

Age-Related Macular Degeneration

Disease Report

REPORT CATEGORIES —



LONGEVITY



EYE HEALTH

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

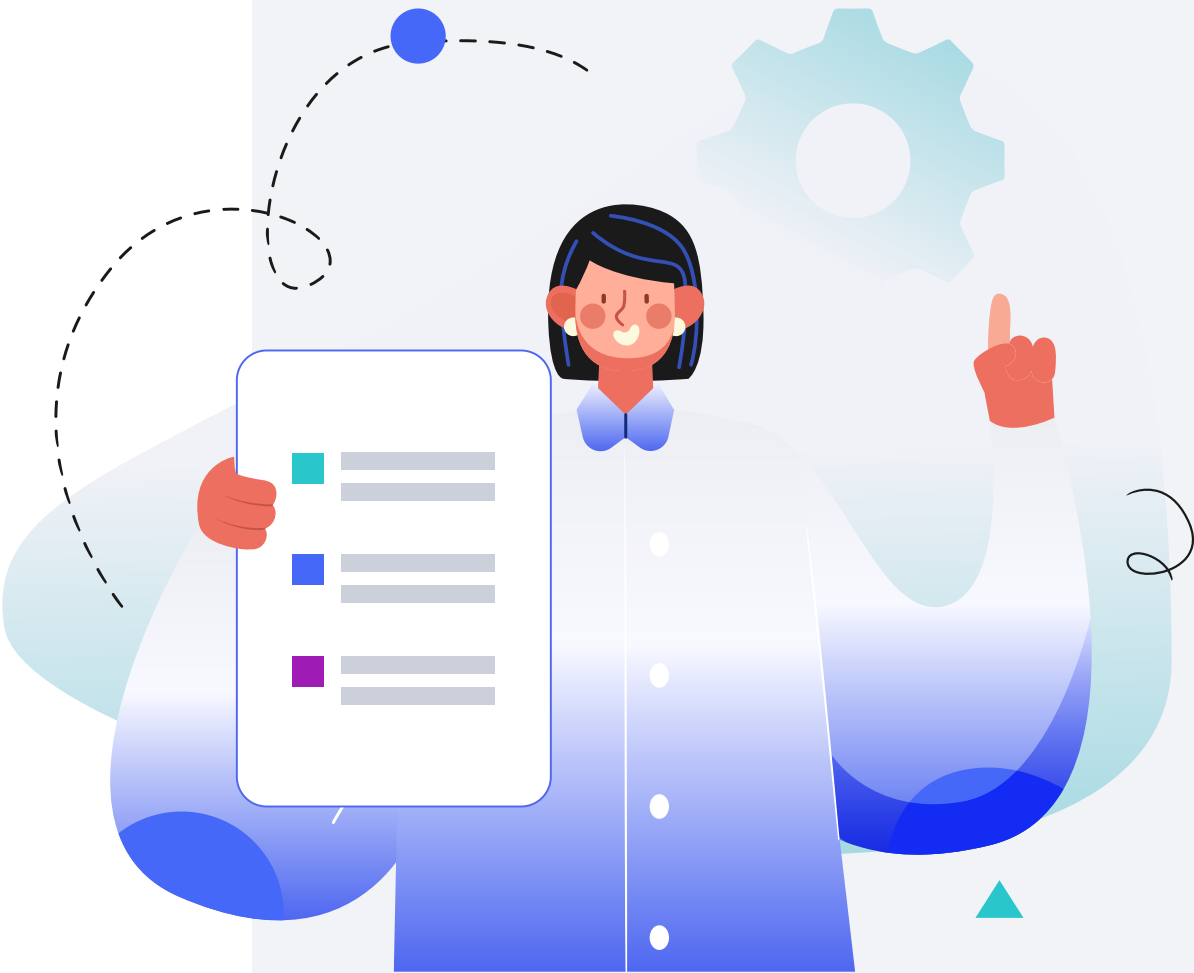
Male

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

Age-related macular degeneration (AMD) is a progressive eye disease that affects the macula, the part of the retina responsible for central vision. It is the leading cause of blindness in people over the age of 60.

Symptoms of AMD include:

- Difficulty reading
- Blurred vision
- Dark spots in the center of the field of vision

The exact cause of AMD is not known, but it likely happens due to a combination of genetic and environmental factors. There is no cure for AMD, but treatments such as anti-VEGF injections, laser therapy, and nutritional supplements may help slow the progression of the disease and preserve vision.

Longevity Screener

Longevity Screener analyzes your DNA and biometric data to holistically determine your risk of developing serious medical conditions.

