

Eye Cancer

Disease Report

REPORT CATEGORIES —



EYE HEALTH



CANCER

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

Eye cancer encompasses cancers that originate in the eye or its surrounding structures. It can affect various parts of the eye, including the retina, the iris, the choroid (a layer between the retina and the sclera), and the optic nerve. Eye cancer can be categorized into primary (originating in the eye) and secondary (spreading to the eye from other parts of the body) cancers.

Types of eye cancer include:

- Uveal melanoma: the most common primary eye cancer in adults, originating in the uvea (which includes the iris, ciliary body, and choroid). Symptoms include visual disturbances, dark spots or shadows in the field of vision, eye pain, and bulging of the eye [\[R\]](#).
- Retinoblastoma: a rare cancer that primarily affects young children, usually under the age of 5. It originates in the retina, the light-sensitive tissue at the back of the eye. It's characterized by white pupils (leukocoria), crossed eyes (strabismus), eye redness or irritation, and vision problems [\[R\]](#).
- Ocular surface squamous neoplasia (OSSN): includes conditions like conjunctival squamous cell carcinoma and corneal squamous cell carcinoma. These cancers affect the surface of the eye. Symptoms include redness, irritation, a growth or lump on the conjunctiva (the membrane covering the white part of the eye), and visual disturbances.
- Choroidal melanoma: a type of melanoma that originates in the choroid layer of the eye. Symptoms are similar to those of uveal melanoma [\[R\]](#).
- Intraocular lymphoma: a rare type of lymphoma that starts in the eye and can spread to other parts of the body. Symptoms include blurred vision, floaters, eye redness, and vision loss.
- Retinal hemangioblastoma: a rare tumor that usually occurs as part of von Hippel-Lindau (VHL) syndrome, a genetic disorder. Symptoms include vision problems, retinal detachment, and eye discomfort.

Symptoms and Treatment

Risk factors for eye cancer include:

- Age: certain types, like retinoblastoma, are more common in children, while others, like uveal melanoma, are more common in adults.
- Genetics: genetic conditions like retinoblastoma or von Hippel-Lindau syndrome increase risk.
- Prolonged exposure to ultraviolet (UV) light is a risk factor for ocular surface cancers.
- Skin color: lghter-skinned individuals may be at higher risk for certain types of eye cancers.
- Family history

Treatment options for eye cancer depend on the type and stage of the cancer, as well as the patient's overall health:

- Surgery: enucleation (removal of the eye, typically used for large tumors or when vision cannot be preserved) or local excision: (removal of the tumor and some surrounding healthy tissue).
- Radiation therapy: brachytherapy (placement of radioactive sources near the tumor) or external beam radiation (targeting the tumor from outside the body).
- Chemotherapy: systemic treatment using drugs to kill cancer cells, often used for cancers that have spread or in combination with other treatments.
- Cryotherapy: using extreme cold to destroy cancer cells, sometimes used for small tumors.
- Laser therapy: using high-energy light to target and destroy cancer cells.

The prognosis for eye cancer varies based on the type, stage, and location of the cancer, as well as the patient's overall health and response to treatment. Early detection and treatment generally improve outcomes. For cancers like retinoblastoma, the prognosis can be excellent with prompt treatment, while other types, like uveal melanoma, may have a more variable prognosis depending on the extent of the disease.

Please note: This report is not diagnostic and can't be used to make any medical decisions. Most cancers are uncommon and have a strong environmental component. Even if your genetic predisposition is high, you will most



TYPICAL LIKELIHOOD

Typical likelihood of eye cancer based on 17,504 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
DSP	rs2076295	GG
MAPT	rs1981997	GG
LRRC37A	rs2957316	TC
DISP2	rs2034650	AA
ATP11A	rs1278769	GG
PRRT1	rs3132946	GA
TERT	rs2736100	AC
TRIM4	rs4727443	CA
DPP9	rs12610495	AG
STN1	rs11191865	AG
DEPTOR	rs7005380	GA
/	rs116906005	CC
MUC5B	rs35705950	GG
SPDL1	rs116483731	GG
CSMD1	rs1379326	TT
TERT	rs7734992	CC
MUC2	rs7934606	CC
CTNNA3	rs2441727	AA
TASL	rs6631122	T
LRRC34	rs6793295	TT
FAM13A	rs2609255	TT
AKAP13	rs6496044	AA

