



GeneFolio[®]

VITALITY

Test Results for:

GeneFolio Test

Date of Birth: 1900-01-01

Account Number: Test

Medical record number: Test

Avera 

GeneFolio

Vitality Introduction

Welcome to your GeneFolio™ Vitality report. The GeneFolio™ Vitality test looks at your unique genetic makeup to help you understand how your DNA might affect your fitness, nutrition, and overall wellness.

What is GeneFolio™ Vitality?

GeneFolio™ Vitality is a genetic test that looks for tiny differences in your DNA that may influence how your body responds to exercise, food, and other lifestyle factors. While everyone should follow basic health guidelines, knowing your genetic traits can help you focus on areas where you might need extra attention.

Your DNA contains instructions that make you unique. Small genetic differences in these instructions, called Single Nucleotide Polymorphisms (SNPs / pronounced “snips”), can affect many aspects of your health and fitness. GeneFolio™ Vitality examines these genetic differences to give you personalized insights.

How Can This Help You?

This test can help you:

- Create a fitness plan that works better for your body
- Understand which foods might benefit you most
- Learn about potential injury risks based on your genetics
- Make informed choices about vitamins and supplements
- Optimize your sleep and brain health

Remember, this test is not meant to diagnose or treat any disease. It is a tool to help you make better lifestyle choices. We recommend sharing your results with a healthcare professional who can help you create a personalized wellness plan.



Making the Most of Your DNA Results

Your personalized report is more than just data, it is a roadmap built from your own DNA to help guide smarter choices about your health, fitness, and nutrition journey. The insights provided highlight how your body may respond to different types of exercise, dietary approaches, recovery strategies, and lifestyle factors.

At Avera, we believe in whole-person care, and that includes making sure you are supported every step of the way. By using this report alongside personalized guidance from your Avera care team, you can take meaningful steps toward optimizing your health, improving performance, preventing injury, and building a sustainable wellness plan that works for you.

To bring these insights to life, we encourage you to connect with one of our trusted health professionals. Whether it is a Health Coach, Dietitian, Personal Trainer, Strength & Conditioning Specialist, Physical Therapist, or Genetic Counselor; our experts can help interpret your results and translate them into real-world actions tailored to your needs and goals, ensuring your plan is safe, personalized, and actionable.

If you have questions about your report or would like to engage with a health professional to receive wellness advice, please visit our website at www.Avera.org/vitalitytest.

Remember: your genetics do not define your destiny—but they can help inform it. This report is the starting point, and your care team is here to walk with you from insight to impact.

Understanding Your Results

Your report organizes genetic traits into these main categories:

- **Fitness:** How your body might respond to different types of exercise, recovery from activities, and your potential risks for certain injuries.
- **Nutrition:** How your body processes different foods and nutrients, and which dietary approaches may be most effective for you.
- **Brain Health:** How genetic factors may influence your pain sensitivity, chance of migraines, and your cognitive function.
- **Hormones:** How your genes may affect hormone balance and related overall wellness.
- **Sleep:** How your genes may influence your sleep quality and circadian rhythms.
- **Vitamins:** How well your body uses different vitamins and minerals.
- **Cardiometabolic:** How your genes may influence your cardiovascular health, and metabolic processes.

For each trait, we combine information from multiple genetic markers to give you a more complete picture. Your results show how you compare to others in the general population.

Our Avera experts are here to help you understand your results and apply them to your daily life. Let's use this information to support your journey

Frequently Asked Questions

What does your genetic information mean?

Your genome is all the genetic material in your body, made up of DNA. DNA uses four basic building blocks – Adenine (A), Thymine (T), Guanine (G), and Cytosine (C). While humans share about 99.9% of the same genetic code, the small differences make each person unique.

The genetic differences in DNA influence everything from your eye color to how your body responds to exercise or processes certain foods. Most of these genetic variations are inherited from your parents and can affect your natural tendencies toward certain health conditions or traits.

The small genetic differences which make us unique are called

Single Nucleotide Polymorphisms or SNPs (pronounced “snips”). A single letter in your DNA code may differ from what most people have.

For example:

Person 1: AAGCCTA **A** GTTCCA

Person 2: AAGCCTA **G** GTTCCA

In this example, one person has an “A” where another has a “G.” This minor change can influence how your body functions in specific ways, such as how you respond to certain exercises, process different foods, or use vitamins.

How is my sample analyzed?

Your sample is processed in our laboratory, which meets the highest standards for clinical testing. We are licensed by the Clinical Laboratory Improvement Amendment (CLIA) and certified by the College of American Pathologists (CAP). We use advanced DNA testing technology that examines thousands of genetic markers across your DNA. The science behind GeneFolio™ Vitality is based on more than a decade of carefully reviewed global research. We regularly update our analysis as new scientific discoveries are made.

Why might my results not match my experience?

Your genetic results show predispositions, not certainties. Think of genetics as just one piece of the puzzle. There are two main factors that shape your actual traits:

- 1. Genetics (Nature):** The inherited tendencies you were born with
- 2. Environment & Lifestyle (Nurture):** Your diet, exercise habits, stress levels, sleep quality, and other lifestyle factors

For example, you might have a genetic predisposition for fast muscle growth, but without regular exercise, you might not see this trait expressed. Similarly, someone with a less favorable genetic profile might achieve excellent fitness results through consistent training and proper nutrition.

Limitations of genetic testing

- Genetic testing cannot predict with 100% certainty how your body will respond or what health outcomes you'll experience
- Not all genetic factors are currently known or included in the test
- Results are based on current scientific understanding, which continues to evolve
- This test is not designed to diagnose or treat any disease
- Genetic patterns vary across different ethnic populations, which may affect how results are interpreted

If you have questions about your results or want help applying them to your lifestyle, our Avera experts are here to help guide you. Please visit www.Avera.org/vitalitytest for more information.

BRAIN HEALTH

Results Summary

Trait	Genetic Result	Page
Alcohol Disorder Potential	Average	6
Migraine Potential	Average	7
Neurological Health	Average	8
Pain Sensitivity	Average	9
Restless Leg Syndrome	Average	10

Alcohol Disorder Potential

Alcohol use disorder (AUD) is a medical condition where a person has trouble controlling or stopping their use of alcohol, even when it causes health problems or issues in their daily life or work. It is also called alcohol abuse, alcohol dependence, alcohol addiction, or alcoholism. AUD can be mild or severe and, over time, may lead to needing more alcohol to feel the same effects. Other consequences include ignoring responsibilities, trying and failing to cut back, and continuing to drink despite harm to themselves or others.



