

Air Pollution Sensitivity

DNA Health Report

REPORT CATEGORY —



Sample Client

Report date: 15 January 2026

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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

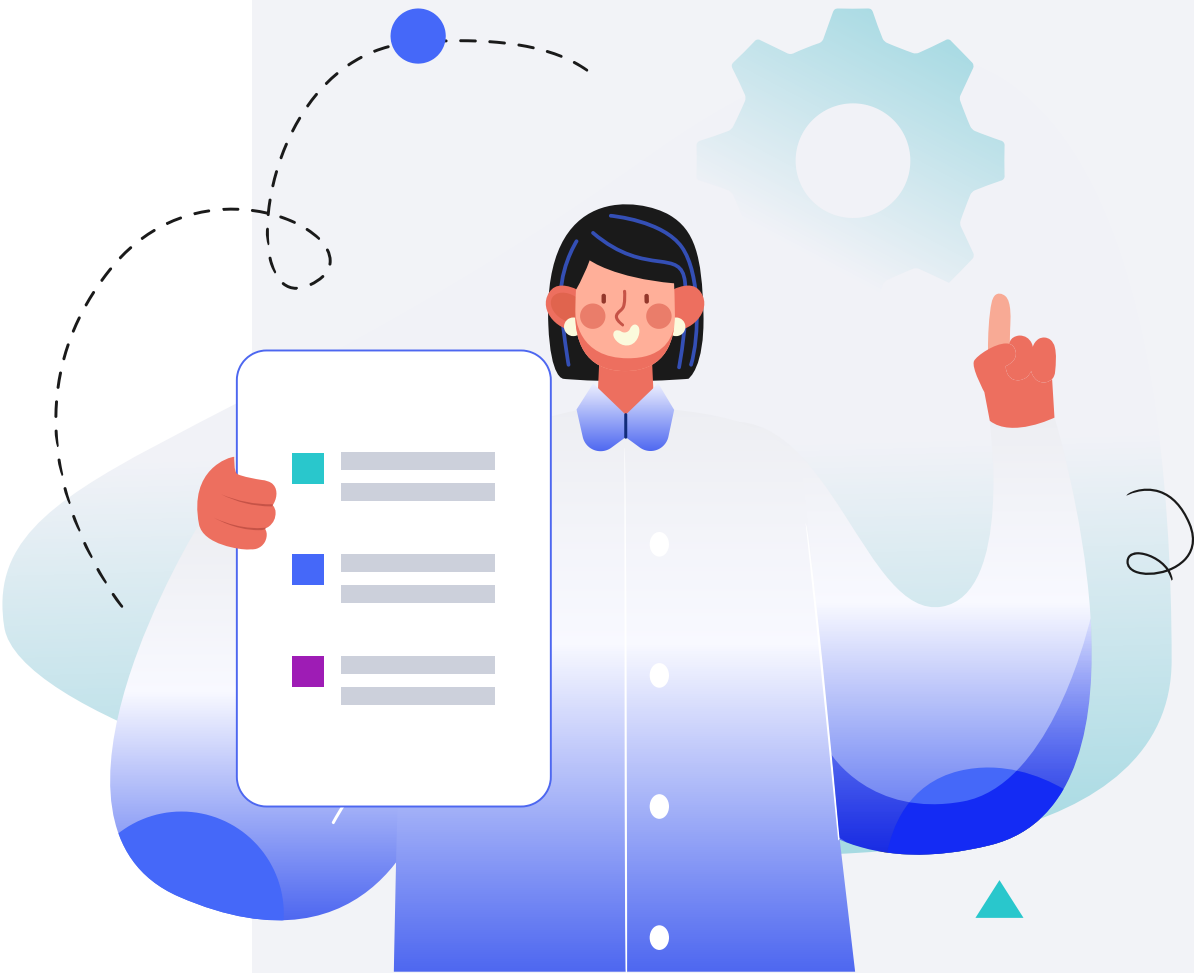
Male

HEIGHT

5ft 5" 165cm

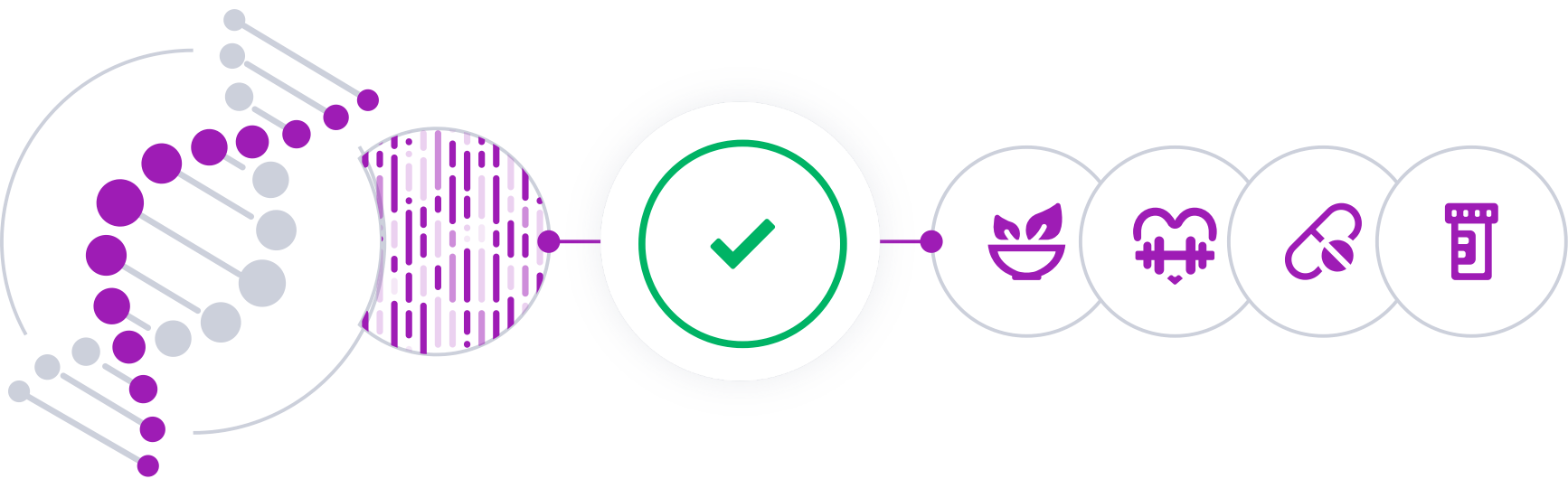
WEIGHT

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.

