

Non-Hodgkin's Lymphoma

Disease Report

REPORT CATEGORY —



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

Non-Hodgkin's lymphoma (NHL) is a broad category of lymphomas, which are cancers that originate in the lymphatic system. Unlike Hodgkin's lymphoma, NHL is characterized by the absence of Reed-Sternberg cells. It includes a diverse group of blood cancers that affect lymphocytes, a type of white blood cell that plays a crucial role in the immune system [\[R\]](#).

NHL encompasses many different subtypes, which are generally classified based on the type of lymphocyte affected (B cells or T cells) and how fast the cancer grows (indolent or aggressive):

- **B-Cell Lymphomas:** The most common form of NHL, accounting for about 85% of cases.
 - Diffuse large B-cell lymphoma (DLBCL): The most common subtype, aggressive but often treatable.
 - Follicular lymphoma: A slower-growing (indolent) type that can transform into a more aggressive form over time.
 - Mantle cell lymphoma: A rarer, more aggressive type of B-cell lymphoma.
 - Burkitt lymphoma: An aggressive form often associated with a very fast growth rate.
 - Marginal zone lymphoma: Usually indolent, often associated with chronic inflammation or infection.
- **T-Cell Lymphomas:** Less common and can be more challenging to treat.
 - Peripheral T-cell lymphoma: A group of aggressive lymphomas that originate from mature T cells.
 - Cutaneous T-cell lymphoma: Affects the skin, such as mycosis fungoides and Sézary syndrome.
 - Anaplastic large cell lymphoma (ALCL): An aggressive form that can occur in both children and adults.
- **Indolent vs. Aggressive Lymphomas:**
 - Indolent NHL: Slow-growing and may not need immediate treatment; examples include follicular lymphoma and marginal zone lymphoma.
 - Aggressive NHL: Fast-growing and requires prompt treatment; examples include DLBCL and Burkitt lymphoma.

Signs and symptoms of non-Hodgkin's lymphoma may include [\[R\]](#):

- Swollen lymph nodes in the neck, armpits, or groin
- Abdominal pain or swelling
- Chest pain, coughing, or trouble breathing
- Persistent fatigue
- Fever
- Night sweats
- Unexplained weight loss

Risk Factors and Treatment

Some factors that may increase the risk of non-Hodgkin's lymphoma include [\[R\]](#):

- Age: NHL risk increases with age, especially in people over 60.
- Immune system deficiency: People with weakened immune systems, such as those with HIV/AIDS or who have undergone organ transplantation, are at higher risk.
- Infections: Certain infections, such as Epstein-Barr virus (EBV), *Helicobacter pylori*, and human T-cell leukemia/lymphoma virus (HTLV-1), are associated with an increased risk.
- Autoimmune diseases: Conditions like rheumatoid arthritis or lupus can increase the risk.
- Exposure to chemicals: Prolonged exposure to certain chemicals, such as pesticides or herbicides, may increase the risk.
- Family history: A family history of lymphoma can slightly increase the risk.

However, most people diagnosed with non-Hodgkin's lymphoma don't have any obvious risk factors and many people who have risk factors for the disease never develop it.

Treatment for non-Hodgkin's lymphoma depends on its particulars of, such as the types of cells involved and whether it is aggressive. Doctors also consider the overall health and preferences. of the patient. If the lymphoma appears to be slow-growing (indolent) and doesn't cause signs and symptoms, the patient might not need treatment right away. Instead, the doctor may recommend regular checkups every few months to monitor the condition. Treatments for aggressive or symptomatic lymphomas may include [\[R\]](#):

- Chemotherapy: The most common treatment, often combined with other therapies.
- Radiation therapy: Used to target and kill cancer cells, especially in localized disease.
- Targeted therapy: Drugs that specifically target lymphoma cells, such as rituximab for B-cell lymphomas.



