) can help determine body fat levels. Your BMI is your mass (in kg) divided by the square of your height (in meters) [R].

In general [R]:

- People with a BMI **under 18.5** tend to be **underweight**
- People with a BMI **between 18.5 and 25** tend to have a **healthy weight**
- People with a BMI **between 25 and 30** tend to be **overweight**
- People with a BMI **over 30** tend to be **obese**

People with a BMI outside the healthy range are more likely to have [R, R, R]:

- Nutrient imbalances
- Heart disease
- Bone and joint problems

How Maintaining a Healthy Weight Helps Increase Longevity

People with a healthy BMI may have increased longevity [R, R, R].

In those who are obese, weight loss may increase longevity [R, R, R].

For older adults, being underweight is linked to a reduced lifespan. This may be due to increased frailty [R, R, R, R].

Other weight-related factors linked to a reduced lifespan include:

- Larger waist size [R, R, R]
- Weight change later in life [R, R, R]

PERSONALIZED TO YOUR GENES

Maintaining a healthy weight can support longevity by targeting many of your gene variants at once [R, R].

Your FTO **gene variant is linked to reduced longevity due to obesity. Do your best to maintain a healthy weight** [R].

YOUR GENETIC VARIANTS

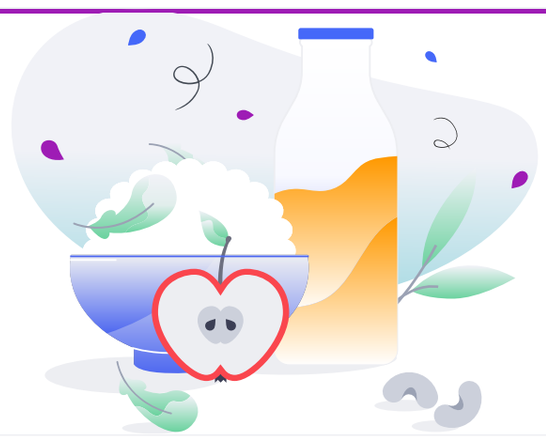
GENE	SNP	GENOTYPE	EVIDENCE
FTO	**rs9939609**	/	

4

Limit Alcohol Intake

IMPACT 4 / 5

EVIDENCE 5 / 5



Many people drink alcohol in their free time. For some, alcohol can temporarily improve their mood and mental state [R].

Experts agree that having 1-2 drinks per day likely won't cause harm. However, heavy drinking is bad for your health [R].

How Limiting Alcohol Intake Helps Increase Longevity

People who drink a lot of alcohol may have a reduced lifespan. This may be especially true for women [R, R, R, R].

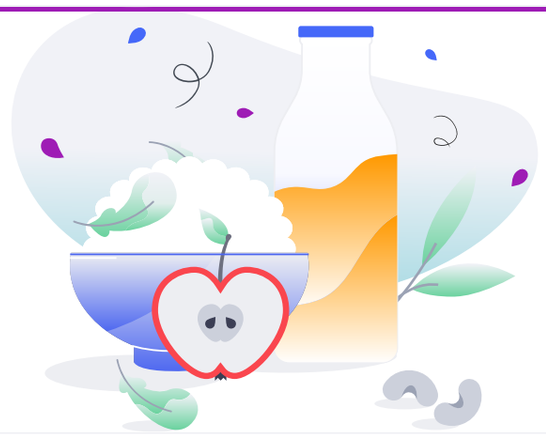
Alcohol may contribute to chronic health conditions that can reduce lifespan. It may also contribute to fatal self-harm and road accidents [R, R, R].

5

Plant-Based Diet

IMPACT 3 / 5

EVIDENCE 4 / 5



A plant-based diet is not necessarily vegetarian or vegan. It focuses on eating foods mainly of plant origin [R].

It includes a variety of fruits and vegetables, grains, dairy, high-protein foods, and oils [R].

Following a plant-based diet may support [R, R, R, R]:

- Heart health
- Blood sugar control
- Kidney health

How a Plant-Based Diet Helps Increase Longevity

People who eat a lot of animal protein may have a reduced lifespan [R].

Red and processed meats are sources of animal protein that are typically high in saturated fat and salt. Eating a lot of them may increase the risk of heart disease [R, R, R, R, R, R, R].

Limiting red meat and processed meat to 3 servings per week may help improve longevity. Legumes (such as peas, beans, and soy) are good meat substitutes that are linked to an increased lifespan [R, R, R, R, R].

In line with this, **plant-based diets may be a good way to support longevity** [R].

Eating more fruits and vegetables is linked to an increased lifespan. Getting just one additional serving per day may be beneficial. Plants that may help include [R, R, R, R, R]:

- Fresh fruits (berries, pears, citrus fruits)
- Root vegetables (carrots, potatoes, beets)
- Green leafy vegetables (lettuce, spinach, chard)
- Cruciferous vegetables (broccoli, cauliflower, cabbage)

Note that canned fruit may not benefit longevity. This may partly be due to added sugars in canned fruit [R, R].

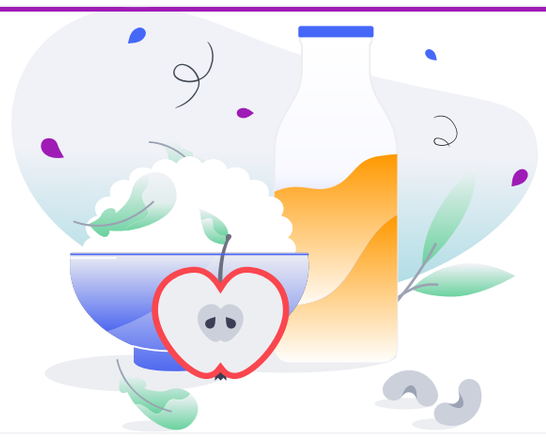
Plant-based diets may help by supporting heart health and reducing inflammation [R, R, R].

6

Mediterranean Diet

IMPACT 3 / 5

EVIDENCE 4 / 5



The Mediterranean diet is based on the traditional cuisine from the Mediterranean region. It's rich in foods like [R]:

- Fruits and vegetables
- Whole grains
- Healthy fats (fish and olive oil)

Red meat consumption is limited and dairy is eaten in moderation.

How the Mediterranean Diet Helps Increase Longevity

Following the Mediterranean diet is linked to increased longevity [R, R, R].

The Mediterranean diet may help:

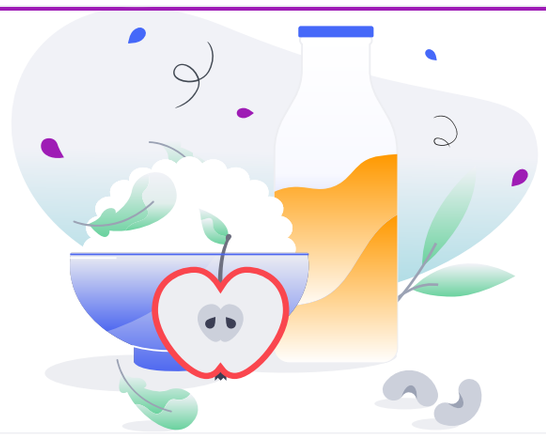
- Prevent chronic health problems [R, R]
- Lower inflammation [R]
- Slow cell aging [R, R]

7

Choose Healthy Fats

IMPACT 3 / 5

EVIDENCE 4 / 5



Based on their structure, the fats in our diet can be broadly divided into *saturated* and *unsaturated* fat. Trans fat is a type of unsaturated fat [R, R, R].

In large amounts, trans fat and saturated fat may have a negative impact on your heart. Processed foods and animal products like red meat and dairy are rich in these fats [R, R, R].

Some types of unsaturated fat can protect your heart. **Experts say you should add more unsaturated fats to your diet**. Some good sources include [R]:

- Nuts
- Seeds
- Fish

Unsaturated fats include polyunsaturated fats or PUFAs (omega-3 and omega-6) and monounsaturated fats or MUFAs [R, R].

How Healthy Fats Help Increase Longevity

Eating a lot of saturated and trans fat is linked to a reduced lifespan. **Try replacing these fats with MUFAs and PUFAs (such as omega-3s)** [R, R, R].

Higher blood levels of omega-3s are linked to increased longevity. Eating more fatty fish may have similar effects. Fatty fish may help by supporting heart health. Fish with high amounts of omega-3s include [R, R, R, R, R, R, R]:

- Salmon
- Cod
- Sardines
- Canned light tuna

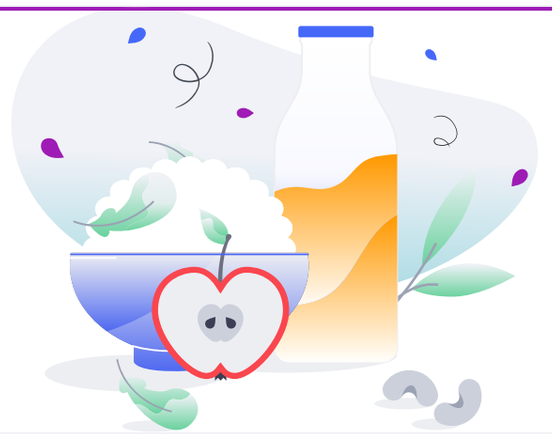
Increased intake of fish oil or olive oil may also be beneficial [R, R, R].

8

Fiber

IMPACT 3 / 5

EVIDENCE 4 / 5



Fiber is a type of carb that your body can't digest. It supports digestion, heart health, blood sugar control, and more [R, R].

Adults should get 28 g of fiber every day. Most people in the US don't get enough fiber [R, R].

You can get more fiber by eating [R, R]:

- Whole grains
- Fruits
- Leafy greens
- Nuts and seeds
- Beans
- Broccoli

Fiber supplements are available for people who don't get enough fiber from their diets [R, R].

How Fiber Helps Increase Longevity

Eating more foods rich in fiber is linked to increased longevity. Increasing intake by **10 g/day** may help [R, R, R].

Whole grains are one example of a fiber-rich source that may support longevity. Adding **1-3 servings (30-90 g) per day** may be beneficial [R, R, R, R, R, R].