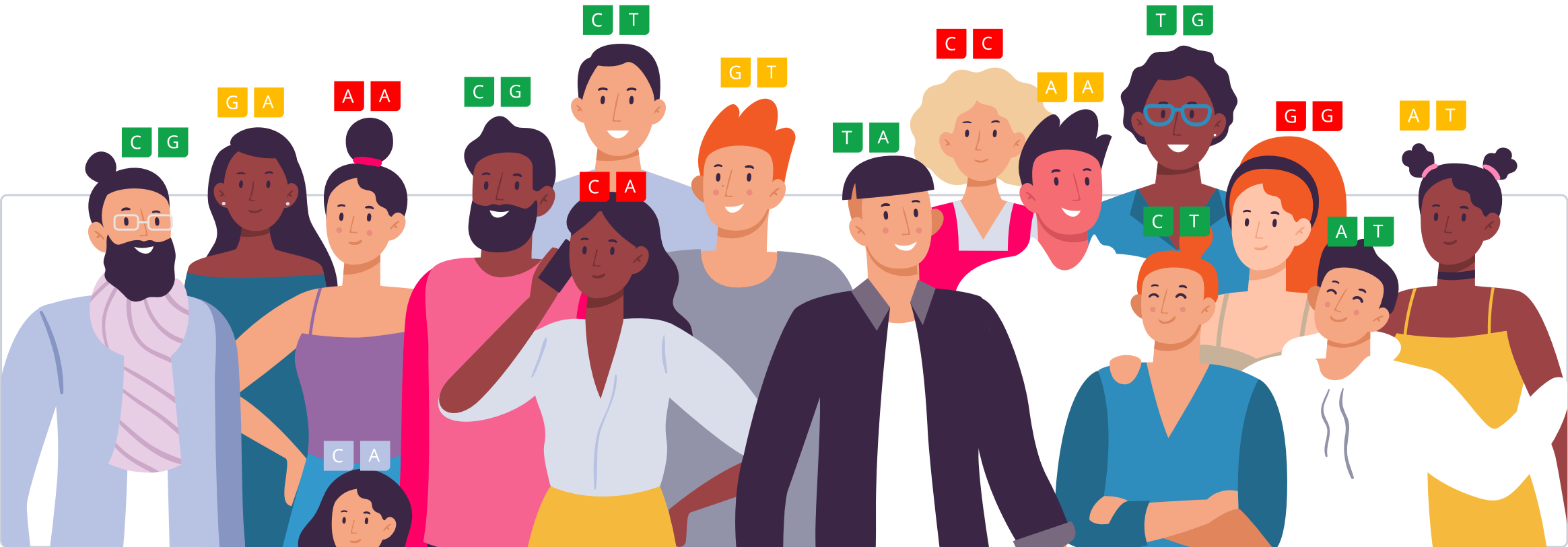


Similarly, our Trait Reports look at how your DNA influences your traits.



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

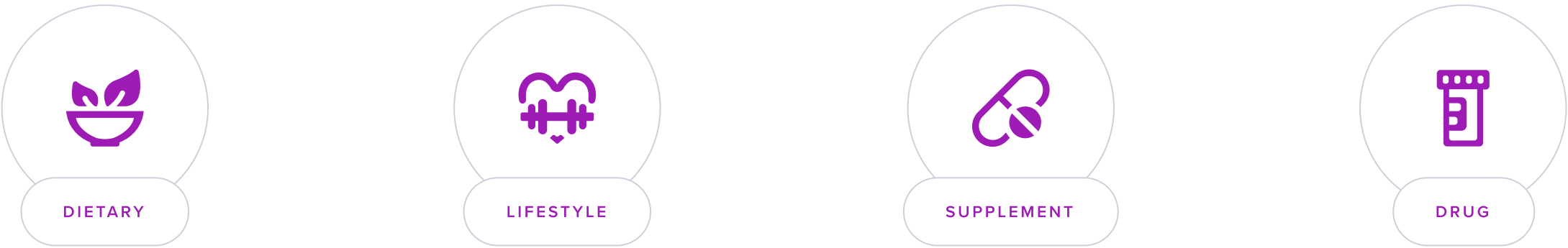
You have 2 risk alleles

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

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 can contribute to [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Lung disease
- Heart disease
- Diabetes
- Allergies

Air Pollution Sensitivity

Not everyone reacts the same to air pollution. The reason for this may partly be in genetics. In people with certain gene variants, air pollution may have stronger effects on [R](#), [R](#), [R](#), [R](#), [R](#), [R](#)]:

- Asthma ([TGFB1](#), [TLR1](#), [TLR2](#))
- Lung function ([SERPINA1](#), [XPC](#))
- Heart health ([MTHFR](#))
- Cognitive function ([APOE](#))
- Blood sugar ([GSTP1](#))

Keep in mind that your other gene variants and environment may also influence your air pollution sensitivity.



TYPICAL

Likely typical air pollution sensitivity based on 27 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
MAFB	rs7361259	TT
ARSA	rs6151412	GG
CTLA4	rs11571319	AG
CDC14C	rs13309098	GG
HSP90B1	rs2070908	GG
STAT4	rs1031509	GT
IL1F10	rs6743376	CC
CXCL12	rs1619661	TC
MTHFR	rs1801133	AA
STK10	rs9313579	CC
CYP2E1	rs2070673	TA
FERD3L	rs6950598	GG
COBL	rs11761214	CA
SERPINA1	rs17580	TT
CTLA4	rs11571316	GG
TLR4	rs10759931	AA
APOE	rs429358	TT
FGD4	rs12312730	GG
TLR2	rs4696480	TT
TLR4	rs2770150	AA
SNX16	rs10504754	GG
ERBB4	rs6725041	CC
GSTP1	rs1695	AA
OR4A5	rs10902298	CC
/	rs4971775	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	Avoid Air Pollution	2	Broccoli		
3	Broccoli Sprouts	2 tbsp	4	N-acetylcysteine (NAC)	600 mg
5	Sulforaphane	30 mg	6	Omega-3 (Fish Oil)	500 mg
7	Wear Facemasks		8	Avoid Crowds	
9	Dietary Omega-3 Fatty Acids		10	Spend Time in Nature	2 hours
11	Avoid Ozone Exposure		12	Dietary Antioxidants	
13	Vitamin C	2000 mg	14	Fruits And Vegetables	
15	Vitamin E	200 iu	16	Air Purifier	

How to implement

Description

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].