Dietary Recommendations



Even with an average genetic risk for alcohol use disorders, it is important to take care of your mental health and watch your alcohol use. Eating a healthy diet rich in whole foods such as fruits, vegetables, lean proteins, and healthy fats is linked to better mental well-being. Such foods help support your body, repair tissues, reduce inflammation, and keep your energy and mood steady. Eating fermented foods such as yogurt, kefir, and sauerkraut can keep your gut healthy, which may affect cravings and mood. Try to limit how much sugar, caffeine, and processed foods you have. Staying hydrated is important. Aim to drink about half your body weight in ounces of water daily, since most of your brain mass is water. Even mild dehydration can affect how you feel. Taking vitamins B1, B6, and B12 helps keep your nervous system healthy. Magnesium may help reduce stress, improve sleep, and restore your electrolyte balance.

Exercise Recommendations



Being active improves blood flow, reduces inflammation, and supports brain health. This can lower feelings of depression, whether you focus on strength training or endurance exercises. Try to get about 150 minutes of light to moderate exercise each week, or 75 minutes of more intense activity. Include strength training 2-3 times per week, focusing on functional movements like squats, deadlifts, and chest presses to maintain a strong foundation. Try to slowly increase the weight, number of reps, or time to keep improving. It is also good to change up your workouts throughout the year to use different muscles and keep things interesting. Try high-intensity interval training (HIIT), strength training, mobility training, endurance training, and/or yoga or meditation.

Lifestyle Recommendations

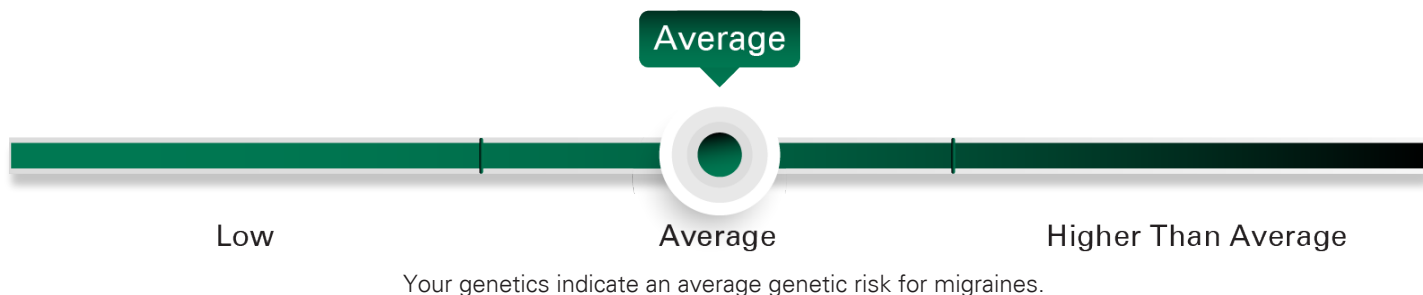


Practice mindful and moderate alcohol consumption. Find healthy ways to manage stress, such as gentle stretching, meditation, or yoga. Pay attention to how alcohol affects you and whether it fits with your lifestyle and goals. Watch for signs of drinking too much. Good sleep habits are very important. Try to get 7 to 9 hours of sleep every night.

References : 21, 42, 60, 77

Migraine Potential

A migraine is a type of headache that usually causes strong, throbbing pain on one side of the head or around one eye. It can make you feel sick, vomit, or be sensitive to light and sound. Some people get auras before a migraine. These are warning signs like blind spots, blurry vision, bright flashes, or tingling in the body. Migraines can last for hours or even days. They are often triggered by factors like stress, changes in hormones, certain foods, sleep problems, or environmental factors. The exact cause of migraines is not fully understood, but research suggests it involves changes in blood flow and neurotransmitters.



Dietary Recommendations



Although you have an average genetic risk for migraines, focus on eating a variety of nutrient-rich foods like lean meats, vegetables, fruits, whole grains, and healthy fats. Processed foods such as aged cheeses, meats with nitrates or nitrites, artificial sweeteners, and MSG may trigger migraines in some people. Skipping meals can lead to low blood sugar, which may also cause migraines. Avoid too much caffeine, limit alcohol, and stay well-hydrated. If you do experience migraines, supplementing with magnesium, vitamin B2 (riboflavin), and coenzyme Q10 has been shown to help reduce their frequency.

Exercise Recommendations



Regular, moderate exercise promotes overall health and helps lower stress, a common migraine trigger. Try to get about 150 minutes of light to moderate exercise each week, or 75 minutes of more intense activity. Include strength training 2-3 times per week, focusing on functional movements like squats, deadlifts, and chest presses to maintain a strong foundation. You may want to avoid intense activity, such as high-intensity interval training (HIIT), since short, intense bursts that cause a rapid increase in blood flow could trigger a migraine.

Lifestyle Recommendations

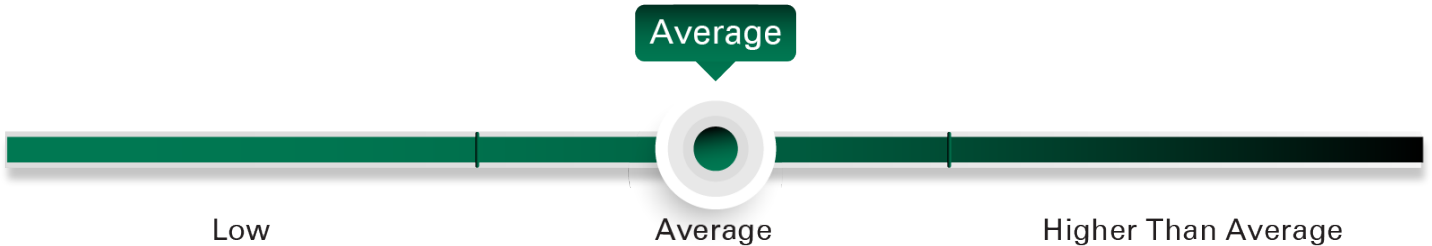


Good sleep habits are very important. Try to get 7 to 9 hours of sleep every night. Managing stress is also important. Relaxation techniques like meditation and deep breathing can help. Be mindful of environmental triggers such as lighting (including the type of lighting), noises, and strong smells, as these can sometimes lead to migraines. Keep a food diary to help identify potential food triggers. For females, hormonal changes during menstrual cycles can also contribute to migraines, so it may be beneficial to track when migraines occur in relation to your cycle. Overusing pain medication can lead to rebound headaches, so it is important to use medications responsibly and consult a doctor if the pain becomes unmanageable.