Fiber may help by [R, R, R]:

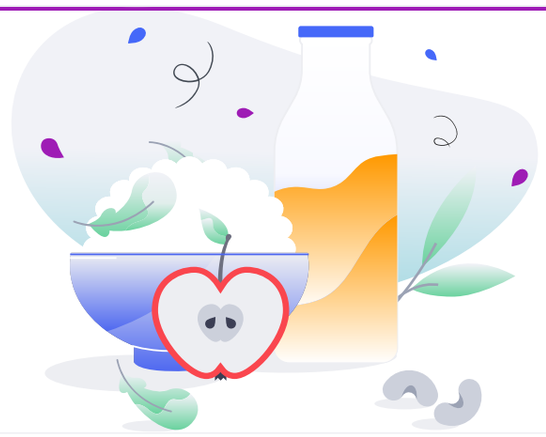
- Supporting a healthy weight
- Reducing inflammation
- Improving blood sugar

9

Coffee

IMPACT 3 / 5

EVIDENCE 4 / 5



People drink coffee for an energy and mood boost. Caffeine is the main ingredient responsible for these effects [R, R].

Drinking moderate amounts of coffee may also help [R, R, R, R]:

- Improve heart health
- Boost mood
- Reduce blood sugar
- Improve skin health

How Coffee Helps Increase Longevity

Drinking coffee regularly (2-4 cups/day) is linked to increased longevity. Interestingly, both caffeinated and decaf coffee may be beneficial [R, R, R, R, R, R, R].

Coffee may help by [R, R, R]:

- Supporting healthy blood sugar levels
- Supporting a healthy weight
- Reducing oxidative stress and inflammation

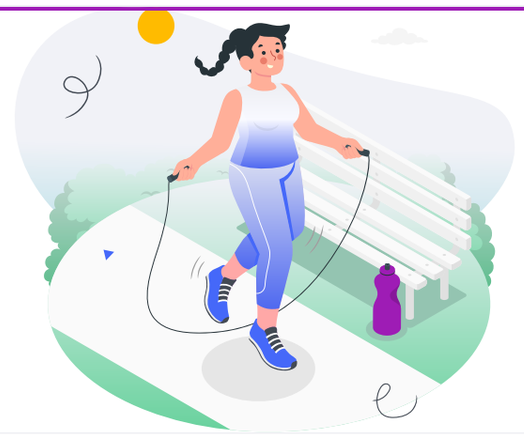
Please note: *Too much caffeine (over 400 mg per day) may lead to sleep problems, high blood pressure and cholesterol, fast heart rate, and dependence. If you're pregnant, try to limit caffeine to 200 mg per day* [R, R].

10

Optimize Sleep

IMPACT 3 / 5

EVIDENCE 5 / 5



[Sleep](#) **supports your body and mind**. It 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 Optimizing Sleep Helps Increase Longevity

Poor sleep is linked to a reduced lifespan. The following may affect longevity:

- **Short sleep duration** (less than 7 hours) [R, R, R, R, R]
- **Night shift work** [R]
- **Long sleep duration** (9 or more hours), including long daytime napping (more than 30-60 minutes a day) [R, R, R, R, R, R, R, R, R]

Having trouble falling or staying asleep (***insomnia***) is also associated with a higher risk. However, one review didn't find a link between insomnia and a reduced lifespan [R, R].

Short sleep duration may reduce lifespan by [R]:

- Increasing appetite and the risk of obesity
- Increasing inflammation
- Impairing blood sugar control

When it comes to long sleep duration, there are no clear mechanisms. Scientists are unsure if long sleep reduces lifespan directly, or if it's just a result of underlying health issues [R, R].

PERSONALIZED TO YOUR GENES

Your VGLL2 gene variant is linked to lower sleep quality [R]. Take special care to optimize your sleep to support longevity.

YOUR GENETIC VARIANTS

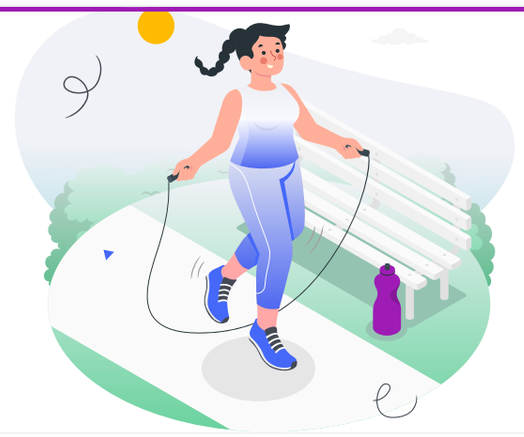
GENE	SNP	GENOTYPE	EVIDENCE
VGLL2	**rs4946246**	/	

11

Avoid Pollution

IMPACT 3 / 5

EVIDENCE 5 / 5



While city life is convenient in a lot of ways, it comes with some health hazards. Cars, factories, and other sources increase air pollution [R].

Air pollution plays a role in [R, R, R, R, R]:

- Lung disease
- Heart disease
- Diabetes
- Allergies

Other forms of pollution can cause a number of health issues as well. Environmental pollutants, such as mercury and PCBs (polychlorinated biphenyls), may reduce lifespan [R, R].

How Avoiding Pollution Helps Increase Longevity

Exposure to air pollution is linked to a reduced lifespan, especially due to heart or lung disease. Breathing polluted air for even a few hours or days may also be harmful [R, R, R, R, R, R, R, R, R, R].

Monitoring your local air quality may help reduce your exposure. Levels of air pollutants, such as ozone, tend to be highest in the early afternoon. It may be best to avoid outdoor activities when pollutants are high [R, R].

Environmental pollutants, such as mercury and PCBs, are also linked to a reduced lifespan. They may contribute to heart disease [R, R, R].

Some larger fish—like shark, swordfish, and white tuna—may be higher in these pollutants. When preparing large fish, it may be best to [R, R]:

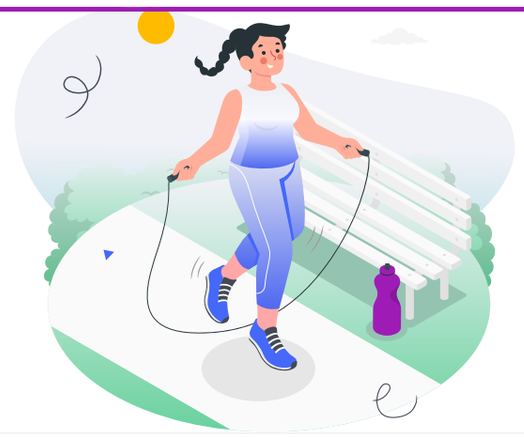
- Limit portion sizes to 4 oz.
- Trim away fatty areas
- Remove skin before cooking to allow fat to drain off
- Avoid deep frying fish

12

Spend Time in Nature

IMPACT 3 / 5

EVIDENCE 3 / 5



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

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

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

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

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

How Spending Time in Nature Helps Increase Longevity

Spending more time in green spaces is linked to increased longevity [R, R, R, R, R, R].

Spending time in nature may help by [R, R, R, R, R]:

- Encouraging physical activity
- Decreasing exposure to air pollution
- Supporting mental health
- Boosting vitamin D, which supports heart health and immunity

PERSONALIZED TO YOUR GENES

Your FOXO3 gene variant may be linked to increased longevity. Spending time in green spaces may be more beneficial for longevity in people with this variant [R].

YOUR GENETIC VARIANTS

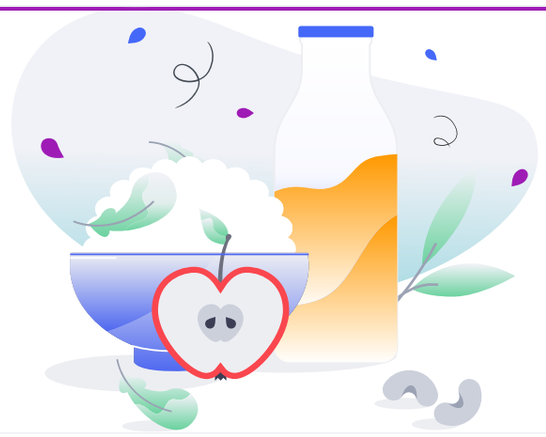
GENE	SNP	GENOTYPE	EVIDENCE
FOXO3	**rs2802292**	/	

13

Dietary Antioxidants

IMPACT 3 / 5

EVIDENCE 3 / 5



Our cells sometimes produce molecules called **reactive oxygen species (ROS)** [R].

High levels of ROS can cause oxidative stress and damage our cells. Oxidative stress plays a role in many health conditions, including [R]:

- High blood sugar
- Type 2 diabetes
- Heart disease

Antioxidants are substances that help combat ROS [R].

You can get most antioxidants from fresh fruits and vegetables. Some common antioxidants include [R, R, R]:

- Vitamin C
- Vitamin E
- Carotenoids
- Flavonoids
- Selenium

How Dietary Antioxidants Help Increase Longevity

Higher blood levels of antioxidants are linked to increased longevity [R, R, R, R, R].

In line with this, a higher intake of antioxidants may support a longer life. Antioxidants that may help include **carotenoids**, **vitamin C**, and **flavonoids** [R, R, R, R].

Adding a variety of plant-based foods to your diet is an excellent way to get more antioxidants. High-antioxidant foods include [R, R]:

- Berries
- Sweet potato
- Peppers
- Leafy greens (e.g., kale, spinach)
- Nuts
- Dark chocolate

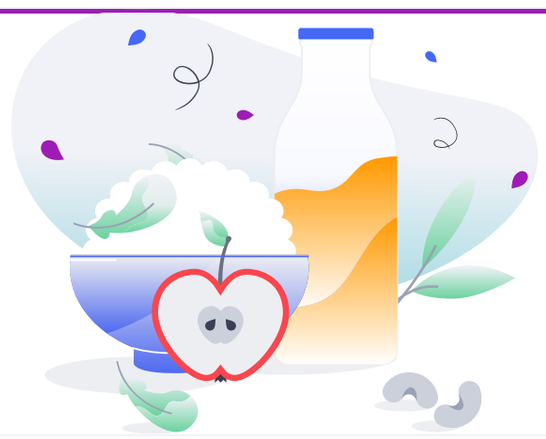
Antioxidants may help by reducing oxidative stress [R, R].

14

Tea

IMPACT 3 / 5

EVIDENCE 3 / 5



Green, black, and oolong tea are made from the same plant (*Camellia sinensis*). This plant is processed in different ways to make each type of tea [R, R].

Tea contains antioxidants called **polyphenols**, which may help support [R, R, R, R, R]:

- Heart health
- Healthy blood sugar levels
- Bone health

How Tea Helps Increase Longevity

People who drink green or black tea may have a longer lifespan. Green tea may have stronger effects. Increasing tea intake by even one cup per day may help [R, R, R].

