

Longevity

This section examines genetic variations can influence cognitive function, sleep quality, mobility, and longevity. With this genetic test, you can personalize your diet and lifestyle choices and identify potential areas of concern as you age. Our aim is to help you comprehend the science behind your genes and utilize this knowledge as a reference to make positive lifestyle adjustments that promote long-lasting well-being.





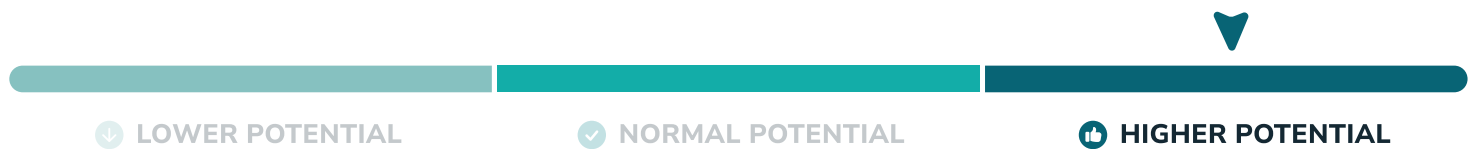
Longevity - General Health

Healthy Aging

Healthy aging, also known as "healthspan," is defined as sustained physical and cognitive function, an absence of chronic disease, and a high quality of life in later years. It's not just about longevity; it's about living healthily for a long time. Genetics are one of the key factors in healthy aging, highlighting their strong role in aging outcomes. Studies of the "Welllderly" cohort, individuals who age healthily without major medical interventions, suggest that healthy aging is associated with a protective genetic profile. This profile is characterized by a lower genetic risk for diseases such as Alzheimer's and coronary artery disease rather than a single gene that solely responsible for extreme lifespan extension. Understanding the genetic basis of healthy aging, as observed in the Welllderly cohort, provides valuable insights for developing strategies that can promote healthspan and mitigate age-related decline.



About your result



Your genetic profile indicates an increased genetic predisposition that may support healthy aging.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Given that you have increased potential for healthy aging, you can optimize this potential by consistently choosing nutrient-rich plant-based foods, such as those containing polyphenols and omega-3s.

Plant-focused diets like the Mediterranean, DASH, and MIND diets support healthy aging by enhancing cognitive, physical, and sensory function. These patterns prioritize fruits, vegetables, whole grains, legumes, and nuts, providing essential fiber, vitamins, and minerals while minimizing processed foods high in added sugars and unhealthy fats. Key nutrients, such as polyphenols (found in berries and green tea) and healthy fats (like omega-3s from fish and monounsaturated fats from olive oil), reduce inflammation, combat cellular stress, and support heart health. Adequate protein from fish and legumes preserves muscle mass and skin integrity, while vitamin C from colorful vegetables aids collagen production and immunity. Together, these nutrient-dense foods create a synergistic effect, promoting vitality and resilience against age-related decline.

Source:

[Yeung et al., \(2021\). Healthy Diet for Healthy Aging. Nutrients, 13\(12\), 4310. https://doi.org/10.3390/nu13124310 34959862](https://doi.org/10.3390/nu13124310)





Exercise



PERSONALIZE RECOMMENDATION

Capitalize on your potential for healthy aging by prioritizing a balanced exercise mix: regular aerobic, strength, flexibility, and crucial balance training weekly.

Regular exercise is crucial for healthy aging, supporting physical function and cognitive health. Aim for a balanced program combining different types. Include at least 150 minutes of weekly moderate-intensity aerobic activity (like brisk walking), possibly aiming for more frequent sessions. Add strength training ≥ 2 days/week, using exercises like squats, wall push-ups, or rows, to combat muscle loss and support daily function. Don't neglect flexibility and specific balance exercises, like single-leg stands, as these are critical for mobility and preventing falls. Mind-body practices like yoga can complement this; ensure the program is challenging yet personalized for progress and well-being.

Source:

Gronek et al. (2021). Exercise in Aging: Be Balanced. Aging and Disease, 12(5), 1140. <https://doi.org/10.14336/ad.2021.0107.34341697>



Lifestyle



PERSONALIZE RECOMMENDATION

Capitalize on your potential for healthy aging by actively fostering quality sleep, strong social ties, and a purposeful, positive mindset.

Healthy aging encompasses physical, social, and mental wellness, built upon foundational habits like balanced nutrition and regular exercise. Prioritizing adequate, good-quality sleep is vital, as research links both poor sleep and excessively long sleep duration to increased frailty. Maintaining strong social connections and avoiding loneliness significantly impacts well-being and longevity, influencing both mental and physical health outcomes. Cultivating positive emotions and a sense of purpose can buffer stress and is associated with better health outcomes and resilience during aging.

Source:

Castruita et al. (2022). Genetic, Social, and Lifestyle Drivers of Healthy Aging and Longevity. Current Genetic Medicine Reports, 10(3), 25–34. <https://doi.org/10.1007/s40142-022-00205-w> 38031561





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
APOE	rs769449	GG	1 PMID: 22234866
TOMM40/APOE	rs2075650	AA	1 PMID: 33657282

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Longevity - General Health

Longevity

Longevity, or the ability to live to an exceptionally old age (e.g., 95 years or older), is a trait many people desire. It is a prime example of healthy aging because many exceptionally long-lived individuals experience fewer age-related diseases or develop them much later in life. Lifespan is influenced by environmental factors, such as diet and exercise, as well as genetics. Genes are estimated to contribute 10-30% to an individual's potential lifespan. Specific genes, such as APOC3 and CETP, are strongly linked to longevity. Additionally, important pathways in the body, such as insulin/IGF-1 signaling, cellular damage repair, and telomere maintenance, also seem to play a role in longevity.



About your result



Your genetic profile indicates an increased genetic predisposition associated with longevity.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Maximize your longevity potential by prioritizing whole plant foods, moderation in consumption, and limiting red/processed meats.

Maintain a lean, stable weight through lifelong moderation, inspired by practices like Okinawa's Hara Hachi Bu (eating until 80% full), which supports metabolic health and longevity. Build meals around whole, plant-based foods: prioritize fiber-rich whole grains (oats, brown rice), colorful fruits/vegetables (berries, leafy greens), nuts, and legumes (lentils) for their protective phytochemicals. Include healthy fats like olive oil (monounsaturated fats) and fatty fish (salmon, rich in omega-3s), to reduce inflammation and support cardiovascular health. Choose protein mostly from plants (legumes, nuts) and fish while limiting red and processed meats, aligning with dietary patterns consistently linked to lower mortality. Ensure nutrient adequacy, paying attention to nutrients like Vitamin B12 if following a strict plant-based diet, and utilize herbs and spices for their potential anti-inflammatory effects supporting overall wellness.

Source:

Hu et al. (2023). Diet strategies for promoting healthy aging and longevity: An epidemiological perspective. Journal of Internal Medicine, 295(4), 508–531. Portico. <https://doi.org/10.1111/joim.13728>





Exercise



PERSONALIZE RECOMMENDATION

Leverage your high longevity potential through consistent exercise at or safely above optimal ranges (150-300+ minutes of vigorous / 300-600+ minutes of moderate exercise).

Regular physical activity boosts longevity and significantly lowers mortality risk. Achieve maximal benefits by aiming for 150-300 minutes/week of vigorous activity (VPA), like jogging or swimming laps where talking becomes difficult, or 300-600 minutes/week of moderate activity (MPA), such as brisk walking or casual cycling where you can still converse. These optimal ranges, roughly double the minimum guidelines, offer the greatest reduction in mortality observed in long-term studies. Encouragingly, exceeding these amounts showed no evidence of harm, providing a safe upper range for highly active individuals. Effective longevity benefits can be achieved through various combinations of sufficient MPA and VPA tailored to personal preference and fitness levels.

Source:

Lee et al. (2022). Long-Term Leisure-Time Physical Activity Intensity and All-Cause and Cause-Specific Mortality: A Prospective Cohort of US Adults. Circulation, 146(7), 523-534. <https://doi.org/10.1161/circulationaha.121.058162>



Lifestyle



PERSONALIZE RECOMMENDATION

Maximize your high longevity potential by fully embracing daily movement, moderation, strong social ties, purpose, and stress relief routines.

Longevity, exemplified by Blue Zone populations (such as Okinawa, Japan; Sardinia, Italy; and Loma Linda, California), is strongly linked to lifestyle. Integrate natural movement daily by walking within your community whenever possible. Practice caloric moderation, such as eating until roughly 80% full, and prioritize a predominantly plant-based diet rich in legumes, grains, and vegetables. Foster strong family bonds, friendships, and a sense of community belonging, as robust social networks are consistently observed in long-lived populations. Cultivate a strong sense of purpose (ikigai) and incorporate daily routines, like naps, prayer, or social happy hours, specifically aimed at reducing stress.

Source:

Castruita et al. (2022). Genetic, Social, and Lifestyle Drivers of Healthy Aging and Longevity. Current Genetic Medicine Reports, 10(3), 25-34. <https://doi.org/10.1007/s40142-022-00205-w>



Environmental



PERSONALIZE RECOMMENDATION

Maximize your high longevity potential by actively seeking regular connection to nature and prioritizing highly walkable community living.

Environmental factors significantly influence longevity. Regular exposure to natural environments like parks, forests, or coastal areas lowers stress and enhances overall well-being. Spending time in biodiverse natural settings can also enrich your gut microbiome, playing a key role in immune health and regulating inflammation associated with aging. Living in walkable communities, where daily destinations are easily reached on foot, encourages consistent, natural physical activity, a hallmark observed in Blue Zone longevity hotspots. Additionally, environments with mild climates, along with access to clean air and water resources, support overall health and facilitate an active outdoor lifestyle conducive to a longer life.



Source:

Aliberti et al. (2025). The Power of Environment: A Comprehensive Review of the Exposome's Role in Healthy Aging, Longevity, and Preventive Medicine-Lessons from Blue Zones and Cilento. Nutrients, 17(4), 722. <https://doi.org/10.3390/nu17040722> 40005049





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
TOMM40	rs2075650	AA	1 PMID: 21418511
AKT1	rs3803304	CC	1 PMID: 19489743
APOC3	rs2542052	CC	1 PMID: 16602826
CETP	rs5882	AA	1 PMID: 20068209
TP53	rs1042522	GC	1 PMID: 18256523

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Longevity - General Health

Bone Density Loss

Bone density loss signifies a reduction in bone mineral density (BMD), which is the measure of the amount of minerals (e.g., calcium and phosphorus) in the bones. These minerals are crucial for bone strength and structural integrity. Low BMD is a primary indicator of osteoporosis and an increased risk of fractures because reduced mineral content weakens bones and makes them more fragile. Age is a primary factor in BMD, which naturally declines after peak bone mass in early adulthood. This decline particularly affects older adults and postmenopausal women. Genetics also play a substantial role, with variants in genes such as LRP5 and SOST being particularly important. While genetic heritability is significant, lifestyle factors such as diet, exercise, and smoking also heavily impact BMD. Peak bone mass achieved in early adulthood and subsequent bone loss rates throughout life are critical determinants of skeletal health. Therefore, both genetic predisposition and modifiable lifestyle factors are important in maintaining bone density and preventing fractures.



About your result



Your genetic profile indicates an increased risk of bone density loss.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Protect against increased bone loss risk by prioritizing optimal calcium, vitamin D, and magnesium intake; consult professionals about supplementation.

To support bone mineral density, it's crucial to consume adequate calcium, ideally around 1000-1200 mg daily, found in foods like milk (120mg/100g), yogurt (125-150mg/100g), and aged cheeses (e.g., Grana Padano with 1162mg/100g). Vitamin D is also essential for calcium absorption, with recommendations of 600-800 IU daily; good sources are fatty fish like salmon (17mcg/100g) and fortified foods. Furthermore, ensure sufficient intake of magnesium, found in foods such as spinach (185mg in portion of 200 g) and almonds/cashews (270mg per 100g). If you struggle to meet these needs through diet alone, or if the test show deficiency, especially in older adults, consider consulting a healthcare professional, such as doctor or registered dietician about calcium and vitamin D supplementation, as it may help.

Source:

[Rondanelli et al. \(2021\). Nutrition, Physical Activity, and Dietary Supplementation to Prevent Bone Mineral Density Loss: A Food Pyramid. Nutrients, 14\(1\), 74. <https://doi.org/10.3390/nu14010074> 35010952](#)





Exercise



PERSONALIZE RECOMMENDATION

Overcome your increased bone density loss risk by prioritizing consistent weight-bearing and resistance exercise. Consult your doctor for tailored routines.

Engaging in regular weight-bearing and resistance exercises is important for maintaining and improving bone mineral density. Weight-bearing activities like walking, dancing, aerobics, jogging, and playing sports (e.g., tennis and badminton) apply beneficial stress to your bones and should be performed for 30 to 40 minutes, three to four times per week. Resistance exercises, such as lifting weights or using resistance bands, stimulate bone formation and should be done progressively two or more times per week. Balance exercises like tai chi, yoga, or Pilates are also recommended to reduce fall risk. Always consult your doctor, especially if you are an osteoporotic patient, for a personalized exercise routine that focuses on posture, balance, gait, coordination, and hip and trunk stabilization.

Source:

Rondanelli et al. (2021). Nutrition, Physical Activity, and Dietary Supplementation to Prevent Bone Mineral Density Loss: A Food Pyramid. Nutrients, 14(1), 74. <https://doi.org/10.3390/nu14010074>



Lifestyle



PERSONALIZE RECOMMENDATION

Protect your bones from increased bone density loss risk by consistently hitting step goals, ensuring calcium intake, quitting smoking, and limiting alcohol.

To support your bone mineral density, focus on incorporating simple, everyday habits into your routine. Aim for consistent movement throughout the day, like achieving 7,000 to 10,000 steps daily. Make easy diet changes, like adding a snack with Greek Yogurt and fruit to ensure a source of calcium. Crucially, quit smoking and reduce alcohol consumption, as these habits can significantly harm bone health. When possible, perform your normal exercises using weighted vest.

Source:

Potashkin et al. (2024). Reversal of Bone Mineral Density Loss Through Lifestyle Changes: A Case Report. American Journal of Lifestyle Medicine, 19(1), 36–41. <https://doi.org/10.1177/15598276241285806>



Monitoring



PERSONALIZE RECOMMENDATION

Given your increased risk of bone density loss, proactively monitor for bone pain or height loss and discuss with your doctor whether you need DXA screening based on symptoms.

Regularly monitoring your bone health is important, especially as you age or if you have risk factors for bone density loss. While a DXA scan provides precise measurements, be proactive by tracking things you can easily observe. Pay attention to any new or unexplained bone pain, especially in your back, hips, or wrists. Monitor your height; a noticeable decrease over time can signal vertebral compression fractures. Discuss your risk factors and family history of osteoporosis with your doctor, who can advise on when a formal bone density test (like a DXA scan) might be appropriate and help interpret any changes in your overall health.

Source:

Rondanelli et al. (2021). Nutrition, Physical Activity, and Dietary Supplementation to Prevent Bone Mineral Density Loss: A Food Pyramid. Nutrients, 14(1), 74. <https://doi.org/10.3390/nu14010074>

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Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
TNFRSF11B	rs4355801	GA	1 PMID: 18455228
LRP5	rs3736228	CT	1 PMID: 18455228
SOST	rs1513670	CC	1 PMID: 19079262
TNFRSF11A	rs3018362	AG	1 PMID: 19079262
SP7	rs10876432	GG	1 PMID: 19079262
LRP5	rs2306862	CT	1 PMID: 14727154
WNT16	rs3801387	AG	1 PMID: 27965945

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Longevity - General Health

Joint Inflammation

Joint inflammation, also known as inflammatory arthritis, is a clinical syndrome involving pain, swelling, stiffness, warmth, and redness in the joints. It can result in a significant loss of function. The condition has many causes, including autoimmune disorders in which the body attacks its own tissues (e.g., rheumatoid arthritis), crystal-induced arthropathies (e.g., gout, which is caused by hyperuricemia or a lot of uric acid in blood), and infectious arthritis (which is caused by pathogens). Predisposition to these conditions is multifactorial with a strong genetic component. The heritability of serum urate levels in gout, for example, is estimated at 40%-70%. Other genes that are involved are variants in PTPN2 and PADI4. Furthermore, environmental and metabolic factors also play a crucial role. Excess body weight and certain dietary habits significantly increase the risk of gout by raising serum urate levels, while smoking is a major risk factor for rheumatoid arthritis.



About your result



Your genetic profile indicates an increased predisposition to joint inflammation.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Manage your increased inflammation risk by prioritizing an anti-inflammatory diet and strictly limiting processed foods, sugars, and red meat.

Anti-inflammatory dietary patterns, such as Mediterranean, vegetarian, or vegan diets, can significantly reduce joint pain associated with conditions like joint inflammation (arthritis). These diets typically emphasize whole foods including fruits, vegetables, legumes, and fish rich in omega-3s, while limiting pro-inflammatory items like processed foods, added sugars, red/processed meats, and certain vegetable oils high in omega-6 fats. Limiting these specific foods may help lower inflammation markers and reduce advanced glycation end products (AGEs) linked to joint inflammation, while improving the omega-6 to omega-3 fatty acid ratio potentially eases symptoms. Effects may take months, and individual needs vary, so consult a professional for personalized advice, considering any sensitivities.

Source:

[Schönenberger et al. \(2021\). Effect of Anti-Inflammatory Diets on Pain in Rheumatoid Arthritis: A Systematic Review and Meta-Analysis. Nutrients, 13\(12\), 4221. https://doi.org/10.3390/nu13124221 34959772](https://doi.org/10.3390/nu13124221)





Lifestyle



PERSONALIZE RECOMMENDATION

Protect your joints from increased inflammation risk by quitting smoking, managing weight diligently, and staying physically active.

Maintaining a healthy lifestyle is important for managing joint inflammation risk and outcomes, particularly regarding smoking, body weight, and physical activity. Smoking is a major risk factor strongly linked to increased inflammation and poorer treatment responses; cessation is highly recommended. Preventing obesity and engaging in regular physical activity are associated with better outcomes, helping manage inflammation and maintain joint function. Complementing these habits with a balanced diet and stress management techniques can further support joint health, though personalized advice from a healthcare professional is beneficial.

Source:

Schöfer et al. (2022). Lifestyle Factors and Their Influence on Rheumatoid Arthritis: A Narrative Review. Journal of Clinical Medicine, 11(23), 7179.
https://doi.org/10.3390/jcm11237179_36498754



Monitoring



PERSONALIZE RECOMMENDATION

Given your increased risk of joint inflammation, be vigilant for any joint pain, swelling, or stiffness. Seek prompt medical evaluation if symptoms persist over 6-8 weeks due to higher risk.

Pay attention to persistent joint pain, visible swelling, and tenderness, particularly in the small joints of hands and feet. Also monitor for early morning stiffness lasting 30 minutes or more, along with general fatigue, malaise, or unexplained weight loss. Note if these symptoms interfere with daily activities or disturb sleep, as this indicates significant impact. If symptoms suggestive of inflammatory arthritis persist for more than 6-8 weeks, seek prompt medical evaluation for accurate diagnosis and early management.

