

Lung Cancer

Disease Report

REPORT CATEGORIES —



RESPIRATORY 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

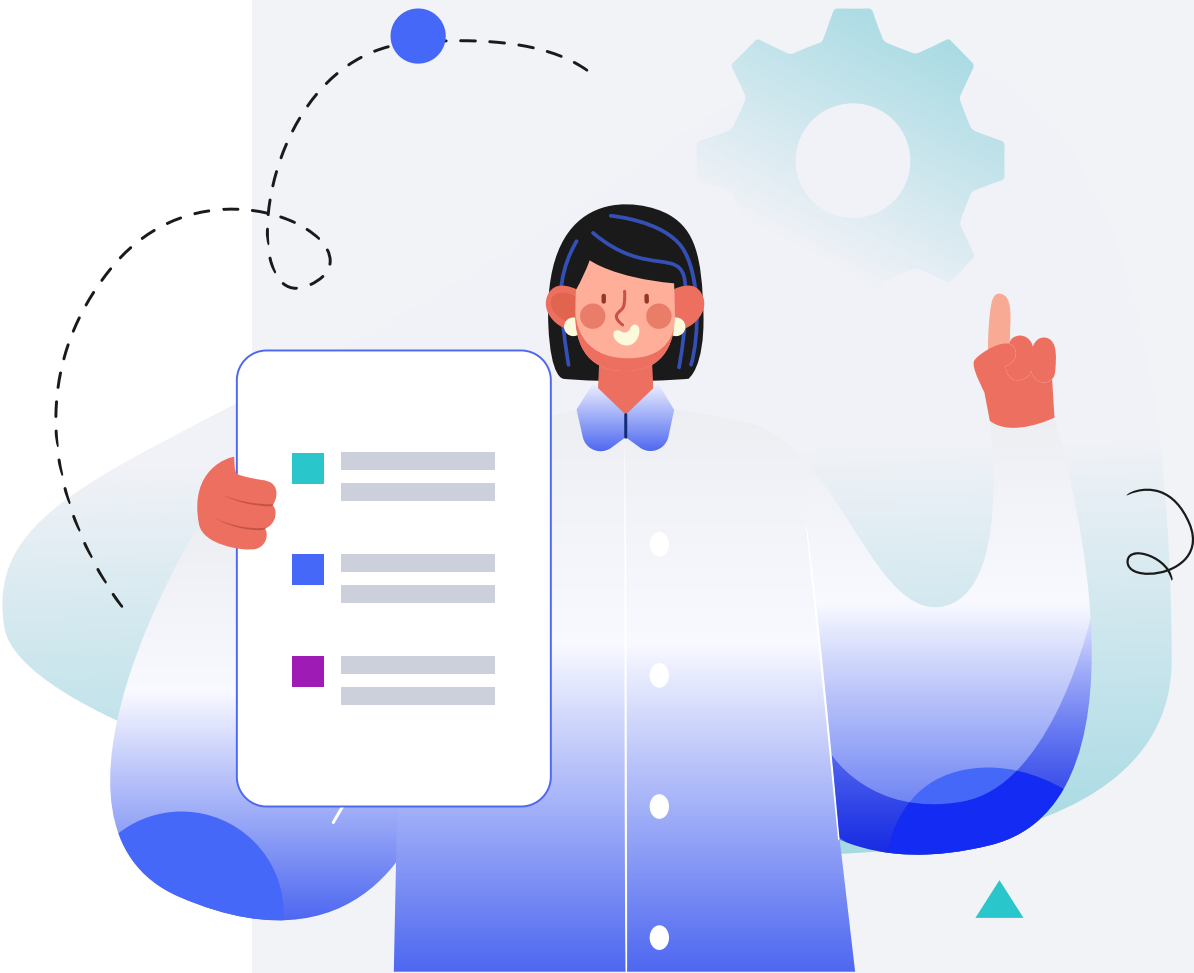
Male

HEIGHT

5ft 5" 165cm

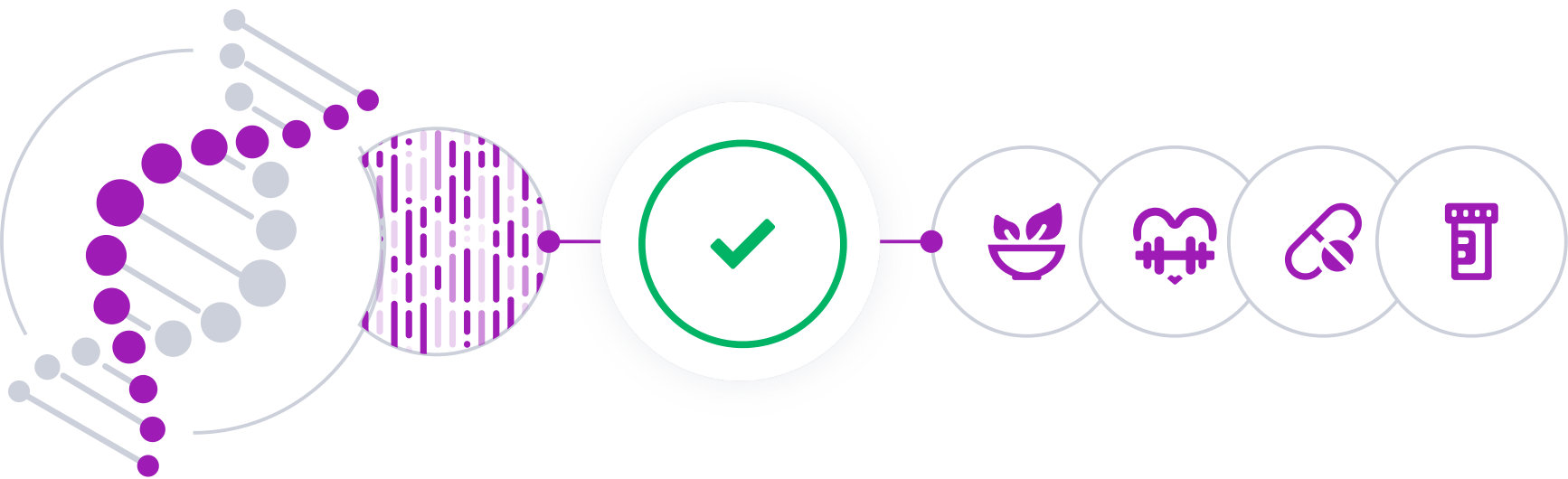
WEIGHT

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.