Your lifetime risk is **Normal**

Your 10-year risk is **Normal**

Summary or results

Your results are indicating a Normal risk of developing Age-Related Macular Degeneration in your lifetime and within the next decade.

Monitor your risk by regularly checking your related labs and implementing the recommendations provided.

The risk of developing Age-related macular degeneration can be influenced by non-genetic factors such as High blood pressure, elevated BMI.

What to do if you get a High risk

Analyze your labs

Analyze your lab results to establish a baseline and track any changes or improvements in your health markers over time.

Find out your out-of-optimal labs

We will pinpoint any values that fall outside the optimal range, allowing you to focus on what matters most.

Optimize labs

Aim to bring all your lab results to optimal levels through lifestyle changes, treatments, and ongoing monitoring for the best health outcomes.

Disclaimer

The Longevity Screener feature is designed to provide insights based on genetic predispositions and basic health data to help you understand factors that may influence your longevity. This tool is for informational purposes only and does not constitute medical advice, diagnosis, or treatment. Always consult with a qualified healthcare provider before making any decisions related to your health, lifestyle, or medical treatments. The information provided by the Longevity Screener is based on current scientific research and should be used as a supplementary tool in conjunction with professional medical advice.

Risk Factors

Key Takeaways:

- About **45-70%** of differences in people's chances of having AMD may be due to genetics.
- Other potential risk factors include age (60+), smoking, diet, race, high blood pressure, heart disease, and excessive sun exposure.
- About **8.5%** of people aged **45-85** have some degree of AMD. Symptoms include difficulty reading, blurred vision, and dark spots in the field of vision. Talk to your eye doctor if you notice any symptoms.
- If you have a high genetic risk, be aware of symptoms and have your eyes checked regularly, especially after age 60.
- Click the **Recommendations** tab for potential dietary and lifestyle changes.

Age-related macular degeneration (AMD) is a progressive eye disease that affects the macula, the part of the retina responsible for central vision. It is the leading cause of blindness in people over the age of 60.

About **45-70%** of differences in people's chances of having AMD may be due to **genetics** [R].

For example, genetically high ApoB levels may be causally associated with a lower risk of the intermediate and geographic atrophy (GA) subtypes of AMD [R].

Other factors that play a role in AMD development include:

- Age (60+)
- Smoking
- Excessive sun exposure
- Unhealthy diet
- Race (European)
- High blood pressure
- Heart disease



TYPICAL LIKELIHOOD

Typical likelihood of AMD based on 1,049,359 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
NECTIN2	rs2075650	AA
MBL2	rs6480975	CC
SKIV2L	rs429608	AG
/	rs5749482	GG
APOE	rs4420638	AA
NLRC5	rs1864163	GG
C3	rs2230199	GC
PRDM1	rs7750345	AA
VEGFA	rs943080	TT
MCUB	rs4698775	GG
GLI2	rs6721654	TC
ZFP36L1	rs8017304	AA
NT5DC1	rs3812111	TT
MTRNR2L13	rs17586843	TC
IER3	rs3130783	AG
PICK1	rs8135665	TC
TNFRSF10A	rs13278062	TG
PRDM1	rs1355023	CT
CTSC	rs10830228	AG
ADAMTS9	rs6795735	CT
LRATD2	rs11986011	CC
ARMS2	rs10490924	GG
MAP2K2	rs10406174	GG
CFH	rs10737680	CC

GENE	SNP	GENOTYPE
CFH	rs1061170	TT
CFHR3	rs1329424	GG
CLIC5	rs4714888	GG
CMSS1	rs13081855	GG
LIPC	rs920915	GG
TGFBR1	rs334353	GG
B3GLCT	rs9542236	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	Carotenoids	6 mg	2	Lutein And Zeaxanthin	
3	Dietary Omega-3 Fatty Acids		4	Eccentric Viewing Training	
5	Mediterranean Diet		6	Vitamin B12	10 mcg
7	Exercise At Least One Hour a Day	1 hour	8	Aerobic Exercise (Cardio)	1 hour
9	Fish		10	Avoid Excess Sunlight Exposure	
11	Methylfolate	400 mcg	12	Zinc	10 mg
13	Avoid Instant Coffee		14	Lutein	
15	Dietary Zinc		16	Leafy Green Vegetables	
17	Saffron	20 mg	18	Avoid Air Pollution	
19	Goji Berries		20	Omega-3 (Fish Oil)	500 mg
21	Ginkgo	120 mg	22	Alpha-Lipoic Acid	100 mg
23	Avoid Cadmium Exposure		24	Cherries	
25	Melatonin	500 mcg	26	Berries	

1



Carotenoids

IMPACT

5 / 5

EVIDENCE

4 / 5

How to implement

Take a carotenoid supplement daily, with a meal that includes fats to improve absorption. Dosage can vary, but a common range is between 6 to 20 milligrams per day. Continue as long as it is recommended by your healthcare provider.