Source:

Suresh et al. (2004). Diagnosis of Early Rheumatoid Arthritis: what the Non-Specialist Needs to Know. Journal of the Royal Society of Medicine, 97(9), 421-424. https://doi.org/10.1177/014107680409700903_15340020





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
DGUOK-AS1	rs6705628	CC	3 PMID: 33310728
PTPN2	rs2847297	AA	1 PMID: 22446963
PTPN22	rs2476601	GG	1 PMID: 29423382
PADI4	rs2240340	TT	1 PMID: 23164236

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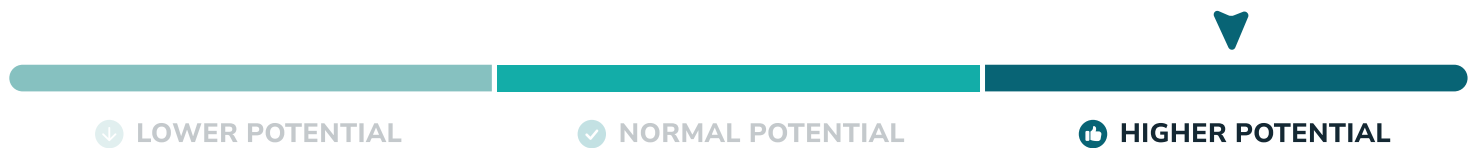
Longevity - General Health

Fibrinogen Level

Fibrinogen is an important protein involved in blood clotting. It also plays a role in wound healing, inflammation, and other processes. Blood fibrinogen levels are tightly controlled, and abnormal levels are associated with cardiovascular diseases, such as heart attacks and strokes. High levels of fibrinogen increase the risk of forming dangerous blood clots, which can lead to cardiovascular events such as heart attacks and strokes. Conversely, very low levels can impair the body's ability to form clots, leading to an increased risk of excessive bleeding, particularly following injury or surgery. Genetic factors significantly influence fibrinogen levels, accounting for up to 50% of the variation between individuals. Specific genes, notably the fibrinogen gene cluster (FGA, FGB, and FGG), are associated with fibrinogen levels. Studies, primarily in European populations, have identified genetic variations within this cluster that affect fibrinogen levels. However, genetic backgrounds vary across populations and need further investigation. Fibrinogen is critical for hemostasis, platelet aggregation, and cellular platelet processes.



About your result



Your genetic profile indicates a tendency towards increased fibrinogen levels, which can be a negative factor in your overall health.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

To help manage your tendency for high fibrinogen levels, it is important to maintain a healthy weight. You should also limit your intake of added sugars and iron-rich red meats.

Higher fibrinogen levels, which shown to linked to inflammation and cardiovascular risk, are associated with certain dietary patterns common in Westernized lifestyles and higher body weight. High dietary iron intake, often from red meat and supplements, may contribute, potentially via oxidative processes linked to inflammation. Elevated intake of total sugars, primarily from sweets and sugary drinks, is also implicated, possibly by impacting blood sugar regulation and subsequent inflammation. Maintaining a healthy body weight is crucial as obesity strongly correlates with higher fibrinogen.

Source:

Miura et al. (2006). Dietary Factors Related to Higher Plasma Fibrinogen Levels of Japanese-Americans in Hawaii Compared With Japanese in Japan. Arteriosclerosis, Thrombosis, and Vascular Biology, 26(7), 1674–1679. <https://doi.org/10.1161/01.atv.0000225701.20965.b9> 16675719





Lifestyle



PERSONALIZE RECOMMENDATION

To help manage your genetically higher fibrinogen levels, it is crucial for you to quit smoking, maintain a healthy body weight (BMI < 25), and engage in regular endurance exercise.

Fibrinogen levels can be positively influenced by adopting certain healthy lifestyle habits. Quitting smoking is important, as fibrinogen levels tend to increase with the number of cigarettes smoked daily. Maintaining a healthy weight (e.g., aiming for a BMI below 25 kg/m²) is also important, as significant weight loss has been shown to lower fibrinogen. Maintaining a healthy body weight and engaging in regular physical activity, particularly endurance-type exercises over time, are consistently associated with lower fibrinogen levels. Moderate alcohol consumption appears linked to lower fibrinogen compared to non-drinkers or heavy drinkers (those consuming over 60g/day), although the specific reduction per gram is relatively small.

Source:

Kamath et al. (2003). Fibrinogen: biochemistry, epidemiology and determinants. QJM, 96(10), 711–729. <https://doi.org/10.1093/qjmed/hcg129.14500858>





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
FGG	rs1049636	GA	1 PMID: 17263791
FGA	rs2070011	CC	1 PMID: 17263791
FGB	rs1800791	GG	1 PMID: 29099861
FGB	rs1800789	GA	1 PMID: 29099861
FGB	rs7439150	GA	1 PMID: 29099861

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Longevity - General Health

Cataracts

Cataract is a disease where normal clear lens of the eye or the surrounding transparent membrane is clouded or opacified which obscure the passage of light from the lens to the retina. The condition can start as asymptomatic in its early phases before gradually cause visual impairment even blindness. Cataract is the leading cause of blindness worldwide with an estimate of 15 million people older than 50 years were classified blind due to the condition in 2020. Ageing and oxidative stress are the main cause of cataract occurrence after birth. Some risk factors like exposure to ultraviolet light and smoking are modifiable and can help reduce the risks. However, systemic diseases such as diabetes and hypertension can elevate the risk. The development is also influenced by genetics with up to 48% of the variation nuclear cataract in the population showing heredity explanations.



About your result



Your genetic profile indicates an increased risk of developing cataracts.

Our Recommendations



Lifestyle



PERSONALIZE RECOMMENDATION

Make lifestyle adjustment such as maintaining healthy BMI, exercising regularly, and avoiding smoking to help reduce the risk of cataract.

The mendelian randomization study shows that the progression of senile cataract is affected by lifestyle as well as metabolic factor. It is advised to maintain healthy body mass index (BMI) as well as systolic blood pressure through engaging in regular physical activities. Adjusting sugary consumption is also encouraged to reduced type 2 diabetes-related cataracts. Avoid smoking and moderate alcohol consumption.

Source:

[Yuan et al. \(2022\). Metabolic and lifestyle factors in relation to senile cataract: a Mendelian randomization study. Scientific Reports, 12\(1\), 409. https://doi.org/10.1038/s41598-021-04515-x 35013517](https://doi.org/10.1038/s41598-021-04515-x)



Dietary



PERSONALIZE RECOMMENDATION

As a preventive measure against cataract, you can make dietary adjustment by adopting Mediterranean diet, maintaining sufficient intake of protein and vitamin C, and taking supplements.

Adjusting nutritional intake through diet can act as a preventive measure for cataracts. Adopt a micronutrient-rich diet and optimize it by taking supplements for lutein and B vitamins. Mediterranean diet which emphasizes polyunsaturated fats, fruits, and vegetables can help reduce the risk of cataract. Study also suggest the beneficial effect of maintaining 100-150 g/day of protein and 135 mg/day of vitamin C intake as a preventive measure against cataracts.

Source:

Weikel et al. (2013). *Nutritional modulation of cataract. Nutrition Reviews*, 72(1), 30–47. <https://doi.org/10.1111/nure.12077> 24279748



Exercise



PERSONALIZE RECOMMENDATION

To lower the risk of cataract, engage in a regular physical activities to achieve the recommended duration of 600 MET-minutes/week through daily tasks and exercises like running.

Study shows that physical activities are associated with cataracts, where low level of physical activities can increase the risk of cataract through inflammatory pathways. It is suggested to do 600 MET-minutes/week activity which can be achieved through daily activities such as walking and doing chores as well as more vigorous exercises such as swimming, running, and cycling.

Source:

López-Sánchez et al. (2020). *The Association Between Physical Activity and Cataracts Among 17,777 People Aged 15–69 Years Residing in Spain. Ophthalmic Epidemiology*, 27(4), 272–277. <https://doi.org/10.1080/09286586.2020.1730911> 32070171



Environmental



PERSONALIZE RECOMMENDATION

To help lower your personal risk of cataracts, it is advisable to control the temperature and humidity levels in your home whenever possible.

Study finds that air humidity and temperature may be associated with cataracts risk in older adults aged 65-years-old and older. Higher temperature can affect the lens leading to higher prevalence of nuclear cataract while low humidity may affect the prevalence through drying out airways. Regulate indoor temperature when possible such as at home and use humidifier to help balance humidity.

Source:

Ly et al. (2022). *Associations of Humidity and Temperature With Cataracts Among Older Adults in China. Frontiers in Public Health*, 10, 872030. <https://doi.org/10.3389/fpubh.2022.872030> 35433602





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
FTO	rs9939609	AA	2 PMID: 31401654
XRCC1	rs25487	TC	1 PMID: 27668351
MTHFR	rs1801133	GA	2 PMID: 28253266
MTHFR	rs1801131	TG	2 PMID: 28253266
LOXL1	rs3825942	GG	3 PMID: 26855560
NQO1	rs1800566	GG	3 PMID: 27844006
TRIB2	rs890069	CT	3 PMID: 36710479
TP53	rs1042522	GC	3 PMID: 27248495

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Longevity - General Health

Droopy Eyelids

The drooping of the upper eyelid or also known as ptosis refers to the abnormally low-lying eyelid, resulting in the narrowing of the palpebral opening and fissure and covering part of the eye. The normal margin for adult ranges from 0.5-2 mm whereas in severe ptosis the eyelid can droop more than 4 mm below the superior corneal limbus. Eyelid ptosis can be an isolated occurrence where it only affect appearance without health consequences. However, it can also be a warning or associated with other severe conditions such as immunological, hereditary disorders, tumor, or infections particularly when it develops rapidly. Severe droopy eyelid should be clinically consulted by an ophthalmologist and neurologist to improve eyesight and avoid further discomfort such as headache and eyestrain due to the obstructed sight.



About your result



Your genetic profile suggests a normal or typical likelihood of developing droopy eyelids (ptosis) with age.

Our Recommendations



Lifestyle



PERSONALIZE RECOMMENDATION

Educate yourself regarding the characteristic of droopy eyelids and try to do eye muscle exercises to help with droopy eyelids' symptoms.

For certain types of acquired droopy eyelids (ptosis), targeted muscle stimulation may be a supportive strategy to help alleviate the condition and potentially lessen its duration. This stimulation can be applied through various methods, including deliberate manual muscle exercises or with the aid of mechanical or electrical devices. A practical example of mechanical stimulation is to gently apply the back of an electric toothbrush over the affected muscle for several minutes daily. However, since a droopy eyelid can be a symptom of various underlying medical conditions, it is essential to consult a healthcare professional for a proper diagnosis to determine the cause before attempting any self-management exercises.

Source:

[King, M. \(2016\). Management of ptosis. The Journal of Clinical and Aesthetic Dermatology, 9\(12\), E1-E4 28210399](#)





Monitoring



PERSONALIZE RECOMMENDATION

Familiarize yourself with the clinical characteristics of droopy eyelids and to monitor the progression of the condition should it manifest.

For non-congenital droopy eyes, it is recommended to do the watch and wait approach regarding its progression to avoid unnecessary surgical procedure. Ptosis can be transient (self-resolving) or progress slowly before requiring intervention. Seek medical advice if the condition obstruct eyesight or comfort.

Source:

Bacharach et al. (2021). A review of acquired blepharoptosis: prevalence, diagnosis, and current treatment options. Eye, 35(9), 2468–2481.
<https://doi.org/10.1038/s41433-021-01547-5> 33927356





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
ACTG1	rs281875326	GG	3 PMID: 22366783
MTND1	rs199474657	A	3 PMID: 29560378

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Longevity - General Health

Glaucoma

Glaucoma is a group of eye conditions that lead to progressive optic nerve degeneration and irreversible blindness. It is estimated that nearly 80 million people were affected by glaucoma worldwide in 2020. It is usually associated with elevated intraocular pressure (IOP) and results in characteristic peripheral vision loss, though normal-tension variants exist. The most common form is primary open-angle glaucoma (POAG), accounting for an estimated 68 million cases. There is a significant increase in prevalence after age 40, and it varies by ethnicity. Individuals of African descent are at higher risk for POAG, while angle-closure glaucoma is more prevalent in Asian and Inuit populations. Risk factors include age, family history, and conditions such as diabetes. A genetic predisposition also plays a role, differing between the rare early-onset and common adult-onset forms. Although treatments can slow progression by lowering IOP, they cannot reverse existing vision loss.



About your result



Your genetic profile indicates an increased risk of developing glaucoma.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Help manage your increased glaucoma risk by prioritizing a diet rich in leafy greens, carrots, and possibly daily hot tea, as research suggests.

Dietary factors can influence glaucoma risk, potentially by mitigating oxidative stress and supporting ocular vascular health. Research links diets rich in fruits and vegetables high in vitamins A, C, and carotene (such as leafy greens and carrots) and dietary nitrates (prominent in green leafy vegetables) with a reduced risk of primary open-angle glaucoma. Furthermore, observational data suggests daily hot tea consumption, possibly beneficial due to its flavonoid antioxidants, is associated with a lower prevalence of glaucoma. Prioritizing these nutrient-dense whole foods is generally recommended, as evidence for specific supplement benefits in glaucoma remains limited.

Source:

Al Owaifeer et al. (2018). The Role of Diet in Glaucoma: A Review of the Current Evidence. Ophthalmology and Therapy, 7(1), 19–31.
<https://doi.org/10.1007/s40123-018-0120-3> 29423897





Exercise



PERSONALIZE RECOMMENDATION

To help manage your increased glaucoma risk, engage in a regular but moderate daily walk and consider mindfulness exercise such as yoga. Even so, it is advisable to avoid heavy lifting and head-down yoga poses.

Regular moderate aerobic exercise, exemplified by increased daily walking, demonstrates potential benefits in glaucoma management by correlating with slower visual field decline and retinal structural loss. Caution is advised regarding activities that induce significant, even if temporary, intraocular pressure (IOP) elevations, such as heavy resistance training and certain yoga poses like head-down positions. These activities can cause substantial IOP spikes during exertion, which might pose cumulative risk over time for susceptible individuals. Additionally, relaxation practices like mindfulness meditation show promise as a complementary method for potentially reducing IOP when used alongside standard glaucoma therapies.

Source:

Elhusseiny et al. (2024). Lifestyle modifications and environmental risk factors for glaucoma. Current Opinion in Ophthalmology, 36(2), 115–121.
<https://doi.org/10.1097/ico.0000000000001098.39446700>



Lifestyle



PERSONALIZE RECOMMENDATION

To address your increased glaucoma risk, it is crucial to avoid smoking as smoking can potentially worsen your vision. It is also advisable to maintain a moderate alcohol intake.

Certain lifestyle habits are important in glaucoma management. Evidence strongly indicates that higher smoking intensity accelerates visual field deterioration and retinal nerve fiber layer thinning in individuals with glaucoma, highlighting the importance of smoking cessation. Although acute alcohol consumption may temporarily lower intraocular pressure (IOP), chronic use is weakly linked to higher IOP and potential glaucoma risk, suggesting moderation is prudent. Marijuana use is not recommended for glaucoma treatment due to its short-lasting effects, potential systemic side effects that may impair ocular blood flow, and a lack of sufficient evidence supporting its efficacy.

Source:

Elhusseiny et al. (2024). Lifestyle modifications and environmental risk factors for glaucoma. Current Opinion in Ophthalmology, 36(2), 115–121.
<https://doi.org/10.1097/ico.0000000000001098.39446700>





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
SIX1/SIX6	rs10483727	CC	1 PMID: 22570617
GMDS	rs11969985	GA	1 PMID: 25173105
CAV1/CAV2	rs4236601	GA	1 PMID: 27297022
TLR4	rs7037117	AA	2 PMID: 18586872
GAS7	rs9913911	GG	1 PMID: 35400990
LOXL1	rs3825942	GG	1 PMID: 18254956

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Longevity - General Health

Macular Degeneration

Age-related macular degeneration (AMD) is a long-term eye disease that commonly affects older individuals, though it can occur in others as well. The development of AMD involves complex structural and functional changes, primarily in the retina and macula, which can ultimately lead to partial or complete vision loss. This condition presents in two main forms: the dry form, which progresses slowly and gradually, and the exudative (or wet) form, characterized by a rapid and severe progression that typically begins as the dry form. It's also possible for both forms to be present at the same time. While the precise cause of AMD is not yet fully understood, extensive genetic research indicates that it's a complex disease influenced by multiple factors, including genetics, environmental influences, and metabolic and functional aspects of the body.



About your result



Your genetic profile indicates an increased risk of developing age-related macular degeneration.

Our Recommendations



Environmental



PERSONALIZE RECOMMENDATION

Maintain a healthy living in a lower-pollution environment as this help reduce oxidative stress and protect your eye and overall health. Keep regularly checking the local pollution index and the safety of nearby natural resources (such as soil and water) so you can manage your exposure to harmful pollutants and heavy metals.

The development of Age-related Macular Degeneration (AMD), is closely linked to chemical elements and oxidative stress. Pollutants like lead, cadmium, and mercury are associated with negative effects in late AMD, and lead in particular influences early AMD. These heavy metals, particularly lead and cadmium, accumulate in retinal tissues, potentially causing damage through oxidative stress. They can also damage DNA in retinal pigment epithelial cells, increasing oxidative stress. Cadmium buildup in the eyes is common in smokers and those with prolonged exposure, and both cadmium and lead can reach higher concentrations in eye tissue than in blood.

Source:

Brodzka et al. (2024). Immunogenetic and Environmental Factors in Age-Related Macular Disease. International Journal of Molecular Sciences, 25(12), 6567. <https://doi.org/10.3390/ijms25126567>





Lifestyle



PERSONALIZE RECOMMENDATION

Maintain a healthy lifestyle to support your eye health. Focus on keeping your weight managed (normal BMI) through good nutrition and exercise, and make sure to always remain free from tobacco use like smoking.

Age and family history are key factors in the risk of developing Age-related Macular Degeneration (AMD), but smoking consistently stands out as a significant modifiable risk factor. Research has shown a clear link between smoking and AMD, with individuals who currently smoke 20 or more cigarettes daily having twice the risk. This risk also increases with the total amount of smoking over time (pack-years). Notably, even after quitting for 15 years, former heavy smokers (those who previously smoked 25 or more cigarettes a day) still face double the risk of AMD, indicating that the benefits of quitting smoking on AMD risk may take many years to fully materialize. Therefore, it is strongly recommended to abstain from cigarette smoking to reduce the likelihood of developing AMD.

Studies have shown a correlation between higher Body Mass Index (BMI) and the development of age-related macular degeneration (AMD), with individuals having a BMI greater than 30 facing a notably increased risk of late AMD compared to those with a normal BMI (between 20 and 25). This heightened risk in obese individuals is thought to be related to elevated levels of pro-inflammatory factors and reduced antioxidant capabilities. These factors can disrupt the function of the Retinal Pigment Epithelium (RPE) and speed up the development of AMD. Consequently, being overweight plays a significant role in increasing the risk of AMD, as obesity creates a pro-inflammatory state that fosters oxidative stress. Furthermore, the accumulation of toxic metals in fatty tissue may also contribute to AMD development. It is implied that to minimize the likelihood of developing AMD, it is important to keep one's BMI within a healthy range.

Source:

Kang et al. (2016). Contribution of the Nurses' Health Study to the Epidemiology of Cataract, Age-Related Macular Degeneration, and Glaucoma. American Journal of Public Health, 106(9), 1684–1689. <https://doi.org/10.2105/ajph.2016.303317.27459452>

Brodzka et al. (2024). Immunogenetic and Environmental Factors in Age-Related Macular Disease. International Journal of Molecular Sciences, 25(12), 6567. <https://doi.org/10.3390/ijms25126567.38928273>



Dietary



PERSONALIZE RECOMMENDATION

Maintain healthy, structured diet rich in plant-based foods and healthy fats (e.g., fruits, vegetables, fish, egg yolks) for your eye health. While a balanced diet is fundamental, strategically incorporating supplements could provide additional support for your eyes and general health.

