

Bladder Cancer

Disease Report

REPORT CATEGORIES —



CANCER



URINARY TRACT
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

Bladder cancer originates in the bladder, the organ responsible for storing urine. It is more common in older adults and is generally more prevalent in men than women. The most common type of bladder cancer is transitional cell carcinoma, which arises from the cells that line the bladder. Other types include [\[R\]](#):

- Squamous cell carcinoma: Often associated with chronic irritation or infection, such as from long-term catheter use or schistosomiasis.
- Adenocarcinoma: Originates from glandular cells in the bladder.
- Small cell carcinoma: A rare and aggressive form of bladder cancer.

Bladder cancer symptoms can be similar to those of other bladder conditions but may include [\[R\]](#):

- Blood in urine (hematuria): The most common symptom, which may be visible or detected only through tests.
- Frequent urination: Feeling the need to urinate more often than usual.
- Urgency: A sudden, strong need to urinate.
- Painful urination: Discomfort or pain while urinating.
- Pelvic pain: Pain in the lower abdomen or pelvis.
- Urinary tract infections: Recurrent infections that don't respond well to treatment.

Diagnosis and Treatment

Several factors can increase the risk of developing bladder cancer [\[R\]](#):

- Smoking: tobacco use is a major modifiable risk factor.
- Chemical exposure: working with certain chemicals, such as those used in the dye industry, can increase risk.
- Chronic irritation: conditions like chronic bladder infections or long-term use of urinary catheters increase the risk.
- Family history
- Previous cancer treatments: prior treatment with certain chemotherapy drugs, like cyclophosphamide, can increase risk.
- Age and gender: more common in older adults and more frequent in men than women.

Treatment options depend on the stage and grade of the cancer, as well as the patient’s overall health. They may include [\[R\]](#):

- Surgery: it may consist of transurethral resection of bladder tumors (a procedure to remove tumors from the bladder using a scope inserted through the urethra), partial cystectomy (removal of part of the bladder, often used for localized tumors), and radical cystectomy (removal of the entire bladder, usually for more advanced cases).
- Intravesical therapy: administering chemotherapy or immunotherapy directly into the bladder to target cancer cells.
- Chemotherapy: systemic treatment using drugs to kill cancer cells, often used before or after surgery or in combination with other treatments.
- Radiation therapy: using high-energy rays to target and kill cancer cells, though it's less commonly used for bladder cancer.
- Immunotherapy: drugs that help the immune system recognize and attack cancer cells, such as Bacillus Calmette-Guérin (BCG) therapy, which is often used for superficial bladder cancer.

The prognosis for bladder cancer depends on several factors, including the stage of the cancer at diagnosis, the



TYPICAL LIKELIHOOD

Typical likelihood of bladder cancer based on 1,675 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
MYC	rs9642880	TT
TACC3	rs798766	CT
PSCA	rs2920281	TT
UGT1A1	rs11892031	AA
P3H2	rs13063162	AA
FAM53A	rs11724531	GA
PSCA	rs2294008	TC
MYC	rs10094872	AT
NAT2	rs1495741	GA
APOBEC3A	rs1014971	TC
SLC14A1	rs10775480	TC
CLPTM1L	rs401681	TT
PAK4	rs111249728	GG
SH3BP4	rs111812445	GG
SOX4	rs76088467	AA
P3H2	rs710521	TT
CCNE1	rs8102137	TT
APOBEC3B	rs56297045	GG
CLPTM1L	rs2736103	TT
AMDHD1	rs10777753	GG

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

type of bladder cancer, and the patient’s overall health. Most bladder cancers are diagnosed at an early stage, when the cancer is highly treatable. Because even early-stage bladder cancers can come back after successful treatment, people with bladder cancer typically need follow-up tests for years after treatment to look for recurrence.

