

Esophageal Cancer

Disease Report

REPORT CATEGORIES —



GUT 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

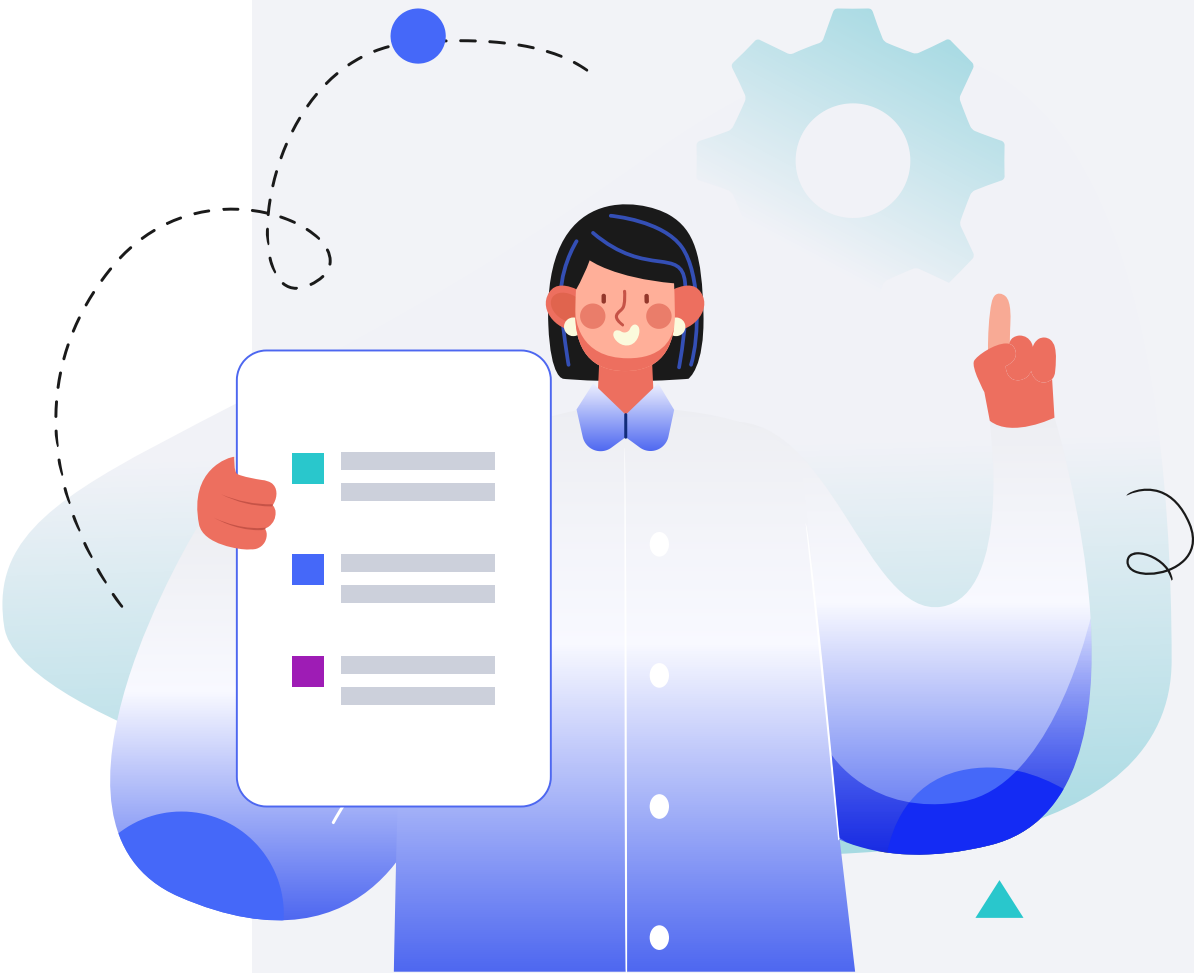
Male

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

Esophageal cancer is a serious and potentially fatal disease characterized by the growth of cancer cells in the esophagus, the long, hollow tube that runs from the throat to the stomach. This type of cancer often starts in the cells lining the esophagus and can occur anywhere along its length. There are two main types of esophageal cancer [\[R\]](#):