- Lung disease
- Heart disease
- Diabetes
- Asthma
- Skin conditions

How it helps

- Monitoring air pollution levels regularly
- Avoiding outdoor activities when pollution levels are high
- Cleaning and maintaining air filtration systems
- Not burning wood or trash
- Using protective respiratory equipment at work, if needed

2



Broccoli

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate at least one cup of chopped broccoli, either steamed or raw, into your daily diet. This can be as part of a meal or snack. Continue this practice daily for ongoing health benefits.

Description

Broccoli and broccoli sprouts are nutrient-dense vegetables packed with vitamins, minerals, and antioxidants. They are known for their potential to support a healthy immune system, protect against chronic diseases, and promote overall nutritional wellness.

Broccoli is high in vitamin K and C, as well as a number of other vitamins and minerals, and antioxidants like quercetin. A ½ cup serving provides 110 mcg of vitamin K or 92%DV.

How it helps

In a 12-week clinical trial with 291 participants, a daily broccoli sprout-derived beverage containing 600 µmol glucoraphanin and 40 µmol sulforaphane enhanced the detoxification of certain airborne pollutants, potentially reducing associated long-term health risks [\[R\]](#).

In a study with 170 subjects randomly assigned to different groups, those who consumed a high-dose broccoli sprout beverage for 10 days showed a significant 63.2% increase in benzene mercapturic acids in urine [\[R\]](#).

In a study with 50 healthy participants, two treatment arms involved a 5-day run-in period, 7 days of beverage administration, a 5-day washout period, and 7 days of the opposite beverage. Urinary excretion of mercapturic acids (acrolein, crotonaldehyde, ethylene oxide, benzene) was measured. Significant increases (20-50%) in excretion of glutathione-derived conjugates of acrolein, crotonaldehyde, and benzene were observed post-interventions [\[R\]](#).

Broccoli sprouts contain sulforaphane, a chemical known to boost your body's capacity to fight off pollutants.

3



Broccoli Sprouts

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Consume 2-4 tablespoons of fresh broccoli sprouts daily. They can be added to salads, sandwiches, or smoothies to make them easier to consume. Continue this practice daily for at least 3 months to potentially see benefits.

TYPICAL STARTING DOSE

2 tbsp

Description

Broccoli and broccoli sprouts are nutrient-dense vegetables packed with vitamins, minerals, and antioxidants. They are known for their potential to support a healthy immune system, protect against chronic diseases, and promote overall nutritional wellness.

How it helps

In a 12-week clinical trial with 291 participants, a daily broccoli sprout-derived beverage containing 600 µmol glucoraphanin and 40 µmol sulforaphane enhanced the detoxification of certain airborne pollutants, potentially reducing associated long-term health risks [\[R\]](#).

In a study with 170 subjects randomly assigned to different groups, those who consumed a high-dose broccoli sprout beverage for 10 days showed a significant 63.2% increase in benzene mercapturic acids in urine [\[R\]](#).

In a study with 50 healthy participants, two treatment arms involved a 5-day run-in period, 7 days of beverage administration, a 5-day washout period, and 7 days of the opposite beverage. Urinary excretion of mercapturic acids (acrolein, crotonaldehyde, ethylene oxide, benzene) was measured. Significant increases (20-50%) in excretion of glutathione-derived conjugates of acrolein, crotonaldehyde, and benzene were observed post-interventions [\[R\]](#).

Broccoli sprouts contain sulforaphane, a chemical known to boost your body's capacity to fight off pollutants.

4



N-acetylcysteine (NAC)

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 600 mg of N-Acetylcysteine (NAC) supplement daily with water. It can be taken at any time of the day, but try to take it at the same time each day for best results.

TYPICAL STARTING DOSE

600 mg

Description

NAC is a supplement that contains a form of the amino acid cysteine, a protein building block that your body uses to make the antioxidant glutathione. It is used for its potential antioxidant properties and its ability to support lung, gut, and mental health.