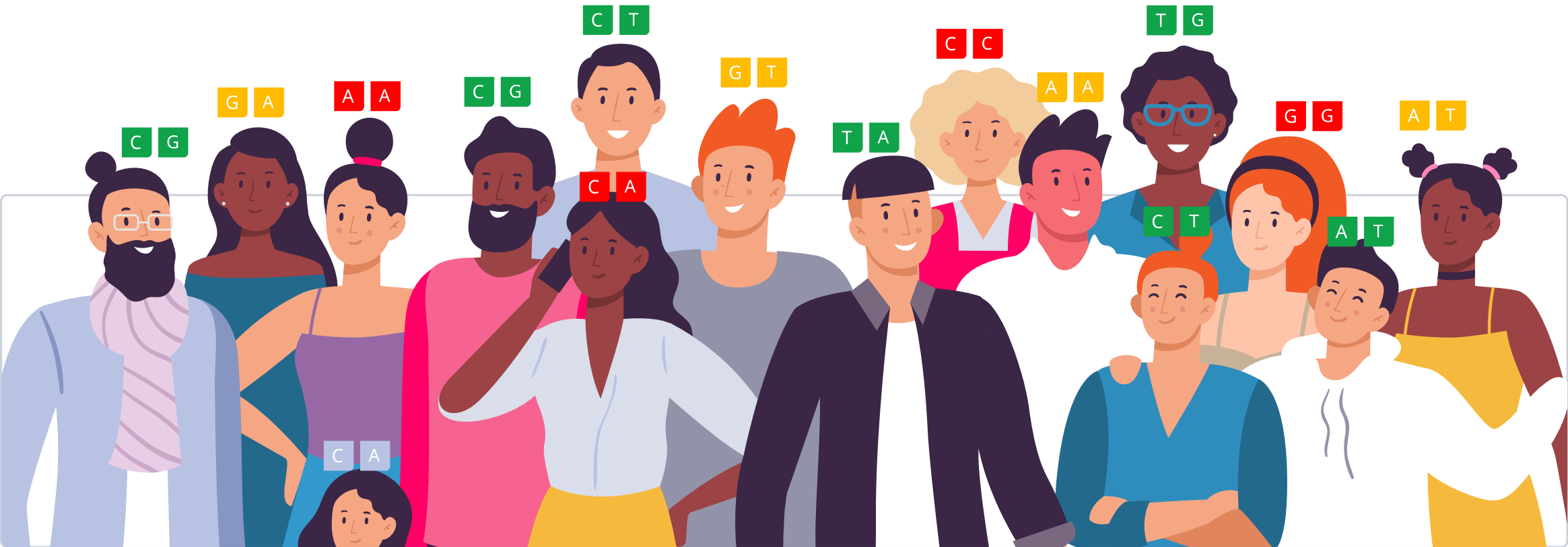


Similarly, our Trait Reports look at how your DNA influences your traits.



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

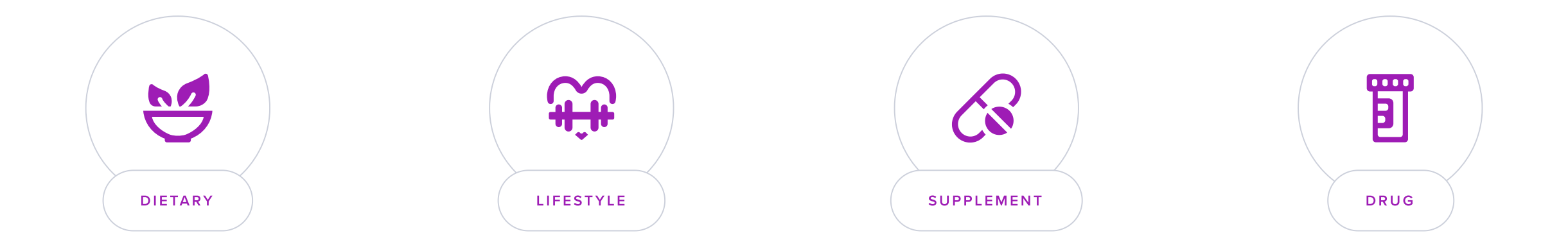
You have 2 risk alleles

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

Lung cancer is a cancer that affects the lungs. **It is the leading cause of cancer death in men and women** [\[R\]](#).

Signs and symptoms of lung cancer typically occur when the disease is advanced and include:

- Persistent cough
- Chest pain
- Shortness of breath
- Blood in the sputum
- Wheezing
- Fatigue
- Unintentional weight loss

When lung cancer spreads to other parts of the body, it may cause:

- Bone pain
- Headache
- Loss of appetite
- Swelling in the face or neck

Risk Factors and Treatment

Exposure to cigarette smoke is by far the main risk factor for lung cancer. Other factors that may increase the risk include [\[R\]](#):

- Exposure to asbestos and other substances
- Exposure to radon
- Previous radiation therapy to the chest
- Family history

Treatment for lung cancer usually begins with surgery to remove the tumor. If it's very large or has spread to other parts of the body, surgery may not be possible. Treatment might start with chemotherapy and radiation instead depending on factors such as overall health, cancer type and stage, and preferences of the patient. If the side effects of the treatment could outweigh its potential benefits, patients may be offered palliative care [\[R\]](#).

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.



LESS LIKELY

Less likely to have lung cancer based on **849,819** genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
GRIK1	rs363433	AC
FCHO2	rs42775	CT
/	rs11012129	TT
ZRANB1	rs76972397	TT
FECH	rs2437037	AA
GRAMD2B	rs77914729	CC
GRAMD2B	rs11954381	GG
CSMD1	rs13261356	CC
IRX2	rs12657742	AA
MAP7	rs3799451	AA
OSBPL1A	rs482962	CC
EML4	rs7593032	TT

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

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You’ll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE	
1	Avoid Secondhand Smoke	2	Avoid Asbestos
3	Fruits And Vegetables	4	Avoid Air Pollution
5	Avoid Radon	6	Dietary Antioxidants
7	Aerobic Exercise (Cardio)	8	Green Tea
9	Pyridoxine (Vitamin B6)	10	Cruciferous Vegetables
11	Methylfolate	12	Limit Red Meat Intake
13	Maintain Optimal Vitamin D Levels	14	Omega-3 (Fish Oil)
15	Avoid Organophosphate Pesticide Exposure	16	Avoid PAHs Exposure
17	Avoid Organochlorine Pesticide Exposure	18	Dietary Zinc
19	Vitamin K	20	Melatonin
21	Fish	22	Soy
23	Avoid Vitamin A Supplements	24	Mediterranean Diet
25	Progressive Muscle Relaxation	26	Massage
27	Avoid Beta-Carotene Supplements	28	Astragalus
29	Yoga	30	European Mistletoe
31	Garlic	32	Aloe Vera

33	Shiitake Mushroom	500 mg	34	Reishi	
35	Berberine	1000 mg	36	Avoid Pesticide Exposure	
37	Zinc	15 mg	38	Limit Coffee Intake	
39	Selenium Supplements	50 mcg	40	Acupuncture	1 hour
41	Tai Chi	1 hour	42	Vitamin C	2000 mg
43	Turkey Tail Mushroom	1000 mg	44	Mindfulness	30 minutes
45	Apples		46	Squalamine	
47	Avoid Arsenic Exposure		48	Airway Muscle Training	30 minutes
49	Airway Muscle Training and Endurance Training	30 minutes	50	Skullcap	1 g
51	Carrots		52	Avoid BPA (Bisphenol A) Exposure	
53	Avoid Formaldehyde Exposure		54	Avoid L-Histidine Supplements	

Avoid Secondhand Smoke

5 / 5

5 / 5

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.

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.

Smoking is the main risk factor for lung cancer. Compared to never-smokers, current smokers have 8.5 times higher risk while the risk may be 4 times higher in former smokers. Heavy smokers and those who have smoked for many years may be at even higher risk while reducing smoking intensity may help reduce it [R, R, R, R, R, R, R, R, R, R].

Although low-tar cigarette smokers tend to compensate by smoking more cigarettes, people who smoke them may have a slightly lower risk of lung cancer than those who smoke regular cigarettes [R, R, R].

Waterpipe smoking also increases the risk of lung cancer (by 2- to 4.5-fold) [R, R, R, R].

Secondhand exposure to cigarette smoke may increase the risk of lung cancer by up to 64% in non-smokers [R, R, R, R, R, R, R, R, R, R, R, R, R, R].

Lung cancer smokers may have a worse prognosis if they have ever smoked, especially if they continue to do so after diagnosis [R, R, R, R, R].

In addition, smoking may further increase the risk of lung cancer in people exposed to asbestos [R, R].

2



Avoid Asbestos

IMPACT

5 / 5

EVIDENCE

5 / 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 comprehensive analysis of asbestos exposure studies reveals significant risks associated with different types of exposure. For neighborhood exposure, particularly in areas with natural asbestos, and among women, there's a notable increase in lung cancer risk. In domestic settings, a meta-analysis shows a summary relative risk estimate (SRRE) of 5.02 for mesothelioma in asbestos-related occupations. Pleural abnormalities and lung cancer risk were also assessed, with limitations. In non-occupational exposure, the overall meta-relative risk (meta-RR) for pleural mesothelioma (PMM) was 5.9, with higher risks associated with specific asbestos fiber types. A study spanning 18 countries links asbestos consumption to mesothelioma deaths, emphasizing the need for better global surveillance. Occupational exposure had a confirmed presence in 2.6% of individuals, with increased lung cancer risk, especially in smokers. Cumulative exposure years and latent periods should inform new diagnostic criteria. A natural spline model indicates higher lung cancer risk at low asbestos exposure levels, particularly with chrysotile fibers. Combining asbestos exposure and smoking significantly increases lung cancer risk. Other studies emphasize the risks associated with neighborhood, domestic, and household asbestos exposure while varying exposure metrics and complexities in assessing health risks emerge as key findings [\[R, R, R, R, R, R, R, R, R, R, R, R, R\]](#).