TYPICAL STARTING DOSE

6 mg

Description

Carotenoids are pigments found in colorful fruits and vegetables like carrots, sweet potatoes, and tomatoes. They have antioxidant properties and may support eye health, immune function, and overall antioxidant protection.

Carotenoids are red, orange, and yellow pigments produced by plants, algae, and some microorganisms. Some of the most common carotenoids include [\[R\]](#):

- [Beta-carotene](#)
- [Lycopene](#)
- [Astaxanthin](#)
- Zeaxanthin
- Lutein

The main effects of carotenoids on human health derive from their antioxidant activity. They help with eye health, cognition, heart health, and more. [\[R\]](#), [\[R\]](#).

Carotenoids are especially abundant in yellow- and orange-colored fruits and vegetables, as well as in green leafy vegetables. Some of the main food sources include [\[R\]](#):

- Carrots
- Sweet potatoes
- Tomatoes
- Mangoes
- Oranges
- Watermelon
- Bell peppers
- Kale
- Spinaches

Supplements are also available for people who don’t consume enough fruits and vegetables. Because they are fat-soluble, carotenoids are better absorbed with a fatty meal.

How it helps

Eating a diet abundant in carotenoid-rich fruits and vegetables may reduce the risk of AMD and delay its progression. Dietary carotenoids that may help include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Lutein
- Zeaxanthin
- Beta-carotene

Carotenoids may help by reducing oxidative damage to the macula [\[R\]](#).



PERSONALIZED TO YOUR GENES

Carotenoids may protect the eyes more in people with your [ABCA1](#) gene variant [R].

Carotenoids may protect the eyes more in people with your [FADS1](#) [TMEM258](#) gene variant [R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
ABCA1	rs1929841	AA	
GENE	SNP	GENOTYPE	EVIDENCE
TMEM258	rs174534	GA	

2

Lutein And Zeaxanthin

IMPACT5 / 5

EVIDENCE3 / 5

How to implement

Take a supplement containing 10mg of lutein and 2mg of zeaxanthin daily, preferably with a meal that contains fat for better absorption.

Description

Lutein and zeaxanthin are carotenoids found in green leafy vegetables and certain supplements. They are known for their role in promoting eye health and reducing the risk of age-related macular degeneration and cataracts when consumed regularly as part of a balanced diet.

Lutein and zeaxanthin are two antioxidant pigments found in the eye [\[R\]](#), [\[R\]](#).

Many plants contain lutein and zeaxanthin, including [\[R\]](#), [\[R\]](#):

- Leafy greens (kale, spinach, leeks, lettuce)
- Cantaloupe
- Corn
- Peas
- Peppers
- Herbs (basil, parsley)

Egg yolks are the main animal source of these carotenoids [\[R\]](#).

Lutein and zeaxanthin may help support eye health [\[R\]](#), [\[R\]](#).

How it helps

A high dietary intake of lutein and zeaxanthin may reduce the risk of late AMD. Eggs, which are a source of both carotenoids, may delay AMD progression [\[R\]](#), [\[R\]](#).

Supplementation with lutein (10-20 mg/day), both alone and combined with zeaxanthin (0.6-10 mg/day), may improve vision function in both healthy people and patients with AMD [\[R\]](#), [\[R\]](#), [\[R\]](#).

Lutein and zeaxanthin may help by reducing oxidative damage to the macula [\[R\]](#).

PERSONALIZED TO YOUR GENES

Lutein and zeaxanthin may protect the eyes more in people with your [ABCA1](#) gene variant [\[R\]](#).

Lutein and zeaxanthin may protect the eyes more in people with your [FADS1/TMEM258](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
ABCA1	rs1929841	AA	
TMEM258	rs174534	GA	

3



Dietary Omega-3 Fatty Acids

IMPACT

4 / 5

EVIDENCE

4 / 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

Eating a diet rich in omega-3 fatty acids reduces the risk of early and late AMD, as well as AMD progression [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

High intake of fish (especially fatty fish) may have similar benefits [\[R\]](#), [\[R\]](#), [\[R\]](#).

In contrast, the protective effects of omega-3 supplements on AMD progression are unclear [\[R\]](#), [\[R\]](#).

The membranes of the retina have a high proportion of omega-3 fatty acids. Low DHA and EPA levels may impair its function [\[R\]](#).