Tea may help by [R, R]:

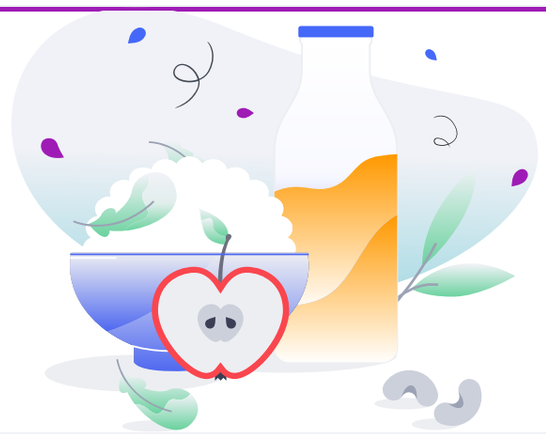
- Supporting blood vessel and heart function
- Reducing oxidative stress and inflammation

15

Nuts

IMPACT 3 / 5

EVIDENCE 3 / 5



Nuts are a healthy source of energy and nutrients. They are rich in [R, R, R]:

- Protein
- Dietary fiber
- Vitamins and minerals
- Healthy fats
- Plant sterols

Most of the energy in nuts comes from healthy *unsaturated fats*. Some nuts, like walnuts, are rich in *polyunsaturated fats* (PUFAs). These are considered to be the healthiest kind of fat [R].

How Nuts Help Increase Longevity

Eating nuts is linked to increased longevity. The more they're consumed, the greater the benefits tend to be. Especially helpful nuts include [R, R, R, R]:

- Peanuts
- Walnuts
- Almonds

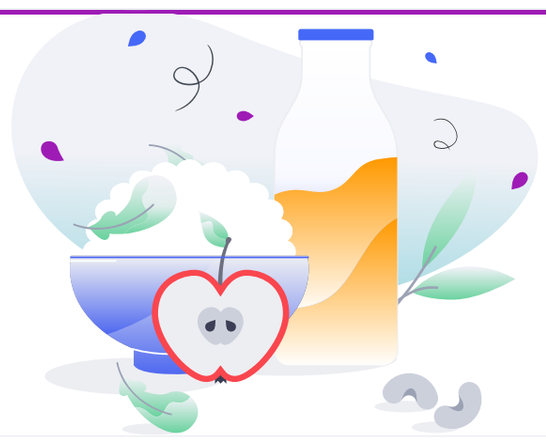
Nuts are a good source of healthy fats and fiber. These may support heart health and blood sugar control [R, R, R, R, R, R].

16

Avoid Sugary Foods

IMPACT 3 / 5

EVIDENCE 3 / 5



High-sugar foods and drinks can spike your blood sugar levels. They include [R, R]:

- Sodas
- Baked goods
- Sweets

Eating a lot of sugary foods may contribute to:

- Diabetes [R, R, R]
- Weight gain and obesity [R, R]
- Insomnia [R]
- Heart disease [R]
- Cavities [R]

How Avoiding Sugary Foods Helps Increase Longevity

People who consume sweetened drinks may have a reduced lifespan. The more drinks consumed, the stronger the impact on longevity. This is true for both sugar-sweetened and artificially sweetened drinks, including [R, R, R]:

- Sodas
- Energy drinks
- Fruit-flavored sports drinks

In line with this, eating a lot of sugary foods has been linked to a reduced lifespan but only in women [R].

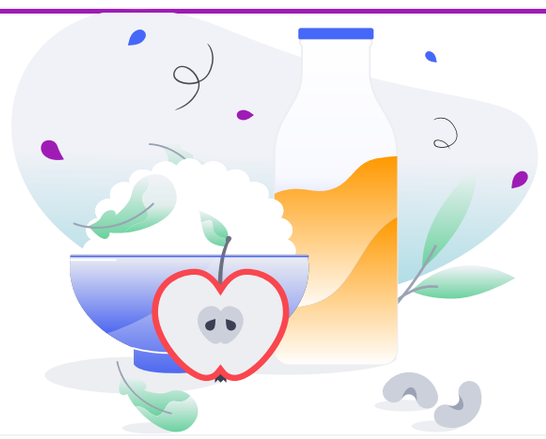
Sweetened beverages are linked to reduced longevity due to heart problems. Insulin resistance and increased levels of fat in the blood may be contributing factors [R, R, R, R].

17

Chili Peppers

IMPACT 2 / 5

EVIDENCE 2 / 5



People consume chili peppers as a spice. Some also take them to help improve digestion and weight control [R, R, R].

Capsaicin is the compound that makes chili peppers spicy [R].

How Chili Peppers Help Increase Longevity

People who eat more spicy foods containing chili may have healthier hearts and a longer lifespan [R].

Chili peppers may help by reducing inflammation [R].

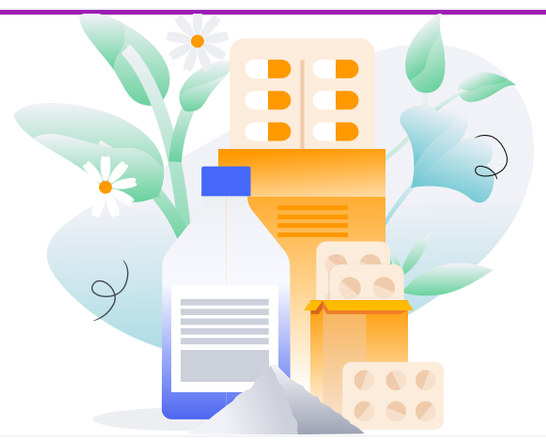
Please note: *Increased intake of chili peppers may be linked to higher odds of stomach cancer. Make sure to consume moderate amounts* [R, R, R].

18

Vitamin D

IMPACT 1 / 5

EVIDENCE 2 / 5



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 Vitamin D Helps Increase Longevity

Low blood levels of vitamin D are linked to a reduced lifespan. However, scientists are unsure of the strength of this connection. It may be that vitamin D plays a direct role in lifespan. However, it is also likely that those with shorter lifespans have an underlying health condition that also lowers vitamin D levels [R, R, R, R, R, R, R].

Some studies suggest **supplementing with vitamin D (200-800 IU/day)** may help increase lifespan. According to these studies, vitamin D may work best for older people and those who have low vitamin D levels. It may need to be taken for a prolonged period (more than 3 years) to provide benefits [R, R, R].

However, other studies didn't find a link between vitamin D supplementation and a longer life [R, R].

Vitamin D may help by [R, R, R]:

- Supporting immune function
- Reducing inflammation
- Slowing cell aging

Please note: *Experts recommend getting 600-800 IU of vitamin D per day. Medical bodies recommend against taking more than 4,000 IU per day* [R].

PERSONALIZED TO YOUR GENES

People with your GC gene variant may have lower vitamin D levels [R]. Take special care to get enough vitamin D.

YOUR GENETIC VARIANTS

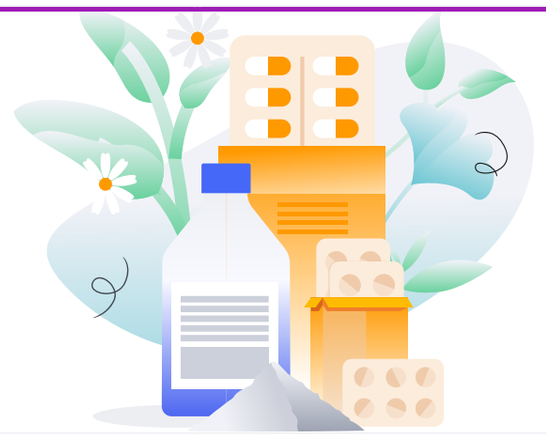
GENE	SNP	GENOTYPE	EVIDENCE
GC	**rs4588**	/	

19

Glucosamine

IMPACT 2 / 5

EVIDENCE 2 / 5



Glucosamine is a compound naturally made by the body. It helps keep the connective tissues, such as the cartilage in the joints, strong and elastic [R].

Glucosamine is also an anti-inflammatory supplement that is widely used to support joint health [R, R, R].

How Glucosamine Helps With Longevity

Higher blood levels of glucosamine are associated with a lower risk of early death [R].

People who take glucosamine supplements (at least 4x/week for at least 3 years) may live longer [R, R].

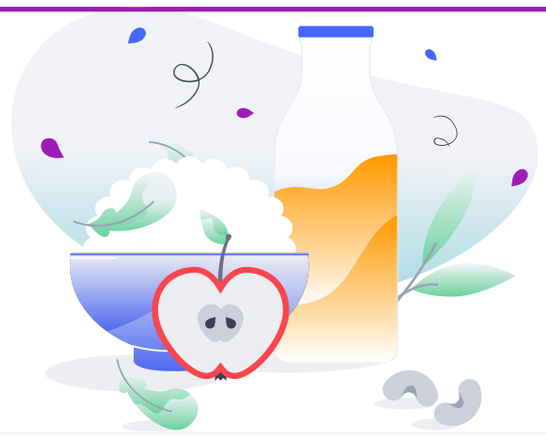
Please note: *Glucosamine may interact with blood thinners like warfarin. If you are taking blood thinners, avoid this supplement* [R].

20

Limit Calorie Intake

IMPACT 2 / 5

EVIDENCE 0 / 5



People often limit their calorie intake to help them lose weight [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.

Does Limiting Calorie Intake Help Increase Longevity?

Limiting calorie intake may support a healthy weight and healthy aging. It may also reduce cholesterol levels and inflammation [R, R].

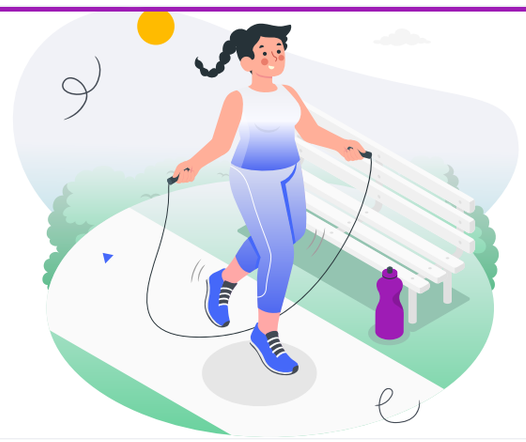
In line with this, multiple studies on yeast, worms, flies, and small mammals note that calorie restriction might increase lifespan. **However, similar studies have not been conducted in humans** [R, R].