Research investigating the relationship between dietary patterns and Age-related Macular Degeneration (AMD) revealed that a diet rich in vegetables, legumes, fruit, whole grains, tomatoes, and seafood (an Oriental pattern) was strongly protective against both early and advanced stages of the disease, reducing the odds by almost 30% and over 60%, respectively. Conversely, a diet characterized by high consumption of red meat, processed meat, high-fat dairy, French fries, refined grains, and eggs (a Western pattern) was strongly associated with an increased risk of both early and advanced AMD, elevating the odds by nearly 60% and almost threefold, respectively.



Dietary factors are important in the development of Age-related Macular Degeneration (AMD), and nutrients with antioxidant properties, particularly omega-3 long-chain polyunsaturated fatty acids (LC-PUFAs), may help lower the risk of AMD. A consistent finding in research is that a high intake of omega-3s is linked to a decreased chance of developing AMD. One potential reason for this is that omega-3 LC-PUFAs may increase the density of macular pigment in the retina, which acts as a filter for blue light and also has antioxidant and anti-inflammatory effects. Multiple prospective studies also stated that higher consumption of omega-3 LC-PUFAs is associated with a reduced risk of developing AMD.

A study indicates that following a Mediterranean diet, characterized by a focus on plant-based foods and healthy fats, can also help protect against AMD. Diets abundant in antioxidant nutrients, including vitamins C and E, carotenoids like lutein and zeaxanthin (found in many fruits and vegetables), and zinc, have been associated with a reduced risk of developing AMD. Additionally, research suggests that a high intake of trans fats acts as a risk factor for late AMD, while consuming more fish or omega-3 fatty acids appears to be protective.

Studies suggest that a daily intake of 5 to 6 mg of lutein and zeaxanthin (most commonly found in leafy green vegetables and egg yolks) can help reduce the risk of developing Age-related Macular Degeneration (AMD). These carotenoids are thought to protect the retina from AMD by effectively lowering oxidative stress and inflammation throughout the eye.

Studies have indicated that consuming fish can help protect against the development of Age-related Macular Degeneration (AMD). This beneficial effect is likely due to compounds present in fish, including docosahexaenoic acid (DHA), which is necessary for the regeneration of photoreceptor outer segments in the eye, and meso-zeaxanthin, which has been found to enhance the density of the macular pigment, a protective layer in the retina.

Research has confirmed that high alcohol consumption has a harmful effect on Age-related Macular Degeneration (AMD). This finding is consistent with other studies that have observed negative outcomes when alcohol intake surpasses recommended levels. Excessive alcohol consumption has long been associated with an increased risk of various diseases, likely due to its tendency to promote oxidation. Beyond directly increasing damaging reactive oxygen species (ROS) and causing oxidative damage to DNA, proteins, and lipids, alcohol also interferes with the body's natural defenses against oxidative stress. Additionally, it has been reported that alcohol can stimulate the growth of new blood vessels and worsen the abnormal blood vessel growth in the choroid, a hallmark of wet AMD.

Source:

[Chiu et al. \(2014\). The Relationship of Major American Dietary Patterns to Age-Related Macular Degeneration. American Journal of Ophthalmology, 158\(1\), 118–127.e1. <https://doi.org/10.1016/j.ajo.2014.04.016> 24792100](#)

[van Leeuwen et al. \(2018\). A new perspective on lipid research in age-related macular degeneration. Progress in Retinal and Eye Research, 67, 56–86. <https://doi.org/10.1016/j.preteyeres.2018.04.006> 29729972](#)

[Hogg et al. \(2017\). Mediterranean Diet Score and Its Association with Age-Related Macular Degeneration. Ophthalmology, 124\(1\), 82–89. <https://doi.org/10.1016/j.ophtha.2016.09.019> 27825655](#)

[Mares et al. \(2016\). Lutein and Zeaxanthin Isomers in Eye Health and Disease. Annual Review of Nutrition, 36\(1\), 571–602. <https://doi.org/10.1146/annurev-nutr-071715-051110> 27431371](#)

[Dinu et al. \(2018\). Food groups and risk of age-related macular degeneration: a systematic review with meta-analysis. European Journal of Nutrition, 58\(5\), 2123–2143. <https://doi.org/10.1007/s00394-018-1771-5> 29978377](#)

[Dinu et al. \(2018\). Food groups and risk of age-related macular degeneration: a systematic review with meta-analysis. European Journal of Nutrition, 58\(5\), 2123–2143. <https://doi.org/10.1007/s00394-018-1771-5> 29978377](#)

Monitoring



PERSONALIZE RECOMMENDATION

Periodically checking biomarkers related to eye health enables the early detection of potential issues.

Implementing prevention strategies based on these early findings can help you avoid the risk of future ocular conditions.

Age-related macular degeneration (AMD), the leading cause of vision loss, has recently been associated with dyslipidemia, particularly high levels of high-density lipoprotein cholesterol (HDL-C). A study has established a causal relationship between high concentrations of HDL-C in plasma and a greater risk of advanced AMD in individuals of European and Asian descent. This suggests that strategies focused on reducing HDL-C levels might be a useful approach in the prevention and treatment of AMD.

Source:

[Fan et al. \(2017\). HDL-cholesterol levels and risk of age-related macular degeneration: a multiethnic genetic study using Mendelian randomization. International Journal of Epidemiology, 46\(6\), 1891–1902. <https://doi.org/10.1093/ije/dyx189> 29025108](#)



Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
ARMS2/HTRA1	rs10490924	GG	1 PMID: 23455636
CFH	rs10737680	AC	1 PMID: 23455636
C2/CFB	rs429608	GG	3 PMID: 23455636
CFH	rs1831282	AC	2 PMID: 23577725
CETP	rs3764261	CA	1 PMID: 26503844
LIPC	rs10468017	CT	1 PMID: 26503844
CX3CR1	rs3732378	GG	1 PMID: 26305531
CX3CR1	rs3732379	CT	1 PMID: 26305531
PGF	rs2268614	CC	3 PMID: 27064391

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Longevity - General Health

Elevated Homocysteine

Elevated homocysteine, also known as hyperhomocysteinemia, refers to the condition where the level of homocysteine in the blood is higher than the normal threshold of 5-15 micromol/L. Homocysteine itself is not an amino acid that can be supplied through diet. This amino acid can be converted by a combination of vitamins (B12, B6, and folate) as well as MTHFR enzyme into cysteine and methionine, essential amino acids. Elevated level of homocysteine is a sign of disruption in the metabolism of homocysteine, which has been associated with rising risk of various diseases ranging from cardiovascular, cognitive decline, even schizophrenia. Mild hyperhomocysteinemia (16-30 micromol/L) has the estimated prevalence of 5 to 7%. Due to their metabolic role in breaking down homocysteine, avoiding deficiency of B12, B6, and folate is crucial in maintaining the healthy range of homocysteine level.



About your result



Your genetic profile indicates an increased genetic risk towards elevated homocysteine levels.

Our Recommendations



Lifestyle



PERSONALIZE RECOMMENDATION

To reduce the level of homocysteine, you can make lifestyle adjustment such as avoiding smoking and moderate coffee and alcohol consumption.

Homocysteine level can be affected by lifestyle choices therefore making appropriate adjustment can help moderate it. In order to reduce it, adopt a healthy lifestyle by avoiding smoking cigarettes and reducing both alcohol and coffee consumption. It is also advisable to increase vegetable intake and engage in regular physical activities.

Source:

Panagiotakos et al. (2005). The association between lifestyle-related factors and plasma homocysteine levels in healthy individuals from the "ATTICA" Study. International Journal of Cardiology, 98(3), 471-477. <https://doi.org/10.1016/j.ijcard.2003.12.036> 15708182



Dietary

 **PERSONALIZE RECOMMENDATION**
To reduce your homocysteine level, consume folate-rich food such as beans, nuts, fruits, and vegetables alongside daily folic acid supplements.

Taking 437 mcg of folic acid daily can boost serum folate by 27 nmol/L and lower homocysteine level by 21%. Fortified cereals raise folate levels and decrease homocysteine level by 24%, while folate-rich foods (beans, nuts, veggies, fruits) offer smaller benefits. Supplementation and fortified foods are the most effective ways to reduce homocysteine level.

Source:

Riddell et al. (2000). Dietary strategies for lowering homocysteine concentrations. The American Journal of Clinical Nutrition, 71(6), 1448–1454.
<https://doi.org/10.1093/ajcn/71.6.1448> 10837284

Exercise

 **PERSONALIZE RECOMMENDATION**
You can regulate the high level of homocysteine through engaging in resistance training and consuming folate after to help with the elevated homocysteine level post exercise.

In terms of the level of homocysteine, exercise needs to be done moderately in regards to its duration and intensity. In order to reduce homocysteine level, incorporate regular resistance training as a routine and take folate supplement after doing acute exercise to help regulate the elevated level of homocysteine.

Source:

Deminice et al. (2016). The Effects of Acute Exercise and Exercise Training on Plasma Homocysteine: A Meta-Analysis. PLOS ONE, 11(3), e0151653.
<https://doi.org/10.1371/journal.pone.0151653> 26986570

Environmental

 **PERSONALIZE RECOMMENDATION**
To help mitigate higher level of homocysteine, avoid exposure of heavy metal and monitor homocysteine level closely if you are exposed regularly due to occupation.

Avoid excessive exposure to heavy metal such as lead, mercury, cadmium, and chromium as it can lead to higher level of homocysteine. For those with frequent occupational exposure to heavy metal, monitor homocysteine level and consult to a physician on prevention plan.

Source:

Ledda et al. (2019). Exposure to Toxic Heavy Metals Can Influence Homocysteine Metabolism? Antioxidants, 9(1), 30.
<https://doi.org/10.3390/antiox9010030> 31905706





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
BHMT	rs3733890	GG	1 PMID: 29407547
MTHFR	rs1801133	GA	1 PMID: 30339177
MTHFR	rs1801131	TG	2 PMID: 21577095
MTRR	rs1801394	AG	2 PMID: 31200713
CUBN	rs11254363	AA	2 PMID: 24533076
NOX4	rs11018628	TT	1 PMID: 25948668
CBS	rs2851391	TC	1 PMID: 25948668
MUT	rs9473555	GG	1 PMID: 25948668
MTR	rs1805087	AA	2 PMID: 26266420
MTRR	rs1802059	GG	3 PMID: 39702542
CBS	rs234706	GA	2 PMID: 11149614
SHMT1	rs1979277	GA	2 PMID: 21178087

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Longevity - General Health

Hair Loss

Hair loss, also known as androgenetic alopecia (AGA), is the condition of patterned hair absence influenced by the excessive follicular sensitivity to androgens and can affect both men and women. Hereditary factors play as the primary influence with 80% predisposition in baldness with a dominant inheritance pattern. The characteristic of this condition is observed through follicular miniaturization, perifollicular inflammation, fibrosis in the pilosebaceous unit angiofibrotic tracts, follicular stela and signs of follicle destruction or hair shaft damage. Presentation, pattern, and prevalence varied between gender. Older male has higher prevalence with >50% while postmenopausal female has the prevalence of 15%. Although age plays a role in the progression alongside with genetic makeup and androgens, hair thinning can start as early as puberty in both gender.



About your result



Your genetic profile indicates an increased predisposition to hair loss.

Our Recommendations



Lifestyle



PERSONALIZE RECOMMENDATION

You can curb the risk of hair loss by avoiding smoking, both active and passive, improving sleeping quality, and increase omega-3 intake.

In order to reduce the risk of hair loss, avoid active and passive smoking as it can lead to further inflammation of the scalp. Improve sleeping quality to help with immune system regulation and advance the health of hair follicle. Consumption of fish oil to increase the intake of omega-3 fatty acid may also help.

Source:

Minokawa et al. (2022). Lifestyle Factors Involved in the Pathogenesis of Alopecia Areata. International Journal of Molecular Sciences, 23(3), 1038.
<https://doi.org/10.3390/ijms23031038> 35162962



Dietary

 **PERSONALIZE RECOMMENDATION**
The risk of hair loss can be decreased through dietary adjustment. Adopt mediterranean diet and ensure adequate protein intake to promote hair health.

Making dietary adjustment can promote growth and enrich hair healthy in different types of alopecia. Adopt Mediterranean diet, which is rich in raw vegetables and fresh herbs, and combine it with isoflavone-rich soy to increase growth due to its anti-inflammatory properties. Maintain adequate necessary intake of protein as it is crucial for hair health.

Source:

Pham et al. (2020). The Role of Diet as an Adjuvant Treatment in Scarring and Nonscarring Alopecia. Skin Appendage Disorders, 6(2), 88–96. Portico.
<https://doi.org/10.1159/000504786.32258051>

Monitoring

 **PERSONALIZE RECOMMENDATION**
Monitoring hair growth can help in reducing the severity and enhance prognosis. Seek clinical assessment when significant hair loss is observed.

Monitoring hair growth can be beneficial as timely identification of hair loss disorders can lead to effective counseling in regards to the specific treatment options and prognosis. Some alopecia conditions respond to therapeutic interventions, while others resolve over time, especially after removal of the insult. Seek clinical assessment such as scalp examination with dermatologist to help determine insult and appropriate intervention.

Source:

Xu et al. (2017). A Practical Approach to the Diagnosis and Management of Hair Loss in Children and Adolescents. Frontiers in Medicine, 4.
<https://doi.org/10.3389/fmed.2017.00112.28791288>





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
ESR2	rs10137185	CT	2 PMID: 24344880
PTPN22	rs2476601	GG	1 PMID: 34735462
IL18	rs1946518	TG	2 PMID: 29349811
IL18	rs187238	CC	1 PMID: 24446726
TLR1	rs4833095	TC	3 PMID: 24780078
TARDBP	rs12565727	AG	3 PMID: 26001114
HDAC9	rs2249817	AA	3 PMID: 22032556

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Longevity - General Health

Hearing Loss

Hearing loss refers to the inability of properly hear sound due to disrupted or imperfect process of sound waves transmission. This condition can be divided into three category: conductive, sensorineural, and mixed. Conductive hearing loss is caused by the disruption of sound transmission to the cochlea due to abnormal physical conditions in the ear. This physical abnormalities can stem from impaction, effusion, and tumors. On the other hand, sensorineural hearing loss is the result of problematic transmission of the stimuli at or after the cochlea. This type of hearing loss happens due to hair cell dysfunction or neural disorder. Lastly, mixed hearing loss is classified for conditions with transmission disruption both before and after the cochlea. In children, genetics predisposition such as mutations and autosomal differences is responsible for 50% of hearing loss while age-related degeneration of the cochlea is the most common cause in older adults. Other factors that can induced hearing loss regardless of age is bacterial and viral infections.



About your result



Your genetic profile indicates an increased risk of developing age-related hearing loss.

Our Recommendations



Lifestyle



PERSONALIZE RECOMMENDATION

To reduce your risk of hearing loss, engage in healthy lifestyle by avoiding smoking, moderating alcohol as well as coffee consumption, and maintaining healthy weight.

To reduce the risk of developing age-related hearing loss, some lifestyle adjustment are advised. Avoid both active and passive smoking to help increase protective antioxidants, consume alcohol especially red wine and coffee in moderate level, and enrich your diet with micronutrients. Engaging in regular physical activity is also recommended as well as maintaining healthy weight and blood sugar level.

Source:

Tang et al. (2023). A Narrative Review of Lifestyle Risk Factors and the Role of Oxidative Stress in Age-Related Hearing Loss. Antioxidants, 12(4), 878. <https://doi.org/10.3390/antiox12040878>



Dietary



PERSONALIZE RECOMMENDATION

In order to reduce the risk of hearing loss, make dietary adjustment by consuming diet enriched by vitamins and minerals as well as avoiding excessive carbohydrate, fats, and cholesterol.

Nutritional intake can be beneficial in preventing the progression of hearing loss. Dietary adjustments are suggested to be enriched with single nutrients such as vitamin A, B, C, D, and E, minerals like zinc, magnesium, iodine, and iron. Avoid consuming excessive amount of carbohydrates, fats, and cholesterol while maintaining adequate intake of protein and polyunsaturated fats.

Source:

Jung et al. (2019). Association of Nutritional Factors with Hearing Loss. Nutrients, 11(2), 307. <https://doi.org/10.3390/nu11020307>



Exercise



PERSONALIZE RECOMMENDATION

You can curb the risk of developing hearing loss by engaging in at least 150 minutes/week of physical activities.

The risk of hearing loss can be mitigated through maintaining the recommended amount of physical activity. The advised amount of physical activities for adults is at the very least 150 minutes/week of moderate activities or 75 minutes/week of vigorous ones. Moderate activities examples are doing house chores and taking a stroll while vigorous activities encompass different types of sports and exercise such as cycling.

Source:

Martinez-Amezcu et al. (2022). The Association Between Midlife Leisure-Time Physical Activity and Hearing Loss in Late Life in the Atherosclerosis Risk in Communities Study. The Journals of Gerontology: Series A, 78(7), 1292–1299. <https://doi.org/10.1093/gerona/glac194>





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
ESPN	rs121908134	AA	3 PMID: 15930085
GJB2	rs104894396	CC	1 PMID: 18941476
GJB2	rs35887622	AA	1 PMID: 17666888
GJB2	rs72474224	CC	1 PMID: 17666888
XPO5	rs2257082	GA	3 PMID: 33457014

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Date of Birth : 01 January 2000

Order ID : #2131-998435
Report Date : 08 September 2025



Longevity - General Health

Pelvic Floor Dysfunction

The pelvic floor, a network of muscles, ligaments, and fascia, plays a vital role in supporting the pelvic girdle, maintaining continence, and facilitating urination, defecation, and sexual function, among other processes. Pelvic floor disorders encompass a range of conditions that disrupt the normal functioning of pelvic organs, including the bladder and anorectum in both sexes, as well as the uterus and vagina in women and the prostate in men. These problems have intricate and varied causes, affecting the health of both men and women, but they are particularly prevalent and impactful on women's well-being. Early detection is crucial to provide the most effective care and treatment. In women specifically, pelvic floor dysfunction manifests in various clinical disorders such as urinary incontinence, pelvic organ prolapse (where organs like the uterus descend), fecal incontinence, and pelvic-perineal pain. The impact of these disorders, especially on women's health and overall quality of life, is substantial, leading to significant consequences for both physical and mental health. Moreover, pelvic floor disorders can be debilitating and cause considerable embarrassment, potentially leading to social isolation, hindering the ability to perform everyday tasks, negatively affecting personal and intimate relationships, and limiting participation in leisure activities for women.



About your result



Your genetic profile indicates an increased risk of developing pelvic floor dysfunction.

Our Recommendations

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Exercise



PERSONALIZE RECOMMENDATION

Consider strengthening pelvic support muscles (for the uterus, bowels, bladder, and rectum) with Kegels or other mild exercises. Consultation with professionals regarding Kegels exercise option might be needed as it may not be suitable for all, particularly those with an overactive pelvic floor. While engaging in an active lifestyle is generally beneficial, be careful with heavy physical activity to protect your pelvic muscle health.

To promote healthy pelvic floor function, it is essential to perform therapeutic exercises that normalize muscle length, strength, and overall function. Improving posture and flexibility can alleviate strain in the lower back, pelvic region, and deep hip muscles. Although Kegel exercises are often recommended for strengthening the pelvic floor, they may not be suitable for everyone, especially those with an overactive pelvic floor. Core strengthening exercises may inadvertently tighten the pelvic floor muscles, leading to pain. Therefore, they may need to be put on hold until flexibility and length are improved. Pelvic floor muscle training enhances muscle contraction, endurance, and coordination. However, maintaining flexibility and mobility is equally important. Additionally, specific breathing techniques can initially be used to reduce anxiety and associated pain and, subsequently, to encourage relaxation of the pelvic floor muscles during exhalation.