 PERSONALIZED TO YOUR GENES

Exposure to asbestos may increase the risk of lung cancer more in people with your [FTMT](#) gene variant [\[R\]](#).

Exposure to asbestos may increase the risk of lung cancer more in people with your [MPO](#) gene variant [\[R\]](#).

Exposure to asbestos may increase the risk of lung cancer more in people with your [NLRP3](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
FTMT	rs1508805	AA	
EFNB3	rs12947788	GG	
NLRP3	rs35829419	CC	

3



Fruits And Vegetables

IMPACT

4 / 5

EVIDENCE

4 / 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

People who consume high amounts of fruits and vegetables may be at decreased risk of lung cancer. The protective effects may be stronger for fruits [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Increasing fruit and vegetable intake may also reduce the risk in current and former smokers [\[R\]](#), [\[R\]](#).

4



Avoid Air Pollution

IMPACT

4 / 5

EVIDENCE

4 / 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

Six Asian cohort studies (340,000 participants) suggest a potential link between PM2.5 exposure and cardiovascular mortality. NO2 exposure relates to increased cancer and lung cancer deaths.

European research found that even low PM2.5 and NO2 levels, below annual limits, increase non-accidental, cardiovascular, respiratory, and lung cancer deaths in seven cohorts. A Chinese study found higher lung cancer risk associated with indoor air pollution factors, but publication bias may affect results.

Asian studies suggest *GSTM1* and *GSTT1* null polymorphisms may increase lung cancer risk, especially in coal-exposed areas. Long-term PM2.5 exposure elevates non-accidental, lung cancer, and cardiovascular mortality risk by 6% per 10 microg/m3, with traffic proximity also a risk factor. Controversial 1990s cohort studies on air pollution's health effects are updated and supplemented with newer research, showing strong links to all-cause, cardiopulmonary, and lung cancer mortality [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

 PERSONALIZED TO YOUR GENES

Exposure to cooking oil fumes may increase the risk of lung cancer more in people with your [OGG1](#) gene variant [R].

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
OGG1	rs1052133	CC	

5



Avoid Radon

IMPACT4 / 5

EVIDENCE4 / 5

Description

Radon is a naturally occurring radioactive gas that forms from the decay of uranium in soil, rock, and water. It is colorless, odorless, and tasteless, making it undetectable without specialized equipment. Radon can enter buildings through cracks in foundations, gaps around pipes, and other openings, where it can accumulate to potentially hazardous levels.

Exposure to high levels of radon over time increases the risk of developing lung cancer, particularly in smokers. When radon gas is inhaled, it decays into radioactive particles that can induce mutations in the lung tissue. Radon is the second leading cause of lung cancer after smoking and is responsible for thousands of lung cancer deaths each year worldwide.

Because radon is ubiquitous in the environment, it is essential for homeowners to test their homes for radon levels regularly and take steps to mitigate any elevated concentrations. Simple measures such as sealing cracks in foundations, improving ventilation, and installing radon mitigation systems can significantly reduce radon levels.

How it helps

Experts agree that radon exposure is the second main risk factor for lung cancer. The health effects of radon exposure are cumulative, meaning that the risk of lung cancer increases with prolonged exposure to elevated levels of radon gas. Smoking is most strongly associated with small-cell lung carcinoma and further increases the risk in smokers [R, R, R, R, R].

People who live in an area where radon is known to be a hazard should have the radon levels in their homes checked. Measures such as sealing the foundations or increasing ventilation may prevent the buildup of this gas [R, R].

Occupational exposure to radon may also increase the risk of lung cancer. For instance, uranium miners may have a 86-123% higher risk [R].

6



Dietary Antioxidants

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

Incorporate foods rich in antioxidants, such as fruits (berries, oranges, plums), vegetables (spinach, kale, bell peppers), nuts (walnuts, almonds), and seeds (flaxseeds, chia seeds) into your daily meals. Aim for at least 5 servings of fruits and vegetables per day, ensuring a variety of colors to cover different antioxidants.

Description

Dietary antioxidants are compounds found in foods that help neutralize harmful molecules called free radicals, potentially reducing the risk of oxidative stress-related diseases and supporting overall health. Examples include vitamins C and E, beta-carotene, and polyphenols.

Our cells sometimes produce molecules called **reactive oxygen species (ROS)** [\[R\]](#).

High levels of ROS can cause [oxidative stress](#) and damage our cells. Oxidative stress plays a role in many health conditions, including [\[R\]](#):

- High blood sugar
- Type 2 diabetes
- Heart disease

Antioxidants are substances that help combat ROS [\[R\]](#).

Antioxidants are found in many plants. Good sources include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Fruits like tomatoes, berries, and pomegranates
- Vegetables like onions, spinach, and celery
- Chocolate
- Olive oil
- Wine

How it helps

People eating a diet rich in antioxidants from fruits and vegetables, especially flavonoids, may be at decreased risk of lung cancer. Similarly, high blood levels of carotenoids have been associated with a decreased risk of lung cancer [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

7



Aerobic Exercise (Cardio)

IMPACT

4 / 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 exercise slightly reduces the risk of lung cancer in current and former smokers, but not in never-smokers [\[R, R, R, R, R, R\]](#).

In lung cancer patients, **aerobic exercise (cardio)** may improve cardiorespiratory and physical fitness, lung function, mood, anxiety, and quality of life [\[R, R, R, R, R, R\]](#).

Moreover, exercise before surgery may reduce hospital stay length and the risk of complications while exercise after surgery may [\[R, R, R, R, R, R, R, R\]](#).

8



Green Tea

IMPACT

4 / 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

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

[Two more meta-analyses \(the largest one with 38 studies\)](#) associated tea intake with **up to 51% lower risk of lung cancer. The protective effects were confirmed in women, Western studies, and Chinese and Japanese studies. Both green and black tea were protective** [\[R\]](#), [\[R\]](#).

A [meta-analysis of 22 studies](#) found high green tea intake **reduces the risk of lung cancer by ~28%, while every 2 additional cups per day reduce it by 22%** [\[R\]](#).

Black tea was found to have no effect in that meta-analysis [\[R\]](#).

 PERSONALIZED TO YOUR GENES

Drinking green tea may reduce the risk of lung cancer more in people with your [COMT](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
COMT	rs4680	AG	

9



Pyridoxine (Vitamin B6)

IMPACT4 / 5

EVIDENCE3 / 5

How to implement

Take a pyridoxine (vitamin B6) supplement daily. Requirements range from 1.3 to 1.7 milligrams per day for adults, but supplement doses usually start from 50 mg. Consult with a healthcare provider for higher doses or specific medical conditions that might benefit from increased supplementation.

TYPICAL STARTING DOSE

50 mg

Description

A **vitamin B6 supplement** of up to 1.3-1.7 mg per day can be taken to meet needs not achieved through diet. Long term supplementation of vitamin B6 can be problematic, so talk to your doctor before using.

How it helps

High dietary intake of vitamin B6 may reduce the risk of lung cancer. However, vitamin B6 supplementation may not help. In line with this, people with high blood levels of this vitamin may be at decreased risk of lung cancer. Vitamin B6 may be most protective in men and ever smokers [\[R\]](#), [\[R\]](#), [\[R\]](#).

10



Cruciferous Vegetables

IMPACT4 / 5

EVIDENCE3 / 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

People who regularly eat cruciferous vegetables may be at decreased risk of lung cancer. The protective effects may be strongest in never-smokers [\[R\]](#), [\[R\]](#), [\[R\]](#).

In lung cancer patients, a high dietary intake of cruciferous vegetables before diagnosis may increase survival [\[R\]](#).

Glucosinolates in cruciferous vegetables may be responsible for their protective effects [\[R\]](#).