- Esophageal adenocarcinoma: Begins in the cells of mucus-secreting glands in the esophagus. This type is more common in the lower part of the esophagus and is strongly linked to Barrett's esophagus, a condition that occurs due to chronic acid reflux or gastroesophageal reflux disease (GERD).
- Squamous cell carcinoma: Occurs in the flat, thin cells lining the esophagus. This type is more commonly found in the upper and middle parts of the esophagus and is associated with smoking and alcohol consumption.

Early stages of esophageal cancer often have no symptoms. As the cancer progresses, symptoms may include [\[R\]](#):

- Difficulty swallowing
- Heartburn and indigestion
- Unintended weight loss
- Hoarseness or voice changes
- Chest pain or discomfort
- Chronic cough

Risk Factors and Treatment

Risk factors for esophageal cancer include [\[R\]](#):

- Chronic gastroesophageal reflux disease (GERD): Prolonged exposure to stomach acids can damage the lining of the esophagus and may lead to Barrett’s esophagus.
- Barrett’s esophagus: Increases the risk of adenocarcinoma.
- Smoking: A significant risk factor for squamous cell carcinoma.
- Heavy alcohol consumption: Especially increases the risk for squamous cell carcinoma.
- Obesity: Associated with a higher risk of adenocarcinoma.
- Diet: A diet low in fruits and vegetables may increase the risk.
- Achalasia: A rare disorder that makes it difficult for food and liquid to pass into the stomach, raising the risk of squamous cell carcinoma.
- Drinking hot liquids: Regularly consuming very hot beverages may irritate the lining of the esophagus, which can increase the risk.

Treatment depends on the stage of the cancer, the patient's overall health, and other factors. It may include [\[R\]](#):

- Surgery: To remove the tumor and some surrounding healthy tissue, and possibly nearby lymph nodes. In advanced cases, part or all of the esophagus may be removed.
- Radiation therapy: Often used alongside chemotherapy before surgery to shrink the tumor or after surgery to eliminate any remaining cancer cells.
- Chemotherapy: Used to kill cancer cells, often in combination with radiation therapy either before surgery or as a standalone treatment in cases where surgery isn't an option.
- Targeted therapy: Uses drugs or other substances to precisely identify and attack cancer cells, usually while doing little damage to normal cells.

Please note: This report is not diagnostic and can't be used to make any medical decisions. Most cancers are



TYPICAL LIKELIHOOD

Typical likelihood of esophageal cancer based on 939,366 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
CCDC71L	rs114448224	CC
/	rs10417850	GG
STAT4	rs113702517	TT
PPP4R1	rs78048962	GG
SALL4	rs16996300	CC
SCG2	rs714943	CC
FAM120AOS	rs12379660	AG
ABHD11	rs7806956	TA
SPATA6	rs11205513	GC
PPP3R1	rs1868403	TC
CHRM3	rs10802794	CT
CDCA2	rs1365016	TC
CHST10	rs147274464	AA
MYO1B	rs142741123	TT
UBE3D	rs115648060	GG
AMTN	rs148725713	CC
TNFRSF10C	rs531841075	GG
SLC16A14	rs35963873	TT
PCM1	rs144188626	GG
CSTF2T	rs143380404	TT
/	rs73365656	CC
UBXN2B	rs114039795	CC
SALL1	rs115523423	CC
GIN52	rs112854191	TT
ZFYVE16	rs79319332	GG
/	rs9783765	AA
C15ORF48	rs73412484	AA
GPM6A	rs4532186	GG
RBBP8	rs62093212	TT
PTCH1	rs4744456	CC