Originally described by Dr. Kegel, Pelvic Floor Muscle Training (PFMT), commonly known as Kegel exercises, is a non-surgical therapy for both the prevention and treatment of urinary incontinence (UI) and pelvic organ prolapse (POP). Dr. Kegel initially prescribed isometric contractions of the pelvic floor muscles (PFM) to strengthen the external sphincter, aiming to help women with stress urinary incontinence (SUI) regain continence. PFMT is recommended as the primary non-surgical treatment for not only stress incontinence but also urgency incontinence and pelvic organ prolapse. Significant evidence now supports that PFMT can lead to anatomical changes and improve both objective and subjective measures of these conditions, particularly in the short term.

A study showed that pelvic floor muscle training is associated with a small, but clinically meaningful, decrease in prolapse symptoms at two years, as evidenced by lower symptom scores in the intervention group relative to the control group.

Source:

Chen et al. (2024). Pelvic Floor Disorders Due to Anal Sexual Activity in Men and Women: A Narrative Review. Archives of Sexual Behavior, 53(10), 4089–4098. <https://doi.org/10.1007/s10508-024-02995-2> 39287780

Lamin et al. (2016). Pelvic Floor Muscle Training: Underutilization in the USA. Current Urology Reports, 17(2). <https://doi.org/10.1007/s11934-015-0572-0> 26757904

Hagen et al. (2017). Pelvic floor muscle training for secondary prevention of pelvic organ prolapse (Prevpro!): A multicentre randomised controlled trial. Lancet (London, England), 389(10067), 393–402. [https://doi.org/10.1016/S0140-6736\(16\)32109-2](https://doi.org/10.1016/S0140-6736(16)32109-2) 28010994



Lifestyle



PERSONALIZE RECOMMENDATION

Maintain a healthy lifestyle as pelvic muscle health benefits from both maintaining a healthy weight (normal BMI) through diet and exercise, and from minimizing oxidative stress by adopting healthier lifestyle habits.

A study demonstrates that overweight and obese women face a higher likelihood of pelvic organ prolapse compared to women with a normal body mass index (BMI). The fact that this association is most evident in objectively measured, clinically significant cases strengthens this evidence considerably. Therefore, the findings implicitly suggest that keeping one's BMI within a healthy range can help in avoiding the risk of pelvic organ prolapse.



Childbirth can lead to pelvic floor disorders in women, resulting in lifelong problems that may require surgery. The substantial stretching of the levator muscle and birth canal during delivery, more than tripling in length, is responsible for muscle tears detectable through imaging. A potential way to decrease the risk of these injuries is to teach pregnant women to avoid pushing against a contracted levator muscle during labor, thus reducing tension. For women who experience difficult deliveries, providing early diagnosis, physical therapy, and dedicated recovery support can improve their outcomes.

Pelvic organ prolapse experienced by women is strongly linked to oxidative stress, which causes molecular alterations that compromise the integrity and strength of the pelvic floor's supporting structures, thus promoting the development of the condition. Additionally, prolonged mechanical stress is a proven factor in the appearance of pelvic organ prolapse. It correlates with increased levels of free radical production and the programmed death of fibroblasts initiated by mitochondria. Consequently, the study implies that lowering oxidative stress, for example by making healthier lifestyle choices (such as having a balanced diet and engaging in regular physical activity), is crucial for avoiding the risk of pelvic organ prolapse.

Source:

Giri et al. (2017). Obesity and pelvic organ prolapse: a systematic review and meta-analysis of observational studies. American Journal of Obstetrics and Gynecology, 217(1), 11-26.e3. <https://doi.org/10.1016/j.ajog.2017.01.039> 28188775

DeLancey et al. (2024). Pelvic floor injury during vaginal birth is life-altering and preventable: what can we do about it? American Journal of Obstetrics and Gynecology, 230(3), 279-294.e2. <https://doi.org/10.1016/j.ajog.2023.11.1253> 38168908

Marcu et al. (2020). Oxidative Stress: A Possible Trigger for Pelvic Organ Prolapse. Journal of Immunology Research, 2020, 1-11. <https://doi.org/10.1155/2020/3791934> 32953891



Monitoring



PERSONALIZE RECOMMENDATION

Enhance your understanding of pelvic floor dysfunction, especially concerning its symptoms and the awareness of one's personal and family history (past or present) with the condition.

Although Pelvic Organ Prolapse (POP) is often considered a personal issue and not openly discussed within families, a study has shown that having a family history of POP increases the risk of both developing the condition and experiencing its recurrence. This suggests that increased awareness and education about POP, both broadly and within family circles, could be beneficial for early detection and the implementation of preventive as well as monitoring strategies.

Source:

Samimi et al. (2020). Family history and pelvic organ prolapse: a systematic review and meta-analysis. International Urogynecology Journal, 32(4), 759-774. <https://doi.org/10.1007/s00192-020-04559-z> 33084962





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
WNT4	rs3820282	CC	2 PMID: 32184442
GDF7	rs9306894	AA	2 PMID: 32184442
EFEMP1	rs3791675	CC	2 PMID: 32184442
FGFR2	rs7072877	CT	3 PMID: 39349682
COL3A1	rs1800255	GA	1 PMID: 33930075

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Longevity - General Health

Red Meat Diet Risk

A diet that includes red meats such as beef, lamb, veal, and pork is an important source of protein and essential nutrients like iron, zinc, and vitamin B12. These meats can also be processed into products like bacon, sausages, and cured ham. Although consumption patterns are influenced by factors such as age and culture, high intake of red and processed meat is associated with significant health risks. In particular, the link to colorectal cancer is well-studied. This risk is partly attributed to mutagenic compounds, such as heterocyclic amines (HCAs) and polycyclic aromatic hydrocarbons (PAHs), that form when meat is cooked at high temperatures, like when it is grilled or pan-fried. Furthermore, genetic predisposition can amplify this susceptibility. For example, variants in genes such as NAT1 are associated with an increased risk of colorectal cancer, particularly with high consumption of processed meats. Other associated conditions include cardiovascular disease and hyperuricemia. Therefore, the general recommendation is to consume red meat moderately, at around 80 g per day, as part of a balanced diet.



About your result



Your genetic profile indicates an increased genetic sensitivity or risk of adverse effects, such as inflammation, from high red meat consumption.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

You can reduce the risk obtained from consuming red meat through limiting your consumption to 500 g/week.

Making dietary modification is encouraged as it can help with reducing the risk of cancer. Limit the intake of red and processed meat to 500 g/week or around 70 g/day. Complement this diet with other sources of protein to fulfill the needed nutrients such as white meat, fish, eggs, and vegetables.

Source:

Aykan et al. (2015). Red meat and colorectal cancer. Oncology Reviews. <https://doi.org/10.4081/oncol.2015.288.26779313>





Exercise



PERSONALIZE RECOMMENDATION

In order to curb the potential risk of red meat, engage in routine exercise such as walking 4100 steps/day and adequate muscle strengthening activity.

Physical activities can help with reducing the risk of mortality caused by consuming red and processed meat. It is advised to engage in muscle-strengthening activity (MSA) at the maximum of 39.5 minutes/week as too much of MSA can caused reversed effect. Additionally, walking is generally recommended with the minimum of 4100 steps per day without any upper limit.

Source:

Wu et al. (2023). How to Keep the Balance between Red and Processed Meat Intake and Physical Activity Regarding Mortality: A Dose-Response Meta-Analysis. Nutrients, 15(15), 3373. <https://doi.org/10.3390/nu15153373>





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
CYP2E1	rs3813867	GC	3 PMID: 30489355
PNPLA3	rs738409	CC	3 PMID: 38403728
GSTP1	rs1695	AG	2 PMID: 31336627
APOA5	rs662799	AA	2 PMID: 35468744
ABCG2	rs2231142	GG	3 PMID: 35079028
NAT1	rs6586714	GG	3 PMID: 22552404

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Longevity - General Health

Insulin Resistance

Insulin resistance is a condition where the body's main tissues (liver, muscle, and fat) do not respond effectively to insulin, which impairs glucose uptake from the blood. The pancreas often compensates by producing more insulin, leading to hyperinsulinemia. The condition is widespread; on a global scale, a 2023 meta-analysis estimated the prevalence to be 35.5% in the adult population. In Southeast Asia specifically, an overall prevalence of 44.3% has been reported according to a separate meta-analysis (2016-2021). Insulin resistance typically precedes type 2 diabetes by 10 to 15 years. The condition is primarily acquired, linked to excess body fat, physical inactivity, and diet. Genetic predisposition also plays a significant role, and research has identified variations in genes including IGF1, IRS1, and KLF14 that are associated with insulin sensitivity. Rare genetic syndromes, such as mutations in the insulin receptor gene (Type A insulin resistance), can cause severe inherited conditions. Without proper management, insulin resistance can significantly increase the risk of metabolic syndrome, cardiovascular disease, nonalcoholic fatty liver disease (NAFLD), and type 2 diabetes.



About your result



Your genetic profile indicates an increased genetic predisposition to developing insulin resistance.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

To manage your increased risk of developing insulin resistance, prioritize a diet of high-fiber, low-glycemic foods and limit refined sugars. For many, a modest, sustainable weight loss significantly improves insulin sensitivity.

Instead of prescribing a single diet, dietary approaches for insulin resistance prioritize the quality of macronutrients to improve the body's response to insulin and prevent the progression of more serious metabolic conditions. Focusing on high-fiber, low-glycemic index carbohydrates from sources such as whole grains, legumes, and vegetables while limiting refined sugars and starches helps manage glucose response. A modest protein intake is recommended, with an emphasis on substituting animal proteins with plant-based sources, such as beans and lentils, to help ameliorate insulin resistance. It is important to ensure adequate dietary fiber intake, around 25–38 grams daily, as it supports gut health and the production of beneficial short-chain fatty acids. For overweight individuals, achieving a sustainable weight loss of 5-10% through an individualized, nutrient-dense diet is one of the most effective ways to improve insulin sensitivity.

Source:

Muscogiuri et al. (2021). Nutritional guidelines for the management of insulin resistance. *Critical Reviews in Food Science and Nutrition*, 62(25), 6947–6960. <https://doi.org/10.1080/10408398.2021.1908223> 33797999





Exercise



PERSONALIZE RECOMMENDATION

To directly improve how your body responds to insulin, combine 150+ minutes of weekly aerobic activity with resistance training 3 times per week. Consistency is essential for managing your increased genetic risk.

Structured exercise incorporating specific modalities and intensities is a highly effective strategy for directly improving insulin sensitivity. Effective aerobic training includes moderate-intensity sessions totaling at least 150 minutes per week or high-volume, vigorous-intensity work (e.g., ~20 miles weekly at 65-80% effort). Resistance training is also crucial, with protocols of 3-4 sets of 8-10 repetitions at a challenging weight (~75-80% of 1-rep max) performed about three times weekly showing significant benefit. Combining both aerobic and resistance training is often recommended as it effectively reduces visceral fat while improving key metabolic health markers. Compared to weight loss from diet alone, exercise-induced weight loss provides the distinct advantage of preserving or increasing lean muscle mass, which is metabolically crucial. The improvements in insulin sensitivity are closely tied to recent activity, making consistency essential for maintaining long-term benefits.

Source:

Keshel et al. (2015). Exercise Training and Insulin Resistance: A Current Review. Journal of Obesity & Weight Loss Therapy, s5.
<https://doi.org/10.4172/2165-7904.s5-00326523243>



Lifestyle



PERSONALIZE RECOMMENDATION

To address your increased risk of insulin resistance, aim for 150+ minutes of weekly exercise. If you are overweight, a 5-10% body weight loss through diet and activity is highly effective.

A targeted lifestyle change, particularly increased physical activity and weight management, is a good place to start when addressing insulin sensitivity. Engaging in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity per week can enhance the body's ability to regulate glucose. It is also important to prioritize daily movement, aiming for a minimum of 10,000 steps per day through regular physical activity. For individuals who are overweight, losing 5–10% of their initial body weight has been shown to significantly improve insulin function. This can be supported by combining physical activity with dietary strategies, such as reducing calories and controlling portions. These lifestyle adjustments address key metabolic imbalances linked to insulin resistance and support long-term metabolic health.

Source:

Muscogiuri et al. (2021). Nutritional guidelines for the management of insulin resistance. Critical Reviews in Food Science and Nutrition, 62(25), 6947–6960. <https://doi.org/10.1080/10408398.2021.190822333797999>



Monitoring



PERSONALIZE RECOMMENDATION

Due to your increased genetic risk, it is vital to have a doctor monitor for signs of insulin resistance, such as high triglycerides or blood pressure. Early professional evaluation is key to preventing progression.

Since directly measuring insulin resistance is difficult, monitoring relies on recognizing a group of clinical signs, symptoms, and risk factors. Key physical indicators include increased waist circumference and acanthosis nigricans (dark, velvety skin patches), as well as lab values showing elevated triglycerides and low HDL cholesterol. A healthcare professional can infer insulin resistance when criteria for metabolic syndrome are met, which requires having at least three risk factors, such as high blood pressure and elevated fasting glucose. Although surrogate markers like the HOMA-IR index can quantify resistance, the presence of these clinical signs is the primary reason to seek a professional evaluation. Early consultation is vital because a clinician can recommend lifestyle changes and, if necessary, prescribe medications such as metformin for related conditions, thereby preventing progression to type 2 diabetes.

Source:

*Freeman, A. M., et al. (2025). Insulin resistance. In StatPearls. StatPearls Publishing. <http://www.ncbi.nlm.nih.gov/books/NBK507839/>**





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
PPARG	rs1801282	CC	2 PMID: 27075119
IRS1	rs2943641	TT	1 PMID: 19734900
FTO	rs9939609	AA	3 PMID: 29764479
FTO	rs17817449	GG	1 PMID: 18316358
FTO	rs1421085	CC	1 PMID: 18316358
INSR	rs1799817	GA	2 DOI: 10.1186/s43066-020-00066-4
CDKAL1	rs7756992	AG	1 PMID: 19033397
KLF14	rs972283	GG	1 PMID: 20581827
TCF7L2	rs7903146	TT	1 PMID: 28611053
MC4R	rs12970134	AA	1 PMID: 33468396
SC4MOL	rs17046216	TA	2 PMID: 22791750
IGF1	rs35767	GG	1 PMID: 20081858

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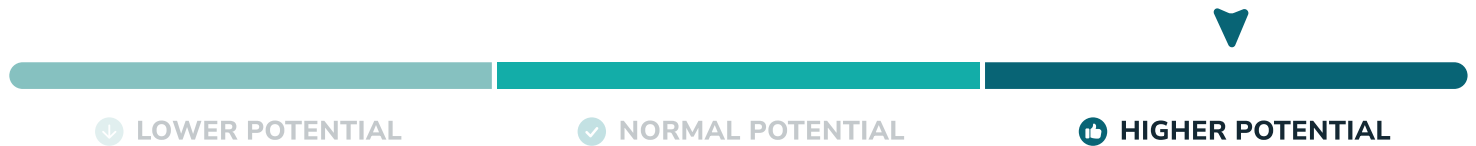
Longevity - General Health

HDL Cholesterol Response to Exercise

How an individual's HDL cholesterol responds to exercise describes how their high-density lipoprotein (HDL, or "good" cholesterol) levels and function change as a result of regular physical activity. One recognized method for raising HDL levels is exercise, which is associated with a lower risk of cardiovascular disease. For example, one study of healthy young men showed that a 12-week moderate-intensity program increased HDL by about 7%, and a subsequent high-intensity program added another 8% increase. However, this response is not uniform and can depend significantly on an individual's baseline metabolic profile. The HDL-raising effect is most effective in people who start with high triglycerides and low HDL, showing a 5% increase in one major study. Meanwhile, those with low HDL alone may experience minimal change. Furthermore, exercise increases not only the amount of HDL, but also its function, such as the ability to remove cholesterol from cells (cholesterol efflux). These responses are complex and variable, influenced by multiple factors including genetics, as investigated in large-scale studies such as the Health, Risk Factors, Exercise Training and Genetics (HERITAGE) Family Study.



About your result



Your genetic profile indicates a tendency for a greater-than-average increase in HDL ("good") cholesterol levels in response to physical activity.

Our Recommendations





Exercise



PERSONALIZE RECOMMENDATION

Even if you have favorable genetic potential for HDL cholesterol response, you can still further improve it by performing a consistent high volume of aerobic exercise combined with moderate-intensity strength training.

This approach maximizes improvements in HDL levels and quality.

The relationship between aerobic exercise and HDL cholesterol is complex. Exercise influences not only the quantity, or level, of HDL particles, but also their quality and functionality. Responses vary based on an individual's baseline metabolic profile. Significant increases in HDL levels are most often observed in individuals with low HDL accompanied by high triglycerides. Those with low HDL alone may be less responsive to exercise interventions. The most consistently effective strategy is a high volume of aerobic exercise implemented through a progressive program that gradually increases in duration and intensity over several months. For instance, a program could progress from a moderate intensity (50–70% VO2 max) to a higher intensity (up to 85% HR max). Although high-intensity interval training (HIIT) can be more effective than continuous moderate-intensity training for some individuals, sustained moderate exercise remains a beneficial and recommended starting point. Importantly, consistent exercise improves HDL quality, even when total HDL levels do not rise, by promoting larger, more protective particles and enhancing cholesterol removal capacity.

Research shows that moderate-intensity strength training is more effective than high-intensity training for raising HDL cholesterol levels. Specifically, resistance training that incorporates foundational exercises such as squats, rows, and bench presses with loads ranging from 50% to 75% of an individual's one-repetition maximum (1RM, the maximum weight that can be lifted for a single repetition) and higher repetition sets has been shown to significantly increase HDL cholesterol levels. In contrast, very high-intensity training (at or above 90% of 1RM) has not been shown to have the same HDL-raising effect and has been found to have less favorable impacts on other blood lipids. The exact mechanisms are still being explored, but it is hypothesized that this intensity range optimizes the activity of key enzymes, such as LCAT, that are involved in HDL maturation and reverse cholesterol transport. The positive effects of a single session of moderate-intensity strength training are also long-lasting, with beneficial changes in HDL observed for up to 72 hours after exercise.

Source:

Franczyk, B., et al. (2023). The impact of aerobic exercise on hdl quantity and quality: A narrative review. International Journal of Molecular Sciences, 24(5), 4653. <https://doi.org/10.3390/ijms24054653>

Lira, F. S., et al. (2010). Low and moderate, rather than high intensity strength exercise induces benefit regarding plasma lipid profile. Diabetology & Metabolic Syndrome, 2(1), 31. <https://doi.org/10.1186/1758-5996-2-31>



Dietary



PERSONALIZE RECOMMENDATION

To further improve your HDL cholesterol response, given that you have high genetic potential for favorable HDL response to exercise, you can adopt a Mediterranean-style diet. The nutrients in foods like fish, nuts, and extra virgin olive oil will further increase your HDL protective qualities.

Adopting a Mediterranean-style diet and combining it with regular exercise is a highly effective strategy that can greatly improve the functionality of HDL cholesterol, not just its quantity. This dietary approach emphasizes consuming extra virgin olive oil (EVOO), fish, legumes, nuts, whole grains, and vegetables while limiting red and processed meats. The benefits are largely attributed to the polyphenol and antioxidant content of these foods, particularly in EVOO. These nutrients have been shown to increase HDL's antioxidant power and its ability to remove cholesterol from arteries. Specifically, consuming fish and legumes has been linked to improved activity of key HDL-associated enzymes. Additionally, omega-3s and lycopene (found in tomatoes) support HDL function. Combining this nutrient-dense dietary pattern with a consistent exercise program creates a powerful, synergistic approach to optimizing the protective qualities of HDL particles.