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 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 Air Pollution		4	Green Tea	400 mg
5	Avoid PAHs Exposure		6	Maintain Optimal Vitamin D Levels	1000 iu
7	Cruciferous Vegetables		8	Avoid Beta-Carotene Supplements	
9	Vitamin C	2000 mg	10	Probiotics	30 billion CFU
11	Avoid Pesticide Exposure		12	Avoid Arsenic Exposure	
13	Maitake Mushroom		14	Lactobacillus Casei	10 billion CFU
15	Fruits And Vegetables		16	Vegetables	
17	Turmeric		18	Avoid Exposure To Organic Solvents	
19	Pomegranate		20	Garlic	
21	Dietary Selenium		22	Pomegranate Juice	

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

Studies reveal mixed findings on the MTHFR polymorphisms' impact on bladder cancer risk. While some suggest an increased risk, particularly in Asians and heavy drinkers, others find no significant global association. Folate intake, however, shows a consistent inverse relationship with bladder cancer risk, emphasizing the need for more extensive cohort studies to confirm these findings [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

2



Avoid Secondhand Smoke

IMPACT

3 / 5

EVIDENCE

4 / 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

Exposure to secondhand smoke can still expose you to harmful chemicals that increase the risk of bladder cancer. Avoiding it can support bladder cancer prevention.

3



Avoid Air Pollution

IMPACT

3 / 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

A review of 20 articles on air pollution and urological cancer found most studies reported positive but mostly nonsignificant associations, particularly with bladder cancer mortality and kidney cancer incidence [\[R\]](#).

4



Green Tea

IMPACT

2 / 5

EVIDENCE

3 / 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

A [meta-analysis of 12 studies](#) found tea intake **reduces the risk of bladder cancer by 13%, especially in men and former smokers. For every 100-mL/day increment, the risk decreased by 3%** [\[R\]](#).

A [meta-analysis of 87 studies](#) found that **increasing black tea intake by 1 cup/day reduced the risk of bladder cancer only in Western countries** [\[R\]](#).

Another [meta-analysis \(24 studies\)](#) concluded that **tea reduces the risk of bladder cancer only in smokers, while black tea reduces it in women** [\[R\]](#).

However, a [meta-analysis of 23 studies](#) found **no protective effects** of tea intake on bladder cancer [\[R\]](#).

Similarly, a [meta-analysis of 17 studies](#) found no overall protective effects of tea on bladder cancer **but green tea did show protective effects** [\[R\]](#).

5



Avoid PAHs Exposure

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Minimize your exposure to Polycyclic Aromatic Hydrocarbons (PAHs) by avoiding or reducing consumption of charred, grilled, or smoked foods, not smoking or avoiding secondhand smoke, and limiting time spent in areas with heavy traffic or industrial fumes. Use exhaust fans in kitchens and ensure proper ventilation when cooking at high temperatures to reduce indoor levels of PAHs.

Description

PAHs or Polycyclic Aromatic Hydrocarbons are harmful substances found in smoke and grilled foods. Try to limit exposure to them for better health. For example, avoid inhaling smoke from cigarettes or barbeques and choose alternative cooking techniques over grilling. Minimizing PAHs can reduce the risk of several health issues, particularly lung and skin diseases.

How it helps

Occupational exposure to PAHs may increase the risk of bladder cancer. For instance, working in aluminum production increases it by 28-29%, working in iron steel foundries increases it by 29-38%, and working in coal gasification increases it by over 2-fold [\[R\]](#), [\[R\]](#).

6



Maintain Optimal Vitamin D Levels

IMPACT

2 / 5

EVIDENCE

3 / 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 has been linked to a lower risk of bladder cancer and better outcomes due to its role in regulating cell growth and boosting immune function.

7



Cruciferous Vegetables

IMPACT

2 / 5

EVIDENCE

2 / 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, such as broccoli, cauliflower, and Brussels sprouts, contain compounds called glucosinolates. When consumed, these compounds break down into substances like indoles and isothiocyanates, which have been shown in studies to inhibit the development of bladder cancer by promoting the elimination of potential carcinogens from the body and by inducing apoptosis (programmed cell death) in bladder cancer cells.

