

Bile Duct Cancer

Disease Report

REPORT CATEGORIES —



LIVER 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

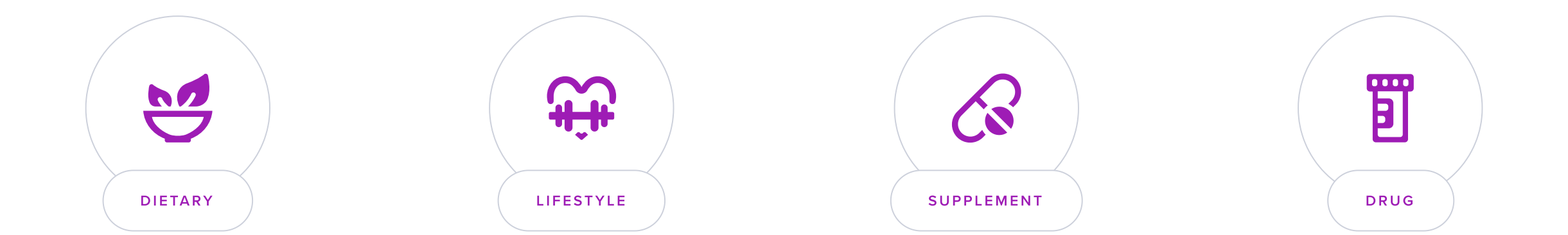
You have 2 risk alleles

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

Bile duct cancer, also known as cholangiocarcinoma, is a relatively rare form of cancer that occurs in the bile ducts, which are thin tubes about 4 to 5 inches long that connect the liver to the small intestine. The primary function of these ducts is to carry bile, a fluid produced by the liver that helps digest fats. Cancer can develop in any part of the bile ducts and is classified based on its location: within the liver (intrahepatic), outside the liver (extrahepatic), or at the junction where the ducts leave the liver (perihilar) [\[R\]](#).

Symptoms of bile duct cancer typically do not appear until the later stages of the disease and may include [\[R\]](#):

- Jaundice: Yellowing of the skin and eyes resulting from bile build-up.
- Itching: Usually occurs with jaundice due to bile salts accumulating under the skin.
- Abdominal pain: Especially in the upper right part of the abdomen.
- Fever: It can occur if there is an infection in the bile duct.
- Weight loss and loss of appetite: Common in people with cancer.
- Pale stools and dark urine: Result from the blockage of bile flow.

Risk Factors and Treatment

The exact cause of bile duct cancer is not fully understood, but several factors are associated with an increased risk [\[R\]](#):

- Chronic liver diseases: Cirrhosis, a condition in which the liver slowly deteriorates and malfunctions due to chronic injury, can increase the risk.
- Biliary tract diseases: Conditions such as primary sclerosing cholangitis, chronic biliary irritation, and choledochal cysts are linked to higher rates of cholangiocarcinoma.
- Infections: Parasitic infections, particularly with liver flukes, increase the risk of bile duct cancer.
- Age: Most people diagnosed with bile duct cancer are over the age of 50.
- Other factors: History of gallstones, hepatitis, smoking, and exposure to certain chemicals, such as thorotrast (a previously used radiographic contrast agent), may increase the risk.

Treatment depends on the stage of the cancer, its location, and the patient’s overall health [\[R\]](#):

- Surgery: If possible, surgery is the preferred treatment, which may involve removing part of the bile duct, liver, and lymph nodes.
- Liver transplant: It may be an option for certain early bile duct cancers where the tumor is confined to the bile ducts in the liver.
- Radiation therapy and chemotherapy: Used to slow the progression of the disease and manage symptoms, especially if surgery is not an option.
- Palliative treatments: Procedures like biliary drainage or stenting can relieve symptoms such as jaundice in cases where the cancer is advanced.

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 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



Typical likelihood of bile duct cancer based on **33,541 genetic variants we looked at**

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.

DOSAGE		DOSAGE		
1	Tea	2	Support Groups	
3	Green Tea	400 mg	4	Cruciferous Vegetables

1



Tea

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Drink 1-3 cups of tea daily, choosing from green, black, or herbal varieties according to preference. It's beneficial to consume tea throughout the day, either hot or cold, for ongoing hydration and health benefits.

Description

Tea is a beverage made by steeping the leaves of the *Camellia sinensis* plant in hot water. It comes in various types, including black, green, white, and herbal teas, and is known for its diverse flavors and potential health benefits due to polyphenols and other bioactive compounds.

[Green](#) and black 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 many active compounds. These include antioxidants like EGCG and amino acids like [L-theanine](#). Active components of tea help support [\[R, R, R, R, R, R\]](#):

- Heart health
- Cognition
- Immunity
- Relaxation

How it helps

An [umbrella review of 64 studies](#) identified biliary tract cancer among those whose **risk is reduced by tea intake** [\[R\]](#).

Similarly, a [meta-analysis of 18 studies](#) found a **~52% decreased risk of biliary tract cancer among tea drinkers, but only in women. For every daily cup, the risk was reduced by 4%** [\[R\]](#).

2



Support Groups

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Attend a support group meeting related to your condition at least once a week. These meetings can be found through local hospitals, online platforms, or health organizations specific to your condition. Participation can be in-person or virtual, depending on what is offered and your preference.

Description

Support groups are gatherings of individuals facing similar challenges, where they can share experiences, emotions, and coping strategies. They offer emotional support, camaraderie, and valuable insights for those dealing with various health conditions or life circumstances.

Support groups involve people with similar struggles helping each other. Support groups usually take place in a casual setting. During sessions, people share their [\[R\]](#):

- Knowledge
- Experiences
- Coping strategies
- Understanding of the recovery process

Support groups may help support recovery from addictions [\[R\]](#).

How it helps

Participating in support groups can provide emotional support and reduce feelings of isolation, helping patients cope better with the challenges of the condition.

3



Green Tea

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Consume 400 mg of green tea extract daily. This can be taken in the form of capsules or tablets available that specify the amount of green tea extract. Ensure the supplement is taken according to the product's specific instructions, usually once a day with water.

TYPICAL STARTING DOSE

400 mg

Description

Tea is a beverage made by steeping the leaves of the *Camellia sinensis* plant in hot water. It comes in various types, including black, green, white, and herbal teas, and is known for its diverse flavors and potential health benefits due to antioxidants and other bioactive compounds.

[Green](#) and black 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 **flavonoids**, which may help prevent [\[R, R, R, R\]](#):

- Heart disease
- Cancer
- Diabetes

How it helps

Green tea is rich in polyphenols, which have antioxidant properties that can help protect cells from DNA damage that may lead to cancer.

4



Cruciferous Vegetables

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate a serving of cruciferous vegetables, such as broccoli, cauliflower, Brussels sprouts, kale, or cabbage, into at least one meal each day. A serving size is about a half cup cooked or one cup raw. Try to maintain this habit consistently over time for the best health outcomes.

Description

Cruciferous vegetables like broccoli, cauliflower, and kale are rich in vitamins, fiber, and antioxidants. Including them in your diet can promote overall health and may offer cancer-protective properties.

Cruciferous vegetables are a group of vegetables that belong to the Brassicaceae family. They are rich in fiber, vitamins, minerals, and other nutrients.

Some common cruciferous vegetables include broccoli, cauliflower, cabbage, kale, and brussels sprouts.

How it helps

Cruciferous vegetables like broccoli and Brussels sprouts contain compounds that can induce detoxifying enzymes, helping to rid the body of potential carcinogens.

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.