Source:

Stadler, J. T., & Marsche, G. (2021). Dietary strategies to improve cardiovascular health: Focus on increasing high-density lipoprotein functionality. Frontiers in Nutrition, 8, 761170. <https://doi.org/10.3389/fnut.2021.761170.34881279>



Lifestyle



PERSONALIZE RECOMMENDATION

Even if you have higher HDL cholesterol response, to achieve your high potential for HDL improvement, you must support your exercise routine with a healthy lifestyle. Prioritizing weight management and smoking cessation is essential for you to achieve optimal results.

Although exercise is an important strategy for managing cholesterol, low HDL levels are strongly associated with an unfavorable metabolic profile, particularly high triglyceride levels and excess body weight. Additionally, this association can persist even in individuals who exercise regularly. This suggests that an exercise program's effectiveness in raising HDL cholesterol may be limited if underlying lifestyle factors are not addressed. Maintaining a healthy body weight is important because obesity is a primary driver of metabolic dysfunction linked to low HDL and can reduce the benefits of physical activity. Furthermore, avoiding smoking is another critical lifestyle choice for supporting cardiovascular health. Therefore, to maximize the HDL-raising potential of exercise, it should be part of a lifestyle that prioritizes weight management and smoking cessation. This holistic approach creates the optimal physiological environment for an individual to reap the full cardiovascular benefits of their training.

Source:

Wakabayashi, I., & Daimon, T. (2017). Associations between hypo-HDL cholesterolemia and cardiometabolic risk factors in middle-aged men and women: Independence of habitual alcohol drinking, smoking and regular exercise. Obesity Research & Clinical Practice, 11(3), 324–334. <https://doi.org/10.1016/j.orcp.2016.04.007.27397794>





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
LIPG	rs2000813	CC	3 PMID: 14624415
LPL	rs10096633	CC	1 PMID: 21252145
LIPC	rs1800588	CT	1 PMID: 21252145
CETP	rs1532624	CA	1 PMID: 21252145
APOE	rs7412	CC	1 PMID: 37388939

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Longevity - Cognitive Performance

Cognitive Decline

Cognition is defined as the process of acquiring knowledge and understanding through experiences, senses, as well as thoughts. It includes different aspects of intellectual functions and processes that encompass high-level brain activity including attention, memory, knowledge, decision making, planning, reasoning, judgement, perception, comprehension, language, and visuospatial function. Cognitive decline or cognitive deficit refers to the impairment in one or more domains of cognition that can be a short-term or a progressive and permanent condition. The cause is not limited to any disease or condition and can be a consequence of an underlying condition. Cognitive decline can be affected by several different factors such as genetics, brain injury, mental illness, neurological disorders, and aging. For example, a common variant of the brain-derived neurotrophic factor (BDNF) gene, known as Val66Met, has been linked to accelerated age-related cognitive decline. The "Met" allele of this variant impairs the activity-dependent secretion of BDNF protein, which is important for neuroplasticity, memory formation, and neuronal survival.



About your result



Your genetic profile indicates an increased risk of experiencing age-related cognitive decline.

Our Recommendations



Lifestyle



PERSONALIZE RECOMMENDATION

The risk of cognitive decline can be curb through avoiding smoking and alcohol consumption as well as participating in physical and social activities.

Avoid smoking altogether as it can affect the progression of cognitive decline significantly especially in terms of memory and fluency ability. In addition, maintain no-to-moderate consumption of alcohol, engage in routine physical activity, and stay socially active through making contact with family and friends as well as participating in communal activities.

Source:
[Bloomberg et al. \(2024\). Healthy lifestyle and cognitive decline in middle-aged and older adults residing in 14 European countries. Nature Communications, 15\(1\), 5003. https://doi.org/10.1038/s41467-024-49262-5 38937442](https://doi.org/10.1038/s41467-024-49262-5)



Dietary



PERSONALIZE RECOMMENDATION

Adjust your diet in accordance to MIND dietary regiment to help reduce the risk of cognitive decline.

Adopt the MIND diet, a regiment that combines the Mediterranean and DASH (hypertension specific) diet that has been recommended in study to reduce the progress of cognitive decline. This diet consists of berries, green leafy vegetables, high dairy, high potato consumption, and at least one fish (not fried) meal per week. This dietary regiment also advised the reduction of red meat consumption.

Source:

Morris et al. (2015). MIND diet slows cognitive decline with aging. Alzheimer's & Dementia, 11(9), 1015–1022. Portico.
<https://doi.org/10.1016/j.jalz.2015.04.011> 26086182

Exercise



PERSONALIZE RECOMMENDATION

You can reduce your risk of cognitive decline by engaging in exercise such as aerobic and resistance training for at least 52 hours a week.

Incorporate routine exercise as well as other form of physical activities to help improve cognitive performance. Study suggests that exercising for at least 52 hours a week can help aging older adults both with and without cognitive impairment. The recommended forms backed with evidence are aerobic, resistance (strength) training, mind-body exercises, and combination of them.

Source:

Gomes-Osman et al. (2018). Exercise for cognitive brain health in aging. Neurology Clinical Practice, 8(3), 257–265.
<https://doi.org/10.1212/cpj.0000000000000460> 30105166





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
ADAMTS9	rs9831846	CT	3 PMID: 28225792
CASS4	rs911159	GG	3 PMID: 28199971
LGALS3	rs4644	CA	2 PMID: 22673112
CETP	rs5882	AA	1 PMID: 25260850
SPON1	rs11023139	GG	1 PMID: 33782664
BDNF	rs6265	CC	3 PMID: 35002376
HTR2A	rs6313	AG	2 PMID: 21320838

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Longevity - Cognitive Performance

Declarative Memory Decline

Cognitive abilities, including memory, tend to decline continuously and gradually with age, often starting around 55 years old. While the degree of this decline varies significantly between individuals due to environmental and genetic factors in both healthy and pathological aging, memory loss stands out as a major concern in clinical settings. Since overall cognitive function, which encompasses memory, executive function, attention, language, visuospatial skills, and processing speed, is crucial for maintaining quality of life in older age, understanding the factors that influence the trajectory of cognitive decline, particularly memory decline, is essential for developing effective intervention and treatment strategies.



About your result



Your genetic profile indicates an increased risk of age-related decline in declarative memory (memory for facts and events).

Our Recommendations



Exercise



PERSONALIZE RECOMMENDATION

Given that you have increased risk of declarative memory decline, engage in both regular physical activity and specific exercises that challenge the mind and body together (motor-cognitive training). This combination is particularly beneficial for older adults as it helps to improve memory and balance which often decline with age.

Exercise can support declarative memory through two distinct approaches: performing it around learning periods, or integrating it directly with learning via motor-cognitive dual-tasking. A well-established strategy is to exercise either immediately before or after studying to enhance memory encoding and consolidation. The more novel dual-task approach, which combines physical movement and learning simultaneously, can also be effective, but its success depends on the design specifics. Memory enhancement is most likely to occur when the physical activity is rhythmic and self-paced, such as steady walking or cycling, and when the information is presented in synchrony with the movement, often in an engaging, game-like context. In contrast, memory can be impaired if the motor task is complex or requires high attention (e.g., obstacle navigation), as it competes for cognitive resources. Therefore, for dual-task training to be beneficial, the physical activity should complement the learning process rather than create cognitive overload.

Source:

Tomporowski, P. D., & Qazi, A. S. (2020). Cognitive-motor dual task interference effects on declarative memory: A theory-based review. Frontiers in Psychology, 11, 1015. <https://doi.org/10.3389/fpsyg.2020.01015.32670130>



Lifestyle



PERSONALIZE RECOMMENDATION

Increase healthy lifestyle choices to boost your working memory and general thinking skills. This approach offers significant advantages for older adults, helping preserve cognitive functions that can diminish with age.

Mild Cognitive Impairment (MCI) is a frequent concern among the elderly that involves a decline in memory, focus, and thinking skills. It is more significant than normal aging and increases the likelihood of developing dementia. Therefore, preventing or slowing its progression is essential. Early use of antioxidants like vitamin E, vitamin C, ginkgo biloba, and curcumin has been proposed to help reduce oxidative stress and aging's impact. A comprehensive approach to managing MCI includes promoting autonomy in communication and daily tasks, managing vascular health issues, encouraging a healthy lifestyle with physical activity, a nutritious diet, adequate sleep, limited alcohol consumption, and abstaining from smoking, in addition to engaging in mental exercises like puzzles and learning.

Source:
 Ataollahi Eshkoor et al. (2015). *Mild cognitive impairment and its management in older people. Clinical Interventions in Aging*, 687.
<https://doi.org/10.2147/cia.s73922.25914527>

Dietary



PERSONALIZE RECOMMENDATION

Adopt a healthy, structured, and nutrient-rich diet to enhance your memory and overall cognitive function. While a balanced diet is essential, strategic supplements consumption may provide additional support for cognitive health.

For older adults experiencing subjective cognitive decline, nutritional spermidine supplementation may offer a way to positively impact their memory performance. The mechanism behind this benefit could involve spermidine stimulating neuromodulatory functions within the brain's memory network.

A study found that a daily serving of whole blackcurrant (WBB) powder, equal to 178 grams of fresh berries, led to better vascular and cognitive function, along with lower 24-hour systolic blood pressure in healthy older individuals. These findings imply that the (poly)phenols present in WBB could help decrease the likelihood of developing cardiovascular disease in older people and may also improve episodic memory processes and executive functioning in older adults at risk for cognitive decline.

Research suggests that taking a supplement containing fucoxanthin, derived from the microalgae *Phaeodactylum tricornutum*, may improve several aspects of cognitive function, including both short-term and longer-term memory, as well as alertness, focus, accuracy, and the ability to manage complex tasks.

Source:
 Wirth et al. (2018). *The effect of spermidine on memory performance in older adults at risk for dementia: A randomized controlled trial. Cortex*, 109, 181–188. <https://doi.org/10.1016/j.cortex.2018.09.014.30388439>
 Wood et al. (2023). *Wild blueberry (poly)phenols can improve vascular function and cognitive performance in healthy older individuals: a double-blind randomized controlled trial. The American Journal of Clinical Nutrition*, 117(6), 1306–1319. <https://doi.org/10.1016/j.ajcnut.2023.03.017.36972800>
 Yoo et al. (2024). *Effects of Supplementation with a Microalgae Extract from Phaeodactylum tricornutum Containing Fucoxanthin on Cognition and Markers of Health in Older Individuals with Perceptions of Cognitive Decline. Nutrients*, 16(17), 2999. <https://doi.org/10.3390/nu16172999.39275314>



Monitoring



PERSONALIZE RECOMMENDATION

With a higher risk to develop declarative memory decline, consult your doctor to regularly monitor specific biomarkers related to cognitive health as it enables early detection of potential risks. Taking preventive action based on these early findings can significantly help reduce the chances of future memory loss or cognitive decline.

Abnormal blood pressure can impair several cognitive functions, including executive function, attention, processing speed, and memory. In a diverse study of middle-aged and older individuals, arterial stiffness and poor blood flow were found to be modestly but consistently associated with lower cognitive function. The study suggests that early blood pressure management through clinical and public health interventions could lessen health disparities and reduce cognitive decline in the population. In the absence of drug treatments for neurodegenerative disorders, managing blood pressure in midlife is a valuable public health strategy for an aging and diverse population.

Source:

Tarraf et al. (2017). Blood Pressure and Hispanic/Latino Cognitive Function: Hispanic Community Health Study/Study of Latinos Results. Journal of Alzheimer's Disease, 59(1), 31–42. <https://doi.org/10.3233/jad-170017> 28582859





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
APOC1	rs4420638	AG	1 PMID: 25648963
TOMM40	rs2075650	AA	1 PMID: 28800603
SLAMF1	rs13374761	GG	3 PMID: 31985465
BDNF	rs6265	CC	3 PMID: 34997117
ABCA7	rs3764650	TT	1 PMID: 28269768
BIN1	rs744373	AG	1 PMID: 28269768

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Name : Deployment LifeReady
Date of Birth : 01 January 2000

Order ID : #2131-998435
Report Date : 08 September 2025



Longevity - Inflammation

Inflammatory Biomarker CRP

C-reactive protein (CRP) is an inflammatory biomarker produced by the liver in response to inflammation or infection. Often measured using high-sensitivity tests (hs-CRP), persistently elevated levels reflect chronic, low-grade inflammation and are associated with an increased risk of various health issues, including cardiovascular disease (CVD) and type 2 diabetes (T2DM). Although higher CRP levels are associated with these conditions, large genetic studies involving over 100,000 individuals suggest that CRP primarily acts as a marker of underlying inflammation rather than as a direct cause of conditions such as coronary heart disease. An individual's baseline CRP level is influenced by both genetic factors, including variations in the CRP gene, and environmental factors triggering inflammation. Monitoring CRP provides insights into inflammatory status and associated disease risks.



About your result



Your genetic profile indicates a tendency towards increased C-reactive protein (CRP) levels, a marker of inflammation.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Manage your increased risk of elevated CRP by eating fatty fish, diverse produce, and fiber, while also ensuring ample Vitamin C intake.

To potentially influence inflammatory markers like C-reactive protein (CRP), consider dietary adjustments focused on reducing systemic inflammation. This involves increasing intake of omega-3 fatty acids from sources like fatty fish (mackerel, sardines, eel) or flax/chia seeds, helping to balance pro-inflammatory omega-6 fats. Simultaneously, emphasize consuming a wide variety of antioxidant-packed fruits (e.g., berries) and vegetables (e.g., spinach), plus fiber-rich whole grains, beans, and lentils for gut health support. Such a nutrient-dense eating pattern provides the building blocks for managing inflammatory responses.

Vitamin C intake appears relevant for managing C-reactive protein (CRP), particularly when levels are already elevated (≥ 1.0 mg/L), indicating increased inflammation. Supplementation studies demonstrated that vitamin C could significantly lower CRP in individuals within this higher-risk category, potentially through its antioxidant actions. Incorporating plenty of Vitamin C-rich foods into the daily diet, such as oranges, red bell peppers, kiwi fruit, and berries, is a practical way to support anti-inflammatory processes. This approach contributes to overall health and may help modulate inflammatory responses.



Source:

Schönenberger et al. (2021). Effect of Anti-Inflammatory Diets on Pain in Rheumatoid Arthritis: A Systematic Review and Meta-Analysis. Nutrients, 13(12), 4221. <https://doi.org/10.3390/nu13124221> 34959772

Block et al. (2009). Vitamin C treatment reduces elevated C-reactive protein. Free Radical Biology and Medicine, 46(1), 70–77. <https://doi.org/10.1016/j.freeradbiomed.2008.09.030> 18952164



Exercise



PERSONALIZE RECOMMENDATION

Given your increased risk of elevated CRP, aim for regular physical activity, like aerobic or resistance training, to help significantly lower inflammation.

Regular physical activity is associated with significant reductions in C-reactive protein (CRP), an important indicator of chronic inflammation. Meta-analysis findings show benefits from various exercise modes like aerobic or resistance training, typically performed around 3 times per week for several months. Although losing weight or body fat through exercise enhances the CRP-lowering effect, exercise demonstrably reduces inflammation even when weight remains stable. This underscores the independent anti-inflammatory benefits of maintaining a consistent exercise routine for managing CRP levels.

Source:

Fedewa et al. (2016). Effect of exercise training on C reactive protein: a systematic review and meta-analysis of randomised and non-randomised controlled trials. British Journal of Sports Medicine, 51(8), 670–676. <https://doi.org/10.1136/bjsports-2016-095999> 27445361





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
CRP	rs1130864	GG	1 PMID: 22763479
CRP	rs1205	CT	1 PMID: 19139754
CRP	rs3093059	AA	1 PMID: 27016573
CRP	rs2794520	CT	1 PMID: 26013044

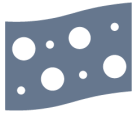
This report was validated and generated automatically. No signature is required. Recommendations given in this report are made using a lab developed test which should not supersede clinical judgement or medical expertise.



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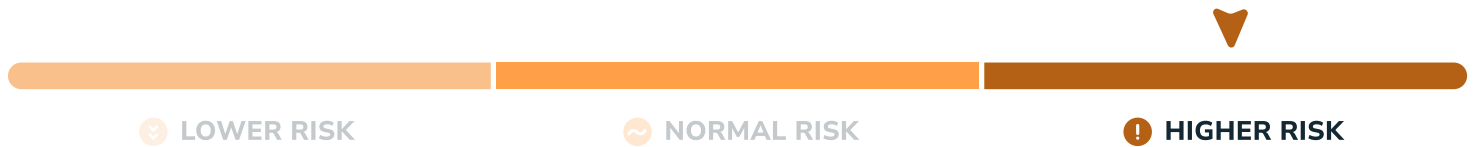
Longevity - Inflammation

Inflammatory Biomarker ESR

Erythrocyte Sedimentation Rate (ESR) is a widely used blood test indicating general inflammation within the body. It measures the speed at which red blood cells settle in a vertical tube over an hour. Increased levels of specific blood proteins, often elevated during infections, autoimmune disorders, or cancers, cause red blood cells to aggregate into stacks (rouleaux). These rouleaux settle more rapidly than single cells, resulting in a higher ESR value. Although not specific to any single condition, the ESR is a valuable, low-cost tool used with other tests to detect and monitor inflammation. Some conditions affecting red blood cells, like polycythemia or sickle cell disease, can lead to a lower ESR reading.



About your result



Your genetic profile indicates a tendency towards increased Erythrocyte Sedimentation Rate (ESR) levels, a marker of inflammation.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Reduce your increased inflammation risk by prioritizing omega-3s, antioxidant-rich produce, and fiber; these choices actively help manage ESR levels.

Dietary choices can influence inflammatory markers such as the Erythrocyte Sedimentation Rate (ESR) by modulating systemic inflammation. Increasing omega-3 fatty acid intake from sources like mackerel, herring, walnuts, or hemp seeds can help counterbalance pro-inflammatory omega-6 fats. Additionally, emphasize a diverse intake of antioxidant-rich vegetables (e.g., broccoli, kale) and fruits (e.g., pomegranates, oranges), along with fiber-rich foods like oats, chickpeas, and quinoa to promote gut health. This nutrient-dense eating pattern provides essential support for regulating inflammatory responses.

Source:

[Schönenberger et al. \(2021\). Effect of Anti-Inflammatory Diets on Pain in Rheumatoid Arthritis: A Systematic Review and Meta-Analysis. Nutrients, 13\(12\), 4221. https://doi.org/10.3390/nu13124221 34959772](https://doi.org/10.3390/nu13124221)





Exercise



PERSONALIZE RECOMMENDATION

Actively lower your increased inflammation risk by incorporating consistent physical exercise into your routine, which can help reduce ESR levels.

Regular physical exercise appears to be associated with lower levels of the Erythrocyte Sedimentation Rate (ESR), a common marker used to assess inflammation. Cross-sectional data indicates individuals undertaking high levels of physical activity generally exhibit lower ESR compared to less active individuals, likely reflecting the systemic anti-inflammatory benefits of exercise. While prospective studies are needed to confirm causality, adopting a physically active routine is a practical approach. Consistently engaging in exercise supports overall health and may help modulate inflammatory states indicated by ESR.

Source:

Alende-Castro et al. (2019). Factors influencing erythrocyte sedimentation rate in adults. Medicine, 98(34), e16816.
<https://doi.org/10.1097/md.00000000000016816> 31441853



Lifestyle



PERSONALIZE RECOMMENDATION

Mitigate your higher inflammation risk by avoiding smoking, managing your weight, and limiting alcohol to help lower ESR levels.