References : 5, 22, 62

Neurological Health

A neurological disorder is a medical condition that affects the central nervous system, which includes the brain, spinal cord, and nerves. It can cause problems with thinking, emotions, behavior, or physical abilities. Neurological disorders happen because of changes in the structure, chemistry, or electrical signals in the nervous system. Symptoms and their severity are different depending on the disorder. They may include changes in thinking or memory, muscle weakness or paralysis, seizures, problems with feeling sensations, pain, or difficulties with movement.



Your genetics indicate an average genetic risk of developing a neurological disorder.

Dietary Recommendations



Eating a healthy diet rich in whole foods such as fruits, vegetables, lean proteins, and healthy fats will help your body repair tissue and prevent inflammation. Staying hydrated is important. Aim to drink about half your body weight in ounces of water daily, as dehydration can affect your brain function. Taking vitamin C and vitamin D supplements can help maintain brain health. Minerals like magnesium, selenium, and zinc also support proper brain function. To keep your brain healthy over time, consider following the MIND (Mediterranean-DASH Intervention for Neurodegenerative Delay) diet. This diet combines the Mediterranean and DASH (Dietary Approaches to Stop Hypertension) diets and includes vegetables, berries, nuts, olive oil, whole grains, fish like salmon and tuna, beans, poultry, and a little wine. It recommends avoiding butter, margarine, cheese, red meat, fried foods, and sweets, as these have been linked to brain decline.

Exercise Recommendations



Staying active helps improve blood flow, reduce inflammation, and strengthen connections in your brain. Try to get about 150 minutes of light to moderate exercise each week, or 75 minutes of more intense activity. Make sure to do strength training that works all your major muscle groups, like your legs, core, back, chest, and arms, to keep your muscles balanced and strong. Exercises like squats, lunges, and deadlifts mimic everyday movements and help improve joint strength and stability. To avoid overworking one area, change up your workouts throughout the year. You can mix different types like high-intensity interval training (HIIT), strength training, mobility work, endurance exercises, or yoga and meditation.

Lifestyle Recommendations

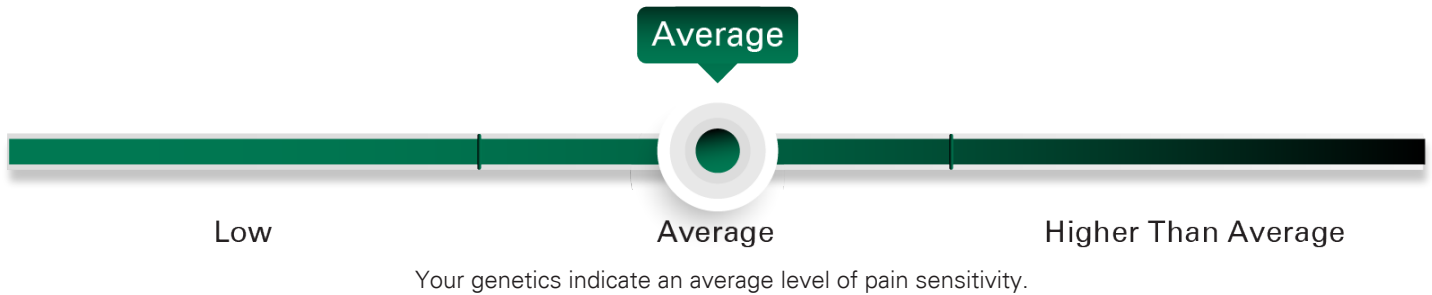


Good sleep habits are very important. Try to get 7 to 9 hours of sleep every night. To help you relax and reduce stress, try deep meditation, light stretching, or gentle yoga. Keep your brain active by working on puzzles, riddles, word games, playing an instrument, or learning a new skill. It is also important to manage health problems like high blood pressure, diabetes, and high cholesterol because they can increase the risk of stroke and brain problems. If you smoke, think about quitting, and try to limit alcohol, since both can harm your nervous system over time.

References : 26, 35, 66, 104, 105

Pain Sensitivity

Pain is the feeling of discomfort or suffering caused by signals from the body or the environment. It involves both chemical and nerve signals that send unpleasant sensations, along with an emotional response. Pain sensitivity refers to how easily or strongly a person feels pain from something that might not bother others. This sensitivity differs from person to person and is affected by environmental, psychological, biological, and genetic factors.



Dietary Recommendations



With an average level of pain sensitivity compared to others, it helps to build resilience to pain and manage discomfort when it comes up. Eating anti-inflammatory foods like leafy greens, fatty fish, nuts, and berries may help lower inflammation and reduce pain. Staying hydrated is important to reduce the risk of muscle cramps and pain. Aim to drink about half your body weight in ounces of water daily. Try to limit things like caffeine and alcohol, especially before bed, because they can hurt your sleep and make pain feel worse.

Exercise Recommendations



Regular exercise helps keep you healthy and lowers stress, which is associated with higher pain. Try to get about 150 minutes of light to moderate exercise each week, or 75 minutes of more intense activity. Include strength training 2-3 times per week, focusing on functional movements like squats, deadlifts, and chest presses to maintain a strong foundation. Try to slowly increase the weight, number of reps, or time to keep improving. Stretch before and after workouts to help reduce muscle stiffness and prevent pain. It is also good to change up your workouts throughout the year to use different muscles and keep things interesting.