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

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 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	Methylfolate	400 mcg	2	Avoid Secondhand Smoke	
3	Avoid Asbestos		4	Green Tea	400 mg
5	Dietary Selenium		6	Aerobic Exercise (Cardio)	1 hour
7	Curcumin	500 mg	8	Maintain Optimal Vitamin D Levels	1000 iu
9	Vitamin C	2000 mg	10	Avoid Spicy Food	
11	Rehmannia	250 mg	12	Molybdenum	
13	Beta-Carotene	6 mg	14	Maitake Mushroom	
15	Riboflavin (Vitamin B2)	25 mg	16	Tomato	
17	Pomegranate Juice		18	Avoid Meals 3-4 Hours Before Bedtime	
19	Cruciferous Vegetables		20	Avoid Acrylamide	
21	Berries		22	Vegetables	
23	Avoid Large Meals		24	Avoid Aflatoxins	
25	Selenium Supplements	50 mcg	26	Avoid Cannabis	
27	Grapes		28	Black Raspberry Extract	300 mg

1



Methylfolate

IMPACT

4 / 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

A meta-analysis found that higher folate intake reduced esophageal cancer (EC) risk. Folate intake and serum folate were associated with lower EC risk, with dose-response relationships observed. MTHFR genotypes and lifestyle factors also influenced EC risk. Another meta-analysis supported the protective effect of dietary and serum folate against EC. Separate analyses showed reduced EC risk with dietary folate and pancreatic cancer but no association with gastric cancer. MTHFR genotypes, especially TT, were linked to increased EC risk, influenced by alcohol and tobacco consumption. A pooled analysis confirmed the association between MTHFR 677 TT genotype and esophageal cancer. Additionally, vitamin B6 and folate intake were inversely correlated with EC risk in the US, Europe, and Australia, with a dose-response relationship. Overall, B vitamins from one-carbon metabolism may protect against EC, except for vitamin B12 [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

2



Avoid Secondhand Smoke

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Implementing a smoke-free lifestyle involves communicating your needs to family, friends, and coworkers, requesting they respect your choice by smoking away from you. At home, establish strict no-smoking policies indoors. When out, choose smoke-free venues and accommodations. Advocate for smoke-free environments in your community and support legislation that promotes public health by reducing exposure to secondhand smoke. Utilize air purifiers at home to reduce any residual particles.

Description

Avoiding secondhand smoke is crucial for maintaining good health. Exposure to secondhand smoke can lead to respiratory problems, cardiovascular disease, and an increased risk of lung cancer, even in non-smokers. Protecting oneself from secondhand smoke involves staying away from smoking areas, ensuring smoke-free environments at home and work, and advocating for smoke-free policies in public spaces.

How it helps

Secondhand smoke contains harmful chemicals that can cause damage to the cells lining the esophagus, increasing the risk of cancer. Avoiding exposure can reduce this risk.

3



Avoid Asbestos

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Check for the presence of asbestos in materials in old buildings, especially those built before the 1980s, before doing any renovations or demolitions. Avoid disturbing materials that might contain asbestos, such as insulation, tiles, and roofing. If asbestos needs to be removed, hire professionals who specialize in asbestos abatement.

Description

Avoiding asbestos exposure is critical to prevent the development of asbestos-related diseases such as mesothelioma and lung cancer. Asbestos is a known carcinogen found in some construction materials and should be handled with extreme care or avoided altogether.

How it helps

A meta-analysis of 242 studies found a strong positive association between asbestos exposure, particularly chrysotile, and esophageal cancer (pooled SMR = 1.28; 95% CI 1.19–1.38, p < 0.00001). Subgroup analyses supported this link, emphasizing the need for long-term cancer monitoring [\[R\]](#).

Occupational asbestos exposure increases esophageal cancer (EC) risk (SMR = 1.24, 95% CI: 1.13-1.38, P < 0.001), especially in males, chrysotile exposure, textile industry, long follow-up (≥20 years), larger cohorts (>500), and high-exposure groups [\[R\]](#).

4



Green Tea

IMPACT2 / 5

EVIDENCE3 / 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

[Two meta-analyses \(the largest one with 14 studies\)](#) found no effect of green tea intake on esophageal cancer. Another [meta-analysis \(10 studies\)](#) found **no overall effects, but green tea did show protective effects in women** [\[R\]](#), [\[R\]](#), [\[R\]](#).