Modifiable lifestyle factors influence Erythrocyte Sedimentation Rate (ESR) levels, reflecting systemic inflammation. Avoiding smoking is recommended, as studies link tobacco use to higher ESR values independently of other factors. Managing body weight is also crucial, given that higher BMI and metabolic syndrome are associated with elevated ESR, signaling a pro-inflammatory state. Regarding alcohol, while light consumption was linked to lower ESR in some findings, excessive intake is broadly considered pro-inflammatory, underscoring the importance of moderation for those who drink.

Source:

Alende-Castro et al. (2019). Factors influencing erythrocyte sedimentation rate in adults. Medicine, 98(34), e16816.
<https://doi.org/10.1097/md.00000000000016816> 31441853





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
IL2/IL21	rs6822844	GT	DOI: 10.1136/annrheumdis-2018-eular.6641
FOXP3	rs3761547	TC	PMID: 34166564
MIR499A	rs3746444	GG	PMID: 22019503
CR1	rs6691117	AA	PMID: 23856853

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Longevity - Inflammation

Inflammatory Biomarker IL-18

Interleukin-18 (IL-18) is a potent cytokine from the IL-1 family that modulates both innate and acquired immunity, contributing to host defense against infections. However, elevated levels of this pro-inflammatory mediator are frequently observed in various autoimmune and inflammatory conditions, such as rheumatoid arthritis, lupus, psoriasis, inflammatory bowel disease, and Type 1 diabetes. Research indicates that higher circulating IL-18 concentrations are prospectively linked to an increased risk of coronary heart disease. Furthermore, IL-18 levels show strong associations with lifestyle factors including cigarette smoking, high triglyceride levels, and inversely with HDL (good) cholesterol levels.



About your result



Your genetic profile indicates a tendency towards increased Interleukin-18 (IL-18) levels, which is involved in inflammatory processes.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Given your higher IL-18 risk, prioritize antioxidant-rich foods, healthy fats, and lean proteins, while strictly limiting processed items and sugars.

Chronic elevation of inflammatory markers like interleukin-18 (IL-18) may be influenced by targeted dietary strategies that reduce systemic inflammation. Emphasize antioxidant-rich vegetables (e.g., carrots, bell peppers, broccoli, kale) and fruits (e.g., cherries, pears, strawberries), along with fiber-dense whole grains and legumes like lentils and black beans. Prioritize healthy fats from sources like flaxseed oil, walnuts, and olives, and include lean protein options such as salmon, turkey, or plant-based options including tempeh and tofu. Limiting processed foods, excess red meat, and added sugars further supports the body's regulation of inflammatory pathways.

Source:

*Scheiber, A., & Mank, V. (2025). Anti-inflammatory diets. In StatPearls. StatPearls Publishing. <http://www.ncbi.nlm.nih.gov/books/NBK597377/> **





Exercise



PERSONALIZE RECOMMENDATION

To help lower your increased IL-18 risk, establish a routine of consistent, moderate-intensity exercise for at least 8 weeks or more.

Consistent exercise training may contribute to lowering circulating levels of the inflammatory cytokine Interleukin-18 (IL-18). Individuals with overweight or obesity are at greater risk of elevated IL-18 levels. Meta-analytic evidence suggests that low-to-moderate intensity exercise sustained over periods longer than eight weeks is most strongly associated with IL-18 reduction. Although the certainty of the evidence remains very low, such exercise interventions may assist in regulating inflammasome activation. Establishing a routine of regular, moderate exercise continues to be a promising approach for managing systemic inflammation.

Source:

Ding et al. (2022). Anti-inflammatory effect of exercise training through reducing inflammasome activation-related inflammatory cytokine levels in overweight/obese populations: A systematic review and meta-analysis. Complementary Therapies in Clinical Practice, 49, 101656. <https://doi.org/10.1016/j.ctcp.2022.101656>





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
BCO2	rs2250417	TT	1 PMID: 24182552
BCO2	rs2115763	AT	1 PMID: 20150558
IL18	rs1834481	CC	1 PMID: 20150558
IL18	rs187238	CC	1 PMID: 32209332

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Longevity - Inflammation

Inflammatory Profile

Your inflammatory profile reflects the body's response to injury or infection, which can be short-term (acute) or long-lasting (chronic). Chronic inflammation is a key factor in major health conditions including cardiovascular disease, certain cancers, and type 2 diabetes. Key biomarkers assessing this profile include C-Reactive Protein (hs-CRP, linked to CVD risk), Erythrocyte Sedimentation Rate (ESR, a general inflammation indicator), and Interleukin-18 (IL-18, associated with autoimmune issues and CVD risk). An individual's inflammatory status results from interactions between genetics (influencing inflammatory mediators and baseline CRP levels), infections, lifestyle choices like diet and exercise, and age-related changes (inflammaging).



About your result



Your genetic profile suggests an increased general tendency towards inflammation.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Given your tendency for increased inflammation, prioritize fruits, vegetables, and healthy fats, while strictly minimizing processed foods and red meat.

To help manage systemic inflammation and improving inflammatory markers like cytokines (e.g., IL-6, IL-18), ESR, and prostaglandins (PGE2), focus on anti-inflammatory dietary principles. This means prioritizing fruits (berries, apples) and vegetables (leafy greens, colorful varieties), whole grains, and legumes for their antioxidant and fiber content. Incorporate lean proteins like fish and poultry, and unsaturated fats from sources such as olive oil, avocados, and nuts, while minimizing processed foods, red meat, and refined sugars. Such dietary patterns support the body's natural mechanisms for controlling inflammatory responses.

Source:

*Scheiber, A., & Mank, V. (2025). Anti-inflammatory diets. In StatPearls. StatPearls Publishing, <http://www.ncbi.nlm.nih.gov/books/NBK597377/> **





Exercise



PERSONALIZE RECOMMENDATION

To reduce your increased inflammation risk, consistently participate in aerobic and mind-body exercises, promoting an anti-inflammatory state within your body.

Consistent participation in physical activity, including various types like aerobic exercise (e.g., brisk walking, cycling, swimming) or mind-body exercises (e.g., Tai Chi), contributes to an anti-inflammatory profile via several mechanisms. Regular aerobic activity has been associated with reductions in circulating inflammatory markers, such as ICAM1 levels, independent of changes in body weight. Exercise promotes the loss of harmful visceral fat, leading to decreased secretion of pro-inflammatory adipokines from fat cells. Additionally, contracting skeletal muscles release anti-inflammatory myokines, such as IL-6 and IL-10, during physical activity, while exercise favorably modulates immune cell populations and their inflammatory activity. Through these interconnected pathways, sustained physical activity systematically combats chronic low-grade inflammation.

Source:

Gleeson et al. (2011). The anti-inflammatory effects of exercise: mechanisms and implications for the prevention and treatment of disease. Nature Reviews Immunology, 11(9), 607–615. <https://doi.org/10.1038/nri3041> 21818123



Lifestyle



PERSONALIZE RECOMMENDATION

Given your increased inflammation risk, proactively manage stress, maintain a healthy weight, and prioritize 7-9 hours of quality sleep nightly.

A comprehensive anti-inflammatory lifestyle incorporates several key habits beyond diet and exercise to manage the general inflammatory profile. Proactively managing chronic stress is crucial; this can involve structured approaches like Mindfulness-Based Stress Reduction (MBSR) to cultivate awareness, techniques such as Progressive Muscle Relaxation (PMR) to release physical tension, or learning self-regulation through biofeedback. Mind-body practices including specific breathing exercises, yoga, and Tai Chi are also effective in calming the nervous system and mitigating stress-induced inflammation. Maintaining a healthy body weight is essential, as excess body fat, particularly abdominal fat, directly contributes to systemic inflammation; even modest weight loss offers benefits. Furthermore, prioritizing sufficient, quality sleep (aiming for 7-9 hours nightly) supports tissue repair and hormonal balance, counteracting inflammation linked to sleep deprivation. Addressing these interconnected areas—stress, weight, and sleep—creates a robust foundation for reducing chronic inflammation.

Source:

*University of Wisconsin, Madison. (n.d.). The Anti-Inflammatory Lifestyle. School of Public Health and Medicine University of Wisconsin, Madison. https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/handout_ai_diet_patient.pdf **





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
MTHFR	rs1801133	GA	1 PMID: 21190091
IL6	rs2069837	AA	1 PMID: 35368020
HLA-DQB2	rs7453920	AG	3 PMID: 30104900
IFNG	rs2430561	AA	2 PMID: 33445752
TNF	rs361525	GG	1 PMID: 29340067
TNF	rs1800629	GA	1 PMID: 29340067
MPPED2	rs2065418	TT	2 PMID: 31781170

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Longevity - Sleep

Caffeine-Induced Insomnia

Caffeine is one of the most frequently used psychoactive stimulant drugs. Caffeine-induced insomnia describes sleep disturbances triggered by its consumption. Symptoms may include difficulty falling asleep, frequent awakenings, reduced total sleep time, non-restorative sleep, and daytime sleepiness, with severity potentially depending on habitual sleep duration. Genetic studies suggest links to genes like ADORA2A, which influence individual responses to caffeine. While commonly used as a stimulant, caffeine can significantly disrupt sleep for susceptible individuals.



About your result



Your genetic profile indicates an increased sensitivity to caffeine, leading to a higher likelihood of experiencing insomnia if consumed.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Given your increased sensitivity, significantly limit caffeine from all sources, avoiding it at least 6-8 hours before bedtime to protect sleep.

Healthy adults generally tolerate up to 400 mg of caffeine daily, but those with caffeine sensitivity or insomnia symptoms should aim for substantially lower amounts and avoid afternoon/evening consumption. Caffeine interferes with sleep mechanisms, and higher intake is linked to sleep disturbances like difficulty staying asleep. To limit exposure, restrict common sources such as coffee, tea (black, green), colas, energy drinks, chocolate (especially dark), and guarana-containing items. Awareness of these sources and timing of intake are key strategies for preventing caffeine-related sleep issues. Given its potentially long duration in the body, avoiding caffeine for at least several hours before intended bedtime is advisable for sensitive individuals. Furthermore, checking labels on supplements and over-the-counter medications, like pain relievers, is important as they can be hidden sources of caffeine.

Source:

[Chaudhary et al. \(2016\). Caffeine consumption, insomnia, and sleep duration: Results from a nationally representative sample. Nutrition, 32\(11-12\), 1193-1199. https://doi.org/10.1016/j.nut.2016.04.005](https://doi.org/10.1016/j.nut.2016.04.005)



Monitoring



PERSONALIZE RECOMMENDATION

Given your sensitivity, consistently track caffeine from all sources to identify your limits and set clear cut-off times for better sleep.

Monitoring daily caffeine intake is a valuable lifestyle strategy for individuals experiencing caffeine-induced insomnia, as sensitivity varies significantly between people. Consistently tracking consumption from all sources—including beverages, foods, and medications—helps identify personal tolerance levels and the relationship between intake timing and sleep disruption. This knowledge empowers individuals to make targeted adjustments, such as setting specific consumption limits or cut-off times. Utilizing simple methods like a log or available tracking applications can aid in maintaining this awareness consistently. Dedicated caffeine tracking apps, accessible on smartphones or watches, aim to make daily logging quick and easy, which is crucial for developing a sustainable habit. They often provide features like customizable drink lists, favorite shortcuts, and logging reminders to streamline the process throughout the day.

Source:

*Recap frequently asked questions. (n.d.). Retrieved June 20, 2025, from <https://recap.app/faq.html> **





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
ADORA2A	rs5751876	TC	1 PMID: 17329997
TNF	rs1800629	GA	1 PMID: 36335893
IL1B	rs1143627	GA	1 PMID: 36335893
ADA	rs73598374	CC	1 PMID: 21359089

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Longevity - Sleep

Sleep Deprivation and Insomnia Risk

Sleep deprivation (<7 hours nightly) and insomnia risk are major health concerns worldwide. Globally, large-scale studies estimate that approximately one-third of the adult population experiences one or more insomnia symptoms. Chronic insufficient sleep is linked to serious outcomes like hypertension, diabetes, obesity, depression, heart attack, stroke, and higher mortality rates. Risk factors include lifestyle choices (shift work, screen time), other sleep disorders, aging, and genetic predisposition. Notably, large genetic studies like the UK Biobank (n = 453,379) and HUNT study (n > 62,500) identified 57 loci associated with insomnia symptoms, implicating genes involved in protein processing active in the brain, muscle and adrenal glands, and suggesting genetic links to coronary artery disease and depression.



About your result



Your genetic profile indicates an increased overall risk of developing insomnia.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Given your increased insomnia risk, prioritize omega-3s, complex carbs, and vitamin D, while diligently limiting saturated fats for better sleep.

Dietary habits influence sleep quality and the risk of insomnia or sleep deprivation. A lower intake of saturated fat, commonly found in red meats, butter, and processed snacks, is linked to improved sleep continuity. Adequate omega-3 fatty acid consumption, particularly EPA and DHA from fatty fish like salmon, sardines, and mackerel, supports healthy sleep duration. Choosing complex carbohydrates and fiber from whole grains (such as oats and quinoa), fruits (e.g., apples and bananas), and vegetables (e.g., sweet potatoes and broccoli) instead of refined sugars may help stabilize blood glucose and hormonal rhythms that affect sleep. Maintaining sufficient vitamin D levels through sources like fortified dairy products, egg yolks, or sunlight exposure is also associated with a reduced risk of sleep disorders.

Source:

Zhao et al. (2020). The Effects of Dietary Nutrition on Sleep and Sleep Disorders. Mediators of Inflammation, 2020, 1–7.
<https://doi.org/10.1155/2020/3142874.32684833>



Monitoring



PERSONALIZE RECOMMENDATION

Given your higher insomnia risk, regularly monitor your sleep patterns for duration and quality, and consult a professional if issues persist.

Awareness of sleep patterns helps identify risks associated with sleep deprivation and insomnia, both of which are linked to broader physical and mental health concerns. Monitoring key aspects such as sleep duration, perceived restfulness upon waking, and frequency of nighttime awakenings can be done through sleep journals or wearable devices and mobile health apps that track rest, movement, and even heart rate variability. Some advanced wearables also estimate sleep stages (e.g., REM, deep sleep), offering additional insight into sleep architecture. While these tools can provide helpful data trends, interpretation should focus on consistent patterns of poor sleep or noticeable daytime impairment rather than isolated nights. If symptoms of insomnia persist, become chronic, or begin to interfere with daily functioning or mood, professional evaluation is recommended.

Source:

Alamoudi et al. (2024). Evaluating the Effectiveness of the SleepTracker App for Detecting Anxiety- and Depression-Related Sleep Disturbances. Sensors, 24(3), 722. <https://doi.org/10.3390/s24030722>

Exercise



PERSONALIZE RECOMMENDATION

To combat your increased insomnia risk, make consistent moderate-intensity exercise a priority although ensure the workouts don't occur too close to bedtime.

Regular physical activity is a key lifestyle component for combating sleep deprivation and insomnia risk by improving sleep quality through several mechanisms. Engaging in moderate-intensity activities like aerobic exercise, resistance training, or mind-body practices such as yoga helps regulate sleep-wake cycles, reduce stress, and facilitate the body temperature drop conducive to sleep. Studies show this leads to decreased time to fall asleep and improved sleep duration. To maximize benefits, avoid strenuous, high-intensity workouts within a few hours of bedtime, as these can be disruptive.

Source:

Alnawwar et al. (2023). The Effect of Physical Activity on Sleep Quality and Sleep Disorder: A Systematic Review. Cureus. <https://doi.org/10.7759/cureus.43595>





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
BDNF	rs6265	CC	1 PMID: 30076879
DRD2	rs6277	GG	2 PMID: 28393838
SLC39A8	rs13107325	CC	1 PMID: 30804565
LAMB2	rs35713889	CC	1 PMID: 30804565
OPN4	rs2675703	CC	3 PMID: 33445464

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Name : Deployment LifeReady
Date of Birth : 01 January 2000

Order ID : #2131-998435
Report Date : 08 September 2025



Longevity - Sleep

Poor Sleep Quality

Poor sleep quality refers to disruptions in sleep duration, difficulty falling or staying asleep, or imbalance in essential NREM (non-rapid eye movement) and REM (rapid eye movement) sleep stages. NREM sleep aids memory consolidation and brain restoration, while REM supports emotional processing. These disturbances affect many adults, with insomnia symptoms in up to a third and diagnosed insomnia in 10-20%. Poor sleep has serious health consequences, causally linked to worsened mental health and associated with increased cardiovascular disease, metabolic syndrome, and hypertension. Sleep quality is influenced by both genetics (31-55% heritability for duration and timing) and lifestyle factors including diet, physical activity, stimulant use, stress, and screen exposure. Sleep problems increase with age and occur more frequently in women.



About your result



Your genetic profile indicates an increased predisposition to experiencing poor or shallow sleep depth.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Given your higher risk of poor sleep, prioritize omega-3s and complex carbs in your diet, actively cutting back on saturated fats.

Improving sleep quality can be supported by thoughtful dietary adjustments that include beneficial nutrients and limit disruptive components. Omega-3 fatty acids, available in foods like tofu, seaweed, and hemp seeds, have been associated with longer sleep duration and fewer nighttime interruptions. Consuming complex carbohydrates and fiber from brown rice, mung beans, and leafy vegetables helps stabilize energy levels and supports more consistent sleep cycles. Adequate vitamin D intake—through eggs, fortified soy milk, or moderate sun exposure—may also reduce the risk of sleep-related issues. At the same time, cutting back on saturated fats from processed snacks, fried foods, and fatty cuts of meat may help lower the likelihood of sleep disruptions and arousal.

Source:

[Zhao et al. \(2020\). The Effects of Dietary Nutrition on Sleep and Sleep Disorders. Mediators of Inflammation, 2020, 1–7. https://doi.org/10.1155/2020/3142874](https://doi.org/10.1155/2020/3142874)





Lifestyle



PERSONALIZE RECOMMENDATION

To improve your sleep quality, establish consistent sleep hygiene by setting regular sleep times for yourself, manage stress, and optimize your sleep environment.

Addressing poor sleep quality effectively begins with lifestyle strategies focused on consistent sleep hygiene and evidence-based behavioral habits. Set regular sleep and wake times, establish a calming pre-bed routine, and avoid exposure to blue light from screens (e.g., phones, tablets, TVs) at least one hour before bedtime, as it can suppress melatonin production and delay sleep onset. Manage stress through techniques such as mindfulness or pre-sleep planning. Optimize the sleep environment for darkness, quiet, and cool temperatures, and avoid lying in bed awake for long periods if sleep doesn't come easily. Additionally, support these habits by avoiding large meals or stimulants like caffeine near bedtime and incorporating regular, appropriately timed physical activity.

Source:

*Fall asleep faster and sleep better—Every Mind Matters. (2021, May 4). NHS. <https://www.nhs.uk/every-mind-matters/mental-wellbeing-tips/how-to-fall-asleep-faster-and-sleep-better/> **



Monitoring



PERSONALIZE RECOMMENDATION

To manage your risk of poor sleep, use a sleep tracker to monitor your patterns and understanding its data as trends to guide improvements.

Utilizing consumer sleep tracking technology, such as wearable devices or nearable/airable systems, can provide accessible monitoring for individuals concerned about poor sleep quality. These trackers estimate sleep components like duration, efficiency, and different sleep stages using various sensors, offering potential insights for self-management. However, research comparing them to polysomnography reveals significant differences in performance accuracy across devices and sleep metrics. It is important to interpret the data, including any derived "sleep scores," as indicative trends rather than definitive clinical assessments.