4



Eccentric Viewing Training

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

Eccentric viewing training involves practicing using your peripheral vision to see, rather than the central vision, which is beneficial for individuals with central vision loss. This training often includes working with a low vision specialist who guides you through exercises to locate the area of your retina that provides the best vision, which you then learn to use to view objects, read, or recognize faces. You should practice these exercises daily for several months under the guidance of a professional to effectively adapt to using your peripheral vision for seeing.

Description

Eccentric viewing training is a rehabilitation technique used for individuals with macular degeneration or other visual impairments. It involves learning to use a non-central area of the retina for reading and other visual tasks to improve functional vision.

Eccentric viewing is a technique in which people with central vision loss use their peripheral vision to see objects [\[R\]](#).

A trained low vision therapist can help patients with AMD learn how to use this technique. After identifying blind spots in their macula, the therapist teaches them techniques to work around these spots and rewire the eyes and brain to learn a new method of seeing [\[R\]](#).

How it helps

Eccentric viewing training may improve visual acuity, reading speed, and performance of daily activities in people with AMD. However, **it doesn’t improve the damage to the retina or delay its progression** [\[R\]](#), [\[R\]](#).

When compared to other vision rehabilitation techniques, eccentric viewing training may be the most effective one to improve reading speed [\[R\]](#).

5



Mediterranean Diet

IMPACT

4 / 5

EVIDENCE

3 / 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

Eating a Mediterranean diet rich in vegetables, whole grains, and nuts but low in red meat may reduce the risk of AMD development and progression [\[R, R\]](#).

The Mediterranean diet may help because it’s rich in plant antioxidants and [omega-3 fatty acids](#) [\[R\]](#).

 PERSONALIZED TO YOUR GENES

The Mediterranean diet may offer a stronger protection against AMD in people with your [CFH](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
CFH	rs1061170	TT	

6



Vitamin B12

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Take a 50 mcg vitamin B12 supplement daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

10 mcg

Description

Vitamin B12 is a water-soluble vitamin primarily found in animal-based foods like meat, fish, and dairy products. It plays a crucial role in maintaining healthy nerve cells, DNA synthesis, and red blood cell formation. Vitamin B12 deficiency can lead to anemia, neurological issues, and fatigue.

[Vitamin B12](#) is important for [\[R\]](#), [\[R\]](#):

- Building DNA
- Nervous system function
- Energy production

You can get vitamin B12 from [\[R\]](#):

- Animal products (meat, fish, eggs, and dairy)
- Fortified foods
- Supplements

Adults should be getting **2.4 micrograms** of vitamin B12 every day [\[R\]](#).

How it helps

Vitamin B12 aids in the maintenance of the nervous system, including the optic nerve that connects your eye to your brain. This could potentially slow down the process of Age-Related Macular Degeneration by preserving the health of this nerve.

A [meta-analysis of 11 studies and 2274 participants](#) found that patients with age-related macular degeneration had **64.16 pg/mL lower vitamin B12 levels** [\[R\]](#).

7



Exercise At Least One Hour a Day

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

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

TYPICAL STARTING DOSE

1 hour

Description

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

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

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

How it helps

Physical activity may reduce the risk of early and late AMD [\[R\]](#), [\[R\]](#).

Physical activity may help by [\[R\]](#):

- Reducing risk factors such as elevated blood pressure and body fat
- Improving antioxidant status

8



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

Physical activity (including cardio) may reduce the risk of early and late AMD [\[R\]](#), [\[R\]](#).

Physical activity may help by [\[R\]](#):

- Reducing risk factors such as elevated blood pressure and body fat
- Improving antioxidant status

9



Fish

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Incorporate two servings of fish into your diet each week, focusing on oily fish like salmon, mackerel, or sardines for their high omega-3 fatty acid content. Each serving should be about 3.5 ounces cooked, or about ¾ cup of flaked fish.

Description

Fish, particularly fatty fish like salmon and mackerel, is an excellent source of omega-3 fatty acids, which support cardiovascular health, brain function, and inflammation management. Regular consumption of fish can promote heart health and overall well-being.

Fish is a great source of [omega-3s](#), protein, and other essential nutrients. Omega-3s from fish (EPA and DHA) are some of the healthiest fats we can eat. They help reduce inflammation and **protect the heart, brain, and eyes** [\[R, R, R\]](#).

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

Fatty fish such as salmon and mackerel are good sources of omega-3 fatty acids, which may help reduce the risk of age-related macular degeneration.

Health experts suggest that eating fish may lower the risk of AMD [\[R, R\]](#).

High fish intake (especially fatty fish) may reduce the risk and progression of AMD [\[R, R, R\]](#).