In one study on humans, reducing calorie intake by 11% reduced some measures of aging in participants' DNA. However, it didn't reduce estimated biological age [R, R].

Please note: *There is no clinical evidence to support this recommendation. 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].

21

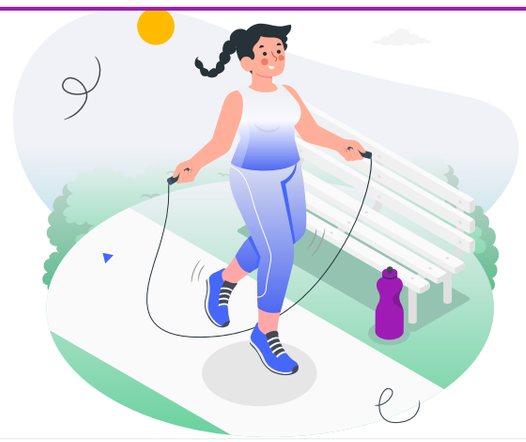
Aerobic Exercise (Cardio)



Cardio

22

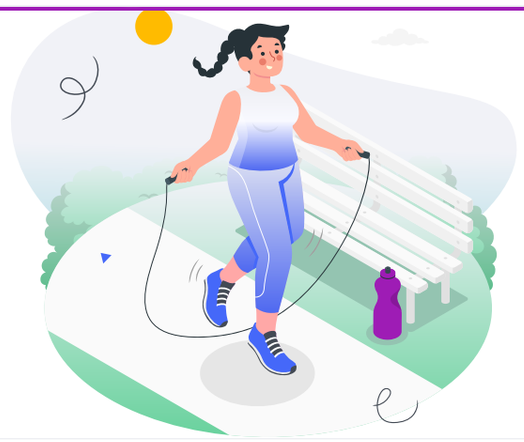
Avoid Air Pollution



Avoid Air Pollution

23

Optimize Mental Health



Optimize Mental Health

24

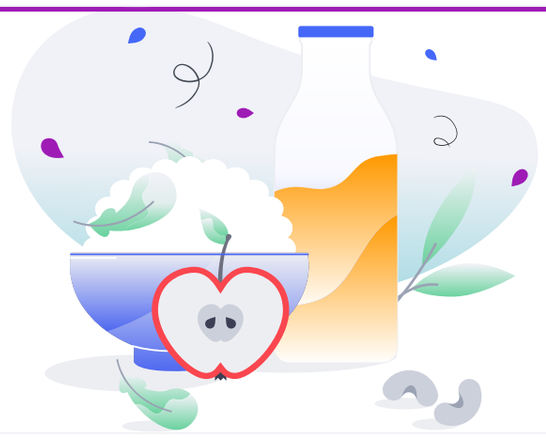
Pears

IMPACT

1 / 5

EVIDENCE

2 / 5



Pears

25

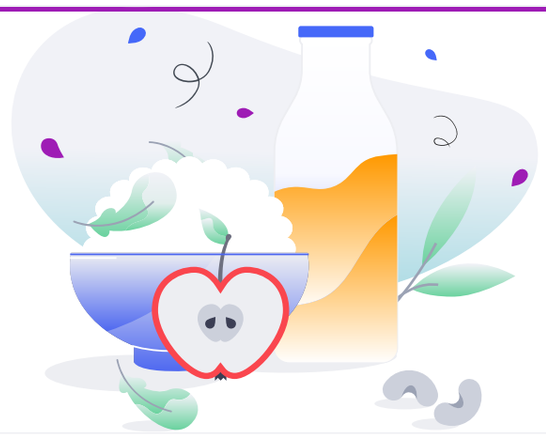
Apples

IMPACT

1 / 5

EVIDENCE

2 / 5



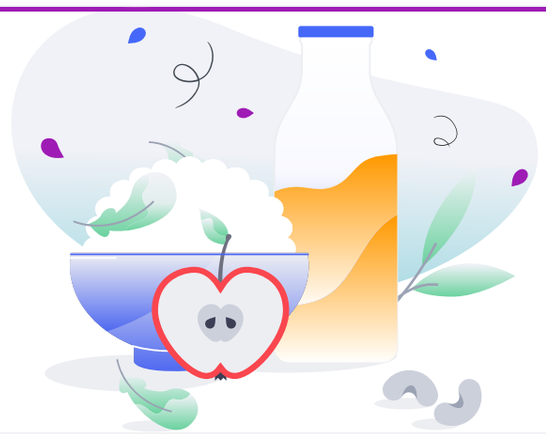
Apples

26

Citrus Fruits

IMPACT 1 / 5

EVIDENCE 2 / 5



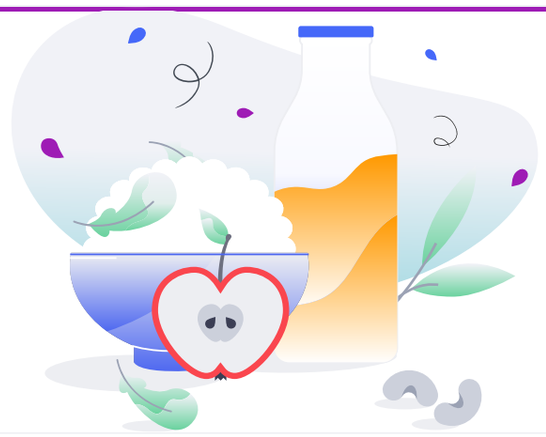
Citrus Fruits

27

Leafy Green Vegetables

IMPACT 1 / 5

EVIDENCE 2 / 5



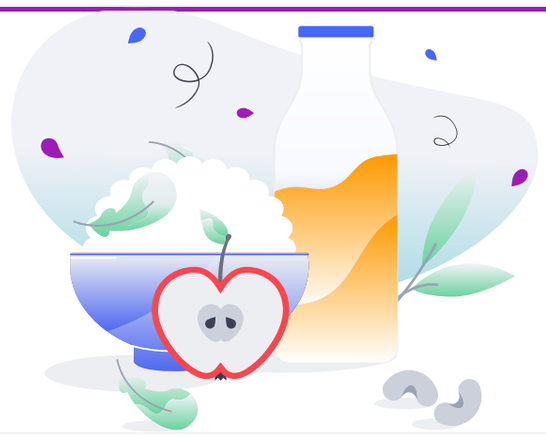
Green Leafy Vegetables

28

Cruciferous Vegetables

IMPACT 1 / 5

EVIDENCE 2 / 5



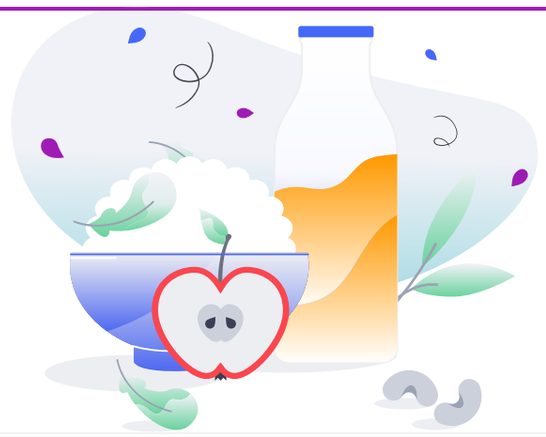
Cruciferous Vegetables

29

Vegetables

IMPACT 2 / 5

EVIDENCE 3 / 5



Vegetables

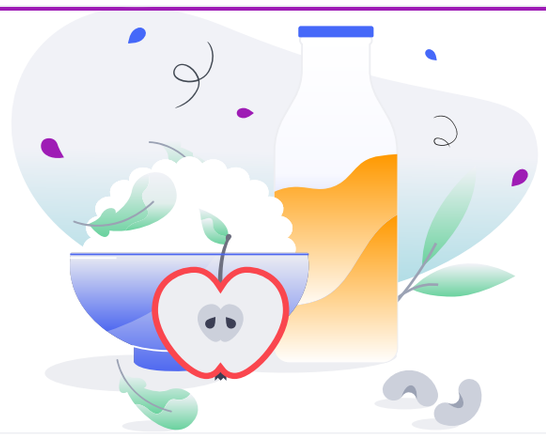
Recommendation References: [R, R]

30

Dietary Calcium

IMPACT 0 / 5

EVIDENCE 0 / 5



Dietary Calcium

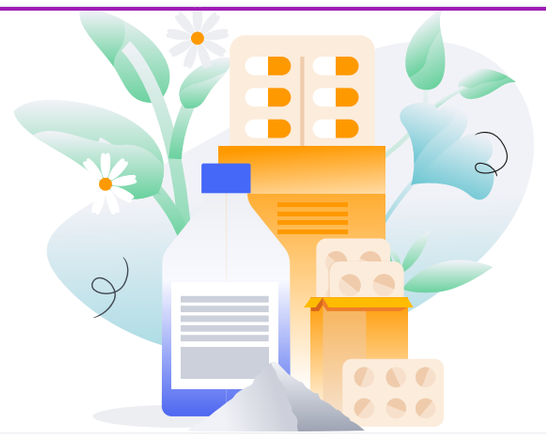
Recommendation References: [R]

31

Avoid Iron Supplements

IMPACT 0 / 5

EVIDENCE 0 / 5



Avoid Iron Supplements

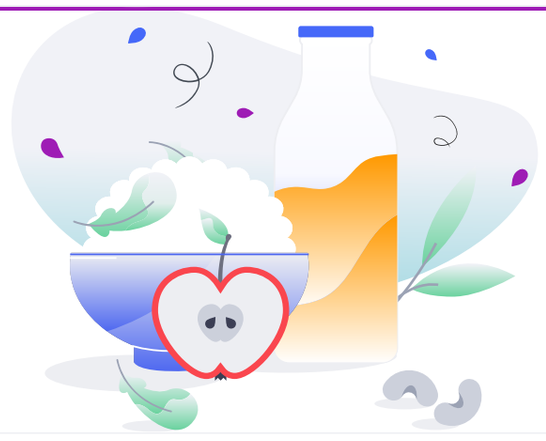
Recommendation References: [R]