11



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

In 5 case-control studies, higher folate levels were associated with reduced lung cancer risk. Odds ratios: 0.82 (men), 0.70 (former smokers), 0.86 (non-smokers). Strongest protection in former smokers compared to non-smokers and current smokers [\[R\]](#).

A meta-analysis found higher folate intake significantly reduces lung cancer risk. Another analysis suggested a marginal link between high serum folate and lung cancer risk. Subgroup analysis showed a significant association. Higher folate intake may protect against lung cancer, with varying results for serum folate [\[R\]](#).

This study included 9 cohort studies examining the impact of folate intake on lung cancer. High folate intake didn't significantly affect lung cancer risk, nor did a 100 µg/day increase in folate intake. Subgroup analyses showed different effects in men and women [\[R\]](#).

The MTHFR C677T polymorphism showed no significant overall association with lung cancer risk. However, in the analysis by histological type, it was linked to an increased risk of non-small-cell lung cancer (NSCLC) but a decreased risk in ever-smokers [\[R\]](#).

12



Limit Red Meat Intake

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Limit your red meat consumption to no more than three portions per week, with each portion being about 3-4 ounces (85-113 grams), roughly the size of a deck of cards. Opt for leaner cuts of meat and consider replacing some red meat meals with poultry, fish, or plant-based protein sources.

Description

Limiting red meat intake involves reducing the frequency and portion sizes of beef, pork, and lamb in your diet. The recommendation encourages choosing alternative protein sources such as poultry, fish, beans, and legumes. It emphasizes moderation to improve health outcomes--including lower risks of heart disease and cancer--and promotes a balanced and varied diet.

How it helps

Three meta-analyses (the most recent one with 148 studies) associated high intake of red meat with 24-35% higher risk of lung cancer. Processed meat increased the risk by 6-12% but poultry reduced it (by ~10%) [\[R, R, R\]](#).

13



Maintain Optimal Vitamin D Levels

IMPACT3 / 5

EVIDENCE3 / 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

People with high blood vitamin D levels may be at decreased risk of lung cancer [\[R, R, R, R, R\]](#).

Similarly, high vitamin D intake may reduce the risk of lung cancer. Both vitamin D-rich foods and supplements may help [\[R, R, R, R\]](#).

In lung cancer patients, high vitamin D levels have been associated with increased survival and decreased relapse rate [\[R, R, R, R, R\]](#).

14



Omega-3 (Fish Oil)

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Take 1-2 g of omega-3 (fish oil) supplement daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

2000 mg

Description

Omega-3 fatty acids are essential fats found in fatty fish like salmon, flaxseeds, and walnuts. They are known for their potential cardiovascular and brain health benefits, including reducing the risk of heart disease and supporting cognitive function.

[Omega-3 fatty acids](#) are some of the healthiest fats we can eat. They help lower inflammation and protect the heart, brain, and eyes. Our bodies produce less omega-3s than we need for optimal health, so it's important to get enough through food or supplements [\[R\]](#), [\[R\]](#), [\[R\]](#).

There are three major types of omega-3s: ALA, EPA, and DHA [\[R\]](#), [\[R\]](#).

Fatty fish are rich in EPA and DHA. They include [\[R\]](#):

- Salmon
- Tuna
- Herring
- Sardines

For optimal protection, try to get at least **two servings of fatty fish per week**. Fish oil supplements are available for those who don't eat fish regularly [\[R\]](#).

How it helps

People who regularly eat fish may be at decreased risk of lung cancer [\[R\]](#), [\[R\]](#).

In line with this, genetically higher omega-3 levels may reduce the risk of lung cancer [\[R\]](#).

In lung cancer patients, supplementation with fish oil may nutritional status, weight and muscle mass maintenance, physical performance, quality of life, and chemotherapy effectiveness while reducing fatigue, loss of appetite, neuropathy, oxidative stress, and the levels of CRP and IL-6 [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

15



Avoid Organophosphate Pesticide Exposure

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

To reduce organophosphate pesticide exposure, buy organic produce when possible, thoroughly wash and peel fruits and vegetables, avoid using chemical pesticides in your home and garden, and wear protective clothing and a mask if you must handle pesticides for agricultural or landscaping work.

Description

Reducing organophosphate exposure involves minimizing contact with pesticides and insecticides containing these chemicals, which can protect against potential health risks such as neurotoxicity and respiratory issues, particularly for individuals working in agriculture or pest control.

Organophosphates (OP) are the most widely used pesticides worldwide. They include [\[R\]](#):

- Parathion
- Malathion
- Chlorpyrifos
- Diazinon
- Phosmet

Chronic exposure to OPs has been linked to [\[R\]](#), [\[R\]](#):

- Fertility problems
- Cognitive problems
- Nerve damage
- Cancer and gene damage

How it helps

This study analyzed 58 studies on occupational exposures and follicular lymphoma (FL). It found positive associations with DDE, PCBs, solvents, and chlorinated solvents, with limited data on other exposures [\[R\]](#).

16

Avoid PAHs Exposure

IMPACT

3 / 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

Polycyclic aromatic hydrocarbon (PAH) mixtures are lung carcinogens, with a URR of 1.20 at 100 µg/m3 years benzo[a]pyrene in occupational studies. Industry-related variations exist, with increased risks in asphalt and chimney sweep workers, but no significant variations within industries or study designs [R].

PAH exposure in certain industries, like iron and steel foundries and aluminum production, is associated with increased risks of respiratory tract and bladder cancers, though potential bias remains uncertain [R].

PAH exposure raises lung cancer risk significantly across industries, with the highest risk in coal gasification (2.58 times). Bladder cancer risk varies but is significant in aluminum production, coal gasification, and iron and steel foundries [R].

In a study with 16,901 lung cancer cases and 20,965 controls, PAH exposure raised the risk of lung cancer by 8% in men and 20% in women. Stratified by smoking and histologic subtype, never-smoking men had an increased risk if they were exposed to PAHs [R].

17

Avoid Organochlorine Pesticide Exposure

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Minimize exposure by choosing organic fruits and vegetables, thoroughly washing produce before consumption, and avoiding areas where organochlorine pesticides are applied. Consider using air purifiers in homes close to agricultural areas to reduce indoor pesticide levels.

Description

Reducing organochlorine pesticide exposure involves minimizing contact with pesticides like DDT, which can accumulate in the body and potentially lead to adverse health effects, including disruption of hormonal functions and carcinogenicity.

How it helps

This study used PRISMA Guidelines to review 32 studies on cancer occurrence among pesticide applicators. Most pesticides were associated with increased cancer risk, with lung cancer being the most prevalent [R].

18



Dietary Zinc

IMPACT3 / 5

EVIDENCE2 / 5

How to implement

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

Description

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

How it helps

High blood zinc levels may reduce the risk of lung cancer [\[R\]](#).

In line with this, a study found lower zinc levels in lung cancer patients [\[R\]](#).

19



Vitamin K

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Take a vitamin K supplement of around 90-120 micrograms daily with a meal that contains fat for optimal absorption. This dosage is appropriate for adult maintenance of health and should be adjusted based on individual healthcare provider advice.

TYPICAL STARTING DOSE

90 mcg

Description

Vitamin K encompasses two main forms: vitamin K1 (phylloquinone) and vitamin K2 (menaquinone). Vitamin K1 is primarily found in leafy green vegetables and plays a crucial role in blood clotting. Vitamin K2, sourced from animal products and fermented foods, is known for its potential to promote bone health and cardiovascular wellness.

Vitamin K is essential for blood clotting and bone formation [\[R\]](#).

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

- Green leafy vegetables, such as kale, spinach, and collards
- Soy products, such as natto, roasted soybeans, and edamame
- Carrot juice
- Pumpkin

Healthy adults should get **120 micrograms** of vitamin K per day [\[R\]](#).

How it helps

A study of 24,340 participants associated high vitamin K intake with a reduced overall cancer incidence (by 16%) and mortality (by 38.8%). Vitamin K was especially effective at preventing lung and prostate cancer [\[R\]](#).