The membranes of the retina have a high proportion of omega-3 fatty acids. Low DHA and EPA levels may impair its function [\[R\]](#).

10

Avoid Excess Sunlight Exposure

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Limit direct sun exposure to early morning or late afternoon hours, ideally before 10 a.m. or after 4 p.m., when UV rays are less intense. Wear protective clothing, such as long-sleeved shirts, pants, and wide-brimmed hats, along with sunglasses that block UVA and UVB rays. Apply a broad-spectrum sunscreen with at least SPF 30 to all exposed skin, reapplying every two hours or immediately after swimming or sweating.

Description

Avoiding excessive sunlight exposure and practicing sun safety measures, such as wearing sunscreen and protective clothing, helps reduce the risk of skin damage, including sunburn and skin cancer. It supports long-term skin health and minimizes the harmful effects of UV radiation.

[Sunlight](#) or bright light during the day can benefit your body and mind. It may [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Boost your mood
- Boost your performance and energy
- Improve sleep quality

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

However, **excessive sun exposure may lead to sunburn, skin aging, and skin cancer**, so make sure to find the right balance [\[R\]](#), [\[R\]](#).

How it helps

High sunlight exposure at work and during leisure time may increase the risk of AMD. However, the evidence is mixed [\[R\]](#), [\[R\]](#), [\[R\]](#).

Direct and excessive exposure to UV and blue light may damage the retina [\[R\]](#).

PERSONALIZED TO YOUR GENES

Your [PRKDC](#) gene variant may be linked to AMD, but only in people regularly exposed to sunlight [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
PRKDC	rs7003908	AC	

11



Methylfolate

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Take an L-methyl folate supplement (400-800 micrograms daily), ideally with a meal, to improve absorption. This dosage is recommended for adults, including pregnant women, to support overall health, especially to reduce the risk of neural tube defects in developing fetuses. Continue daily use as part of your regular supplement routine.

TYPICAL STARTING DOSE

400 mcg

Description

Folate, a B-vitamin, is crucial for DNA synthesis, cell growth, and the formation of red blood cells. Adequate folate intake supports overall health and reduces the risk of neural tube defects during pregnancy.

[Vitamin B9](#) (*folate*) plays an essential role in [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Making DNA
- Metabolism
- Energy production

SelfDecode recommends L-methylfolate as the preferred folate supplement for those who need one. It is superior to folic acid because it doesn't require activation, but the research is still ongoing [\[R\]](#), [\[R\]](#).

How it helps

Folate supplement helps in reducing the risk of Age-Related Macular Degeneration by decreasing the body's levels of homocysteine, a harmful amino acid that has been linked to this eye condition. High homocysteine levels can damage retinal cells leading to the degeneration.

A [meta-analysis of 11 studies and 2274 participants](#) found that patients with wet age-related macular degeneration had **1.66 ng/mL lower folic acid levels** [\[R\]](#).

Similarly, supplementation with the B vitamins folic acid (2.5 mg/day), pyridoxine hydrochloride (50 mg/day), and cyanocobalamin (1 mg/day) for an average of 7.3 years **reduced the risk of age-related macular degeneration** in a [placebo-controlled trial of 5442 women](#) [\[R\]](#).

12



Zinc

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Take a 15 mg zinc supplement daily, ideally with a meal to enhance absorption.

TYPICAL STARTING DOSE

10 mg

Description

Zinc is an essential mineral found in various foods, including meat, dairy, and nuts. It is crucial for immune function, wound healing, DNA synthesis, and maintaining healthy skin and nails. Zinc supplements are sometimes used to support immune health and manage zinc deficiencies.

[Zinc](#) is an essential mineral. Your body needs it to [\[R\]](#), [\[R\]](#):

- Defend against disease
- Protect DNA from damage
- Heal wounds
- Control blood sugar

Some of the best sources of zinc include **shellfish, pork, beef, and beans**. It is also available as a supplement [\[R\]](#).

Adults should get **8-11 mg of zinc** per day [\[R\]](#).

How it helps

Supplementation with zinc (40 mg/day for at least 6 months), especially in combination with other antioxidant supplements, may delay AMD progression. Studied forms include [\[R\]](#):

- Zinc sulfate
- Zinc monocysteine
- Zinc oxide

Through its role in antioxidant enzyme function, zinc may reduce oxidative damage to the macula [\[R\]](#).

Please note: *A high intake of zinc may cause stomach pain and gut irritation. Medical bodies recommend against taking more than **40 mg** of zinc per day* [\[R\]](#), [\[R\]](#).

13



Avoid Instant Coffee

IMPACT

3 / 5

EVIDENCE

1 / 5

How to implement

Try avoiding instant coffee. Whenever possible, replace it with regular coffee.