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

likely not develop the disease. This report doesn’t test for hereditary cancer syndromes or ‘cancer genes’. These are usually caused by rare mutations that can’t be analyzed by our test. If you're concerned about your risk of hereditary cancer, consider getting a specialized test at a reference laboratory.

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

Fruits And Vegetables
- 2

Avoid Radiation Exposure
- 3

Avoid Excess Sunlight Exposure
- 4

Vegetables
- 5

Anti-Inflammatory Diet

1



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 rich in vitamins, minerals, and antioxidants that promote overall health and can help protect against cancer.

2



Avoid Radiation Exposure

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Minimize your exposure to radiation by staying at least six feet away from radiation-emitting devices like X-rays and microwaves whenever possible. Limit your time in areas with high radiation levels and opt for alternatives to X-ray exams when available. Wear protective gear, such as lead aprons, when exposure is unavoidable, and follow safety protocols during medical procedures involving radiation.

Description

Avoiding excessive exposure to radiation, whether from medical procedures or environmental sources, can help protect against the risk of DNA damage and potential cancer development.

How it helps

Exposure to high levels of radiation increases the risk of developing cancers. Limiting exposure to radiation can help reduce the risk of eye cancer.

3



Avoid Excess Sunlight Exposure

IMPACT

0 / 5

EVIDENCE

0 / 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

Ultraviolet (UV) rays from the sun can damage the DNA in our skin cells which may lead to skin cancer, including cancers that affect the eye area, such as eyelid cancers. Limiting sun exposure, wearing sunglasses with UV protection, and applying broad-spectrum sunscreen on exposed skin, including the eyelids, can reduce the risk of these cancers.

4



Vegetables

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate at least 2-3 cups of various vegetables into your daily diet, ensuring a mix of colors like greens, reds, and yellows to maximize nutrient intake. Aim to include vegetables in most meals, either as a side, part of the main dish, or snacks.

Description

Vegetables are edible parts of plants that offer various health benefits due to their rich nutrient content, including vitamins, minerals, fiber, and antioxidants. They are essential components of a balanced diet and contribute to overall health, supporting various bodily functions.

How it helps

Vegetables are rich in antioxidants and phytochemicals, which can help protect cells from damage and may lower the risk of cancer.

5



Anti-Inflammatory Diet

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate foods rich in omega-3 fatty acids, such as salmon and flaxseeds, fruits, vegetables, nuts, and whole grains into your daily meals. Avoid processed foods, red meats, and refined sugars. Aim for a balanced diet consisting mostly of plant-based foods and lean protein sources, adjusting portions sizes to meet your individual nutritional needs and health goals.

Description

An anti-inflammatory diet focuses on reducing inflammation in the body by emphasizing foods rich in anti-inflammatory compounds, such as fruits, vegetables, fatty fish, nuts, and seeds, while minimizing processed foods and those high in added sugars and trans fats.

Anti-inflammatory diets use healthy foods to reduce inflammation. These diets are generally high in [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Colorful fruits and vegetables
- Nuts and seeds
- Fish
- Olive oil
- Tea

They also tend to restrict [\[R\]](#), [\[R\]](#):

- Processed food
- Sugar and refined carbs
- Red meat

The [Mediterranean diet](#) and the DASH diet are good examples of anti-inflammatory diets [\[R\]](#), [\[R\]](#).

How it helps

An anti-inflammatory diet can help reduce chronic inflammation, which has been linked to cancer progression. This diet includes foods like fatty fish, leafy greens, and berries that may help slow cancer cell growth.

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.