Lifestyle Recommendations

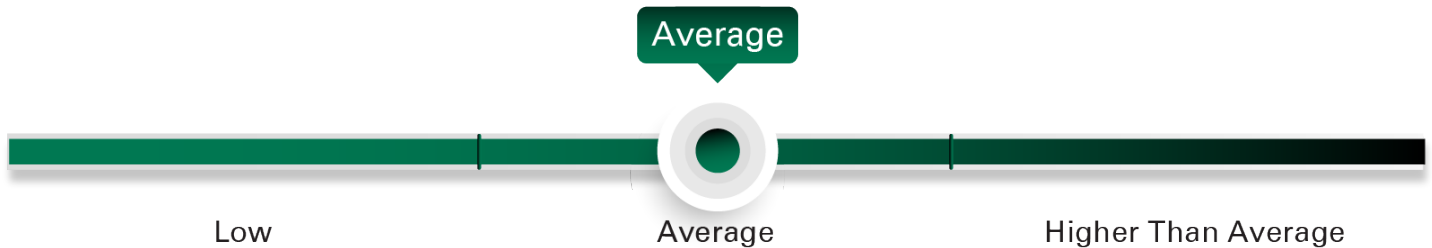


Poor sleep is linked to increased pain sensitivity. Good sleep habits are very important. Try to get 7-9 hours of sleep every night. Practicing mindfulness or deep breathing before bed can help lower the perception of pain by reducing stress and anxiety. You can also take over-the-counter medicine like ibuprofen or acetaminophen if needed. However, if you find yourself using them often, talk to a healthcare provider for guidance.

References : 6, 24, 28, 31, 38, 39, 52, 82, 83, 96, 110, 117, 130

Restless Leg Syndrome

Restless leg syndrome (RLS) is classified as both a neurological disorder and a sleep disorder. It causes uncomfortable sensations in the legs, like tingling, crawling, itching, or throbbing, that create an uncontrollable urge to move, often during the evening or night. These symptoms can significantly reduce quality of life because of discomfort, pain, and sleep disruption. The exact cause of RLS is not fully known, but it may be linked to a problem with dopamine, a chemical in the brain that controls movement.



Your genetics indicate an average genetic risk for restless leg syndrome (RLS).

Dietary Recommendations



Although you have an average genetic risk for RLS, it is still important to maintain a healthy, balanced lifestyle. Focus on eating a variety of nutrient-rich whole foods, such as lean meats, vegetables, fruits, whole grains, and healthy fats, to get a well-rounded mix of macronutrients. Avoid nicotine and limit caffeine and alcohol. Support your daily nutrition by including iron, since low levels are linked to RLS. Magnesium can help relax your muscles. Vitamin D is important since a deficiency may worsen symptoms. B-complex vitamins also play a key role in supporting overall nerve function.

Exercise Recommendations



Staying active can help ease RLS symptoms. Focus on low-impact activities like walking, swimming, or yoga, because high intensity exercises may make symptoms worse. Gentle stretching and mobility work can also help reduce discomfort. It is important to avoid sitting for long periods, as this can increase the feeling of restlessness in your legs. Try to take short breaks every hour to walk or stretch and keep your body moving.

Lifestyle Recommendations



Good sleep habits are especially important for preventing RLS, since symptoms often appear at night. Try to get 7-9 hours of sleep each night. Try deep meditation, warm baths, or leg compresses, and progressive muscle relaxation techniques. It is also important to regularly check your vitamin D and iron levels with your healthcare provider, as imbalances can contribute to symptoms. If your symptoms become too severe, talk to a doctor about other options.

References : 81, 113, 123

CARDIOMETABOLIC

Results Summary

Trait	Genetic Result	Page
Body Mass Index	Slightly High	12
Coronary Artery Disease	Slightly High	13
Diastolic Blood Pressure	Slightly High	14
Hemoglobin A1C	Average	15
Low Density Lipoprotein	Average	16
Systolic Blood Pressure	Slightly High	17
Type 2 Diabetes	Average	18

Body Mass Index

Body Mass Index (BMI) is a measure used to estimate body fat based on height and weight. It is used as a screening tool to categorize weight status, such as underweight, healthy weight, overweight, or obesity. While it does not directly measure body fat, it gives a general idea of whether someone's weight may be affecting their health.



Your genetic profile suggests you have a slightly elevated predisposition to an increased BMI.

Dietary Recommendations

Follow a balanced diet incorporating appropriate portions from all food groups to maintain optimal health. Practice mindful eating by paying attention to hunger and fullness cues, which helps prevent overeating and supports natural weight regulation. Include a variety of colorful whole foods with different textures to ensure you receive a broad spectrum of nutrients that support overall health.



Exercise Recommendations

Aim for at least 150 minutes of moderate activity weekly, spread across several days to maintain consistent metabolic benefits. Include both cardiovascular exercise for heart health and strength training to preserve muscle mass and metabolic rate. Find physical activities you genuinely enjoy to maintain consistency long-term, as adherence is more important than intensity for health benefits.



Lifestyle Recommendations

Establish regular sleep patterns of 7-9 hours per night, as adequate sleep is crucial for weight regulation and metabolic health. Implement stress management techniques such as meditation, deep breathing, or yoga, as chronic stress can disrupt metabolism and eating patterns. Monitor your health metrics regularly to track weight trends and catch any concerning changes early.



References : 109

Coronary Artery Disease

Coronary Artery Disease (CAD) happens when the arteries that supply blood to the heart muscle become narrowed or blocked, usually because of plaque buildup called atherosclerosis. CAD can reduce blood flow to the heart, leading to chest pain, shortness of breath, or heart attacks.



Your genetic profile suggests you have a slightly elevated genetic predisposition to coronary artery disease.

Dietary Recommendations

Follow a Mediterranean-style diet rich in plant foods, lean proteins, and healthy fats, which has been shown to reduce CAD risk by up to 30%. Limit processed foods, added sugars, and trans fats that can contribute to inflammation and plaque formation in arterial walls. Include heart-healthy foods like fatty fish, nuts, seeds, and olive oil that contain compounds that support vascular health and manage cholesterol levels.



Exercise Recommendations

Aim for 150-180 minutes of moderate-intensity exercise weekly, which research shows significantly reduces cardiovascular risk factors. Include both aerobic exercise for heart conditioning and resistance training to improve metabolic health and circulation. Build activity into daily routines by taking stairs, having walking meetings, or doing active chores, as consistency in movement throughout the day supports heart health.



Lifestyle Recommendations

Maintain a healthy weight through balanced nutrition and regular physical activity, as excess weight increases strain on the cardiovascular system. Prioritize stress management techniques like deep breathing, meditation, or yoga, which help reduce cortisol levels that can damage blood vessels. Schedule regular health screenings for blood pressure, cholesterol, and blood glucose to monitor cardiovascular risk factors and catch any changes early.