A [meta-analysis of 24 studies](#) found high **green (but not black) tea intake reduces the risk of esophageal cancer (by ~29%), especially in Chinese studies** [\[R\]](#).

In any case, **drinking very hot tea and other beverages increases the risk of esophageal cancer** as noted in a [meta-analysis of 54 studies](#) [\[R\]](#).

5



Dietary Selenium

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Incorporate selenium-rich foods into your daily diet, such as Brazil nuts, seafood, and organ meats. Eating 1-2 Brazil nuts a day can meet the daily selenium requirement for most adults.

Description

Selenium is a trace mineral found in various foods, including nuts, seeds, and seafood. It is an essential nutrient that plays a crucial role in maintaining the body's antioxidant defenses and supporting thyroid function.

[Selenium](#) supports [\[R\]](#):

- Reproduction
- Thyroid function
- DNA production
- Immune response

Adults should be getting **55 micrograms** of selenium per day. Good sources of selenium include [\[R\]](#):

- Brazil nuts
- Fish
- Meat
- Eggs
- Rice
- Oatmeal

How it helps

A meta-analysis analyzed 69 studies and found that high selenium exposure seemed to protect against cancer overall, and esophageal cancer in particular. Selenium in blood and toenails was associated with cancer prevention, but supplements didn't show the same effect [\[R\]](#).

6



Aerobic Exercise (Cardio)

IMPACT

2 / 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

Regular physical activity can help maintain a healthy weight, which is important because obesity is a risk factor for esophageal cancer. Exercise also boosts overall immunity and improves metabolic health.

7



Curcumin

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a 500 mg curcumin supplement daily with food. To enhance absorption, take it with a meal that contains fats or oils since curcumin is fat-soluble.

TYPICAL STARTING DOSE
500 mg

Description

Curcumin is a compound found in turmeric known for its anti-inflammatory and antioxidant properties. It has been studied for its potential to reduce inflammation, support joint health, and contribute to overall well-being.

[Turmeric](#) is a yellow spice from India. It may reduce inflammation and [oxidative stress](#) [R].

The most important active compound in turmeric is **curcumin**. People use curcumin for [R, R, R, R, R, R]:

- Joint pain
- Hay fever
- Mood
- High blood sugar
- Gut health
- Liver health

How it helps

Curcumin, found in turmeric, has anti-inflammatory and anti-cancer properties. Studies have shown that it can inhibit the growth of cancer cells in the esophagus and improve the effectiveness of chemotherapy.

8



Maintain Optimal Vitamin D Levels

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Check your vitamin D levels, they should ideally be in the 30-66 ng/mL range. If your levels are lower than that, take a vitamin D supplement, 1000-4000 IU daily, to reach an optimal range.

TYPICAL STARTING DOSE

1000 iu

Description

Vitamin D, often referred to as the "sunshine vitamin," can be synthesized by the skin when exposed to sunlight, as well as being found in fish, eggs, and fortified milk. It helps regulate calcium absorption, promoting strong bones and a healthy immune system. Vitamin D deficiency can lead to conditions like rickets in children and osteoporosis in adults.

Your body needs [vitamin D](#) for strong bones. Vitamin D also plays a role in [\[R\]](#):

- Mood
- Immunity
- Heart health
- Blood sugar control

[Sunlight](#) is our main source of vitamin D. Experts recommend getting at least **5-15 minutes of midday sun, 2-3 times per week**. People with darker skin and those living at high latitudes may need longer periods of sun exposure [\[R, R\]](#).

Foods like fish, eggs, and fortified milk provide small amounts of vitamin D. **People lacking vitamin D should consider taking a supplement** [\[R\]](#).

How it helps

Vitamin D may help reduce the risk of some cancers, including esophageal cancer. It might work by regulating cellular growth and helping the immune system fight cancer cells.