TYPICAL LIKELIHOOD

Typical likelihood of non-Hodgkin's lymphoma based on 861,887 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
/	rs34102154	GG
SPATA4	rs10017639	TC
TRIM27	rs238883	AG
/	rs1342494	AT
HPS4	rs146427908	CC
NTM	rs112479596	AA
HLA-DRB5	rs2097442	GG
CLEC12A	rs3176779	CC
ONECUT3	rs77943404	GG
AIF1	rs2471960	GG
CCHCR1	rs1265080	GG
MYC	rs13255292	CC
HLA-DQB1	rs2858331	AA

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

- Immunotherapy: Treatment that enhances the body’s immune system to fight the cancer, including CAR-T cell therapy.
- Stem cell transplant: Replaces damaged bone marrow with healthy stem cells, used in certain cases, especially in relapsed lymphoma.
- Watchful waiting: For some indolent lymphomas that are not causing symptoms, close monitoring may be chosen instead of immediate treatment.

The prognosis varies widely depending on the specific type, stage at diagnosis, and response to treatment. Indolent lymphomas may remain stable for many years with minimal or no treatment, while aggressive lymphomas may require intensive treatment but can often be cured. Advances in treatment have improved outcomes for many types of NHL. Regular follow-up is essential, as the risk of relapse or secondary cancers exists, and long-term side effects of the treatment need to be managed.

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	Avoid Organochlorine Pesticide Exposure	2	Green Tea400 mg
3	Avoid Organophosphate Pesticide Exposure	4	Avoid PCBs
5	Avoid Dioxin	6	Avoid Pesticide Exposure
7	Turmeric	8	Walking30 minutes
9	Maintain Optimal Vitamin D Levels1000 iu	10	Aerobic Exercise (Cardio)1 hour
11	Swimming30 minutes	12	Stress Management Therapy1 hour
13	Exercise At Least One Hour a Day1 hour	14	Support Groups
15	Cycling	16	Mindfulness-Based Stress Reduction (MBSR)2 hours
17	Avoid Secondhand Smoke		

1

Avoid Organochlorine Pesticide Exposure

IMPACT

4 / 5

EVIDENCE

2 / 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 conducted a systematic review and meta-analysis of 44 papers. It found positive associations between NHL and certain pesticides, highlighting the need for broader geographic investigations [R].

A meta-analysis of 13 studies found that exposure to organochlorine pesticides (OCPs) is associated with a 40% increased risk of non-Hodgkin lymphoma (NHL), with certain OCPs showing stronger links [R].

However, a number of studies ultimately found no strong evidence supporting a DDT-NHL association; other pesticides may explain the initial risk [R, R].

PERSONALIZED TO YOUR GENES

Exposure to organochlorines may increase the risk of non-Hodgkin lymphoma more in people with your **IFNG** gene variant [R].

Exposure to organochlorines may increase the risk of non-Hodgkin lymphoma more in people with your **IL4** gene variant [R].

Exposure to organochlorines may increase the risk of non-Hodgkin lymphoma more in people with your **IL16** gene variant [R].

Exposure to organochlorines may increase the risk of non-Hodgkin lymphoma more in people with your **CXCL8** gene variant [R].

Exposure to organochlorines may increase the risk of non-Hodgkin lymphoma more in people with your **IL10** gene variant [R].

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
IFNG	rs2069705	AA	
IL4	rs2070874	CC	
STARD5	rs859	AA	
PF4V1	rs4073	TT	
IL19	rs1800896	CT	

2



Green Tea

IMPACT

3 / 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 19 studies and 315,972 participants associated green tea (but not black tea) intake with ~44% lower risk of non-Hodgkin lymphoma [\[R\]](#).

Green tea, rich in polyphenols, has shown potential cancer-preventive effects in several studies. Its active compounds can inhibit the proliferation of lymphoma cells and induce apoptosis (cell death), providing a protective effect against non-Hodgkin lymphoma.

Please note: polyphenols from green tea may bind to iron and form insoluble complexes, which reduces iron absorption in the gut. If you have anemia, consult your healthcare provider before using green tea [\[R\]](#).

3



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 meta-analysis of ten observational studies found a moderate association between Malathion, Terbufos, and Diazinon exposure and non-Hodgkin lymphoma (NHL). Diazinon significantly increased NHL risk, while the others didn't. Diazinon had neuro-immune system effects, Malathion directly affected immune cells, and Terbufos showed no reported immunotoxic effects [\[R\]](#).