20



Melatonin

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

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

TYPICAL STARTING DOSE
500 mcg

Description

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

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

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

How it helps

In lung cancer patients receiving chemotherapy, supplementation with melatonin may improve disease stabilization, survival, and quality of life while reducing adverse effects of the chemotherapy [\[R, R, R, R, R, R, R, R, R, R\]](#).

Melatonin may also increase the effectiveness and tolerance of immunotherapy with IL-2 [\[R, R, R, R\]](#).

21



Fish

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

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

Description

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

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

Fatty fish are rich in EPA and DHA. They include [\[R\]](#):

- Salmon
- Tuna
- Herring
- Sardines

For optimal protection, try to get at least **two servings of fatty fish per week**. Fish oil supplements are available for those who don’t eat fish regularly [\[R\]](#).

How it helps

Two meta-analyses (the most recent one with 15 studies and 1,785,000 participants) associated fish consumption with up to 26.6% reduced risk of lung cancer. Every 5-g/day increment of dietary PUFA was associated with 5% lower risk [\[R, R\]](#).

22



Soy

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Incorporate soy-based products such as tofu, soy milk, and edamame into your daily diet. Aim for at least one serving per day, equivalent to about a cup of soy milk, a half-cup of cooked soybeans, or a 3-ounce piece of tofu.

Description

Soy is a legume native to East Asia, and its health benefits include being a source of plant-based protein, fiber, and various vitamins and minerals. It is known for its potential to support heart health, reduce cholesterol levels, and provide essential nutrients in vegetarian and vegan diets.

Soy is a common food in many cuisines around the world, especially Asian cuisines [\[R\]](#).

It’s a great source of [\[R\]](#), [\[R\]](#):

- Plant-based protein
- Fiber
- Omega-3 fats
- Antioxidants (isoflavones)

Soy-based foods include [\[R\]](#):

- Soy beverages
- Tofu
- Tempeh
- Edamame
- Miso
- Natto

Soy protein and soy isoflavones are also available as supplements.

How it helps

Dietary soy may reduce the risk of lung cancer, especially of aggressive tumors. Soy may be most protective in women, never-smokers, and Asian populations [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

In lung cancer patients, a high soy intake before diagnoses has been associated with increased survival [\[R\]](#).

23



Avoid Vitamin A Supplements

IMPACT2 / 5

EVIDENCE2 / 5

Description

Vitamin A is a fat-soluble vitamin essential for various bodily functions, including vision, immune system support, and skin health. It is found in foods like carrots, sweet potatoes, and spinach and is important for maintaining overall health.

Vitamin A is a nutrient important for [\[R\]](#), [\[R\]](#):

- Vision
- Immunity
- Gut health
- Skin health

Foods rich in vitamin A include [\[R\]](#):

- Beef liver
- Sweet potato
- Spinach
- Carrots
- Cheese

Vitamin A is also available in supplement form.

Women should be getting 700 micrograms of vitamin A per day, while men should be getting 900 micrograms [\[R\]](#).

How it helps

Genetically predicted higher levels of retinol intake may be associated with an increased risk of lung cancer [\[R\]](#).

Taking vitamin A supplements may increase the risk in smokers and asbestos workers [\[R\]](#), [\[R\]](#).

24



Mediterranean Diet

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate a variety of primarily plant-based foods, such as fruits, vegetables, whole grains, nuts, and legumes, into every meal. Choose healthy fats, like olive oil, over saturated fats and consume fish and poultry at least twice a week. Limit red meat to a few times a month and include a moderate amount of dairy products. Opt for water and red wine in moderation as your beverages.

Description

The [Mediterranean diet](#) is based on the traditional cuisine from the Mediterranean regions. It moderates the intake of red meat and dairy, while being rich in fruits and vegetables, whole grains, and healthy fats ([olive oil](#)).

The [Mediterranean diet](#) focuses on traditional cuisine from the Mediterranean regions. It’s rich in [\[R\]](#):

- [Olive oil](#)
- Fruits and vegetables
- Whole grains
- Nuts and seeds
- Fish

This type of diet may **reduce inflammation and protect the brain and heart** [\[R, R, R, R\]](#).

Limited intake of animal products, saturated fat, and refined sugar likely contribute to the health benefits of the Mediterranean diet [\[R\]](#).

How it helps

Adherence to a Mediterranean diet may reduce the risk of lung cancer. The Mediterranean diet may be especially protective in former smokers [\[R\]](#).

25



Progressive Muscle Relaxation

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Set aside at least 10-15 minutes daily in a quiet, comfortable spot where you won't be disturbed. Start by tensing the muscles in your feet for 5 seconds, then relax for 30 seconds, and progressively work your way up through the major muscle groups of your body, tensing then relaxing each for 5 and 30 seconds respectively.

TYPICAL STARTING DOSE
10 minutes

Description

Progressive Muscle Relaxation is a relaxation technique involving the systematic tensing and releasing of muscle groups to reduce muscle tension, stress, and anxiety. Regular practice can lead to improved physical and mental relaxation.

Progressive muscle relaxation is a relaxation technique focused on releasing muscle tension. In this technique, you focus on tensing and relaxing different parts of your body, one after the other, to relieve stress [R](#), [R](#)].

It is common to start with the toes and slowly work your way up to the neck and head. Try to focus on a single muscle group at a time (for example, the calf muscles). Tense these muscles for 5-10 seconds, then relax for 20-30 seconds before moving on to the next muscle group [R](#), [R](#)].

How it helps

A meta-analysis of 6 studies and 288 cancer patients concluded that progressive muscle relaxation relieves chemotherapy-induced nausea and vomiting. In a non-placebo-controlled trial of 84 lung cancer patients receiving chemotherapy, progressive muscle relaxation reduced the frequency, severity, and level of distress [R](#), [R](#)].

26



Message

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Schedule a massage session, ideally with a licensed therapist, for 30-60 minutes, once a week. Choose a type of massage that suits your specific needs, such as Swedish for relaxation or deep tissue for muscle tension.

TYPICAL STARTING DOSE

30 minutes

Description

Massage therapy involves the manipulation of soft tissues to relax muscles, reduce stress, and alleviate pain. It can improve circulation, promote relaxation, and provide relief from various physical and mental health concerns.

If you’ve ever had a professional [massage](#), then you probably know how much good it can do. Massages may help with [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Anxiety
- Pain
- Fatigue

Reflexology is a type of massage. It involves applying pressure to specific parts of your feet or hands. In theory, by pressing on these areas, you can relieve tension from other parts of the body [\[R\]](#).

Acupressure is a similar technique, in which pressure points are used to help with stress and pain [\[R\]](#), [\[R\]](#).

How it helps

In a non-placebo-controlled trial of 28 patients with lung cancer, receiving a massage on the back for 10 minutes decreased pain in men but not in women [\[R\]](#).

Foot reflexology increased relaxation while reducing anxiety, pain intensity, and nausea in 3 non-placebo-controlled trials of 196 cancer patients (many of them with lung cancer) [\[R\]](#), [\[R\]](#), [\[R\]](#).

27



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

High dietary vitamin A and beta-carotene intake may slightly reduce the risk of lung cancer. Similarly, genetically higher beta-carotene levels may reduce the risk of lung adenocarcinoma [R, R, R].

However, taking beta-carotene supplements may increase the risk. The negative effects of beta-carotene supplements may be strongest in smokers and asbestos workers [R, R, R, R].

28



Astragalus

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a 500 mg astragalus supplement once daily with a meal. Continue this regimen for at least 4 to 6 weeks to evaluate its effectiveness on your overall health.

TYPICAL STARTING DOSE

500 mg

Description

Astragalus is an herb used in traditional Chinese medicine. It is believed to have immune-boosting properties and may help reduce stress and support overall vitality.

[Astragalus](#) (*Astragalus membranaceus*) is an herb used in traditional Chinese medicine. It is commonly used for “tonifying Qi” or fatigue. It may help [\[R\]](#), [\[R\]](#):

- Reduce inflammation
- Fight [oxidative stress](#)

Astragalus root is a staple of traditional Chinese medicine, where it is also known as *Huang Qi*.