References : 109

Diastolic Blood Pressure

Diastolic blood pressure is the pressure in the arteries when the heart is at rest between beats. It is the bottom number in a blood pressure reading. Maintaining a healthy diastolic pressure is important for supporting cardiovascular health.



Your genetic profile suggests you have a slightly elevated genetic risk of increased diastolic blood pressure.

Dietary Recommendations

Follow the DASH (Dietary Approaches to Stop Hypertension) eating pattern, which emphasizes fruits, vegetables, whole grains, and low-fat dairy products. Limit your sodium intake to 2,300 mg daily or less, equivalent to about one teaspoon of salt from all food sources combined. Include potassium-rich foods like bananas, potatoes, and leafy greens, which help counterbalance sodium's effects on blood pressure.



Exercise Recommendations

Engage in regular aerobic activity 3-5 times weekly for 30 minutes per session, which studies show can lower diastolic blood pressure by 2-5 mmHg. Include dynamic resistance exercises like circuit training to improve vascular function and blood pressure regulation. Consider activities that promote relaxation in addition to physical fitness, like yoga or Tai Chi, which have specific benefits for blood pressure management.



Lifestyle Recommendations

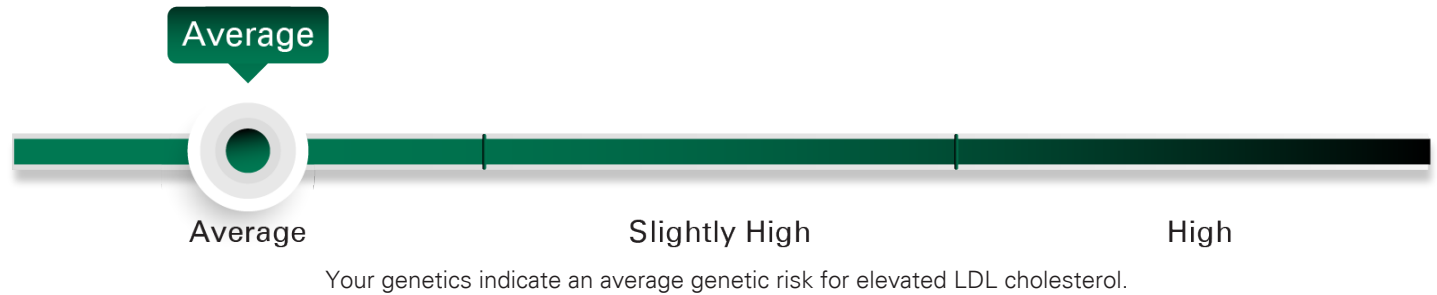
Maintain a healthy weight, as each kilogram of weight loss can reduce blood pressure by approximately 1 mmHg. Limit alcohol consumption to no more than one drink daily for women and two for men to prevent blood pressure elevation. Monitor your blood pressure regularly at home or through pharmacy kiosks to establish patterns and identify triggers. Practice stress management techniques such as deep breathing, meditation, or progressive muscle relaxation to prevent stress-induced blood pressure spikes.



References : 109

Low Density Lipoprotein

Low-density lipoprotein (LDL) is a type of cholesterol often called “bad cholesterol” because high levels can lead to plaque buildup in the arteries, increasing the risk of heart disease and stroke.



Dietary Recommendations

Even with an average risk of elevated LDL cholesterol, it is still important to eat in a way that supports heart health. Choose moderate amounts of healthy fats from foods like olive oil, avocados, and nuts. These foods help keep cholesterol levels in check. Avoid trans fats and heavily processed foods, as they can raise harmful cholesterol and affect overall heart health.



Exercise Recommendations

Aim for at least 150 minutes of moderate exercise each week to help keep your cholesterol at healthy levels. Try a mix of aerobic activities like walking, swimming, or cycling, along with resistance training like using weights, resistance bands, or bodyweight exercises. These activities can help raise your good (HDL) cholesterol, lower your bad (LDL) cholesterol and improve your circulation. Build physical activity into your daily routine by taking the stairs, walking or biking for transportation, and cutting down on sitting time. Staying active on a regular basis helps your body manage cholesterol more effectively.



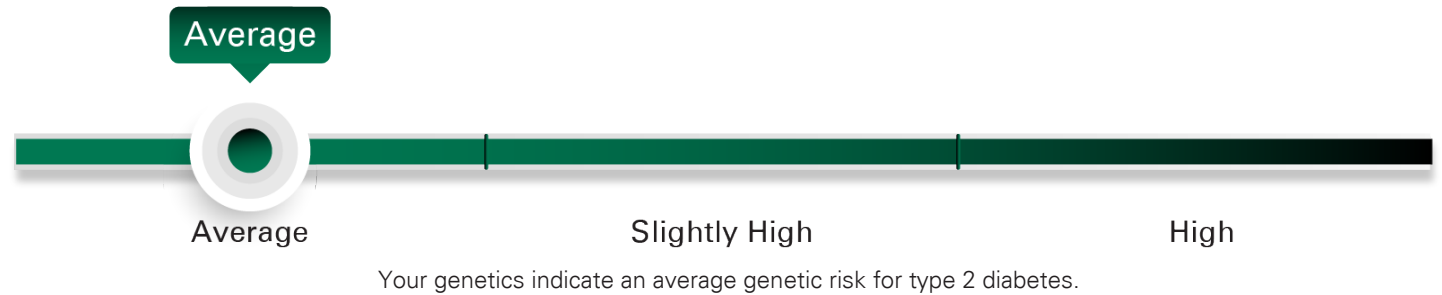
Lifestyle Recommendations

Get your cholesterol checked regularly so you can establish a baseline and track any changes over time. Learn how your diet, activity level, stress, and certain medications can affect cholesterol. Practice mindfulness techniques regularly, since chronic stress can still influence cholesterol levels, even with a lower genetic risk.



Type 2 Diabetes

Type 2 diabetes is a condition where the body cannot use a hormone called insulin well or does not make enough of it. This causes high blood sugar and can lead to health problems if it is not managed properly.