32

Carrots

IMPACT 1 / 5

EVIDENCE 2 / 5



Carrots

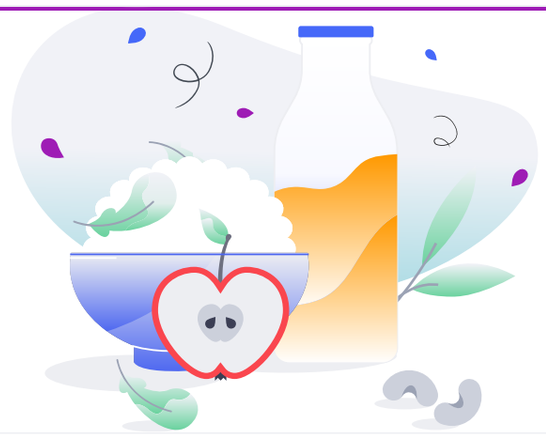
Recommendation References: [R]

33

Fruits

IMPACT 1 / 5

EVIDENCE 3 / 5



Fruits

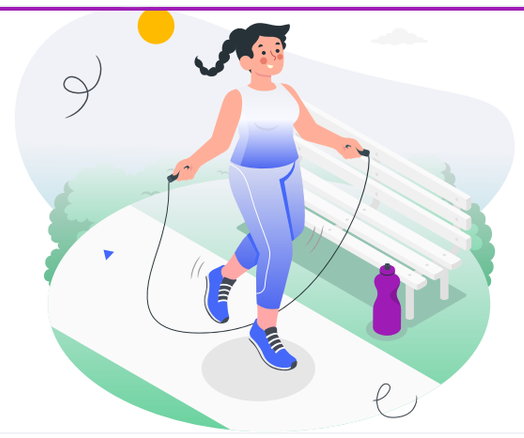
Recommendation References: [R]

34

Transcendental Meditation

IMPACT 1 / 5

EVIDENCE 1 / 5



Transcendental Meditation

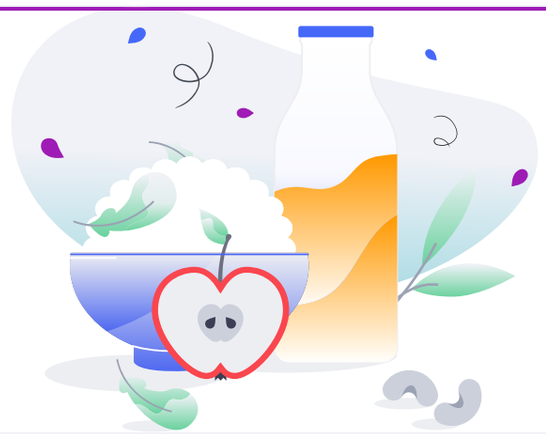
Recommendation References: [R]

35

Vegan Diet

IMPACT 2 / 5

EVIDENCE 3 / 5



Vegan Diet

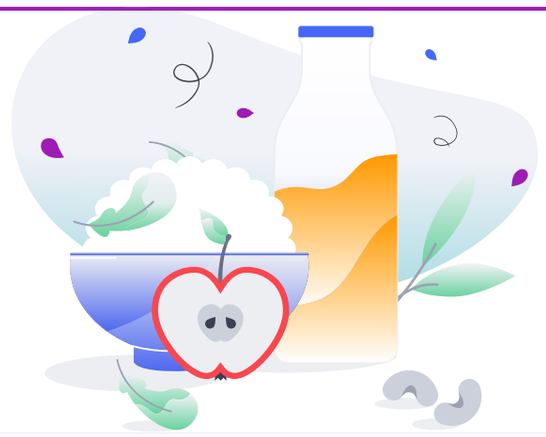
Recommendation References: [R, R]

36

Vegetarian Diet

IMPACT 2 / 5

EVIDENCE 3 / 5



Vegetarian Diet

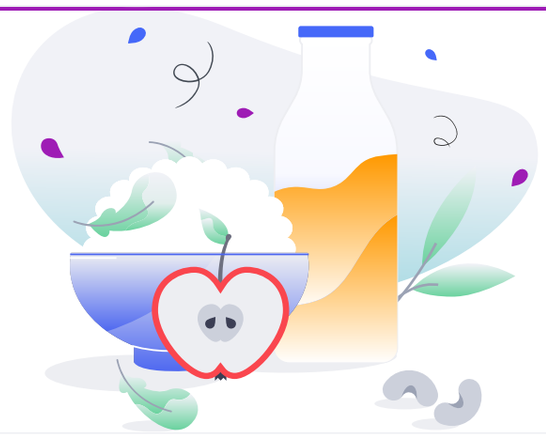
Recommendation References: [R, R, R, R, R]

37

Decaffeinated Coffee

IMPACT 1 / 5

EVIDENCE 2 / 5



Decaffeinated Coffee

Recommendation References: [R]

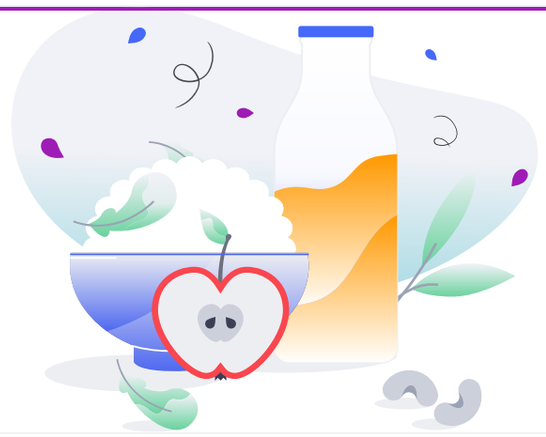
Please note: *Too much caffeine (over 400 mg per day) may lead to sleep problems, high blood pressure and cholesterol, fast heart rate, and dependence. If you're pregnant, try to limit caffeine to 200 mg per day* [R, R].

38

Dietary Beta-Carotene

IMPACT 1 / 5

EVIDENCE 2 / 5



Dietary Beta-Carotene

Please note: *While dietary beta-carotene is generally considered safe, beta-carotene supplements have been linked to heart disease and cancer, especially lung cancer. These links may be stronger in smokers. Make sure to consult your doctor before taking beta-carotene supplements* [R, R, R, R, R, R].

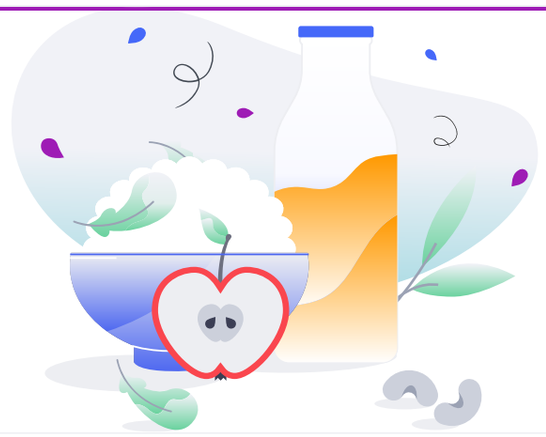
Recommendation References: [R, R, R]

39

Dietary Vitamin C

IMPACT 1 / 5

EVIDENCE 2 / 5



Dietary Vitamin C

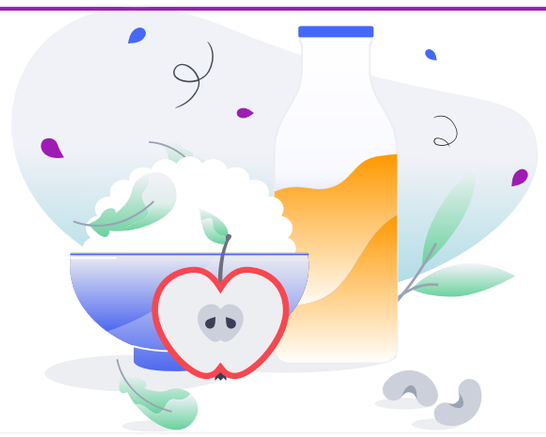
Recommendation References: [R]

40

Dietary Vitamin E

IMPACT 1 / 5

EVIDENCE 2 / 5



Dietary Vitamin E

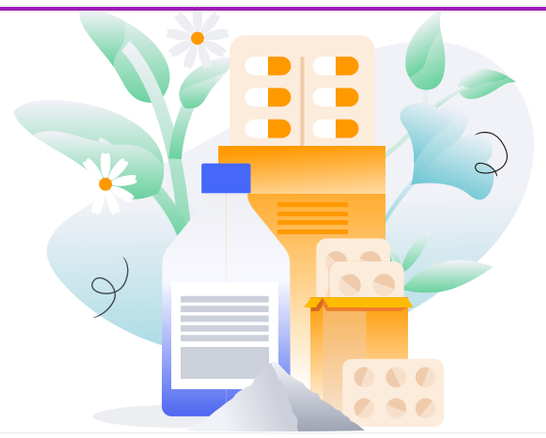
Please note: *While dietary vitamin E is generally considered safe, vitamin E supplements have been linked to prostate cancer. They may also not be the best option for people who are pregnant or have heart disease, bleeding disorders, or other conditions. Consult your doctor before taking vitamin E supplements* [R].
Recommendation References: [R]

41

Avoid Beta-Carotene Supplements

IMPACT 2 / 5

EVIDENCE 3 / 5



Avoid Beta-Carotene Supplements

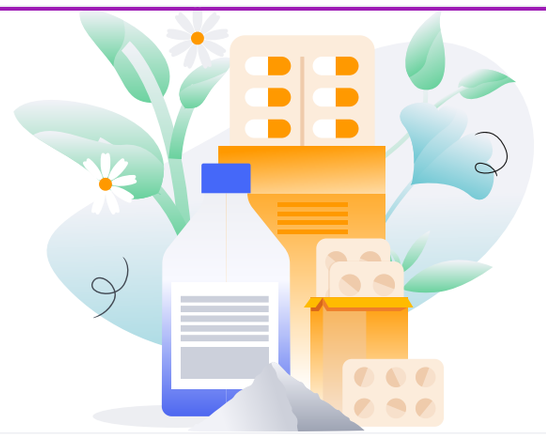
Recommendation References: [R, R, R, R, R, R, R, R]

42

Avoid Vitamin E Supplements

IMPACT 1 / 5

EVIDENCE 2 / 5



Avoid Vitamin E Supplements

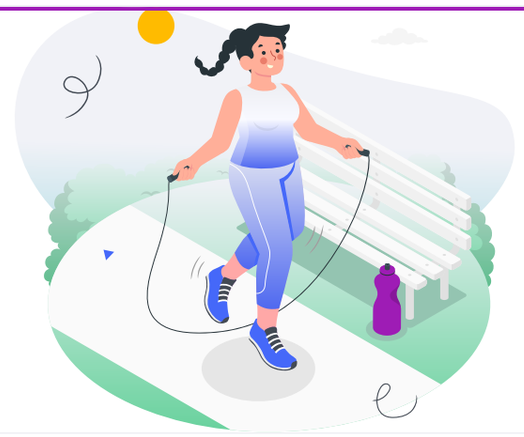
Recommendation References: [R, R]