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 [\[R\]](#).

4



Avoid PCBs

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

To avoid PCBs (Polychlorinated Biphenyls), do not use old electrical equipment manufactured before 1977, avoid consuming fish from contaminated waters, especially larger species such as shark and swordfish which are higher in the food chain, and check for and properly dispose of any old fluorescent lighting fixtures that may contain PCBs. Pay attention to local advisories regarding the safety of locally caught fish and wildlife.

Description

PCBs are toxic chemicals that can cause cancer, reproductive problems, and developmental problems. Avoiding exposure to PCBs is important for protecting your health.

Polychlorinated biphenyls (PCBs) are man-made chemicals. They were used in the industry until their **ban in 1979**. PCBs are considered **persistent organic pollutants** (POPS) due to their slow degradation in the environment. They may also **accumulate** in the food chain and the human body [\[R\]](#), [\[R\]](#).

We may be exposed to PCBs through contaminated [\[R\]](#), [\[R\]](#):

- **Food** (e.g., fish, meat, rice)
- Soil
- Air

PCBs may have toxic effects on [\[R\]](#), [\[R\]](#):

- Immunity
- Nervous system
- Reproductive system
- Hormone levels

They may also increase the risk of cancer and reduce lifespan [\[R\]](#), [\[R\]](#).

How it helps

A systematic review and meta-analysis found inconsistent results on PCB exposure and cancer. Some evidence suggests a link to non-Hodgkin lymphomas, but overall conclusions are uncertain due to mixed findings [\[R\]](#).

A meta-analysis of case-control studies found a statistically significant causal association (odds ratio 1.43, 95% confidence interval 1.31-1.55) between NHL and PCB exposure [\[R\]](#).

Fifty-eight studies were reviewed, indicating a positive link between follicular lymphoma (FL) and exposure to DDE, PCBs, solvents, and chlorinated solvents, with some associations observed in specific job roles [\[R\]](#).

However, a meta-analysis of 30 studies on PCB exposure and non-Hodgkin lymphoma (NHL) risk found no association, including occupational exposures. Also, eleven cohort studies on occupationally exposed workers found mixed results, with a potential link to melanoma and NHL in some studies, but the evidence is inconclusive. Overall, no strong evidence supports PCBs increasing melanoma or NHL risk [\[R\]](#), [\[R\]](#).

5



Avoid Dioxin

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Reduce consumption of animal fats, since dioxins accumulate in fat tissue. Choose lean cuts of meat, and opt for organic or pasture-raised when possible to minimize exposure. Additionally, avoid burning trash that contains plastic, treated wood, or chlorinated chemicals to prevent dioxin release into the environment.

Description

Avoiding exposure to dioxin, a highly toxic environmental pollutant, can help protect against serious health risks, including cancer and hormonal disruptions. Reducing contact with dioxin-contaminated sources such as certain foods and industrial emissions is essential for long-term health.

How it helps

A meta-analysis of 31 studies with 29,605 cancer cases and 3,478,748 participants associated high dioxin exposure with increased cancer mortality (by 45%) and incidence (by 57%). Particularly, it was associated with increased mortality from non-Hodgkin’s lymphoma [\[R\]](#).

6

Avoid Pesticide Exposure

IMPACT2 / 5

EVIDENCE2 / 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

A meta-analysis of ten observational studies found a moderate association (OR 1.22, 95% CI 1.04-1.43) between Malathion, Terbufos, and Diazinon exposure and NHL risk. Diazinon had a significant risk, while Terbufos and Malathion did not show significant associations. Different mechanisms of immune system disruption were observed for each pesticide [\[R\]](#).

In a meta-analysis of 13 studies, occupational pesticide exposure was significantly associated with an increased risk of hematopoietic cancers, particularly non-Hodgkin lymphoma (NHL). Longer exposure (more than 10 years) had a higher risk [\[R\]](#).

A meta-analysis of 13 studies examined the link between OCP exposure and NHL risk. The summary odds ratio (OR) was 1.40 (95% CI 1.27-1.56), indicating a significant positive association. Subgroup analyses highlighted strong associations with specific OCPs (DDE, HCH, chlordane, HCB) [\[R\]](#).