8



Avoid Beta-Carotene Supplements

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Do not purchase or consume supplements that list beta-carotene as an ingredient. This includes checking the labels of multivitamins and other health supplements to ensure they are free of beta-carotene.

Description

Avoiding high-dose beta-carotene supplements is advisable, as excessive intake may increase the risk of certain health issues, including lung cancer in smokers. Getting beta-carotene from dietary sources like fruits and vegetables is a safer way to support overall health.

How it helps

Beta-carotene supplementation may have no cancer-preventive effects and may even increase the risk of urothelial cancer, especially bladder cancer [\[R\]](#).

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

Vitamin C is a powerful antioxidant that helps prevent oxidative stress. High intake of fruits and vegetables rich in Vitamin C might reduce the risk of bladder cancer.

10



Probiotics

IMPACT2 / 5

EVIDENCE1 / 5

How to implement

Take a probiotic supplement containing 10 billion or more live cultures once daily, preferably with a meal or as directed by the packaging or a healthcare provider.

TYPICAL STARTING DOSE
30 billion CFU

Description

Probiotics are live beneficial bacteria and yeasts that can support gut health and digestive function when consumed as supplements or found in fermented foods like yogurt and sauerkraut. They may be beneficial to gut health, immune function, blood sugar, and mood.

[Probiotic bacteria](#) are “good” bacteria found mainly in the large intestine. They support your body and mind by [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Maintaining gut health
- Supporting a healthy immune system
- Improving your mood
- Helping to maintain healthy blood sugar

Prebiotics are certain types of fiber and other complex carbs that serve as food for gut bacteria. **They support gut health by helping boost the activity and growth of “good” bacteria** [\[R\]](#), [\[R\]](#).

Prebiotics are also added to foods and supplements. Common prebiotic ingredients are [\[R\]](#), [\[R\]](#):

- Oligo-fructose
- Oligo-galactose
- [Inulin](#)

Mixtures of probiotics and prebiotics are known as **synbiotics** [\[R\]](#).

How it helps

In 2 placebo-controlled trials of 186 patients with superficial transitional cell carcinoma of the bladder, supplementation with an oral *L. casei* preparation (3 g/day) reduced bladder cancer recurrence and prolonged recurrence-free interval by almost 2-fold [\[R\]](#), [\[R\]](#).

11



Avoid Pesticide Exposure

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Purchase organic produce when possible, wash fruits and vegetables thoroughly under running water, and peel them if not organic. Use natural pest control methods instead of chemical pesticides at home and garden. Limit the use of non-organic lawn and garden chemicals.

Description

Pesticides include all chemicals used to kill weeds, insects, fungi, and microbes. Reducing pesticide exposure involves choosing organic or pesticide-free foods and using natural pest control methods to limit contact with potentially harmful chemical residues. It supports overall health by reducing the risk of pesticide-related health issues.

Pesticides include all chemicals used to kill weeds, insects, fungi, and microbes. They are widely used in agriculture to improve crop yields. Common groups of pesticides include:

- Organophosphates (glyphosate, parathion, malathion, chlorpyrifos, diazinon, phosmet)
- Neonicotinoids (imidacloprid, acetamiprid, thiacloprid, clothianidin)
- Pyrethroids (permethrin, alpha-cypermethrin)

Chronic exposure to pesticides has been linked to:

- Fertility problems [\[R\]](#)
- Cognitive problems [\[R\]](#)
- Alzheimer’s and Parkinson’s disease [\[R\]](#), [\[R\]](#)
- Thyroid problems [\[R\]](#)
- Obesity [\[R\]](#)
- DNA damage and cancer [\[R\]](#), [\[R\]](#), [\[R\]](#)

How it helps

Pesticide exposure is linked to higher bladder cancer risk, especially in the Americas. Both case-control and cohort studies support this association. No publication bias was detected [\[R\]](#).