Description

People often drink coffee for an energy and mood boost [\[R, R\]](#).

While many turn to instant coffee, it can sometimes lead to spikes in blood sugar and cause digestive issues due to the additives used in the production process.

Instant coffee can also have a higher level of acrylamide, a compound formed during the roasting process, which may pose health risks if consumed in excess. Reducing intake ensures a more balanced approach to caffeine without compromising long-term health.

As with regular coffee, drinking a lot of instant coffee can increase blood pressure and anxiety. It may also cause headaches [\[R, R, R\]](#).

How it helps

Regular consumption of instant coffee has been associated with an almost 7-fold higher risk of age-related macular degeneration [\[R\]](#).

14



Lutein

IMPACT

3 / 5

EVIDENCE

1 / 5

How to implement

Increase your intake of lutein by eating more dark, leafy greens such as spinach and kale, as well as other foods like corn, peas, and egg yolks. Aim to include these in your daily diet, consuming at least one serving of lutein-rich foods per meal. It can also be taken as a supplement.

Description

Lutein is an antioxidant pigment found in the eye, and may support eye health. It is commonly found in leafy green vegetables.

Lutein is an antioxidant pigment found in the eye. Many plants contain lutein, including [\[R\]](#), [\[R\]](#):

- Leafy greens (kale, spinach, leeks, lettuce)
- Cantaloupe
- Corn
- Peas
- Peppers
- Herbs (basil, parsley)

Lutein may help support eye health [\[R\]](#), [\[R\]](#).

How it helps

A high dietary intake of lutein and zeaxanthin may reduce the risk of late AMD. Eggs, which are a source of both carotenoids, may delay AMD progression [\[R\]](#), [\[R\]](#).

Supplementation with lutein (10-20 mg/day), both alone and combined with zeaxanthin (0.6-10 mg/day), may improve vision function in both healthy people and patients with AMD [\[R\]](#), [\[R\]](#), [\[R\]](#).

Lutein and zeaxanthin may help by reducing oxidative damage to the macula [\[R\]](#).

 PERSONALIZED TO YOUR GENES

Lutein and zeaxanthin may protect the eyes more in people with your [ABCA1](#) gene variant [\[R\]](#).

Lutein and zeaxanthin may protect the eyes more in people with your [FADS1](#)/[TMEM258](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
ABCA1	rs1929841	AA	
TMEM258	rs174534	GA	

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Dietary Zinc

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Incorporate foods high in zinc, such as beef, poultry, seafood (especially oysters), beans, nuts, and whole grains, into your daily diet. Aim for the recommended dietary allowance of zinc, which is 11 mg per day for adult men and 8 mg per day for adult women.

Description

Dietary zinc is essential for the body. It helps our immune system fight off bacteria and viruses, plays a role in healing wounds, and is essential for our sense of taste and smell. Without enough zinc, these systems may not work as effectively as they should.

How it helps

Zinc plays a vital role in bringing vitamin A from the liver to the retina in order to produce melanin, a protective pigment in the eyes.

According to health experts, zinc deficiency may be a risk factor for AMD. Eating zinc-rich foods may help improve AMD [\[R, R\]](#).

16



Leafy Green Vegetables

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Incorporate at least one serving of leafy green vegetables, such as spinach, kale, or Swiss chard, into your diet daily. This can be done by adding them to salads, smoothies, or as a side dish to your meals.

Description

Leafy green vegetables like spinach and kale are packed with vitamins, minerals, and antioxidants. Incorporating them into your diet can promote overall health by providing essential nutrients, supporting digestion, and reducing the risk of chronic diseases like heart disease and certain cancers.

Leafy green vegetables, also called leafy greens, or greens, are edible plant leaves, which can include stalks and shoots as well. Common examples include: lettuce, spinach, kale, chard, endive, and fennel.

Leafy greens contain a host of vitamins and minerals, as well as fiber. Most of them are a particularly good source of vitamin K.

How it helps

Dark green leafy vegetables contain high concentrations of lutein and zeaxanthin, which are crucial for retinal health and may reduce the risk of AMD [\[R, R, R, R\]](#).

Higher consumption of fruits and vegetables, particularly those rich in antioxidant nutrients and phytochemicals, is associated with a lower risk of AMD [\[R, R, R\]](#).

17



Saffron

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take 20 mg of saffron supplement daily. This can be taken at any time of the day, with or without food.

TYPICAL STARTING DOSE

20 mg

Description

Saffron is a spice derived from the stigma of the saffron crocus flower, and is native to the Mediterranean and Asia. Its main compounds include crocin, picrocrocin, and safranal, which may contribute to its antioxidant properties and potential mood-enhancing effects.