43

Avoid Arsenic Exposure

IMPACT 1 / 5

EVIDENCE 2 / 5



Avoid Arsenic Exposure

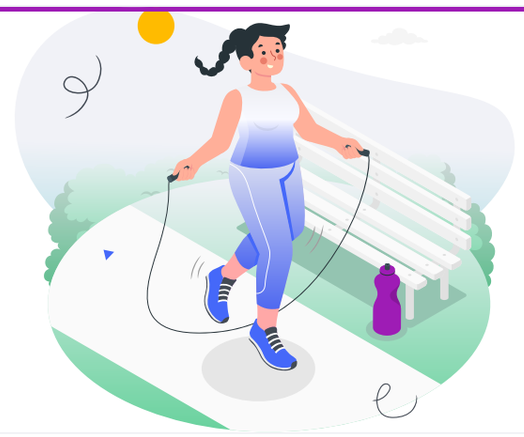
Recommendation References: [R]

44

Avoid PAHs Exposure

IMPACT 1 / 5

EVIDENCE 1 / 5



Avoid PAHs Exposure

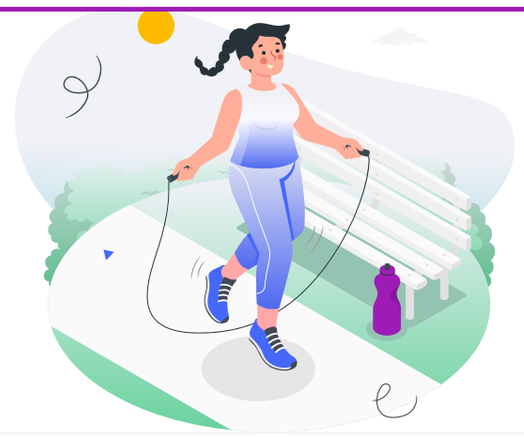
Recommendation References: [R, R]

45

Avoid Cadmium Exposure

IMPACT 1 / 5

EVIDENCE 2 / 5



Avoid Cadmium Exposure

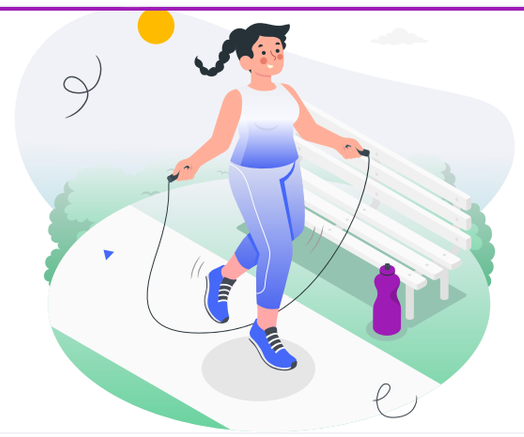
Recommendation References: [R, R]

46

Avoid Mercury Exposure

IMPACT 1 / 5

EVIDENCE 3 / 5



Avoid Mercury Exposure

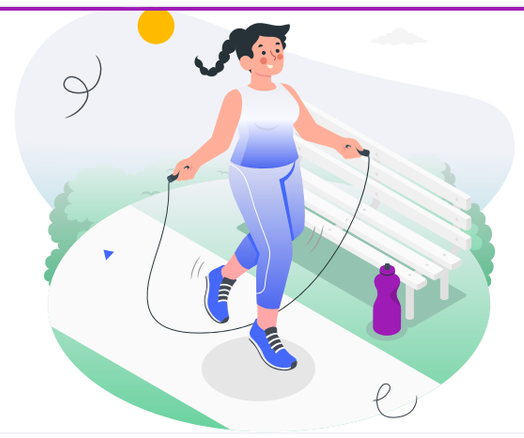
Recommendation References: [R]

47

Avoid Dioxin

IMPACT 3 / 5

EVIDENCE 3 / 5



Avoid Dioxin

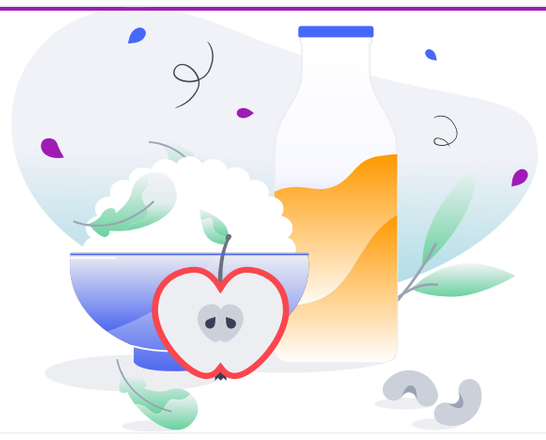
Recommendation References: [R, R, R]

48

Oats

IMPACT 2 / 5

EVIDENCE 1 / 5



Oats

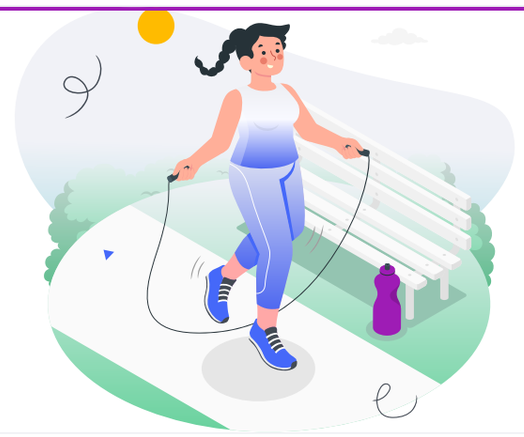
Recommendation References: [R]

49

Reduce Exposure to Parabens

IMPACT 1 / 5

EVIDENCE 1 / 5



Reduce Exposure to Parabens

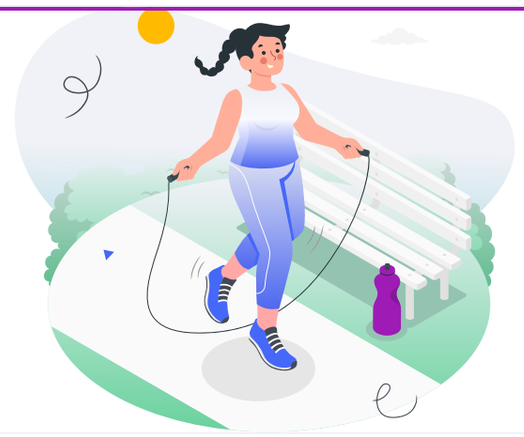
Recommendation References: [R]

50

Avoid Lead Exposure

IMPACT 1 / 5

EVIDENCE 2 / 5



Avoid Lead Exposure

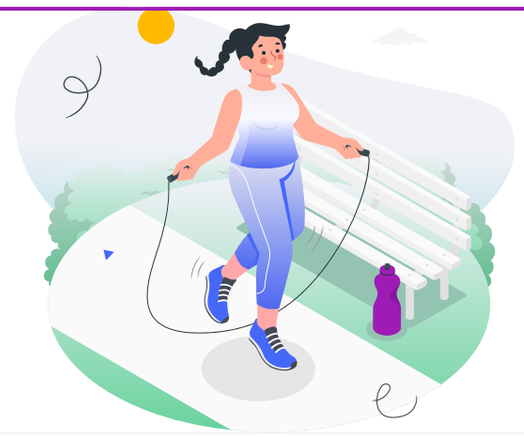
Recommendation References: [R]

51

Avoid Exposure to Heavy Metals

IMPACT 1 / 5

EVIDENCE 2 / 5



Avoid Exposure to Heavy Metals

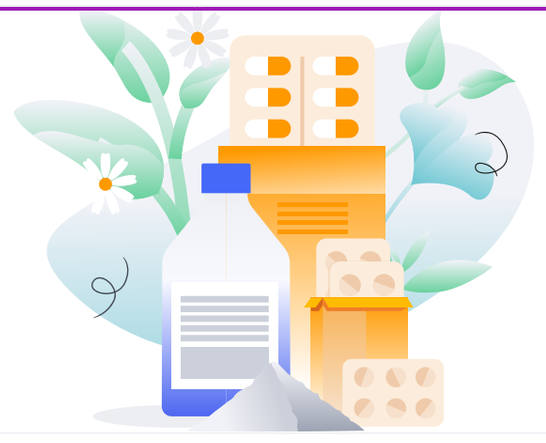
Recommendation References: [R]

52

Vitamin A

IMPACT 0 / 5

EVIDENCE 0 / 5



Vitamin A

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.*

Please note: *A high dose of vitamin A or taking high amounts of vitamin A long-term can be harmful, especially in women planning pregnancy or already pregnant. Vitamin A may cause harm to the fetus Vitamin A may also interact with some medications. Talk to your doctor before supplementing with vitamin A* [R, R, R].