Dietary Recommendations

Even with an average genetic risk of type 2 diabetes, follow a balanced diet with moderate carbohydrates spread throughout the day to help keep glucose levels steady. Include fiber-rich foods like whole grains, legumes, and vegetables, which slow glucose absorption and support better blood sugar control. Aim to get at least 25 grams of fiber each day, which can lower your chances of developing diabetes and help keep your blood sugar in check.



Exercise Recommendations

Aim for at least 150 minutes of moderate exercise each week. This can lower your risk of type 2 diabetes by 30-40%. Include both aerobic activities like walking, swimming, or cycling, and resistance training like using weights, resistance bands, or bodyweight exercises. These help your body use insulin better and keep your blood sugar in a healthy range. Being active regularly works better than exercising once in a while.



Lifestyle Recommendations

Schedule regular lab tests as recommended by your doctor to establish a baseline for your blood glucose and HbA1c levels and to track any changes over time. Learn about factors that affect diabetes risk, including diet, physical activity, stress, and family history. Practice mindfulness techniques regularly, since stress hormones can affect how your body processes sugar, even with a lower genetic risk.



References : 109

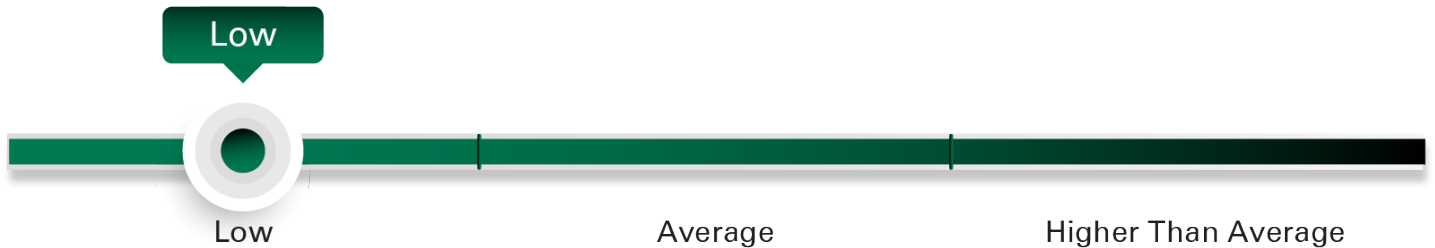
FITNESS

Results Summary

Trait	Genetic Result	Page
Endurance Potential	Low	20
Fat Loss Potential	Average	21
Muscle Metabolism	Low	22
Performance Potential	Normal	23
Power Potential	Average	24
Strength Potential	Higher Than Average	25
Susceptibility To Injury Due To Overtraining	Normal	26
VO2 Max Potential	Low	27

Endurance Potential

Endurance means how long you can keep doing an activity like running, swimming, or biking without getting tired. Both your body and mind affect endurance. Things like the health of your heart, muscles, diet, and motivation all play a role. You can make your endurance better with practice, good nutrition, and staying inspired.



You may have some limitations in your slow-twitch muscle fiber recruitment and overall muscular and/or cardiovascular endurance, but these can be improved with some targeted strategies.

Dietary Recommendations



It is important to start fueling your body before you work out by eating foods with carbohydrates to give you lasting energy. Eat about 20-30 grams of simple sugars, like a banana or other fruit, 30-45 minutes before you exercise to help your body use energy better. If you are doing a workout that lasts an hour, try to eat 40-60 grams of carbs during your training to keep your energy up. Eating enough protein will help your muscles recover and get stronger. Make sure to drink water before, during, and after your workout to avoid getting dehydrated. If you are training in hot weather, use drinks or supplements with electrolytes to help your muscles and nerves work well, improve blood flow, and stop muscle cramps.

Exercise Recommendations



Even if you are not naturally good at endurance, doing regular, moderate exercises like running, biking, or swimming can help your heart and lungs get stronger. Try to get at least 150 minutes of this kind of exercise each week. Slowly increasing how hard and how long you exercise will help you build a good base for endurance. Adding high-intensity interval training (HIIT) once or twice each week can also make your heart and muscles stronger. Building muscle with strength exercises for your core and legs can help you last longer and feel less tired during long workouts.

Lifestyle Recommendations

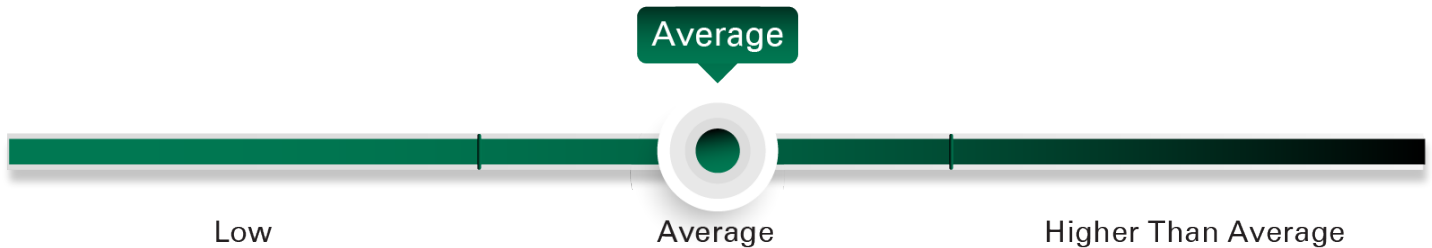


Plan rest days so your body can heal and stay flexible, and to help your circulation. If you feel very stressed, try meditating to build mental strength for longer workouts. Try to get 7 to 9 hours of sleep each night so your muscles can recover and to keep hormone balance. For help making a training plan that fits you and your fitness goals, talk to a personal trainer or sports expert.

References : 1, 13, 14, 17, 30, 68, 87, 88, 103, 119

Fat Loss Potential

Fat loss is when your body loses extra body fat, usually by eating less, being active, getting enough sleep, and being healthy overall. Healthy fat loss happens slowly, about 1-2 pounds per week, and is best kept off long-term with healthy habits.



Your genetics indicate you are neither prone nor adverse to losing fat.

Dietary Recommendations



You can lose fat and keep it off with normal lifestyle changes. Try eating about 300 fewer calories each day and fill your meals with healthy foods like lean meats, vegetables, fruits, whole grains, and healthy fats. These foods can help control your blood sugar, energy, and hunger while you are losing weight. Aim to eat enough protein, about 0.7 to 0.9 grams for every pound you weigh, to help your muscles grow and repair and to boost your metabolism. You can also change the amount of carbs you eat based on how active you are. Try eating more carbs (about 30-50 grams) before and after your workouts, and eat fewer carbs on days when you are resting or not as active.