Source:

Lee et al. (2023). Accuracy of 11 Wearable, Nearable, and Airable Consumer Sleep Trackers: Prospective Multicenter Validation Study. JMIR MHealth and UHealth, 11, e50983. <https://doi.org/10.2196/50983> 37917155





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
FKBP5	rs1360780	TT	2 PMID: 38525273
FKBP5	rs4713916	AA	3 PMID: 38525273
CRHR1	rs110402	GA	2 PMID: 38525273
FKBP5	rs3800373	CC	3 PMID: 36743961
FABP7	rs2279381	CC	3 PMID: 28435883
ADA	rs73598374	CC	2 PMID: 21734253
COMT	rs4680	GA	1 PMID: 22216231

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Longevity - Sleep

Delayed Sleep Phase

Delayed sleep-wake phase disorder (DSWPD) is characterized by a significant delay in the body's internal clock that controls sleep timing. This common circadian rhythm disorder is most prevalent in adolescents (an estimated 3-8% vs. 1-1.5% in adults) and causes difficulty falling asleep and waking up at conventional times. This results in chronic sleep restriction when trying to adhere to standard schedules. When aligned with the person's delayed rhythm, sleep quality itself is typically normal. Genetic factors, such as variations in the CLOCK gene that potentially extend the internal cycle, and environmental factors both contribute to DSWPD. DSWPD impacts daily functioning and cognition and is linked to higher rates of depression, anxiety, ADHD, and ASD (autism spectrum disorder).



About your result



Your genetic profile suggests a typical response and recovery time when experiencing jet lag.

Our Recommendations



Lifestyle



PERSONALIZE RECOMMENDATION

You can support a healthy sleep-wake cycle by maintaining a regular eating schedule, particularly by eating your breakfast at a consistent time each day.

Chrono-nutrition, or the timing of food intake throughout the day, may play a role in managing Delayed Sleep-Wake Phase Disorder (DSPD). Meals can act as synchronizing cues, also known as zeitgebers (German for "time-givers"), that help align the body's internal clock, also called the circadian rhythm. This rhythm regulates sleep, wakefulness, and other bodily functions over a 24-hour cycle. Studies observe that adolescents with DSPD often delay their first meal and consume breakfast less consistently than individuals without DSPD, potentially reinforcing their delayed sleep patterns. While overall diet quality may not differ significantly, establishing a regular eating schedule, particularly ensuring a consistent and earlier breakfast, could potentially serve as a helpful zeitgeber. Further research is needed, but mindful meal timing complements other DSPD management strategies.

Source:

[Berendsen et al. \(2020\). Chrono-Nutrition and Diet Quality in Adolescents with Delayed Sleep-Wake Phase Disorder. Nutrients, 12\(2\), 539. https://doi.org/10.3390/nu12020539](https://doi.org/10.3390/nu12020539)



Monitoring



PERSONALIZE RECOMMENDATION

If you experience persistent trouble with your sleep schedule, you should consult a doctor to discuss potential causes and appropriate management strategies for you.

Managing Delayed Sleep-Wake Phase Disorder (DSPS) involves therapies aimed at shifting the internal body clock, which should always be guided by a healthcare professional. Clinical recommendations include the use of carefully timed melatonin as a potential treatment for both adults and adolescents, where precise timing relative to the desired sleep schedule is critical. In children and teens, morning light therapy—often paired with behavioral strategies—may also help advance sleep timing. However, both melatonin and light therapy require individualized planning for timing, dosage, and duration, and may carry side effects or variable effectiveness. If you or your child experience persistent difficulty falling asleep or waking at socially expected times, it's important to consult a physician or sleep specialist to determine if these interventions are appropriate and to ensure safe monitoring throughout treatment.

Source:

[Auger et al. \(2015\). Clinical Practice Guideline for the Treatment of Intrinsic Circadian Rhythm Sleep-Wake Disorders: Advanced Sleep-Wake Phase Disorder \(ASWPD\), Delayed Sleep-Wake Phase Disorder \(DSWPD\), Non-24-Hour Sleep-Wake Rhythm Disorder \(N24SWD\), and Irregular Sleep-Wake Rhythm Disorder \(ISWRD\). An Update for 2015. Journal of Clinical Sleep Medicine, 11\(10\), 1199–1236. <https://doi.org/10.5664/jcsm.5100> 26414986](#)





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
PER3	rs228697	CC	1 PMID: 25201053
CLOCK	rs1801260	AG	1 PMID: 15578592

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Longevity - Sleep

Drowsiness (Excessive Sleepiness)

Feeling very sleepy during the day, sometimes called Excessive Daytime Sleepiness (EDS), means feeling overwhelmingly tired when you should be awake. You might even fall asleep without meaning to or have trouble waking up. EDS is common worldwide, affecting approximately 20% of the global population, with Southeast Asia showing rates around 46% and North America reporting up to 33% in adults. The most common cause is not getting enough sleep (less than 7 hours), but other causes include sleep disorders like sleep apnea and narcolepsy, medical conditions such as obesity, diabetes, and chronic rhinitis, mental health issues like depression, side effects from certain medications, and working night shifts. Genetic variations influencing EDS tendency play a significant role in increasing your chances of developing the condition. EDS can be dangerous. It increases your risk of accidents, makes daily activities harder, and is closely linked to mental health problems.



About your result



Your genetic profile indicates an increased predisposition to experiencing daytime sleepiness.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

To help address your excessive drowsiness, prioritize lean protein and healthy fats in your diet, while significantly reducing your saturated fat intake.

The balance of dietary macronutrients may influence excessive daytime sleepiness (EDS). Iso-caloric substitution analyses suggest that a higher proportion of energy from protein (such as from eggs, legumes, tofu, or lean poultry) is linked to a lower risk of EDS. In contrast, a higher intake of saturated fats, commonly found in processed meats, fried foods, and high-fat dairy, is associated with increased risk. Replacing saturated fats with protein showed the strongest association with reduced EDS odds, though substitutions with unsaturated fats (e.g., from avocados, olive oil, or nuts) or complex carbohydrates (e.g., brown rice or whole grain bread) also showed favorable trends. These findings suggest that emphasizing protein and unsaturated fat sources, while reducing saturated fat intake, may support better daytime alertness, although clinical trials are still needed to confirm these effects.

Source:

Melaku et al. (2019). Association between Macronutrient Intake and Excessive Daytime Sleepiness: An Iso-Caloric Substitution Analysis from the North West Adelaide Health Study. *Nutrients*, 11(10), 2374. <https://doi.org/10.3390/nu11102374> 31590356





Lifestyle



PERSONALIZE RECOMMENDATION

To reduce your excessive drowsiness, practice strict sleep hygiene, moderate caffeine, and consult your doctor if sleepiness persists despite efforts.

Lifestyle strategies are key in addressing excessive daytime sleepiness (EDS). Practicing good sleep hygiene, like limiting screen use before bed, directly supports better sleep quantity and quality, thereby reducing EDS. Moderating intake of caffeine is also advised, as high consumption can disrupt sleep and is paradoxically linked to more severe sleepiness. Managing schedules for those involved in shift work is crucial due to its strong association with circadian disruption and EDS. Persistent daytime sleepiness despite these measures warrants medical attention to investigate potential underlying causes.

Source:

Slater, G., & Steier, J. (2012). Excessive daytime sleepiness in sleep disorders. Journal of thoracic disease, 4(6), 608–616.
<https://doi.org/10.3978/j.issn.2072-1439.2012.10.07.23205286>



Exercise



PERSONALIZE RECOMMENDATION

Given your increased risk of daytime drowsiness, aim for consistent moderate exercise (around 150 min/week), scheduling it earlier in your day.

Regular physical activity offers benefits for managing excessive daytime sleepiness (EDS), largely through improvements in nighttime sleep quality and regulation of body rhythms. Consistent moderate-intensity exercise, like aerobic activities or strength training (aiming for ~150 min/week), promotes more restorative sleep, leading to reduced daytime drowsiness. Mind-body exercises such as yoga can also be beneficial, particularly if stress impacts sleep. Scheduling exercise earlier in the day and avoiding vigorous activity before bed is advised to prevent sleep disruption.

Source:

Patel et al. (2024). The effect of exercise on daytime sleepiness in healthy individuals. Sleep Medicine, 120, 10–14.
<https://doi.org/10.1016/j.sleep.2024.05.049.38824847>





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
TNF	rs1800629	GA	2 PMID: 20846669
CRAT	rs10988217	GG	1 PMID: 40124615

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Longevity - Mental Health

Seasonal Depression

Seasonal depression, also known as seasonal affective disorder (SAD), is a type of recurrent major depression that occurs in a seasonal pattern, typically beginning in the fall or winter. Symptoms include low energy, sadness, and changes in sleep and appetite. This condition is likely caused by reduced sunlight affecting serotonin, melatonin, and circadian rhythms. Risk factors include being female, being of younger age (with onset occurring between the ages of 18 and 30), living far from the equator (which is why it is rare in places like South East Asia), and having a family history of mood disorders. Research suggests that hereditary component, such as the NPAS2 gene, plays a significant factor in the development of SAD. The severity of the condition can vary considerably, ranging from mild "winter blues," which cause minor disruptions, to debilitating depression, which significantly impacts daily functioning. Most people with SAD experience symptoms that recurrently appear and resolve at the same time each year.



About your result



Your genetic profile indicates an increased susceptibility to seasonal changes, potentially heightening the risk of issues like seasonal allergies or mood disturbances (e.g., SAD).

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

If you face seasonal depression, be aware of eating habits like evening snacking or carb cravings, and discuss them with your healthcare provider.

While specific dietary treatments for Seasonal Affective Disorder (SAD) lack strong evidence, research suggests individuals with SAD may exhibit distinct eating patterns. Compared to controls, those with SAD tend to consume larger dinners and more evening snacks, alongside higher rates of emotional or binge-eating, and report cravings for starch-rich foods. However, interventions like specific carbohydrate loading or supplementation with vitamin D or B12 have not demonstrated clear benefits for improving SAD symptoms in studies reviewed (although some guidelines do recommend taking vitamin D supplementation). Therefore, focusing on awareness of these eating behaviors, alongside established SAD therapies, is currently advised, pending further research on effective nutritional strategies.

Source:

Yang et al. (2020). *The Role of Diet, Eating Behavior, and Nutrition Intervention in Seasonal Affective Disorder: A Systematic Review. Frontiers in Psychology, 11.* <https://doi.org/10.3389/fpsyg.2020.01451> 32903693



Monitoring

 **PERSONALIZE RECOMMENDATION**

Given your increased risk of seasonal depression, consult your doctor about therapies like CBT-SAD or medication, ensuring professional monitoring for your safety.

Seasonal Affective Disorder (SAD) is best managed through professional support and structured treatment. Cognitive Behavioral Therapy designed for SAD (CBT-SAD) helps individuals track and adjust negative thoughts and behaviors tied to seasonal changes, with therapist guidance throughout the process. In some cases, antidepressants may be prescribed, but they require careful monitoring by a healthcare provider to assess effectiveness (usually over 4–8 weeks) and manage possible side effects. Self-medicating is strongly discouraged—consulting a medical or mental health professional is essential to ensure safe, appropriate, and effective management tailored to individual needs.

Source:

Melrose et al. (2015). Seasonal Affective Disorder: An Overview of Assessment and Treatment Approaches. Depression Research and Treatment, 2015, 1–6. <https://doi.org/10.1155/2015/178564> 26688752

Lifestyle

 **PERSONALIZE RECOMMENDATION**

Given your increased risk of seasonal depression, maintain routines, get outdoor light, and discuss strategies like light therapy or Vitamin D with your provider.

Managing Seasonal Affective Disorder (SAD) benefits from a structured lifestyle approach alongside treatments like light therapy or psychotherapy. Maintaining consistent daily routines, engaging in enjoyable activities, and spending time outdoors when possible may help support mood, following behavioral activation principles. Although vitamin D deficiency is common in winter and may influence serotonin function, its role in treating SAD remains unclear; National Institute of Health (NIH) notes mixed study results, and some reviews report no benefit. Therefore, it's important to monitor vitamin D levels and consult a healthcare provider before starting supplementation, especially due to possible interactions with medications. Additional strategies, such as morning light exposure and cognitive-behavioral therapy, should be explored under professional supervision. Always seek guidance from a qualified provider when planning treatment for SAD.

Source:

*Seasonal affective disorder: National Institute of Mental Health (NIMH). (n.d.). Retrieved June 20, 2025, from <https://www.nimh.nih.gov/health/publications/seasonal-affective-disorder> **





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
CLOCK	rs1801260	AG	3 PMID: 26134245
NPAS2	rs2305160	GG	3 PMID: 20368993

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Longevity - Mental Health

Emotional Well-Being

Emotional well-being, also known as subjective well-being (SWB), is how individuals personally experience and evaluate their lives. It encompasses feelings of happiness and overall life satisfaction. Emotional well-being is a complex trait with a strong genetic correlation to depressive symptoms and the personality trait of neuroticism. Thus, some of the same genetic factors can influence these different states. Genome-wide studies have identified specific genetic variants associated with emotional well-being. These variants are often located in or near genes active in the central nervous system and in tissues of the adrenal glands or pancreas. While genetics play a role, emotional well-being is a highly polygenic trait. The heritability explained by common genetic variants (SNPs) is relatively low, estimated at around 4%. This findings suggests that polygenic scores alone have limited predictive power for an individual's emotional well-being, highlighting the substantial influence of non-genetic life factors.



About your result



Your genetic profile indicates an increased genetic predisposition for emotional well-being (subjective evaluation of happiness and life satisfaction).

Our Recommendations



Exercise



PERSONALIZE RECOMMENDATION

To build on your higher genetic potential for emotional well-being, maintain a regular exercise routine. You might also explore high-intensity endurance training for even greater benefits.

Regular physical activity is strongly associated with higher levels of emotional well-being, including greater happiness, life satisfaction, and self-esteem. This relationship is supported by biological mechanisms: exercise increases endorphin release and stimulates dopaminergic activity in the brain, which is linked to pleasure and positive mood states. Research indicates that initiating physical activity can lead to measurable improvements in happiness and life satisfaction within a relatively short timeframe, such as four weeks of consistent engagement. While mood benefits may manifest quickly, other components, such as self-esteem, require a more prolonged commitment to achieve significant enhancements because they are often tied to longer-term changes in physical skills and body perception.



High-intensity endurance training, such as marathon running, has been shown to significantly improve quality of life and subjective well-being in older adults. Research following elderly marathon runners over four years shows that they consistently report superior and more stable levels of physical, mental, and emotional health than non-athlete controls. These significant benefits to an individual's sense of well-being remain even when corresponding improvements in cognitive test scores are not observed, indicating a distinct impact on subjective health. When pursuing such demanding training, it is important to balance the time commitment with opportunities for social interaction because social interaction is another crucial factor for maintaining positive emotional health.

Source:

Iwon, K., et al. (2021). Elevating subjective well-being through physical exercises: An intervention study. Frontiers in Psychology, 12, 702678. <https://doi.org/10.3389/fpsyg.2021.702678>

Batmyagmar, D., et al. (2019). High intensity endurance training is associated with better quality of life, but not with improved cognitive functions in elderly marathon runners. Scientific Reports, 9(1), 4629. <https://doi.org/10.1038/s41598-019-41010-w>



Lifestyle



PERSONALIZE RECOMMENDATION

To maintain your high emotional well-being, you can practice positive psychology interventions, such as journaling about good experiences, practicing mindfulness, and performing acts of kindness to foster purpose.

Various effective lifestyle strategies can improve subjective well-being (SWB). Psychological interventions have been shown to have the most significant positive effects on SWB. There is strong evidence supporting practices such as mindfulness, cognitive behavioral therapy (CBT), and resiliency training based on systematic research of interventions for working populations. Studies show CBT can be particularly effective for increasing eudemonic well-being (one's sense of purpose), while mindfulness and workplace ergonomic adjustments can enhance evaluative well-being, such as job satisfaction. Regular physical activity has also been found to boost hedonic well-being by increasing positive feelings and vitality. For greater impact, a comprehensive approach that integrates structured psychological techniques with consistent physical activity is recommended. When it comes to formal interventions like CBT or resiliency training, it is important to engage with programs guided by qualified professionals to ensure their effectiveness.

Participating in specific positive psychology interventions (PPIs) offers a practical approach to improving emotional well-being. Research indicates that performing acts of kindness, such as giving money to others or giving tangible gifts, is an effective way to increase life satisfaction and positive feelings. Other structured exercises, such as writing in detail about a positive past experience or envisioning one's "best possible self" in the future, are also associated with significant increases in positive emotions. However, interventions focused solely on practicing gratitude did not demonstrate the same level of statistically significant benefit in this analysis. The positive impact of these PPIs may be linked to fostering greater social connection and a sense of purpose. It is important to note that the overall quality of this evidence is considered low-to-moderate, and the benefits may be most apparent for individuals not already reporting very high levels of life satisfaction.

Source:

Sakuraya, A., et al. (2020). What kind of intervention is effective for improving subjective well-being among workers? A systematic review and meta-analysis of randomized controlled trials. Frontiers in Psychology, 11, 528656. <https://doi.org/10.3389/fpsyg.2020.528656>

Solanes, A., et al. (2021). Can we increase the subjective well-being of the general population? An umbrella review of the evidence. Revista de Psiquiatría y Salud Mental, 14(1), 50-64. <https://doi.org/10.1016/j.rpsm.2020.08.002>





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
BRINP3	rs10920424	CT	1 PMID: 35589828
STAU1	rs34841991	TT	3 PMID: 30279531
OXTR	rs53576	AA	1 PMID: 35222513
FTO	rs1421085	CC	1 PMID: 39080362
RAPGEF6	rs3756290	AG	2 PMID: 27089181
FAAH	rs324420	AA	1 PMID: 37761966

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Longevity - Mental Health

Stress Sensitivity

Stress sensitivity refers to an individual's unique biological and psychological response to daily stressors and adverse life events, which can moderate the long-term impact on health and well-being. Although everyone is exposed to stress, people are affected differently, and genetic factors significantly influence this variability. Studies of related conditions estimate that common genetic variants (SNPs) account for approximately 28% of the heritability of anxiety and stress-related disorders. Research has identified specific genetic variations that contribute to stress sensitivity. For example, variants in the PDE4B gene have been strongly linked to an increased risk of stress-related conditions. Other genetic variants have been shown to modulate the body's physiological stress response by altering how cells react to glucocorticoids, major stress hormones. While this genetic sensitivity does not determine an outcome, it can influence an individual's risk of developing anxiety or depression following prolonged or significant stress.



About your result



Your genetic profile indicates that you may be more sensitive to stress, which could lead to more intense emotional responses when facing stressor or stress trigger.

Our Recommendations



Exercise



PERSONALIZE RECOMMENDATION

To manage your increased risk of stress sensitivity, it is important to engage in consistent aerobic exercise to help regulate your body's HPA axis and cortisol response. A good place to start is 150 minutes of aerobic exercise per weeks, and hiking in nature is especially effective at reducing stress hormones.

Consistently completing at least 150 minutes of moderate- to high-intensity aerobic exercise per week, often structured as 30 minutes over five days, can significantly improve physiological resilience. This level of consistent physical activity helps regulate the hypothalamic-pituitary-adrenal (HPA) axis, the body's central stress command center, which leads to lower reactivity and a more controlled release of cortisol. Additionally, this type of exercise increases levels of essential neurotransmitters, such as serotonin and norepinephrine, in the brain. It also boosts Brain-Derived Neurotrophic Factor (BDNF), which supports neuronal health that is often impaired by chronic stress. By developing these neurobiological adaptations through sustained aerobic exercise, the body's sensitivity and reactivity to acute stressors can be reduced.