9



Vitamin C

IMPACT

2 / 5

EVIDENCE

2 / 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

A meta-analysis of 18 papers (4,126 cases, 36,902 controls) found that higher dietary vitamin C intake was associated with a reduced risk of esophageal cancer, especially esophageal squamous cell carcinoma (ESCC) and esophageal adenocarcinoma (EAC). An increase of 50 mg/day in dietary vitamin C intake led to a 10% reduction in esophageal cancer risk [\[R\]](#).

In another meta-analysis of 15 articles (7,063 controls, 3,955 esophageal cancer cases), vitamin C intake was inversely associated with esophageal cancer risk. Higher vitamin C intake was linked to a 13% risk reduction for every 50 mg/day increase in dietary intake [\[R\]](#).

A study on gastric adenocarcinoma (GA) found that a 20-μmol/L increase in plasma vitamin C was associated with a 14% decreased risk. Individuals with normal plasma vitamin C concentrations (>28 μmol/L) had a 27% lower GA risk compared to those with low concentrations (≤28 μmol/L). No such association was observed for esophageal squamous cell carcinoma (ESCC). A meta-analysis confirmed a 31% lower risk of GA in individuals with the highest plasma vitamin C levels [\[R\]](#).

Please note: *Supplementing with vitamin C is linked to a slightly higher risk of kidney stones in men. Talk to your doctor before taking vitamin C* [\[R\]](#), [\[R\]](#).

10



Avoid Spicy Food

IMPACT

1 / 5

EVIDENCE

2 / 5

How to implement

Eliminate or significantly reduce consumption of foods high in spices, such as hot peppers, curry, and salsa, from your daily diet.

Description

For individuals sensitive to spicy foods, avoiding excessively hot or spicy dishes can prevent digestive discomfort and heartburn, promoting better gastrointestinal comfort and overall well-being.

How it helps

A meta-analysis suggests that high levels of spicy food intake may be associated with an increased risk of EC, although 1 prospective study found an inverse association [R].

11



Rehmannia

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take rehmannia in capsule form, with the usual dose being between 250 to 500 mg daily. It's best consumed with water, after meals to minimize digestive discomfort. Consult with a healthcare professional for personalized advice, especially if you have pre-existing conditions or are on other medications.

TYPICAL STARTING DOSE

250 mg

Description

Rehmannia (Rehmannia glutinosa) is a medicinal plant native to East Asia and the root of the plant has been used traditionally for centuries in China and Korea for various health purposes. Rehmannia contains various compounds, including iridoid glycosides and catalpol, which may provide benefits for kidney and gland health.

How it helps

In a study of esophageal cancer patients, Rehmannia oral liquid improved general condition and symptoms post-radiotherapy, with a higher local control rate (70%) compared to radiotherapy alone (40%). It also positively affected cytokine levels, suggesting benefits in radiotherapy response and quality of life [R].

12



Molybdenum

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Adults should get about **45 micrograms** of molybdenum each day [R].

Foods rich in molybdenum include [R]:

- Black-eyed peas (288 mcg per serving)
- Beef liver (104 mcg per serving)
- Lima beans (104 mcg per serving)
- Yogurt (26 mcg per serving)
- Baked potato (16 mcg per serving)
- Wheat cereals (15 mcg per serving)

Description

[Molybdenum](#) (Mo) is a mineral that we need in very small amounts (trace mineral) [R].

Molybdenum helps process sulfur-containing amino acids such as [methionine](#) and [cysteine](#). It also helps make [uric acid](#) and is part of the tooth enamel [R, R].

Adults should get about **45 micrograms** of molybdenum each day [R].

Foods rich in molybdenum include [R]:

- Black-eyed peas (288 mcg per serving)
- Beef liver (104 mcg per serving)
- Lima beans (104 mcg per serving)
- Yogurt (26 mcg per serving)
- Baked potato (16 mcg per serving)
- Wheat cereals (15 mcg per serving)

Water also contains some molybdenum, although the exact amount can vary greatly depending on the region [R].

People easily get all the molybdenum they need through food and water, so [molybdenum deficiency is extremely rare](#) [R].