Exercise Recommendations



Combine strength training and cardiovascular work to maintain fat burning intensity. Strength training will help build muscle, which increases metabolism and promotes fat loss. Incorporate exercises like squats, deadlifts, and presses, and work to progress in amount or volume over time. Steady-state cardio work, like brisk walking or cycling, along with higher intensity training, adds variety to the system and allows for additional fat burning. Do not underestimate the importance of moving your body outside the gym. To help increase metabolism, adding in non-exercise activity through daily activities (e.g., taking the stairs, step counting, etc.) can significantly contribute to fat loss.

Lifestyle Recommendations

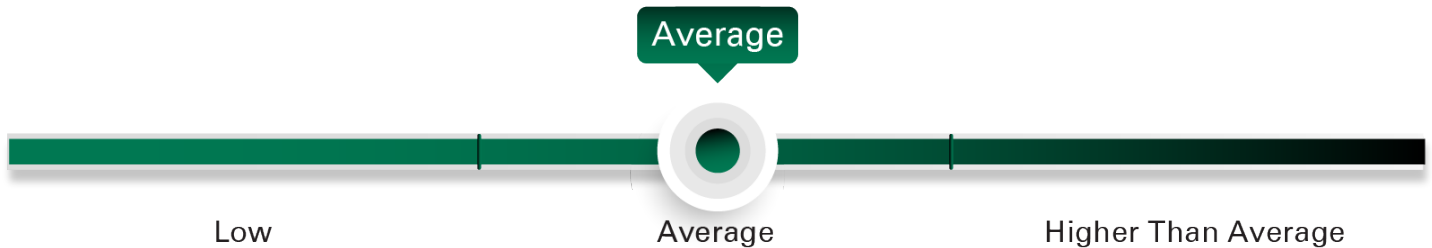


It is important to pay attention to how many calories you eat and the types of nutrients you get from protein, carbs, and fats so you can reach your goals. You can work with a nutrition coach or dietitian to find out what amounts are right for you. Instead of only using a scale, check your fat loss by using body measurements and/or body composition (performed by a fitness professional). Getting 7 to 9 hours of sleep each night helps control hormones that affect your hunger and how your body stores fat. To manage stress and avoid gaining fat around your stomach, try meditation, yoga, or deep breathing.

References : 15, 55, 63, 75, 78, 94, 107

Power Potential

Power is how well your body can make a lot of force very quickly. In sports, power means being able to use your muscles as hard as you can in a short time, like when you jump, sprint, or lift something heavy. Athletes with power can move fast and change directions quickly. They often have more muscles that help with quick, strong movements, but they may not be as good at activities that last a long time. These athletes might have bigger muscles or spend a lot of time working on strength and conditioning. Sports like weightlifting, track and field (e.g., sprinting and long jump), football, wrestling, and rugby often need athletes who are very powerful.



Your genetics indicate an average genetic profile for building power.

Dietary Recommendations



Athletes who want to be powerful should work on moving better, building muscle, and recovering after workouts. To do this, they need to eat the right foods. They should eat lean protein to help muscles grow and repair, aiming for about 0.7 to 1 grams of protein for every pound they weigh. Carbohydrates give the main energy for exercise, so athletes should have about 1.8 to 2.8 grams of carbs for every pound they weigh. Fats are also important for making hormones, helping cells, and using some vitamins. Most people should get about 0.7 to 0.9 grams of fat per pound of body weight, or 20% to 35% of their total calories. Some common supplements can help athletes meet their goals. Creatine helps muscles make and use energy better. Protein powders, from milk or plants, makes it easier to get enough protein, especially after a workout. Caffeine can help with focus and energy, and make exercise feel easier. However, people who have heart problems or trouble sleeping should be careful with caffeine.

Exercise Recommendations



You could have a balance of fast-twitch and slow-twitch muscle fibers, which means you can be good at both strength and endurance. However, it might still be harder to be powerful in fast movements. Keep focusing on compound exercises like squats and deadlifts that use lots of muscles. Try to make these exercises harder over time by adding weight or doing more time under tension. Olympic lifts (like the clean, jerk, and snatch) are good because they help build both speed and strength. Finally, try working out at different levels of difficulty during your program to improve both power and endurance.

Lifestyle Recommendations

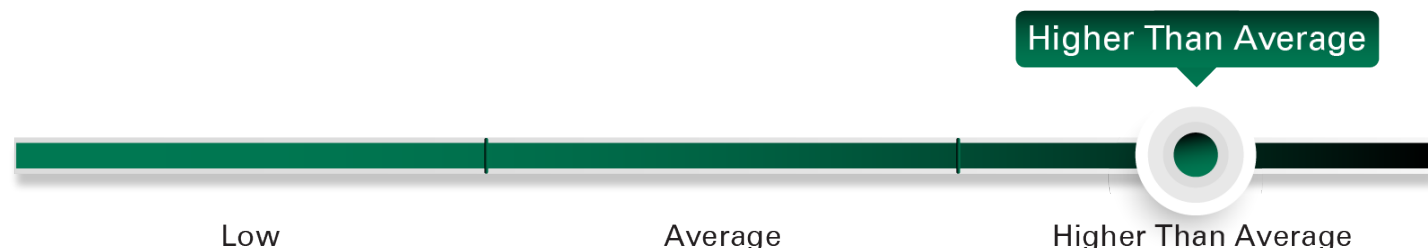


The number of calories and types of nutrients a person needs depends on their weight, height, how much they exercise, and their personal goals. For advice made just for you, talk to a nutrition coach, a registered dietitian, or a healthcare professional.

References : 13, 16, 17, 37, 68, 103

Strength Potential

Strength is how much force your muscles can produce. This means how heavy you can lift or how hard you can push or pull something. Strength depends on your training, food, motivation, and health. The stronger you are, the more weight or force your muscles can create.



Your body is likely optimized for activities that involve strength and produce force due to a higher proportion of fast-twitch muscle fibers and a more efficient neuromuscular system.