How it helps

A [systematic review and meta-analysis of 34 randomized trials with 2,815 patients with advanced non-small-cell lung cancer](#) found that Astragalus-based Chinese herbal medicine in combination with platinum-based chemotherapy **reduced the risk of death at 12 months and improved tumor response** compared to chemotherapy alone. With Jin Fu Kang, a specific herbal combination, **the risk of death at 24 months also dropped and tumor response increased** [\[R\]](#).

Another [systematic review and meta-analysis of 17 RCTs with 1552 patients](#) with advanced non-small-cell lung cancer (NSCLC) found that platinum-based chemotherapy combined with Astragalus-based Chinese botanicals, **increased overall survival, 1-year, 2-year, and 3-year survival rates, performance status, and tumor overall response rate**. It was also better on syndrome differentiation and reduced side effects [\[R\]](#).

A more recent [systematic review of 19 RCTs involving 1635 patients with advanced nonsmall cell lung cancer \(NSCLC\)](#) found that Astragalus injection (AGI) in combination with platinum-based chemotherapy may **improve the objective response rate, Karnofsky performance status, and 1-year survival rate** compared to chemotherapy alone. It also **increased the percentages of CD3, CD4, CD4/CD8, and NK cells**, while **decreasing the incidence of leukopenia, platelet toxicity, and vomiting**. However, the quality of evidence was low [\[R\]](#).

29



Yoga

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Practice yoga for at least 20 to 30 minutes a day, most days of the week. Choose a style that matches your fitness level and goals, and consider attending a class or using online resources to guide your practice.

TYPICAL STARTING DOSE
30 minutes

Description

Yoga is a mind-body practice that combines physical postures, breathing exercises, and meditation. It enhances flexibility, strength, and mental well-being and is used for stress reduction, relaxation, and overall health improvement.

[Yoga](#) combines breathing, stretching, and relaxation techniques. Practicing yoga may help [\[R, R, R\]](#):

- Reduce [stress](#)
- Improve fitness
- Lower blood pressure and heart rate
- Manage pain

How it helps

In 5 non-placebo-controlled trials of 97 lung cancer patients, yoga interventions (up to 14 weeks) improved physical and breathing function, mood, fatigue, sleep efficiency, and quality of life [\[R, R, R, R, R\]](#).

30



European Mistletoe

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

European mistletoe extracts are typically administered subcutaneously, intravenously, or orally, with dosages tailored to individual patient needs and specific health conditions. Subcutaneous injections of mistletoe extracts are commonly administered several times per week, with doses typically starting at around 0.1 to 0.5 milligrams per injection and gradually increasing to higher doses as tolerated. Intravenous administration may involve similar dosing regimens but requires careful monitoring by healthcare professionals due to the potential for adverse reactions. Oral preparations of European mistletoe, such as capsules or tinctures, may also be used for certain health conditions.

Description

European mistletoe (*Viscum album*) is a semi-parasitic plant native to Europe and parts of Asia. It grows on various tree species. While often associated with festive decorations during the holiday season, European mistletoe has a long history of medicinal use dating back to ancient times.

In traditional medicine, European mistletoe has been employed for its purported health benefits in the treatment of conditions such as hypertension, arthritis, and epilepsy. However, its most well-known application is in the realm of complementary and alternative cancer therapies. Research suggests that mistletoe extracts may possess immunomodulatory, cytotoxic, and apoptotic effects. As such, mistletoe therapy, also known as *Viscum* therapy, is sometimes used alongside conventional cancer treatments as a complementary approach to support overall well-being and improve quality of life.

How it helps

In a non-placebo-controlled trial of 224 cancer patients (94 of them with non-small cell lung cancer), supplementation with European mistletoe extract as an add-on to standard chemotherapy reduced the side effects of chemotherapy and improved quality of life [\[R\]](#).

In another non-placebo-controlled trial of 158 stage-IV non-small cell lung cancer patients, receiving European mistletoe improved survival by 9 months. Overall survival at 1 and 3 years was 60.2% and 25.7%, respectively (compared to 35.5% and 14.2% in the control group) [\[R\]](#).

A meta-analysis of 32 studies concluded that European mistletoe extract improves cancer survival. However, they found it least effective for lung cancer (risk reduction by 19%) and most effective for cervical cancer (risk reduction by 132%) [\[R\]](#).

31



Garlic

IMPACT

2 / 5

EVIDENCE

2 / 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

Consuming raw garlic up to 2x/week may reduce the risk of lung cancer by 78.57% while consuming it over 2x/week may reduce it by 2-fold [\[R\]](#).

However, garlic supplements may not reduce the risk of lung cancer [\[R\]](#).

32



Aloe Vera

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a 50 mg Aloe vera supplement daily, with a glass of water, preferably at the same time each day to maintain consistency.

TYPICAL STARTING DOSE

50 mg

Description

Aloe vera is a succulent plant native to arid regions and contains a gel-like substance in its leaves that is rich in vitamins, minerals, and antioxidants, making it beneficial for soothing skin irritations, promoting wound healing, and providing relief from conditions such as sunburn and minor burns. The primary active compounds in aloe vera gel include polysaccharides, vitamins like vitamin C and E, and minerals such as zinc, which contribute to its healing and anti-inflammatory effects.

[Aloe vera](#) lives in the desert, and its thick leaves store water in the form of a gel [\[R\]](#).

People use aloe gel to help soften the skin and soothe burns [\[R\]](#).

Oral aloe supplements may help with blood sugar and gut health [\[R\]](#).

How it helps

In a non-placebo-controlled trial of 240 patients with metastatic cancers, supplementation with aloe (10 mL, 3x/day) as an add-on to chemotherapy (cisplatin and etoposide or weekly vinorelbine in the case of lung cancer) improved objective tumor regression, disease control, and 3-year survival [\[R\]](#).

Similarly, aloe tincture (1 mL, 2x/day) improved the effectiveness of melatonin in a non-placebo-controlled trial of 50 patients with different cancer types. The combination achieved a partial response in 8.3% (vs 0% in the control group), stable disease in 50% (vs 27% in the control group), and 1-year survival in 37.5% (vs 15% in the control group) [\[R\]](#).

33



Shiitake Mushroom

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take shiitake mushroom in supplement form, typically ranging from 500 to 1,000 mg per day, divided into two or three doses. It can be consumed with or without food. Continue this regimen daily for at least one to two months to observe potential health benefits.

TYPICAL STARTING DOSE
500 mg

Description

Shiitake mushrooms are edible fungi native to east Asia. They contain compounds like lentinan, which may have immune-boosting properties.They are also rich in vitamins, minerals, and compounds like beta-glucans, which are believed to support immune health and overall well-being.

How it helps

Injection with the shiitake's component lentinan may improve the effectiveness of chemotherapy, survival, and response rate, while reducing adverse events, in lung cancer patients [R, R].

34



Reishi

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a reishi mushroom supplement, ranging from 500mg to 1500mg once daily. It is best consumed with water and can be taken with or without food. Continue consistently for at least 2 to 3 months to observe potential benefits.

Description

Reishi (Ganoderma lucidum) is a type of medicinal mushroom consumed in various forms, including teas, extracts, and capsules. Native to Asia, reishi has been used for centuries in traditional Chinese medicine for its potential to boost the immune system, promote relaxation, and support overall well-being. Reishi contains various compounds, including triterpenes and polysaccharides.

How it helps

Reishi mushroom may increase lung tumor response and immune function when used as an add-on to conventional therapies. Reishi may also reduce the adverse effects of chemotherapy [R, R, R].

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Berberine

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EVIDENCE1 / 5

How to implement

Take 500 mg of berberine two times a day before meals. Continue this regimen for up to three months, then evaluate its effects with your healthcare provider.

TYPICAL STARTING DOSE

1000 mg

Description

Berberine is a compound found in certain plants, known for its potential to support blood sugar control and heart health.