[Saffron](#) is a yellow spice praised for its color, taste, and potential health benefits [\[R\]](#).

Saffron is rich in antioxidants such as *crocin*. Researchers are looking into its potential benefits for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Gut conditions
- Heart health
- Mental health

How it helps

Supplementation with saffron (20 mg/day for 3-12 month) may improve vision in people with AMD [\[R\]](#), [\[R\]](#), [\[R\]](#).

Saffron may also help in combination with carotenoids and plant extracts [\[R\]](#).

Saffron may help by reducing oxidative stress, inflammation, and cell death in the macula [\[R\]](#).

18



Avoid Air Pollution

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Stay indoors on days when air quality indexes (AQI) indicate high pollution levels, which are often reported by weather services or government environmental agencies. **Install air purifiers** in your home, especially in bedrooms, to reduce indoor pollutants. Limit outdoor exercise when air pollution warnings are issued, opting for indoor activities instead.

Description

Avoiding air pollution by reducing exposure to pollutants in the environment is essential for respiratory and overall health. It can help lower the risk of respiratory diseases, cardiovascular conditions, and other health issues associated with poor air quality.

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
- Asthma
- Skin conditions

How it helps

People exposed to high levels of air pollution may be at increased risk of AMD. Potentially harmful air pollutants include [\[R\]](#):

- NO2
- CO
- Particulate matter

There are many strategies that may lower your exposure to air pollution. When air pollution is high, you may want to [\[R\]](#):

- Stay indoors
- Keep windows closed
- Use air purifiers
- Wear a well-fitting mask outdoors

Air pollutants may increase oxidative damage and impair blood vessel function in the macula [\[R\]](#).

19



Goji Berries

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate goji berries into your daily diet by adding a handful (about 1 ounce or 28 grams) to your morning cereal, yogurt, or smoothie. You can also snack on dried goji berries throughout the day. Aim to include them in your diet consistently for at least a month to observe potential health benefits.

Description

Goji berries are a nutritious fruit known for their high antioxidant content. They may support immune health, provide essential nutrients, and be incorporated into a healthy diet as a snack or ingredient.

How it helps

Goji berries are high in zeaxanthin and lutein, antioxidants that can protect the macula (a part of eye retina) by absorbing blue light and counteracting free radicals. Consuming these berries can help maintain macular health and slow the progression of Age-Related Macular Degeneration.

Regular intake of goji berries significantly increases MPOD, which is a biomarker for AMD risk, in both healthy individuals and early AMD patients. This increase is attributed to the high zeaxanthin content in goji berries [\[R, R\]](#).

Goji berry extracts may protect the retina from oxidative stress and inflammation, key factors in AMD progression. These extracts improve retinal structural abnormalities and enhance antioxidant enzyme activities [\[R, R\]](#).

Supplementation with goji berries significantly increases serum zeaxanthin levels, linked to better MPOD and visual acuity in early AMD patients [\[R, R\]](#).

20



Omega-3 (Fish Oil)

IMPACT1 / 5

EVIDENCE4 / 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

Eating a diet rich in omega-3 fatty acids reduces the risk of early and late AMD, as well as AMD progression [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

High intake of fish (especially fatty fish) may have similar benefits [\[R\]](#), [\[R\]](#), [\[R\]](#).

In contrast, the protective effects of omega-3 supplements on AMD progression are unclear [\[R\]](#), [\[R\]](#).

The membranes of the retina have a high proportion of omega-3 fatty acids. Low DHA and EPA levels may impair its function [\[R\]](#).

21



Ginkgo

IMPACT

1 / 5

EVIDENCE

2 / 5

How to implement

Take 120 mg of Ginkgo supplement daily, preferably with meals to aid absorption. This dosage is typically split into two 60 mg doses taken in the morning and evening for best results.

TYPICAL STARTING DOSE

120 mg

Description

[Ginkgo](#) (*Ginkgo biloba*) is an ancient tree used in traditional Chinese medicine [\[R\]](#), [\[R\]](#).

According to limited evidence, ginkgo leaf extract may help with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Anxiety
- Dementia
- Eye problems
- Blood vessel problems
- Vitiligo

How it helps

Ginkgo extract (60-240 mg/day) may improve vision in people with AMD. However, the evidence is limited [\[R\]](#), [\[R\]](#).

Ginkgo extract is rich in antioxidants that may reduce oxidative damage to the macula [\[R\]](#).