How it helps

Observational research has found higher female esophageal cancer rates and mortality in areas where soil molybdenum is low [R, R].

However, there is no evidence that increasing molybdenum intake helps reduce the risk of esophageal cancer.

13



Beta-Carotene

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a beta-carotene supplement daily, with a dose ranging from 6 to 15 milligrams. It's best taken with a meal that includes fat to improve absorption.

TYPICAL STARTING DOSE

6 mg

Description

Beta-carotene is a pigment found in various fruits and veggies like carrots, which gives them their bright colors. When we eat these foods, our body can convert beta-carotene into vitamin A, which is essential for good vision, a strong immune system, and healthy skin. So eating plenty of beta-carotene-rich foods can help us maintain our overall well-being.

How it helps

A meta-analysis of 14 articles indicated that higher dietary intake of β -carotene and vitamin A is associated with a reduced risk of esophageal cancer, especially in American and European populations [R].

14



Maitake Mushroom

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a maitake mushroom supplement, available in capsule or powder form, daily. The typical dosage ranges from 500mg to 3,000mg per day, divided into two or three doses. Consult with a healthcare provider for the correct dosage suitable for your health condition and needs.

Description

Maitake mushrooms are valued for their potential immune-boosting properties. Compounds found in maitake, such as beta-glucans, may support the immune system and contribute to overall health.

How it helps

During concurrent chemoradiotherapy (CCRT), Maitake capsules were administered orally three times daily before meals. Quality of life (QOL) was assessed using EORTC questionnaires. Among 141 patients, the intervention group experienced fewer severe adverse events and higher QOL scores post-treatment, indicating Maitake D-Fraction's potential to alleviate CCRT-related adverse effects and QOL deterioration [R].

15



Riboflavin (Vitamin B2)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a riboflavin (vitamin B2) supplement daily, with a dose ranging from 5mg to 400mg, depending on the specific health concern or advice from a healthcare provider. Swallow the supplement with water, preferably with a meal to enhance absorption. This regimen can be continued long-term or as directed by a healthcare professional.

TYPICAL STARTING DOSE
25 mg

Description

Riboflavin is a water-soluble B vitamin found in various foods like dairy products, leafy greens, and lean meats. It plays a crucial role in energy production, metabolism, building red blood cells, and maintaining healthy skin and eyes.

[Vitamin B2](#) helps our cells create energy. It’s also known as riboflavin [\[R\]](#), [\[R\]](#).

This vitamin is important for [\[R\]](#), [\[R\]](#):

- Brain, liver, and gut health
- Building red blood cells

Riboflavin deficiency is rare in the US. People with gut, eating, or hormonal disorders may be at a higher risk. Alcohol abuse and certain medications can also deplete this vitamin [\[R\]](#), [\[R\]](#).

Good sources of riboflavin include [\[R\]](#), [\[R\]](#):

- Eggs
- Dairy
- Lean and organ meats
- Green vegetables
- Fortified cereals

How it helps

In the study, endoscopy results favored the intervention group, with better mucosal status compared to the control group. Mean EGRAC values were lower in the intervention group. Lack of riboflavin increased esophageal cancer risk, but not dysplasia. Post-intervention, the intervention group had a lower esophageal cancer incidence than the control group, although not statistically significant. In conclusion, riboflavin-fortified salt effectively improved riboflavin levels and esophageal mucosal health [\[R\]](#).

16



Tomato

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate fresh or cooked tomatoes into your daily diet. This can be achieved by adding them to salads, sandwiches, pastas, and sauces or simply eating them on their own. Aim for at least one serving (approximately 1 medium-sized tomato or 1/2 cup of chopped or cooked tomatoes) per day.

Description

Tomatoes are a fruit grown widely in numerous varieties, and are rich in vitamins C and K, as well as the antioxidant lycopene, which may contribute to heart health and protect against certain chronic diseases when incorporated into a balanced diet.