12



Avoid Arsenic Exposure

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Use a water filter certified to remove arsenic if you rely on well water, opt for arsenic-tested rice or rice products, and avoid using contaminated pesticides or herbicides in gardening or farming. Test your home for arsenic if you live in an area known for high levels of arsenic in soil or water. Limit consumption of foods known to accumulate arsenic such as rice and rice-based products, especially if you are pregnant, nursing, or preparing meals for young children.

Description

Avoiding arsenic exposure is essential for preventing potential health risks associated with arsenic contamination in drinking water and foods. Chronic exposure to arsenic has been linked to various health issues, including cancer and cardiovascular problems.

Arsenic is a [heavy metal](#) naturally found in the environment. It is used for mining, fracking, and industrial applications, such as the production of pesticides and wood preservatives, and the use of fossil fuels [\[R\]](#).

The main sources of exposure to arsenic are contaminated [\[R\]](#), [\[R\]](#), [\[R\]](#):

- **Drinking water**
- **Rice** and fish
- Air

Long-term exposure to high amounts of arsenic may be linked to health problems, including [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Skin disorders
- Heart disease
- High blood pressure
- Stroke
- Diabetes
- Cancer

Please note: *Soaking, washing until clear, and cooking rice with a high (1:6) water-to-rice ratio may help reduce rice’s arsenic content* [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Thirteen studies, primarily from Taiwan, examined the association between methylation percentages (%MMA and %DMA) and cancer, especially skin and bladder cancer. %MMA was positively linked to bladder and lung cancer risk, while %DMA had an inverse relationship with lung cancer risk. These findings suggest the importance of considering methylation in assessing inorganic arsenic's carcinogenicity [\[R\]](#).

13



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

A study examined Zhuling (*Grifola umbellata pilat*) and BCG prophylaxis post-TURBT and partial cystectomy for bladder cancer. Among 146 patients, Zhuling and BCG groups exhibited significantly lower recurrence rates (33.3%, 34.3%) compared to controls (65.1%), with no reported side effects, favoring Zhuling due to cost-effectiveness and convenience [\[R\]](#).

Between 1982 and 1997, 313 patients post-TURBT or partial cystectomy were followed for 2 to 15 years. Groups included BCG, MMC, thiotepa, Zhuling, afterloading brachytherapy, and control. Zhuling and BCG showed better prophylaxis than MMC. Afterloading brachytherapy was effective for high-risk cases [\[R\]](#).

14



Lactobacillus Casei

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement containing *Lactobacillus casei* daily, with a dosage recommended by the product's manufacturer or a healthcare professional. The specific amount can vary, but it is commonly found in doses around 10 billion colony-forming units (CFUs). Continue this regimen for at least 4 weeks to observe potential health benefits.

TYPICAL STARTING DOSE

10 billion CFU

Description

Lactobacillus casei is a probiotic bacterium known for its potential to support gut health and immune function. It contributes to a balanced gut microbiome and may help alleviate digestive issues like diarrhea.

[Lactobacillus casei](#) is a [probiotic](#) bacterium found in fermented foods (e.g., cheese), as well as in the reproductive and gastrointestinal tracts of humans and other animals [\[R\]](#), [\[R\]](#).

People mainly take *L. casei* to support a healthy gut microbiota [\[R\]](#).

How it helps

In 2 placebo-controlled trials of 186 patients with superficial transitional cell carcinoma of the bladder, supplementation with an oral *L. casei* preparation (3 g/day) reduced bladder cancer recurrence and prolonged recurrence-free interval by almost 2-fold [\[R\]](#), [\[R\]](#).

15



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

A diet rich in fruits and vegetables provides a variety of vitamins, minerals, antioxidants, and dietary fiber. These nutrients collectively contribute to the overall health and can lower the risk of developing bladder cancer. Antioxidants, for example, help protect cells from damage by free radicals, potentially reducing the risk of cancer. Additionally, dietary fiber may aid in the elimination of toxins from the body, further preventing cancer development.