This study analyzed 44 papers from high-income countries, finding positive associations between NHL (Non-Hodgkin lymphoma) and specific pesticide groups like phenoxy herbicides, carbamate insecticides, and lindane [\[R\]](#).

In a study, 1,131 CpG sites showed significant DNA methylation differences between case and control groups. These sites, found in 598 genes, revealed a link between prenatal DDT exposure and altered BRCA1 gene methylation and expression in fetuses, suggesting a role for epigenetic processes in their development [\[R\]](#).

Urine and blood samples from children in different areas were analyzed for pesticide exposure (atrazine) and cytogenetic damage markers. Higher damage markers were found in pesticide-exposed areas compared to the control group [\[R\]](#).

7



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 with anti-inflammatory and antioxidant properties. Research indicates that curcumin can suppress the growth of various types of cancer cells, including non-Hodgkin lymphoma, by inhibiting pathways involved in cancer progression.

8



Walking

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate at least 30 minutes of brisk walking into your daily routine, aiming for a minimum of five days a week. This can be done in one continuous session or broken into shorter periods, such as three 10-minute walks throughout the day.

TYPICAL STARTING DOSE

30 minutes

Description

Walking is a low-impact form of exercise that can contribute to cardiovascular fitness, weight management, and improved overall health. It is used to support physical activity goals, enhance mood, and promote better cardiovascular health.

How it helps

Regular physical activity has been shown to strengthen the immune system and improve overall health, which can potentially reduce the risk of developing non-Hodgkin lymphoma. Exercise such as walking, cycling, or swimming for at least 30 minutes a day can help maintain a healthy weight and lower the chance of lymphoma.

9



Maintain Optimal Vitamin D Levels

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

1000 iu

Description

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

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

- Mood
- Immunity
- Heart health
- Blood sugar control

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

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

How it helps

Vitamin D may help improve immune function and has been associated with better outcomes in some lymphoma patients.

10



Aerobic Exercise (Cardio)

IMPACT

0 / 5

EVIDENCE

0 / 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 aerobic exercise can improve overall quality of life and reduce fatigue in patients with non-Hodgkin's lymphoma. It helps boost cardiovascular health, enhance mood, and improve physical stamina.

11



Swimming

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate swimming into your routine for at least 30 minutes, 3 times a week. Choose a pace and stroke that keeps your heart rate elevated yet allows you to breathe comfortably. Continue this practice regularly for long-term health benefits.

TYPICAL STARTING DOSE
30 minutes

Description

Swimming is a whole-body workout that engages various muscle groups, promoting strength and endurance. It helps keep the heart and lungs healthy, improves flexibility, and can even help reduce stress. Regular swimming is a great way to maintain a balanced, fit, and healthy lifestyle.

How it helps

Regular physical activity has been shown to strengthen the immune system and improve overall health, which can potentially reduce the risk of developing non-Hodgkin lymphoma. Exercise such as walking, cycling, or swimming for at least 30 minutes a day can help maintain a healthy weight and lower the chance of lymphoma.

12



Stress Management Therapy

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Engage in stress management therapy sessions, such as cognitive-behavioral therapy (CBT), for at least 1 hour per week over a course of 8 to 12 weeks. Techniques can include mindfulness, deep breathing exercises, and identifying stressors to develop coping strategies.

TYPICAL STARTING DOSE
1 hour

Description

Stress management therapy refers to various techniques and approaches aimed at reducing and coping with stress. It can improve mental and physical well-being by helping individuals better manage the effects of stress on their health.

How it helps

Stress management therapy can help improve the overall well-being of patients with non-Hodgkin's lymphoma, potentially improving their quality of life and ability to cope with treatment.

13



Exercise At Least One Hour a Day

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Dedicate a minimum of 60 minutes to moderate-intensity activities such as brisk walking, swimming, or cycling. Do this most days of the week, aiming for at least 5 days to optimize benefits.

TYPICAL STARTING DOSE
1 hour

Description

[Exercise](#) can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [\[R\]](#).