Tomato (*Solanum lycopersicum*) is a fruit originally from the Andes in South America. It is usually consumed as a vegetable in juices, sauces, or fresh. Tomato is an important source of [\[R\]](#):

- [Vitamin C](#)
- Potassium
- Antioxidants (e.g., [lycopene](#))
- Vitamin B9 ([folate](#))

Tomato is traditionally used for [\[R\]](#), [\[R\]](#):

- High cholesterol
- High blood pressure

How it helps

Tomatoes are rich in lycopene, an antioxidant that has been associated with a reduced risk of several types of cancer, including esophageal cancer.

17



Pomegranate Juice

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Drink 8 ounces (about 240 milliliters) of 100% pomegranate juice daily, ideally in the morning to incorporate it into your daily routine. Continue this practice regularly as part of your daily diet.

Description

Pomegranate juice is made from the seeds and pulp of the fruit. It is rich in nutrients, including vitamin C, vitamin K, folate, potassium, and dietary fiber., and provides a source of dietary antioxidants that may provide addition benefits for inflammation and heart health.

[Pomegranates](#) are red fruits that contain seeds covered by edible sweet coats. They are rich in antioxidants [\[R, R\]](#).

Pomegranate may reduce inflammation and support heart health. People use pomegranate seed oil and peel in cosmetics and traditional medicine [\[R, R\]](#).

How it helps

Pomegranate juice contains high levels of antioxidants and has been studied for its anti-cancer properties, including effects on esophageal cancer cells.

18



Avoid Meals 3-4 Hours Before Bedtime

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Finish your last meal of the day at least 3 to 4 hours before you go to sleep. For example, if you usually go to bed at 10 pm, aim to have dinner no later than 6 pm to 7 pm.

Description

Avoiding meals, especially heavy meals, close to bedtime can help prevent digestive discomfort, indigestion, and disrupted sleep patterns. Opting for lighter evening meals promotes better digestion and overall sleep quality.

How it helps

Eating close to bedtime can promote acid reflux while lying down, which may worsen esophageal irritation and potentially affect cancer progression.

19



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 have been shown to have cancer-protective properties and may help inhibit the growth of cancer cells.

20



Avoid Acrylamide

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Reduce your intake of fried, baked, or roasted high-carbohydrate foods, such as potato chips, fries, and toast, to minimal levels. Opt for boiling, steaming, or microwaving these foods instead. When cooking at high temperatures, aim to keep the temperature below 248 degrees Fahrenheit (120 degrees Celsius) to prevent the formation of acrylamide.

Description

Avoiding acrylamide involves minimizing exposure to this chemical compound, which can form in certain foods when cooked at high temperatures. Reducing acrylamide intake may lower the risk of potential health concerns associated with its consumption.

How it helps

Acrylamide is a chemical found in certain foods when cooked at high temperatures. Studies suggest that exposure to high levels of acrylamide may increase the risk of several types of cancer, including esophageal cancer. Reducing intake of foods high in acrylamide, like fried potatoes and certain baked goods, may lower these risks.

21



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 are high in antioxidants and phytochemicals, which may help to prevent cell damage and reduce the risk of cancer progression by neutralizing harmful free radicals.

22



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

Consuming a variety of vegetables provides essential vitamins, minerals, and antioxidants that can help reduce inflammation and potentially lower the risk of esophageal cancer.

23



Avoid Large Meals

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Divide your daily food intake into smaller portions spread out over five to six times a day instead of having three large meals. Ensure that each portion is balanced and includes a variety of nutrients. This means having breakfast, a mid-morning snack, lunch, an afternoon snack, dinner, and possibly a light evening snack, depending on your caloric needs.

Description

Eating smaller, more frequent meals may help prevent overeating. This involves eating the same number of meals at about the same times every day. Doing so may help with issues like blood pressure, body weight, cholesterol levels, and migraines.

Eating smaller, more frequent meals may help prevent overeating. One way to do this is to keep a regular meal schedule. This involves eating the same number of meals at about the same times every day. Doing so may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Manage blood pressure
- Balance the internal clock
- Maintain a healthy body weight
- Support healthy cholesterol levels
- Prevent migraines

How it helps

Eating large meals puts pressure on the lower esophageal sphincter and can increase the risk of acid reflux, which may damage the esophagus and contribute to cancer progression.