16



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

Various vegetables are rich in antioxidants and phytochemicals that can help prevent DNA damage and support immune function, potentially reducing cancer risk.

17



Turmeric

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate 500-1000 mg of turmeric into your daily diet, either by adding ground turmeric spice to your food, such as in curries, soups, and smoothies, or by taking a dietary turmeric supplement. This should be done daily for at least 8 weeks to observe potential health benefits.

Description

Turmeric is a bright yellow spice derived from the root of the *Curcuma longa* plant. It contains curcumin, a potent antioxidant and anti-inflammatory compound. Turmeric is used for various health conditions, including reducing inflammation, alleviating joint pain, and supporting digestive health.

How it helps

Turmeric contains curcumin, a compound known for its anti-inflammatory and antioxidant properties. Curcumin has been studied for its potential to prevent cancer cell growth, including in the bladder, by interfering with several important molecular pathways involved in cancer development.

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Avoid Exposure To Organic Solvents

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Ensure to work in well-ventilated areas and wear protective gear when handling products like paints, varnishes, and adhesives. When possible, choose solvent-free or water-based products to minimize exposure. Regularly check labels for any solvents listed and strive to limit their use in both personal and professional settings.

Description

Avoiding exposure to organic solvents, commonly found in paints, adhesives, and cleaning products, can protect against the potential health risks associated with inhalation or skin contact, such as respiratory issues and skin irritation.

Organic solvents are used in various industries and workplaces for tasks like cleaning, painting, and manufacturing.

However, their use can be hazardous to workers' health. Exposure to these solvents can lead to problems such as breathing difficulties, skin irritation, and reduced fertility [\[R\]](#).

How it helps

Organic solvents found in certain industrial and household products can increase the risk of bladder cancer. Minimizing exposure can help lower this risk.

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Pomegranate

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate pomegranate into your diet by consuming fresh pomegranate seeds, drinking pure pomegranate juice, or adding pomegranate extract to smoothies or yogurts. Aim for at least one serving per day, which could be about half a cup of seeds or a glass (8 ounces) of juice, to gain its health benefits.

Description

Pomegranate is a fruit native to regions of the Middle East and Mediterranean. It is rich in antioxidants and nutrients such as vitamin C, vitamin K, and dietary fiber. It contains punicalagins, anthocyanins, and ellagic acid, which give it anti-inflammatory effects and potential heart health benefits.

[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 contains powerful antioxidants, which can protect cells from damage by free radicals. There's evidence suggesting that antioxidants can reduce the risk of cancer, including bladder cancer, by preventing cellular damage that can lead to cancerous growths.

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Garlic

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate 1-2 cloves of raw garlic into your meals daily. This can be achieved by finely chopping or crushing the garlic and letting it sit for a few minutes before adding it to your dishes to maximize its health benefits.

Description

Garlic is a popular herb known for its potential cardiovascular benefits, including lowering blood pressure and cholesterol levels. It also possesses antimicrobial properties and may support immune function.

[Garlic](#) is a vegetable often used to flavor food. It’s been a part of traditional medicine for thousands of years [\[R\]](#).

Today, people take garlic to help control their blood pressure and cholesterol [\[R\]](#).

How it helps

Garlic contains sulfur compounds that have shown potential anti-cancer properties by inhibiting tumor cell growth and inducing cancer cell death.

21



Dietary Selenium

IMPACT

0 / 5

EVIDENCE

0 / 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

Selenium is a mineral that helps protect cells from damage. Some studies suggest that higher levels of selenium in the diet might be linked to a lower risk of certain types of cancer, including bladder cancer.

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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 antioxidants which may help inhibit cancer cell growth and promote cancer cell death. Studies have shown that pomegranate juice can target pathways important for the survival of cancer cells.

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.