Please note: *Do not consume ginkgo seeds or unprocessed ginkgo leaves. They are poisonous. Ginkgo may also interact with blood thinners. Consult your doctor before taking ginkgo supplements* [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

How to implement

TYPICAL STARTING DOSE
100 mg

Description

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

Alpha-lipoic acid (200-600 mg/day for 3 months) may improve vision and antioxidant status in people with AMD. However, one study found no benefits of alpha-lipoic acid in AMD patients [R, R, R].

Alpha-lipoic acid may help by reducing oxidative damage to the macula [R].

23



Avoid Cadmium Exposure

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To avoid cadmium exposure, refrain from smoking or exposure to secondhand smoke, reduce consumption of foods high in cadmium like shellfish, liver, kidney meats, and certain leafy vegetables, and use ceramic or glass containers instead of plastic when microwaving food. Limit intake of cadmium-contaminated workplace air by using protective gear if you work in battery manufacturing, welding, or metal refining industries.

Description

Avoiding cadmium exposure is essential to prevent potential health risks associated with this heavy metal, such as kidney damage and increased cancer risk. Reducing exposure to cadmium-containing products and contaminated foods is crucial.

Heavy metals are elements naturally found in the environment. They are also used for agricultural, industrial, and medicinal purposes. Some can even be found in small amounts in your body [\[R\]](#), [\[R\]](#).

Long-term exposure to high amounts of heavy metals can be harmful to your health [\[R\]](#), [\[R\]](#).

Heavy metals that are most often linked to health problems include [\[R\]](#), [\[R\]](#):

- Lead
- Cadmium
- Arsenic
- Chromium
- Mercury

How it helps

In adults aged 40 and older, higher blood cadmium levels were linked to an increased risk of age-related macular degeneration. The association was somewhat weaker after accounting for smoking habits. Urinary cadmium also showed a similar association, with stronger effects in non-Hispanic whites compared to non-Hispanic blacks [\[R\]](#).

Cadmium exposure can accelerate the aging process of the eyes, exacerbating age-related macular degeneration.

24



Cherries

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a serving of cherries, which is about 1 cup or 21 cherries, into your daily diet. You can eat them fresh, frozen, dried, or in juice form. If opting for juice, ensure it's 100% cherry juice without added sugars.

Description

Cherries are a stone fruit that comes in numerous varieties. They are a natural source of antioxidants and anti-inflammatory compounds. They may help reduce inflammation, promote better sleep, and support overall health.

A cherry is a stone fruit with numerous varieties. Cherries are native to parts of Europe and Asia [\[R\]](#), [\[R\]](#).

People consume sweet cherries (*Prunus avium*) and tart cherries (*Prunus cerasus*) to help with [\[R\]](#):

- Gout
- Exercise recovery
- Blood sugar control
- Blood pressure

How it helps

Cherries are rich in antioxidants including beta carotene, vitamine E, and vitamine C which could potentially slow the progression of age-related macular degeneration by preventing oxidative damage. They also contain zinc which is crucial in maintaining healthy eye function.

25



Melatonin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

500 mcg

Description

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

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

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

How it helps

A single study found that supplementation with melatonin (3 mg/day for 6 months) may delay AMD progression [\[R\]](#).

Melatonin may help by reducing oxidative damage to the macula [\[R\]](#).

Please note: *Melatonin may interact with some medications. Consult your doctor before taking melatonin* [\[R\]](#).

26



Berries

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate a variety of berries such as strawberries, blueberries, raspberries, and blackberries into your daily diet. Aim for at least one cup of fresh or frozen berries every day, either as a snack, part of your breakfast (such as in oatmeal or yogurt), or as a dessert.

Description

Berries, such as strawberries, blueberries, and raspberries, are packed with antioxidants, vitamins, and fiber. Regular consumption of berries may support heart health, improve cognitive function, and contribute to overall well-being.

How it helps

Berries, including blueberries and blackberries, contain antioxidants like vitamin C, which can reduce oxidative stress, potentially slowing the progression of age-related macular degeneration.

Next Steps

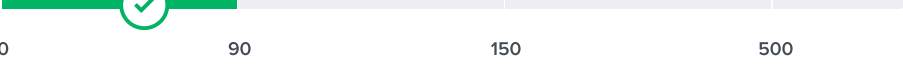
Remember, your genes only tell one important part of your health story!

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

Your lab results

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

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

	T4 Free (FT4)	1.26 ng/dL		9 Nov 2025
	Vitamin D, 25-Hydroxy, Total	58.59 ng/mL		9 Nov 2025
	Triglycerides	54 mg/dL		9 Nov 2025
	Homocysteine	12.84 umol/L		9 Nov 2025
	hs-CRP	1.6 mg/L		9 Nov 2025
	ApoB	108 mg/dL		9 Nov 2025