There are many ways you can be active. You can walk, run, swim, dance, or play team sports. **Everything counts, and it's never too late to start!**

Try to get at least **60 minutes of moderate physical activity on most days**, including walking. **Getting a mix of cardio (min 150 min/day) and strength training (min 2 times a week) may be optimal.**

How it helps

Regular physical activity has been shown to strengthen the immune system and improve overall health, which can potentially reduce the risk of developing non-Hodgkin lymphoma. Exercise such as walking, cycling, or swimming for at least 30 minutes a day can help maintain a healthy weight and lower the chance of lymphoma.

14



Support Groups

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

Description

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

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

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

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

How it helps

Support groups provide emotional and social support, which can be essential for patients dealing with the challenges of non-Hodgkin's lymphoma.

15



Cycling

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Begin cycling with moderate rides to build up your stamina, targeting 2 to 4 times a week for 30 to 60 minutes per session. Ensure your bicycle is the right size and properly adjusted for your comfort. Safety gear, including helmets, is essential. Mix up your routes for interest and challenge, and consider joining a cycling group for social and motivational benefits. Maintenance of your bicycle will ensure a smooth ride and prolong its life.

Description

Cycling is a low-impact, environmentally friendly exercise that offers significant cardiovascular benefits, muscle strengthening, and flexibility improvement. It's suitable for all fitness levels and can be enjoyed both recreationally and competitively. Cycling promotes weight loss, decreases stress levels, and improves joint mobility. It's also a convenient mode of transportation that encourages outdoor exploration and reduces air pollution.

How it helps

Regular physical activity has been shown to strengthen the immune system and improve overall health, which can potentially reduce the risk of developing non-Hodgkin lymphoma. Exercise such as walking, cycling, or swimming for at least 30 minutes a day can help maintain a healthy weight and lower the chance of lymphoma.

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Mindfulness-Based Stress Reduction (MBSR)

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Enroll in an 8-week MBSR course, which includes a weekly 2.5-hour class, one all-day class after the sixth week, and 45 minutes of daily home practice guided by assignments and instructional recordings.

TYPICAL STARTING DOSE

2 hours

Description

Mindfulness-Based Stress Reduction (MBSR) is a structured program that teaches mindfulness techniques to reduce stress and improve overall mental and emotional health. MBSR has been shown to help individuals cope with chronic pain, anxiety, and other stress-related conditions.

How it helps

MBSR has been shown to reduce stress and improve psychological well-being in cancer patients. It helps manage anxiety and emotions, which can be beneficial for people undergoing treatment for non-Hodgkin's lymphoma.

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Avoid Secondhand Smoke

IMPACT

0 / 5

EVIDENCE

0 / 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

Smoking tobacco has been linked to an increased risk of developing non-Hodgkin lymphoma. The chemicals in cigarette smoke can damage the DNA of cells, making it more likely for them to become cancerous. Avoiding exposure to cigarette smoke, both by not smoking and avoiding second-hand smoke, can reduce this risk.

Next Steps

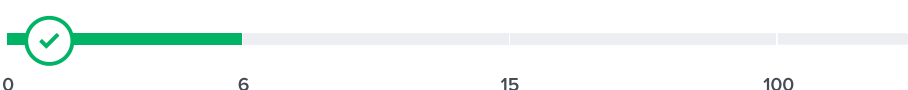
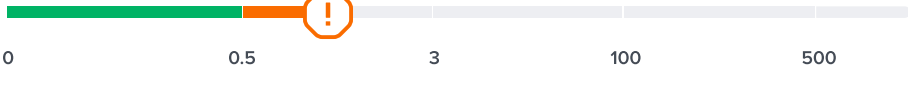
Remember, your genes only tell one important part of your health story!

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.

	ESR	1 mm/hr		9 Nov 2025
	WBC	6.92 x10^3/mm3		9 Nov 2025
	Lymphocytes (Absolute)	1.48 x10^9/L		9 Nov 2025
	Lymphocytes (%)	21.4 %		9 Nov 2025
	Ferritin	102.2 ng/mL		9 Nov 2025
	Platelet Count	215 x10^3/mm3		9 Nov 2025
	Hemoglobin	17.1 g/dL		9 Nov 2025
	hs-CRP	1.6 mg/L		9 Nov 2025