24



Avoid Aflatoxins

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Store grains and nuts in a dry, cool place to prevent mold growth. Check for moldy smells or discoloration in foods before eating, especially in peanuts, corn, and grains. Avoid purchasing damaged or discolored grains and nuts.

Description

Aflatoxins are toxic substances produced by molds that can contaminate various food products, particularly nuts and grains. Avoiding foods contaminated with aflatoxins is crucial to prevent potential health risks, including liver damage and cancer.

How it helps

Aflatoxins are toxins produced by certain molds, which can contaminate crops such as grains and nuts. Studies have shown that aflatoxin exposure is a risk factor for various cancers, including liver cancer, and there's evidence suggesting it could also affect the risk of esophageal cancer, especially in areas where dietary exposure is high.

25



Selenium Supplements

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 50 mcg of selenium supplements once daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

50 mcg

Description

Selenium is a trace mineral found in Brazil nuts and many other foods as well as supplements. It is an essential nutrient that plays a crucial role in maintaining the body's antioxidant defenses and supporting thyroid function.

[Selenium](#) supports [\[R\]](#):

- Reproduction
- Thyroid function
- DNA production
- Immune response

Adults should be getting **55 micrograms** of selenium per day. Selenium supplements are available for people who can't meet their needs with a balanced diet [\[R\]](#).

How it helps

Selenium has been shown to have potential cancer-preventive properties. It may help reduce cancer risk by protecting cells from damage caused by oxidative stress.

26



Avoid Cannabis

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Stop any form of cannabis use, including smoking, vaping, edibles, and topical applications. If you currently use cannabis, it's recommended to cease usage immediately and seek support or counseling if necessary for cessation.

Description

Avoiding cannabis is advised in situations where its use is prohibited by law or poses health risks, particularly for individuals with a history of substance abuse or mental health conditions. Responsible use and adherence to local regulations are essential to minimize potential negative consequences.

[Cannabis](#) (marijuana) is a plant used for its medicinal and recreational properties. It contains substances called *cannabinoids*, such as [CBD](#) and THC [\[R\]](#).

Cannabis misuse can have long-term consequences, such as [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Lung damage
- Mental health problems
- Cognitive impairment

How it helps

There's growing evidence linking cannabis smoking to several respiratory conditions and potentially to certain types of cancer. While direct evidence linking cannabis use to esophageal cancer risk is limited, avoiding smoking, in general, is advisable to reduce the overall risk of cancer.

27



Grapes

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate a serving of grapes, which is about 32 seedless grapes or approximately 1 cup, into your daily diet. You can eat them as a snack, add them to salads, or blend them into smoothies. Do this consistently for a period of at least 3 months to observe potential health benefits.

Description

Grapes are a nutrient-dense fruit rich in vitamins, fiber, and antioxidants like resveratrol. Regular consumption of grapes is associated with potential benefits for heart health, skin health, and overall well-being.

How it helps

A randomized controlled trial with 40 subjects found that daily grape consumption for 21 days altered circulating miRNA levels in healthy individuals. Notably, 18 miRNAs were down-regulated, and 2 were up-regulated, potentially influencing cancer-related pathways [\[R\]](#).

28



Black Raspberry Extract

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 300 to 600 milligrams of black raspberry extract daily, divided into two or three doses. It can be taken with or without food. Continue for at least 6 to 12 weeks to assess its benefits.

TYPICAL STARTING DOSE

300 mg

Description

Black raspberry extract is derived from black raspberries, which are rich in antioxidants like anthocyanins. This extract is used for its potential to promote heart health, protect cells from oxidative stress, and support overall health.

How it helps

Black raspberry extract is high in antioxidants and has been found to prevent cancer cell growth and reduce the risk of esophageal cancer. Its compounds can reduce inflammation and inhibit pathways that lead to cancer progression.

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.