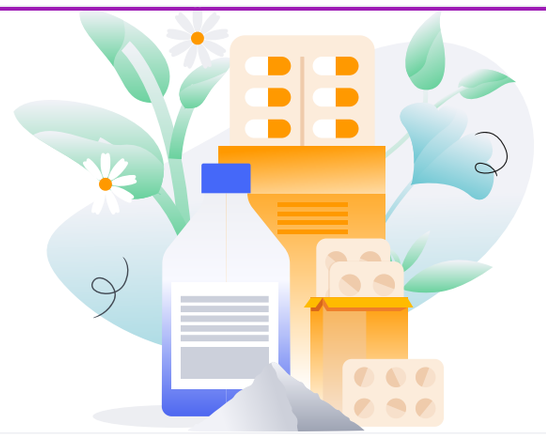
Genetically higher vitamin A metabolite levels (retinol and retinoic acid) may be associated with increased longevity. [R]

53

Avoid Zinc Supplements

IMPACT 0 / 5

EVIDENCE 0 / 5



Avoid Zinc Supplements

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.*

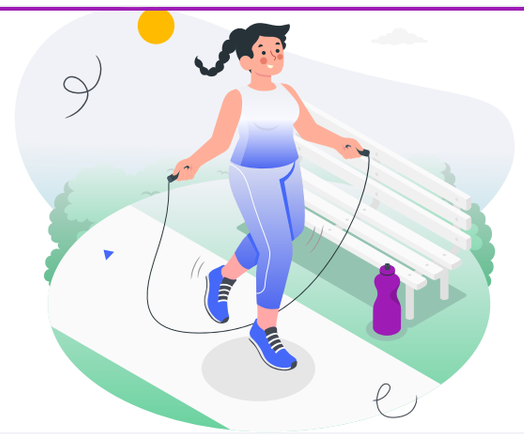
Genetically higher zinc levels may be associated with reduced life expectancy. [R]

54

Avoid PCBs

IMPACT 3 / 5

EVIDENCE 3 / 5



Avoid PCBs

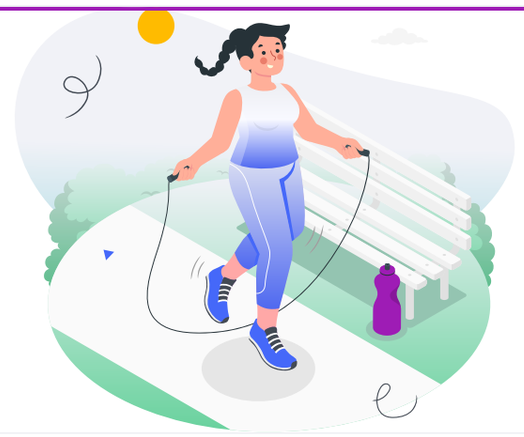
Recommendation References: [R, R, R]

55

Reduce Organochlorine Pesticide Exposure

IMPACT 2 / 5

EVIDENCE 2 / 5



Reduce Organochlorine Pesticide Exposure

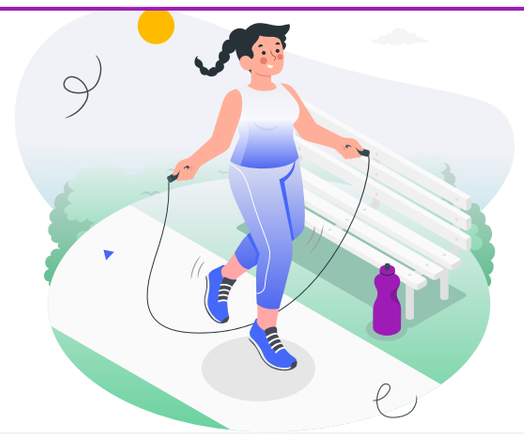
Recommendation References: [R, R]

56

Avoid Air Pollution

IMPACT 1 / 5

EVIDENCE 1 / 5

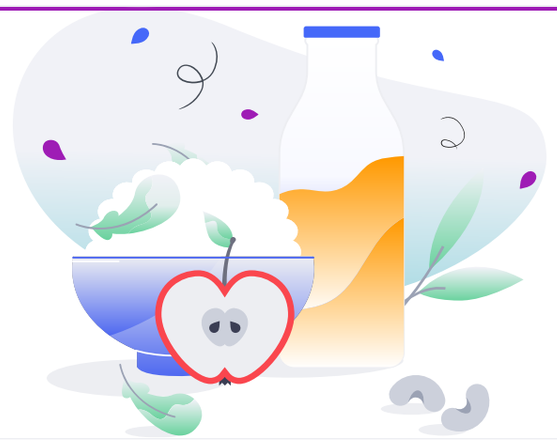


Avoid Air Pollution

Recommendation References: [R, R, R, R, R, R]

57

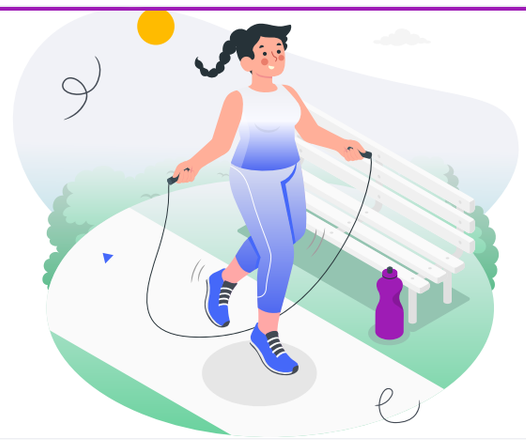
Dark Chocolate



Dark Chocolate

58

Meditation



Meditation

59

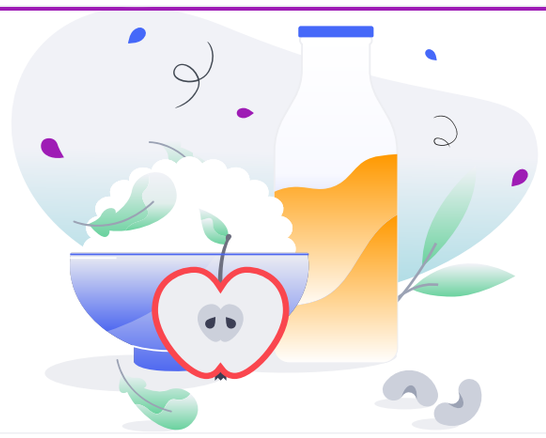
Black Tea

IMPACT

0 / 5

EVIDENCE

0 / 5



Black Tea

60

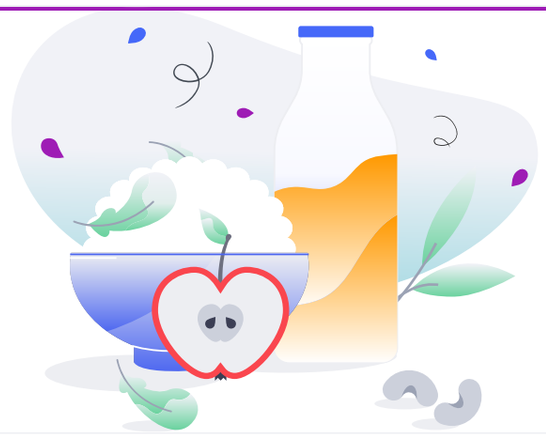
Green Tea

IMPACT

0 / 5

EVIDENCE

0 / 5



Green Tea

61

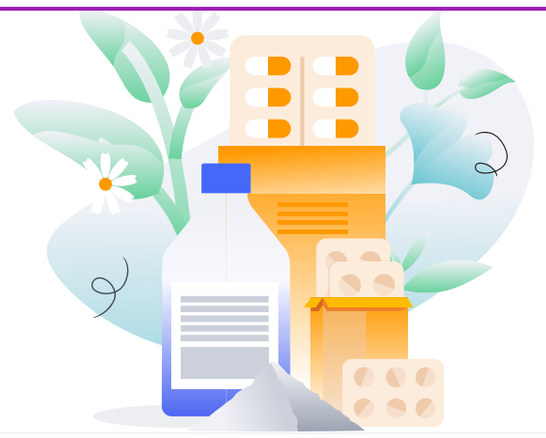
Glycine

IMPACT

0 / 5

EVIDENCE

0 / 5



Glycine

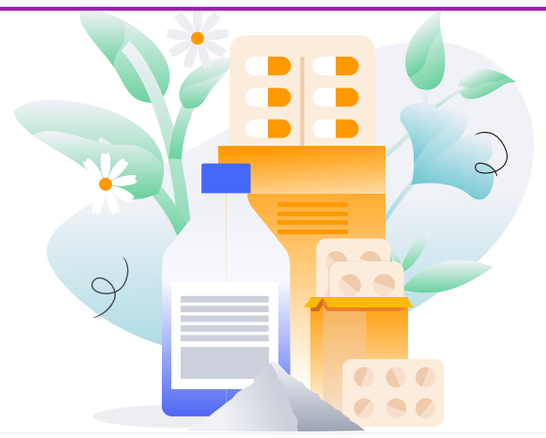
Please note: *There is no evidence from controlled clinical trials to support this recommendation. It is included based on uncontrolled clinical trials, animal or cell studies, or non-scientific criteria. Please take this recommendation with a grain of salt until more research is available.*

62

Soy Isoflavones

IMPACT 2 / 5

EVIDENCE 2 / 5



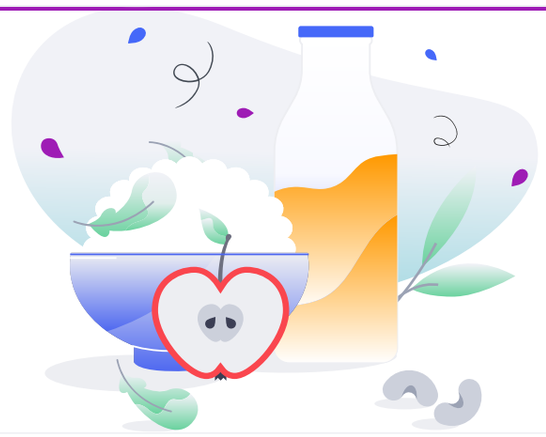
Soy Isoflavones

63

Stay Hydrated

IMPACT 2 / 5

EVIDENCE 2 / 5



Stay Hydrated

64

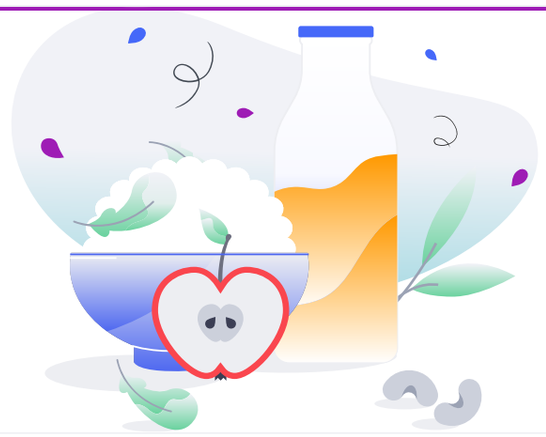
Yogurt

IMPACT

1 / 5

EVIDENCE

2 / 5



Yogurt

65

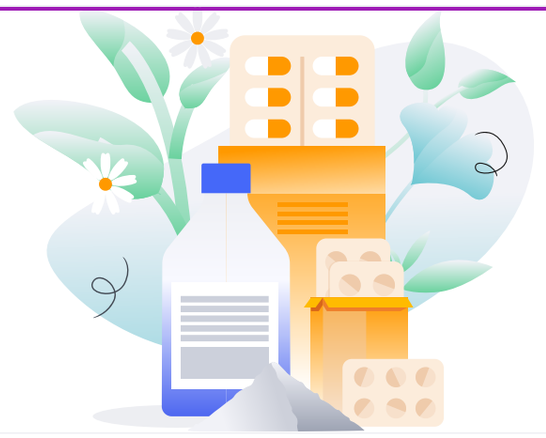
Coenzyme Q10 (CoQ10)