[N-acetylcysteine](#) (NAC) is converted to cysteine in the body. Cysteine is a protein building block (amino acid) that helps make the antioxidant glutathione [\[R\]](#).

People take NAC to potentially support [\[R\]](#), [\[R\]](#):

- Mental health
- Ovarian health and pregnancy outcomes
- Lung health
- Gut health

How it helps

In a placebo-controlled trial of 78 patients with airway hyper-responsiveness, supplementation with NAC (600 mg/day) for 6 days reduced baseline airway responsiveness in hyper-responsive individuals by 20% and prevented its increment in response to diesel exhaust [\[R\]](#).

NAC acts as an antioxidant, aiding your body in fighting off harmful pollutants.

5



Sulforaphane

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a sulforaphane supplement, typically available in capsule form, with a dosage ranging from 30 to 60 milligrams per day. It is generally taken once daily, with or without food, according to the product's label instructions or a healthcare provider's advice. Continue this regimen daily for as long as you seek its benefits, but consult a healthcare provider for long-term use guidance.

TYPICAL STARTING DOSE

30 mg

Description

Sulforaphane is a natural compound found in cruciferous vegetables like broccoli and cauliflower. It is known for its potent antioxidant and anti-inflammatory properties, potentially offering protective effects against chronic diseases and promoting overall health.

How it helps

Broccoli sprout extract delivering 100 $\mu\text{mol/day}$ sulforaphane taken for 4 days decreased WBC count in response to diesel exhaust particles by 54% in a non-placebo-controlled trial of 20 participants [R].

In a placebo-controlled trial of 170 participants, drinking a high-dose broccoli sprout beverage for 10 days increased benzene mercapturic acids in urine (marker of benzene detoxification) by 63.4%. Similarly, a broccoli sprout beverage providing 600 μmol glucoraphanin and 40 μmol sulforaphane taken for 12 weeks increased the excretion of the glutathione-derived conjugates of benzene (61%), and acrolein (23%), but not crotonaldehyde, in a placebo-controlled trial of 291 participants [R, R].

6



Omega-3 (Fish Oil)

IMPACT1 / 5

EVIDENCE1 / 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

500 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

In a study with 70 participants, half receiving fish oil and half receiving sunflower-seed oil, the impact of PM2.5 on metabolites was analyzed. Fish oil supplementation showed potential in mitigating PM2.5-induced inflammatory responses by affecting fatty acid metabolism [\[R\]](#).

Omega-3 fatty acids can enhance lung function and overall breathing, important for those sensitive to air pollution. Furthermore, they exhibit anti-inflammatory properties that can help mitigate inflammation triggered by pollutants.

7



Wear Facemasks

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Place a clean facemask over your nose and mouth before going into public spaces, especially indoor or crowded areas, making sure it fits snugly against the sides of your face without gaps. Keep it on throughout your exposure to these areas and replace the mask with a new one if it becomes damp or after each use. For cloth masks, wash them after a day’s use.

Description

Wearing facemasks is a preventive measure to reduce the transmission of infectious diseases, particularly respiratory illnesses. It is used to protect individuals and communities from viral infections by preventing the spread of respiratory droplets.

How it helps

Facemasks can filter out particulate matter and protect the respiratory system from pollutants in high-risk or high-pollution areas.

8



Avoid Crowds

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Minimize your time in crowded places by scheduling your errands during off-peak hours, avoiding public events known to draw large crowds, and choosing less crowded routes or modes of transportation.

Description

Avoiding crowded environments, especially during contagious disease outbreaks, can reduce the risk of viral transmission and help protect public health. It promotes social distancing measures that are crucial for preventing the spread of infectious diseases.

How it helps

Crowded places may increase exposure to air pollutants and airborne irritants; avoiding them can reduce symptom triggers.

9



Dietary Omega-3 Fatty Acids

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate foods high in omega-3 fatty acids into your diet daily. This includes eating fish such as salmon, mackerel, and sardines at least twice a week. Alternatively, include a tablespoon of flaxseed oil or chia seeds in your daily diet.