[Berberine](#) is an active compound of some plants used in traditional medicine, such as [\[R\]](#):

- European barberry
- Oregon grape
- Goldenseal
- Chinese goldthread
- Tree turmeric

Berberine is also available as a supplement. People use it to help with [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Diabetes
- High cholesterol
- High blood pressure
- PCOS

How it helps

In a placebo-controlled trial of 85 patients with lung cancer, taking berberine (20 mg/kg/day) as an add-on to radiation therapy for 6 weeks reduced the incidence of radiation-induced lung injury and decreased the levels of sICAM-1 and TGF-beta1 [\[R\]](#).

A meta-analysis of 26 animal studies concluded that berberine has anti-tumor effects in several cancer types, especially breast and lung cancer [\[R\]](#).

36



Avoid Pesticide Exposure

IMPACT

2 / 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

Five papers with six reports were analyzed. The lung cancer mortality rate was 1.18 (95% CI: 1.03-1.35, p=0.014) with moderate heterogeneity. No publication bias was detected. Conclusion: Chlorophenol-related compounds may increase lung cancer risk [\[R\]](#).

37



Zinc

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

15 mg

Description

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

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

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

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

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

How it helps

Zinc supplementation has been investigated in various contexts related to lung health and cancer, although direct studies focusing specifically on lung cancer are limited. Here are some key findings:

- Zinc supplementation, particularly in the form of zinc oxide nanoparticles, has demonstrated therapeutic potential in lung cancer models. For example, zinc oxide-loaded syringic acid showed protective effects against benzo(a)pyrene-induced lung cancer in a mouse model, indicating the potential for zinc in cancer therapy [\[R\]](#).
- Zinc oxide nanoparticles have been found to induce apoptosis and migration blocking in human lung cancer cells, suggesting a role for zinc in inhibiting cancer cell proliferation and potentially reducing tumor burden [\[R\]](#).
- Zinc status impacts epidermal growth factor receptor and downstream protein expression in A549 lung cancer cells, suggesting a link between zinc levels and lung cancer cell biology [\[R\]](#).
- Zinc supplementation has been shown to ameliorate lung injury by reducing neutrophil recruitment and activity, which could have implications for inflammatory responses in lung cancer [\[R\]](#).

These studies suggest potential benefits of zinc supplementation for lung cancer, particularly in enhancing the efficacy of chemotherapy and affecting cancer cell biology. However, more research is needed to fully understand the mechanisms and to establish clinical protocols for zinc supplementation in lung cancer patients.

38



Limit Coffee Intake

IMPACT1 / 5

EVIDENCE3 / 5

How to implement

Reduce your coffee consumption to no more than 2-3 cups (approximately 200-300 mg of caffeine) per day. Try to avoid drinking coffee after 2 PM to minimize potential impacts on sleep.

Description

Limiting coffee consumption can help prevent potential side effects like jitteriness, insomnia, and increased heart rate, while allowing for better sleep quality and overall energy regulation. Moderation in coffee intake supports overall well-being without overstimulation.

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

However, **coffee also comes with some drawbacks**. Drinking a lot of coffee can increase blood pressure and anxiety. It may also cause headaches [\[R, R, R\]](#).

How it helps

Some studies have associated a high coffee intake with an increased risk of lung cancer. However, the evidence is mixed [\[R, R, R, R\]](#).

Moreover, smoking may be a confounder for this association. Some studies only found an increase risk among coffee drinkers who were also smokers [\[R, R\]](#).

39



Selenium Supplements

IMPACT1 / 5

EVIDENCE2 / 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 may reduce lung cancer risk in people with low selenium levels but potentially increase risk in those with high levels. Hence, selenium is not recommended for general prevention. However, selenium may help reduce the side effects of some cancer treatments [\[R\]](#).

How to implement

TYPICAL STARTING DOSE

1 hour

Description

Acupuncture is a part of traditional Chinese medicine. It involves **inserting thin needles at specific points on the body**. People use it to [R, R, R, R, R]:

- Relieve pain
- Improve sleep quality
- Relieve allergies
- Reduce nausea

How it helps

Acupuncture may reduce fatigue, shortness of breath, and post-surgical constipation, while improving quality of life, in lung cancer patients. Moreover, it may prevent radiation pneumonitis and preserve lung function [R, R, R, R, R, R].

How to implement

TYPICAL STARTING DOSE

1 hour

Description

Tai chi involves gentle movements and breathing to strengthen and relax the mind and body. Practicing tai chi may help [R, R, R]:

- Manage pain
- Improve fitness
- Increase well-being
- Improve sleep and mood

How it helps

A meta-analysis of 6 trials and 373 cancer patients found that tai chi relieves cancer-related fatigue, especially in patients with lung or breast cancer [R].

How to implement

TYPICAL STARTING DOSE

2000 mg

Description

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 21 studies with 8,938 lung cancer cases found that higher vitamin C intake significantly reduced lung cancer risk (RR = 0.829). Risk decreased by 7% for each 100mg/day increase in vitamin C intake, especially in the US and in prospective studies. No publication bias was detected, supporting a protective effect of vitamin C against lung cancer [R].

However, In a study of 3,206 lung cancer cases, vitamin intake seemed to lower risk, but after adjusting for smoking and other factors, the effect diminished. Pooled results showed no significant reduction in lung cancer risk for vitamins A, C, E, or folate when considering food intake alone. Additionally, vitamin supplements did not show any significant risk reduction [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 [\[R, R\]](#).

43



Turkey Tail Mushroom

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a turkey tail mushroom supplement in capsule or powder form, usually ranging between 1,000 to 3,000 mg per day. Divide this dosage into two to three separate doses to be taken with meals throughout the day. Continue this regimen daily for immune support or as directed by a healthcare provider.

TYPICAL STARTING DOSE

1000 mg

Description

Turkey tail mushrooms (*Trametes versicolor*) are a type of mushroom that grows on decaying wood in various parts of the world. They are valued for their potential health benefits due to the presence of compounds like polysaccharopeptide (PSP) and polysaccharide-K (PSK), which have been studied for their immune-boosting properties and potential use in supporting cancer treatment.

How it helps

A double-blind placebo-controlled study evaluated PSP effects on advanced NSCLC patients post-conventional treatment. PSP group showed improved blood parameters and body fat. Disease progression withdrawal was significantly lower. No adverse reactions were reported [\[R\]](#).

44



Mindfulness

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Set aside 5-10 minutes each day to practice mindfulness meditation. Find a quiet place, assume a comfortable seated position, close your eyes, focus on your breathing, and observe your thoughts and sensations without judgment.

TYPICAL STARTING DOSE

30 minutes

Description

Mindfulness involves paying focused and non-judgmental attention to the present moment. It can reduce stress, improve emotional regulation, and enhance overall mental clarity and well-being.

Mindfulness is the practice of being aware of the present moment. When practicing mindfulness, a person acknowledges their thoughts, feelings, and sensations without any judgment [\[R\]](#).

Mindfulness and other types of [meditation](#) may improve [\[R\]](#):

- Weight and anxiety
- Low mood
- Sleep disturbances
- Pain
- High blood pressure

How it helps

A mindfulness-based intervention reduced cancer-related depression and stress in a non-placebo-controlled trial of 75 metastatic non-small cell lung cancer patients. A single 20-minute session of mindful breathing reduced breathlessness in a non-placebo-controlled trial of 63 lung cancer patients [\[R\]](#), [\[R\]](#).

45



Apples

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate at least one whole apple into your daily diet, either as a snack or part of your meals, ensuring to eat them consistently every day for an ongoing period to derive potential health benefits.

Description

Apples are a nutritious fruit known for their fiber content and antioxidant-rich skin. They support overall health by aiding digestion, reducing the risk of chronic diseases, and promoting heart health.

Apples (*Malus domestica Borkh.*) are one of the most widely consumed fruits in the world. They have a high nutritional value and content of antioxidants [\[R\]](#), [\[R\]](#).

Eating apples is associated with a lower risk of [\[R\]](#), [\[R\]](#):

- Heart disease
- Asthma
- Diabetes

How it helps

A meta-analysis of 20 case-control and 21 cohort studies found that higher apple consumption significantly reduces the risk of lung cancer in both study types. For colorectal, breast, and digestive tract cancers, benefits were seen in case-control studies but not in prospective ones. Some confounding factors may exist [\[R\]](#).