IMPACT

0 / 5

EVIDENCE

0 / 5



Coenzyme-Q10

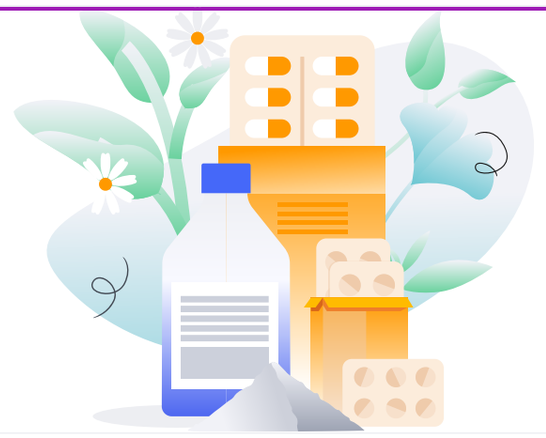
Please note: *There is no evidence from controlled clinical trials to support this recommendation. It is included based on uncontrolled clinical trials, animal or cell studies, or non-scientific criteria. Please take this recommendation with a grain of salt until more research is available.*

66

Coenzyme Q10 and Selenium

IMPACT 1 / 5

EVIDENCE 1 / 5



Coenzyme Q10 and Selenium

67

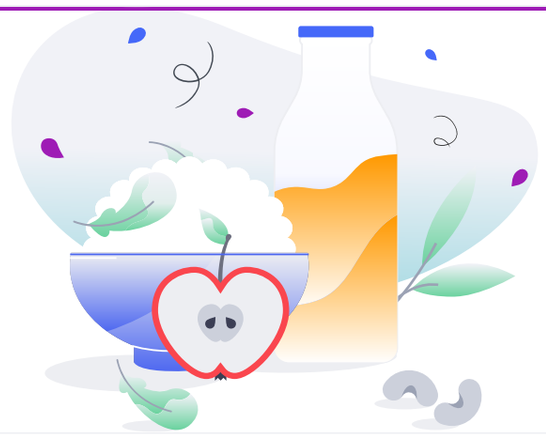
Alpha-Linolenic Acid (ALA)

IMPACT

1 / 5

EVIDENCE

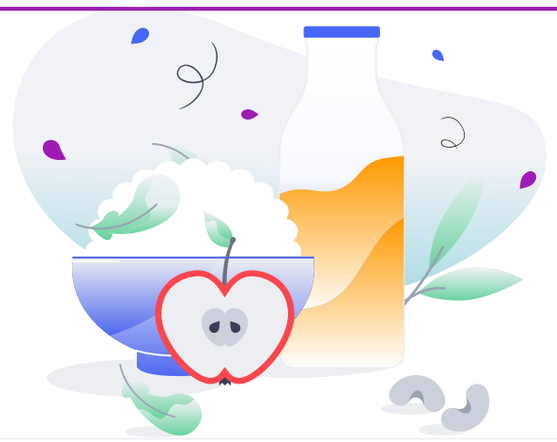
1 / 5



Alpha-Linolenic Acid (ALA)

68

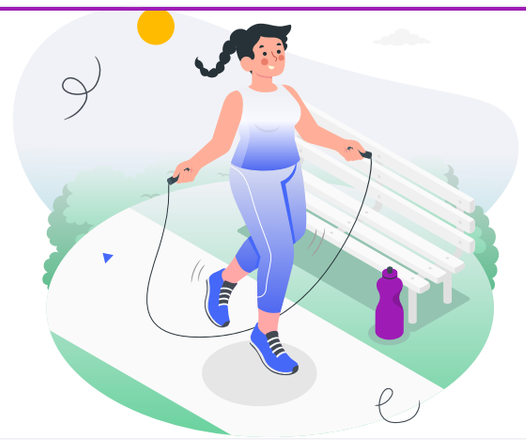
Soy



Soy

69

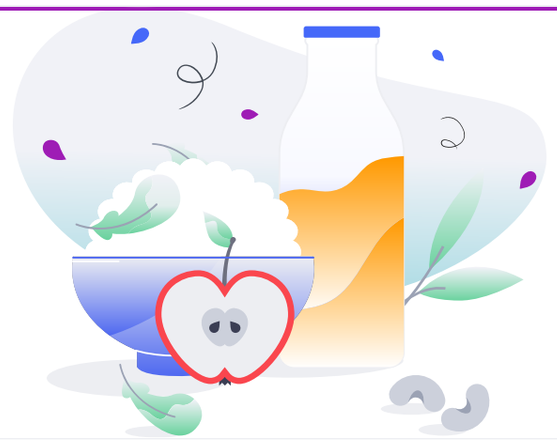
Avoid Exposure to Toxic Chemicals



Avoid Toxic Chemicals

70

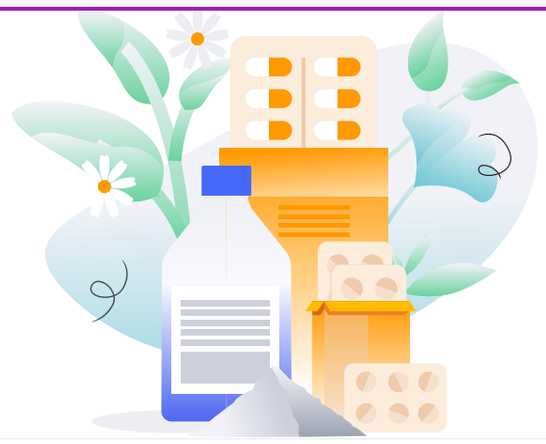
Fish



Fish

71

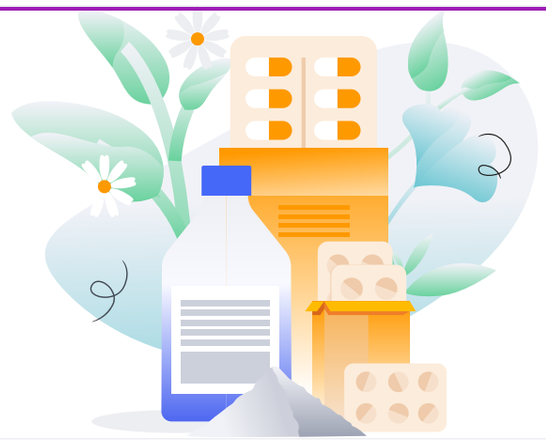
Lycopene



Lycopene

72

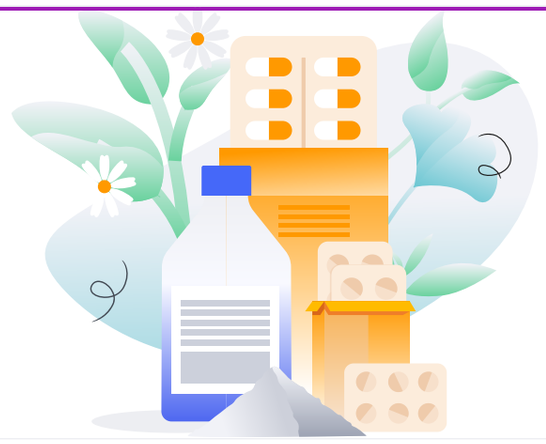
Omega-3 (Fish Oil)



Omega-3 Fatty Acids

73

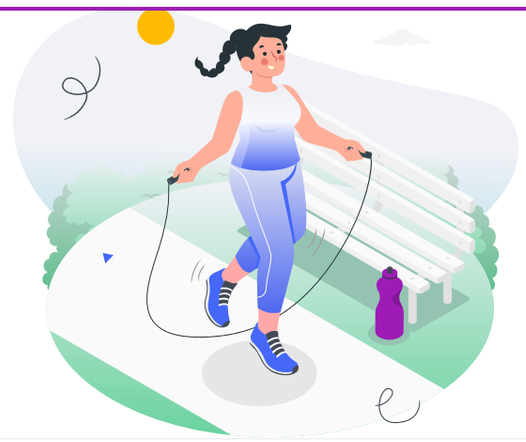
Selenium



Selenium

74

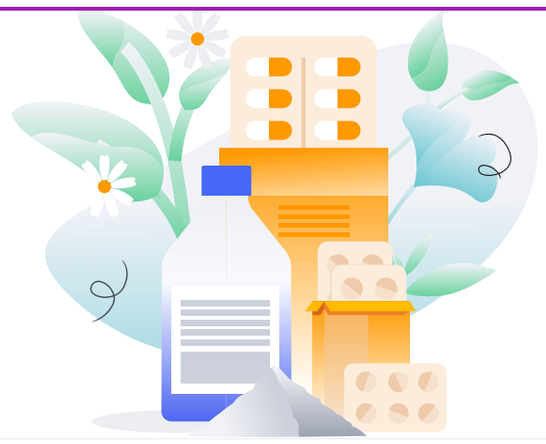
Strength Training



Strength Training

75

Ergothioneine



Ergothioneine

Next Steps

Remember, your genes only tell one important part of your health story!
These next steps will teach you how to get the most complete picture of your health.

1

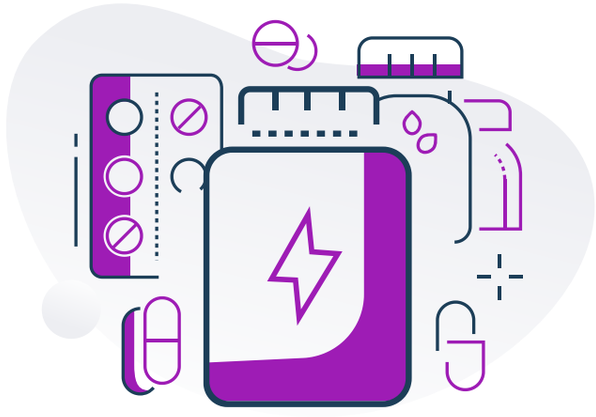
Your Lifestyle

Answer questions to understand the health impacts of your lifestyle.

2

Your Labs

Labwork is how you discover the true impact of your lifestyle and genetics on your current health.



3

Your Supplements

Discover key supplements that you can introduce to your body to achieve optimal health.