Description

[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. **EPA and DHA are vital for mental and heart health** [\[R\]](#), [\[R\]](#), [\[R\]](#).

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

- Salmon
- Tuna
- Herring
- Sardines

For optimal health, 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

Omega-3 fatty acids can have anti-inflammatory effects that may be beneficial in reducing the impact of air pollution.

10



Spend Time in Nature

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Aim to spend at least 120 minutes per week in natural environments, such as parks, forests, or beaches. This can be divided into short durations throughout the week, for example, 17 minutes per day or longer sessions on weekends.

TYPICAL STARTING DOSE

2 hours

Description

Spending time in nature, also known as ecotherapy or forest bathing, is a wellness practice that involves immersing oneself in natural environments. It offers mental and physical health benefits, including reduced stress, improved mood and eye health, healthier weight, and blood sugar control.

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 it helps

Spending time in green, natural environments with clean air can help reduce the health burdens of air pollution.

11



Avoid Ozone Exposure

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Stay indoors during times when ozone levels are reported to be high, typically on hot sunny days, especially during afternoon and early evening hours. Ensure that air filters in your home and vehicle are regularly maintained to decrease indoor ozone levels. Limit outdoor exercise or strenuous physical activity during high ozone days to reduce ozone exposure.

Description

Avoiding prolonged exposure to ground-level ozone, a component of air pollution, can protect lung health and reduce the risk of respiratory problems. Reducing outdoor activities during high ozone levels and using air purifiers indoors can minimize exposure.

How it helps

Ozone is an irritant gas that can exacerbate respiratory conditions, so avoiding areas with high ozone levels can protect sensitive lungs.

12



Dietary Antioxidants

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate foods rich in antioxidants, such as fruits (berries, oranges, plums), vegetables (spinach, kale, bell peppers), nuts (walnuts, almonds), and seeds (flaxseeds, chia seeds) into your daily meals. Aim for at least 5 servings of fruits and vegetables per day, ensuring a variety of colors to cover different antioxidants.

Description

Dietary antioxidants are compounds found in foods that help neutralize harmful molecules called free radicals, potentially reducing the risk of oxidative stress-related diseases and supporting overall health. Examples include vitamins C and E, beta-carotene, and polyphenols.

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 [\[R\]](#).

Antioxidants are found in many plants. Good sources include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Fruits like tomatoes, berries, and pomegranates
- Vegetables like onions, spinach, and celery
- Chocolate
- Olive oil
- Wine

How it helps

Antioxidants can neutralize free radicals and may reduce harm caused by air pollutants.

13



Vitamin C

IMPACT

0 / 5

EVIDENCE

0 / 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

2000 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

Vitamin C is an antioxidant that can neutralize free radicals, reducing inflammation and potentially protecting lung function from damage caused by air pollution.

14



Fruits And Vegetables

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Increase your intake of fruits and vegetables to at least five servings per day, aiming for a variety of types and colors to ensure a broad range of nutrients. Each serving size should roughly be the amount you can fit in one hand. Try to incorporate at least one serving of fruits or vegetables into every meal and snack throughout the day.

Description

A diet rich in fruits and vegetables provides essential nutrients, antioxidants, and dietary fiber. This combination supports overall health, helps maintain a healthy weight, and reduces the risk of chronic diseases such as heart disease and certain cancers.

How it helps

Fruits and vegetables are high in antioxidants and other nutrients that may help protect the body against damage from air pollutants.

15



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

Vitamin E works synergistically with Vitamin C and can also protect cellular membranes from oxidative damage induced by airborne pollutants.

16



Air Purifier

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Install an air purifier in your home, ideally in the rooms you spend the most time in, such as your bedroom and living room. Keep the air purifier on for at least 12 hours each day, or continuously if possible, to effectively reduce airborne contaminants. Regularly clean or replace the filters according to the manufacturer's instructions to maintain its efficiency.

Description

Air purification is the process of cleaning the air around us. Using a high-quality air purifier with a HEPA filter helps remove harmful particles like dust, smoke, and bacteria. Having clean air to breathe can help boost your health by reducing allergies, asthma problems, and even certain infections.

How it helps

Air purifiers can help remove pollutants from indoor environments, reducing exposure to harmful substances for those with sensitivity to air pollution.

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

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.