46



Squalamine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

When considering the use of squalamine, it's essential to consult with a healthcare professional due to its experimental nature and limited availability. As squalamine is primarily studied in preclinical and early clinical research, there are no standardized dosages established for its use in humans. Typically, squalamine is administered orally or through injection in clinical settings, with dosages tailored to specific conditions and individual health factors.

Description

Squalamine is a naturally occurring compound belonging to a class of molecules known as aminosterols and originally discovered in the tissues of certain species of sharks. Squalamine exhibits a broad spectrum of biological activities, including antimicrobial, anti-inflammatory, and anti-angiogenic.

It has shown promise in combating infections caused by bacteria such as *Staphylococcus aureus* and *Pseudomonas aeruginosa*, as well as viruses like HIV and hepatitis B.

Additionally, it could be beneficial in the treatment of inflammatory conditions such as rheumatoid arthritis and inflammatory bowel disease. Its ability to inhibit angiogenesis has also sparked interest in its potential use in cancer therapy.

How it helps

In a non-placebo-controlled trial of 45 patients with chemotherapy-naïve non-small cell lung cancer, supplementation with squalamine (300 mg/m²/day) as an add-on to chemotherapy for 5 days every 3 weeks was well tolerated and caused partial tumor response in 28% of the patients and disease stabilization in 19% [\[R\]](#).

47



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 [\[R\]](#).

48



Airway Muscle Training

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Perform airway muscle training exercises daily for at least 30 minutes. This can involve using specific devices designed to resist airflow in and out, thereby strengthening the respiratory muscles, or practicing breathing exercises that focus on inhaling and exhaling against resistance. Consistency is key, so aim to integrate this practice into your daily routine for ongoing respiratory health.

TYPICAL STARTING DOSE

30 minutes

Description

Airway muscle training is exercise that builds strength in the throat and tongue muscles. This can involve anything from controlled breathing to singing long notes. People use airway muscle training to improve sleep apnea, respiratory conditions, and exercise performance.

Airway muscle training is exercise that builds strength in the throat and tongue muscles. This can involve anything from controlled breathing to singing long notes. People use airway muscle training to improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Sleep apnea
- Respiratory conditions like COPD
- Exercise performance

How it helps

In a non-placebo-controlled trial of 37 patients with non-small cell lung cancer who underwent lung resection, an 8-week program combining aerobic exercises and high-intensity respiratory muscle training improved exercise capacity, respiratory muscle strength, and serum IGFBP-3 levels [\[R\]](#).

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Airway Muscle Training and Endurance Training

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Perform airway muscle training by using a device designed for respiratory muscle training for 30 minutes a day, five days a week. Additionally, incorporate endurance training exercises such as jogging, cycling, or swimming for at least 30 minutes a day, five days a week. Continue this combined routine for at least eight weeks to see improvements in respiratory muscle strength and overall endurance.

TYPICAL STARTING DOSE

30 minutes

Description

Airway muscle training and endurance training can help to improve lung function, reduce the risk of respiratory infections, and improve exercise performance. This can be beneficial for people with asthma, chronic obstructive pulmonary disease (COPD), and other respiratory conditions, and can also help to improve exercise performance.

How it helps

In a non-placebo-controlled trial of 37 patients with non-small cell lung cancer who underwent lung resection, an 8-week program combining aerobic exercises and high-intensity respiratory muscle training improved exercise capacity, respiratory muscle strength, and serum IGFBP-3 levels [\[R\]](#).

50



Skullcap

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 1 to 2 grams of dried skullcap herb in capsule or tablet form, or 1 to 2 milliliters of a tincture three times daily. For standardized extracts, follow the specific dosage instructions on the product label.

TYPICAL STARTING DOSE

1 g

Description

Skullcap, also known as Scutellaria, is a herbaceous plant native to North American and Asia. Its extract is often used in traditional herbal medicine for its calming and anti-inflammatory properties. Skullcap extracts may contain various compounds, including flavonoids and polyphenols.

American [skullcap](#) (*Scutellaria lateriflora*) is a Native American herb traditionally used for [R](#):

- Anxiety
- Stress
- Insomnia

How it helps

Two studies explored the impact of a dry skullcap extract on lung cancer patients undergoing chemotherapy. The first study found that skullcap extract stimulated hemopoiesis. In the second study, skullcap increased T-lymphocytes, theophylline-resistant population, and immunoregulation index during chemotherapy. Additionally, the inclusion of skullcap in the treatment led to higher immunoglobulin A levels while maintaining stable immunoglobulin G levels [R](#), [R](#).

51



Carrots

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate at least one medium-sized carrot (about 61 grams) into your daily diet by either eating it raw, steamed, or as part of salads, soups, and stews to support eye health and provide essential nutrients.

Description

Carrots are a nutritious vegetable known for their high vitamin A content and numerous health benefits. They support eye health, provide essential nutrients, and contribute to a well-rounded diet.

Carrots are an excellent source of vitamin A, as well as biotin, vitamins K1 and B6, potassium, and antioxidants. A ½ cup serving provides 459 mcg of vitamin A or 51%DV.

How it helps

A meta-analysis of 18 studies (202,969 individuals, 5,517 lung cancer patients) found that higher carrot consumption was associated with a lower risk of lung cancer (pooled OR 0.58, 95% CI 0.45-0.74), particularly for adenocarcinoma [\[R\]](#).

52

Avoid BPA (Bisphenol A) Exposure

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To avoid BPA exposure, choose BPA-free products, particularly when selecting food containers, water bottles, and baby bottles. Prefer glass, porcelain, or stainless steel containers, especially for hot food or liquids. Reduce use of canned foods as they may be lined with BPA and avoid handling thermal paper receipts, as they can contain BPA. When possible, select fresh or frozen foods over canned goods.

Description

Avoiding BPA (Bisphenol A) exposure involves minimizing contact with products or containers containing this chemical, which is commonly found in plastics and can potentially disrupt hormone regulation.

BPA (bisphenol A) is a chemical used to make certain plastics and resins. BPA-containing plastics are often used in containers that store food and beverages. Plastics marked with **recycling code 3 or 7** may contain BPA [\[R\]](#).

BPA is a well-known hormone disruptor. Research has linked BPA exposure to diabetes, heart disease, altered behavior, and more [\[R\]](#).

How it helps

Exposure to bisphenol A may increase the risk of lung cancer more in people with certain gene variants [\[R\]](#).

PERSONALIZED TO YOUR GENES

Exposure to bisphenol A may increase the risk of lung cancer more in people with your [ESR1](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
CCDC170	rs2046210	AG	

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Avoid Formaldehyde Exposure

IMPACT

0 / 5

EVIDENCE

3 / 5

How to implement

To minimize formaldehyde exposure, choose household products and building materials labeled low-VOC (Volatile Organic Compounds) or formaldehyde-free. Ensure proper ventilation in your living and working spaces, especially when using products known to contain formaldehyde like certain adhesives, cleaning agents, and cosmetics. Aim to reduce use of pressed wood products and seek out alternatives when possible.

Description

Avoiding exposure to formaldehyde, a chemical commonly found in building materials and certain products, is crucial to prevent respiratory problems and potential carcinogenic effects.

How it helps

A study found no significant increase in lung cancer risk among formaldehyde-exposed workers (overall risk estimate: 1.04). A slight elevation was noted in higher exposure, high-quality, and recent studies, but not conclusive evidence of formaldehyde as a lung cancer risk factor [\[R\]](#).

54



Avoid L-Histidine Supplements

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Do not purchase or consume any supplements that list L-histidine as an ingredient. This includes checking the labels of multi-vitamins, amino acid complexes, and sports nutrition products to ensure they do not contain L-histidine.

Description

L-Histidine supplements are typically used to help your body make proteins. However, taking these supplements when you don't need to can mess up the natural balance of chemicals in your body. So, it's better to avoid L-Histidine supplements unless your doctor recommends them.

How it helps

Genetically higher histidine levels may be causally associated with an increased risk for lung and intrathoracic organ cancers. [\[R\]](#)

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.