Taking part in outdoor physical activities, especially hiking in natural environments, is an effective way to manage stress sensitivity. The benefits stem from a powerful synergy between exercise and nature exposure, which has been shown to have a greater positive impact on well-being than comparable indoor activity. Spending time in natural settings, such as forests, can physiologically deactivate the sympathetic ("fight-or-flight") nervous system. This leads to measurable decreases in stress hormones, including cortisol, adrenaline, and noradrenaline. From a psychological standpoint, these environments promote mental recovery by restoring directed attention, and they are associated with increased feelings of revitalization and significant reductions in tension and anger. Since hiking is often enjoyable, individuals may engage in it for longer periods and experience stress-reducing effects that are immediate and can persist for days after a session.

Source:

Anderson, E., & Shivakumar, G. (2013). Effects of exercise and physical activity on anxiety. Frontiers in Psychiatry, 4.
<https://doi.org/10.3389/fpsy.2013.00027.23630504>

Mitten, D., et al. (2018). Hiking: A low-cost, accessible intervention to promote health benefits. American Journal of Lifestyle Medicine, 12(4), 302-310.
<https://doi.org/10.1177/1559827616658229.32063815>



Lifestyle



PERSONALIZE RECOMMENDATION

To manage your increased risk of stress sensitivity, it's very important to practice mindfulness and journaling to calm your nervous system, as well as improving overall mental health, and prioritize getting 7.5-10.5 hours of sleep nightly.

Traditional yoga and mindfulness are effective, evidence-based lifestyle practices for managing physiological responses to stress. Yoga integrates physical postures, such as in vinyasa flow, with controlled breathing exercises (pranayama) and relaxation to calm the nervous system. The purpose of yoga is to use meditative movement and increased body awareness to interrupt negative thought patterns that trigger stress. Similarly, mindfulness involves intentionally focusing on the present moment by observing one's thoughts, bodily sensations, and surroundings without judgment. This practice helps one to detach from and reduce the impact of repetitive, stressful thinking. Mobile applications like "Pause" adapt these principles by using guided exercises inspired by tai chi to activate the body's relaxation response. Although all methods are beneficial, scientific studies that monitor physiological stress markers demonstrate that traditional yoga and mindfulness practices may have a slightly stronger stress-reducing effect than mobile-based versions.

To reduce negative affect, individuals should maintain a consistent sleep duration between 7.5 and 10.5 hours per night. Evidence from two large community samples suggests a nonlinear relationship between sleep duration and negative affect. Both short (less than 7.5 hours) and long (more than 10.5 hours) sleep durations are associated with increased negative mood the following day. Interestingly, the study found that poor sleep does lead to a worse mood the next day, but poor mood does not cause poor sleep the following night. This finding emphasizes sleep as the primary driver in this association. Therefore, optimizing sleep duration within this range may serve as a preventive strategy for emotional disturbances.

Source:

Can, Y. S., et al. (2020). How to relax in stressful situations: A smart stress reduction system. Healthcare, 8(2), 100.
<https://doi.org/10.3390/healthcare8020100.36373061>

Barber, K. E., et al. (2023). Day-to-day directional relationships between sleep duration and negative affect. Journal of Psychosomatic Research, 172, 111437. <https://doi.org/10.1016/j.jpsychores.2023.111437.37478504>



Monitoring



PERSONALIZE RECOMMENDATION

Given your increased stress sensitivity, you might use a wearable device to monitor your HRV. Persistent high stress readings are a valuable signal to consult a professional.

Using wearable technology to monitor important physiological signals is a practical strategy for raising awareness and managing stress sensitivity. While many commercial devices track average heart rate (HR), more accurate stress detection relies on metrics such as heart rate variability (HRV) and electrodermal activity (EDA). Studies have shown that the combination of HR and EDA is highly predictive. The primary goal of this monitoring is to recognize early signs of a stress response in real time, enabling immediate self-regulation before stress becomes chronic. Consistently high stress readings or an inability to return to a physiological baseline after a stressful event may indicate insufficient self-management. If monitoring data reveals persistent high stress or an increasing frequency of anxious episodes, this objective information serves as a valuable basis for consulting with a healthcare or mental health professional to assess the need for more structured therapy.

Source:

González Ramírez, M. L., et al. (2023). Wearables for stress management: A scoping review. Healthcare, 11(17), 2369.
<https://doi.org/10.3390/healthcare11172369> 37685403

Environmental



PERSONALIZE RECOMMENDATION

Given your high risk of stress sensitivity, it is important to minimize your exposure to environmental stressors like air pollutants, chronic noise, and artificial night light. Moreover, Introducing natural soundscapes can also help promote psychophysiological recovery.

Controlling environmental exposures is a key strategy for mitigating chronic stressors that can increase stress sensitivity and negatively impact mental health. Minimizing exposure to air pollutants, such as fine particulate matter (PM2.5), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂), is advisable, as these pollutants are linked to increased anxiety and depression via mechanisms like oxidative stress and neuroinflammation. Monitoring local air quality can help guide daily activities. Reducing exposure to excessive artificial light at night is also critical because this form of light pollution disrupts circadian rhythms and melatonin secretion. These rhythms and secretion are vital for regulating mood and sleep. Similarly, it is important to limit chronic noise exposure, as it is correlated with increased physiological stress and a higher risk of depressive symptoms. Creating a personal environment with cleaner air and lower levels of light and noise pollution can reduce the chronic physiological load on the nervous system, thereby supporting greater resilience against stress.



Introducing natural soundscapes into day-to-day life is an effective strategy for managing stress sensitivity and promoting psychophysiological recovery. While individual natural sounds are beneficial, research from Zhangjiajie National Forest Park in China shows that a rich combined soundscape featuring elements such as wind, water, birdsong, and insects provides the most potent restorative effect overall. These combined soundscapes are particularly effective at restoring attention and concentration. Certain individual sounds, such as the rustling of wind through trees, can induce deep physiological relaxation. Exposure to these sounds positively alters brainwave activity and significantly reduces negative mood states, including tension, anxiety, and fatigue. This can be accomplished by regularly spending time in natural settings, such as forests or parks, or by using high-quality recordings of natural soundscapes to create a restorative auditory environment during rest or work periods.

Source:

Tota, M., et al. (2024). Environmental pollution and extreme weather conditions: Insights into the effect on mental health. Frontiers in Psychiatry, 15, 1389051. <https://doi.org/10.3389/fpsy.2024.1389051>

Bai, Z., & Zhang, S. (2024). Effects of different natural soundscapes on human psychophysiology in national forest park. Scientific Reports, 14(1), 17462. <https://doi.org/10.1038/s41598-024-67812-1>





Gene Details

Your Gene Table

Level of scientific evidence

1 Highest

2 Moderate

3 Lowest

Gene	rsID	Genotype	Reference
OXTR	rs53576	AA	2 PMID: 22123970
COMT	rs4680	GA	2 PMID: 22152146
BDNF	rs6265	CC	2 PMID: 34245319
FKBP5	rs1360780	TT	3 PMID: 18702710
CRHR1	rs878886	CC	DOI: 10.1016/j.paid.2017.02.002
DRD2	rs1800497	GA	2 PMID: 34594253
NR3C2,NR3C2	rs2070951,rs5522	GG,TT	2 PMID: 21095064
PDE4B	rs7528604	AA	1 PMID: 31116379

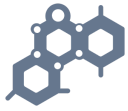
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Name : Deployment LifeReady
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Order ID : #2131-998435
Report Date : 08 September 2025



Longevity - Mental Health

Serotonin and Melatonin Biosynthesis

Serotonin and melatonin biosynthesis is a crucial biological process in which serotonin, a neurotransmitter that affects mood, is converted into melatonin, a hormone that regulates sleep-wake cycles (circadian rhythm). This conversion relies on key enzymes, such as SNAT and ASMT, whose efficiency can be influenced by an individual's genetics. The conversion of serotonin to melatonin, which occurs at night, resets and regulates the serotonin system. An inefficient conversion can disrupt this natural rhythm and reduce serotonin availability during the day. This dysregulation has been linked to mood instability, anxiety, and an impaired ability to cope with stress. Moreover, imbalances in melatonin secretion and circadian rhythms are considered as hallmarks of depression, and can increase the risk of cognitive, cardiovascular, and metabolic issues.



About your result



LOWER POTENTIAL



NORMAL POTENTIAL



HIGHER POTENTIAL

Your genetic profile suggests reduced efficiency in converting serotonin to melatonin, which could negatively impact mood, mental health, and the regulation of circadian rhythms.

Our Recommendations



Dietary



PERSONALIZE RECOMMENDATION

Given that you have lower genetic potential for efficient serotonin and melatonin pathways, focus on dietary strategies that increase tryptophan's availability, like pairing legumes with carbohydrates.

Research shows that increasing the availability of tryptophan (the precursor to serotonin) relative to other competing amino acids, is one of the most effective dietary strategies for modulating brain serotonin levels. Contrary to popular belief, consuming high-protein foods is ineffective because the large neutral amino acids in protein compete with and inhibit the transport of tryptophan across the blood-brain barrier. The most effective dietary approach is to increase the ratio of available tryptophan to these competitors. Certain varieties of chickpeas have been selectively bred for a higher free tryptophan content. Traditional food processing methods, such as the alkali treatment of corn, also enhance tryptophan bioavailability. Therefore, focusing on specific foods and preparation methods that favor tryptophan's uptake, rather than general protein intake, is the best evidence-based dietary strategy.



To promote serotonin and melatonin biosynthesis, nutritional strategies should focus on optimizing not just the intake of the tryptophan (precursor of serotonin), but also its transport and conversion. One important strategy is to pair tryptophan-rich foods with carbohydrates, which stimulates an insulin response that directs competing amino acids into muscle tissue. This enhances the transport of tryptophan across the blood-brain barrier. Good dietary sources of tryptophan include legumes (such as soybeans and lentils), nuts, seeds, and whole grains. Additionally, it is important to ensure adequate intake of B vitamins and magnesium, as these nutrients are required for the enzymatic conversion of serotonin into melatonin. Therefore, a comprehensive dietary approach that considers food pairings and essential cofactors is the most effective way to support this biochemical pathway.

Source:

[Young, S. N. \(2007\). How to increase serotonin in the human brain without drugs. Journal of Psychiatry & Neuroscience: JPN, 32\(6\), 394–399. https://pubmed.ncbi.nlm.nih.gov/18043762/](https://pubmed.ncbi.nlm.nih.gov/18043762/)
[Zuraikat, F. M., et al. \(2021\). Sleep and diet: Mounting evidence of a cyclical relationship. Annual Review of Nutrition, 41\(1\), 309–332. https://doi.org/10.1146/annurev-nutr-120420-021719](https://doi.org/10.1146/annurev-nutr-120420-021719)



Exercise



PERSONALIZE RECOMMENDATION

Given that you have lower genetic potential for efficient serotonin and melatonin metabolism, support your serotonergic system by participating in consistent aerobic exercise to improve tryptophan transport to your brain.

Regular aerobic exercise is a well-documented method for improving mood and can directly influence brain serotonin function through at least two primary mechanisms. First, exercise increases the plasma ratio of tryptophan to its competing branched-chain amino acids (BCAAs), allowing more tryptophan to enter the brain, where it functions as an essential precursor to serotonin synthesis. Second, animal studies suggest that motor activity directly stimulates serotonin neurons, increasing their firing rate and leading to greater serotonin release and production. The most consistent mood-enhancing effects are observed when individuals engage in aerobic exercise at a familiar, sustained level, which highlights the importance of consistency and activity type in supporting the serotonergic system.

Source:

[Young, S. N. \(2007\). How to increase serotonin in the human brain without drugs. Journal of Psychiatry & Neuroscience: JPN, 32\(6\), 394–399. https://pubmed.ncbi.nlm.nih.gov/18043762/](https://pubmed.ncbi.nlm.nih.gov/18043762/)



Lifestyle



PERSONALIZE RECOMMENDATION

Due to your reduced genetic capacity for efficient serotonin and melatonin metabolism, it is recommended to support your serotonergic system through consistent exposure to bright light during daytime hours and by obtaining a minimum of seven hours of uninterrupted, high-quality sleep each night.

Studies reveal that simple lifestyle changes targeting mood and light exposure can directly increase serotonin synthesis in the brain. Additionally, research indicates a two-way relationship in which positive mood states can increase serotonin synthesis rates. This suggests that psychological practices aimed at cultivating a positive outlook may support serotonergic function. Furthermore, regular exposure to bright light (over 1000 lux), such as that found outdoors on a cloudy day, is strongly associated with increased brain serotonin levels and has well-established antidepressant effects. Increasing daily exposure to natural daylight and participating in activities that promote positive emotions are two practical, evidence-based, and non-pharmacological lifestyle strategies for supporting the serotonergic system.



Quality sleep is essential for supporting the body's natural serotonin and melatonin pathways. At least seven hours of sleep per night is necessary for optimal function. Insufficient sleep creates a harmful cycle by disrupting dietary choices and increasing the desire for energy-dense foods, which compromises the availability of nutrients needed for serotonin synthesis. Serotonin plays a complex role in regulating the homeostatic sleep process by helping to set the duration and intensity of wakefulness, which triggers sleep onset. In response to darkness, serotonin is then converted to melatonin, which acts as the primary hormonal signal that initiates sleep. Therefore, prioritizing sleep hygiene is crucial because it allows these neurohormonal systems to function optimally and helps break the negative feedback loop by promoting healthier dietary patterns.

Source:

[Young, S. N. \(2007\). How to increase serotonin in the human brain without drugs. Journal of Psychiatry & Neuroscience: JPN, 32\(6\), 394–399. https://pubmed.ncbi.nlm.nih.gov/18043762/ 18043764](https://pubmed.ncbi.nlm.nih.gov/18043762/)

[Zuraikat, F. M., et al. \(2021\). Sleep and diet: Mounting evidence of a cyclical relationship. Annual Review of Nutrition, 41\(1\), 309–332. https://doi.org/10.1146/annurev-nutr-120420-021719 34348025](https://doi.org/10.1146/annurev-nutr-120420-021719)





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
TPH2	rs4570625	GG	2 PMID: 29314569

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Longevity - Mental Health

Exercise Impact to Mental Health

The impact of exercise on mental health consists of the positive effects that physical activity has on an individual's mood, emotional state, and sense of overall well-being, especially in non-clinical populations. A large body of research confirms these benefits. For example, a meta-analysis combining over 90 studies found that physical activity effectively reduces symptoms of depression and anxiety in adults. These effects are driven by significant neurobiological changes. Even a single session of acute exercise can alter neurochemical pathways, while long-term, chronic activity promotes brain plasticity and improves function in areas such as the prefrontal cortex, which is associated with executive functions like attention. By modulating various neurochemical pathways in the brain, regular physical activity is a powerful, accessible tool for promoting general mental health and may help protect the brain from the detrimental effects of aging.



About your result



LOWER POTENTIAL



NORMAL POTENTIAL



HIGHER POTENTIAL

Your genetic profile suggests that you are likely to experience a typical mental health benefits, such as improved mood, from participating in regular physical activity.

Our Recommendations



Exercise



PERSONALIZE RECOMMENDATION

You can significantly improve your mental health through various forms of exercise. Consider strength training, yoga, or "green exercise" like hiking to reduce anxiety and boost mood. Joining a team sport can also enhance well-being through social connection.

Regular participation in organized sports is an effective way to improve mental health. In particular, team sports often provide more substantial and comprehensive benefits than individual activities. There is a strong association between engaging in sports and enhanced psychological well-being, including higher self-esteem and life satisfaction, as well as reduced symptoms of depression and anxiety. The structured nature of team sports, such as soccer or basketball, helps create a sense of belonging, improves communication skills, and builds social connections, all of which contribute to mental wellness. Generally, the greater the frequency of participation, the greater the benefits. However, it's important to note that while community-level sports are beneficial, the intense pressures of elite-level competition can sometimes lead to higher levels of psychological distress. This highlights the importance of a supportive sports environment.



Exercise is an effective way to improve mental health. Walking, jogging, yoga, and strength training have been shown to significantly reduce symptoms of depression. A significant practical aspect to consider is the intensity of the exercise, as positive effects are directly proportional to the prescribed effort. Vigorous-intensity workouts tend to yield stronger results than light or moderate ones, regardless of the frequency. To optimize outcomes, exercise modalities can be personalized: strength training appears more effective for women and younger people, while yoga may be more beneficial for men and older adults. These effects have a multifaceted scientific basis, likely stemming from increased self-efficacy from strength training, mindfulness from yoga, and neurobiological changes from aerobic exercise. Strength training and yoga were also found to be highly acceptable forms of exercise, an important factor for long-term adherence.

Hiking or walking in forests or other green, natural environments is a highly effective exercise strategy for improving mental health. Compared to urban settings, this activity yields significantly greater psychological benefits. This type of "green exercise" effectively reduces anxiety and fatigue while improving vigor and positive mood. Research suggests that shorter activity sessions may be most beneficial for achieving these acute improvements in mood and anxiety. The scientific evidence for these effects is related to nature's ability to restore mental fatigue and stimulate positive emotional responses. While single sessions are beneficial, hiking with a group or in areas where others are present can enhance the experience by providing a sense of safety and social connection, which can further amplify the positive mental health impact.

Source:

Eather, N., et al. (2023). The impact of sports participation on mental health and social outcomes in adults: A systematic review and the 'Mental Health through Sport' conceptual model. Systematic Reviews, 12(1), 102. <https://doi.org/10.1186/s13643-023-02264-8> 37344901
Noetel, M., et al. (2024). Effect of exercise for depression: Systematic review and network meta-analysis of randomised controlled trials. BMJ, e075847. <https://doi.org/10.1136/bmj-2023-075847> 38806193
Wicks, C., et al. (2022). Psychological benefits of outdoor physical activity in natural versus urban environments: A systematic review and meta-analysis of experimental studies. Applied Psychology: Health and Well-Being, 14(3), 1037–1061. <https://doi.org/10.1111/aphw.12353> 35259287



Lifestyle



PERSONALIZE RECOMMENDATION

To gain the full mental health benefits of exercise, it's important to overcome motivational barriers, such as a low mood. You can do so by establishing a strong support system, such as joining a group or working with a professional.

A major challenge to using exercise for mental wellness is the paradox that the main motivators—improving mood and reducing stress—are also the most significant barriers. Low mood, stress, and fatigue create a difficult cycle that often prevents people from starting the very activity that could relieve these symptoms. Therefore, establishing a robust support system is a critical lifestyle adjustment to overcome this inertia. For instance, working with an exercise professional, therapist, or joining a supportive group can help, as a lack of support is a major barrier for 50% of individuals. This external support structure helps set achievable goals, provides accountability, and maintains motivation during periods of low energy. Structuring one's lifestyle to include this type of supported exercise is a proven strategy for overcoming the motivational paradox and consistently reaping the powerful mental health benefits of physical activity.

Source:

Firth, J., et al. (2016). Motivating factors and barriers towards exercise in severe mental illness: A systematic review and meta-analysis. Psychological Medicine, 46(14), 2869–2881. <https://doi.org/10.1017/S0033291716001732> 38161742





Gene Details

Your Gene Table

Level of scientific evidence 1 Highest 2 Moderate 3 Lowest

Gene	rsID	Genotype	Reference
BDNF	rs6265	CC	1 PMID: 39826378
COMT	rs4680	GA	3 PMID: 20800689
APOE,APOE	rs429358,rs7412	CC,CC	3 PMID: 38304020

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