Dietary Recommendations



Strength athletes should work on moving well, building muscle, and recovering after exercise. To do this, they should eat lean protein to help their muscles grow and repair, aiming for about 0.7 to 1 grams of protein for each pound they weigh. Carbohydrates are the main source of energy for training, so it is good to eat about 1.8 to 2.8 grams of carbs per pound of body weight. Fats are also important because they help with hormones, cell health, and the use of certain vitamins. Most people should have 0.7 to 0.9 grams of fat for each pound they weigh, or about 20% to 35% of their total calories. Some common supplements can help strength athletes meet their goals. Creatine monohydrate helps muscles make energy. Protein powders, from whey or plants, can make it easier to get enough protein, especially after working out. Beta-alanine can help your muscles feel less tired during hard workouts.

Exercise Recommendations



With a high likelihood for top strength, you are able to stress your system with more intense and heavier compound movements like squats, deadlifts, bench press, and overhead press with a focus on lower reps (3-6 reps) to maximize strength. Standard progressive overload should continue, but you may add additional weight a few times per week instead of once per week. Alternate your training to account for both strength gains and muscle size gains (hypertrophy).

Lifestyle Recommendations

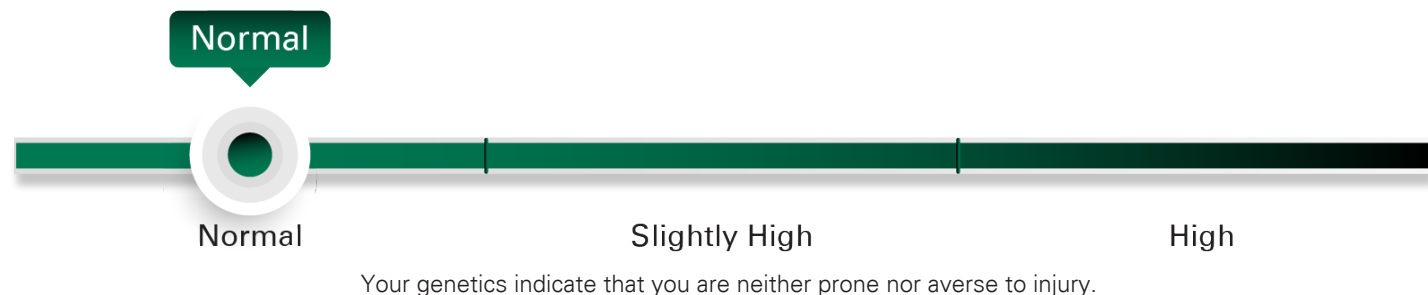


Keeping track of your workouts helps you improve in a steady way. Make sure to get 7 to 9 hours of sleep each night so your muscles can heal and grow. On your rest days, you can help your circulation by walking, swimming, or doing stretches. For a workout plan and nutrition advice made just for you, talk to a personal trainer, nutrition coach, or other fitness professional.

References : 1, 3, 14, 88, 90, 103, 126

Susceptibility To Injury Due To Overtraining

Some people get injured more easily than others. This can be because of how they move and how strong or flexible they are. Training correctly and eating well can help lower your chance of getting hurt, but some risk may always be there.



Dietary Recommendations



Given a normal risk for injury, it is still important to keep and maintain a healthy diet. Adequate protein intake in the range of 20-30 grams per meal will support muscle growth and repair. Carbohydrates are an important macronutrient to help provide your system with appropriate energy. Healthy fats from nuts, seeds, fish, and olive oils aid in the body's hormone regulation and aid in appropriate digestion. Inflammation can be mitigated by incorporating anti-inflammatory foods like leafy greens, fatty fish, nuts, and berries, which support joint health.

Exercise Recommendations



Although you are not predisposed to injury from overtraining, it is still important to follow smart training habits. You can handle higher training loads, but you should still incorporate warm-ups, cool-downs, and rest days in your exercise program. It is important to incorporate a mix of different exercise types like strength training, cardio, and flexibility into your routine to prevent overuse injuries.

Lifestyle Recommendations

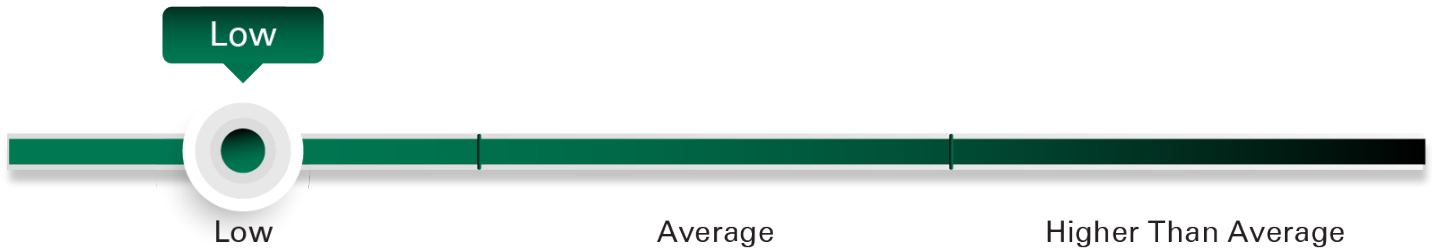


Recovery activities like walking, yoga, or swimming can help muscles recover after intense workouts while promoting circulation. Staying properly hydrated can help maintain joint lubrication and reduce muscle cramping. Sleeping 7-9 hours per night will support muscle recovery and repair to prevent injury.

References : 7, 9, 46, 54, 93

VO2 Max Potential

VO2 max is the maximum amount of oxygen your body can use when you do hard exercises like running or cycling. Having a higher VO2 max usually means you have better endurance and can keep going longer because your heart, lungs, and muscles are working well. VO2 max can be made better with regular training, but genetics, age, and fitness also play a role.



Your genetics did not indicate a tendency towards the ability to perform longer duration physical activities; however, research shows that cardiorespiratory performance can be improved by gradually increasing your physical activity time and intensity.

Dietary Recommendations



If you have a lower VO2 max, there are ways to help your body use oxygen better. Eating more iron-rich foods like red meat, leafy greens, and beans helps your blood carry oxygen. Eating foods like berries, nuts, and seeds, which are antioxidants, can help reduce stress and swelling in your body. To get the best results from your workouts, eat a balanced diet that gives you enough energy, helps you recover, and keeps your heart healthy. Eat carbohydrates from whole grains, fruits, and vegetables. Lean meats like beef, bison, and turkey give your muscles what they need to grow and repair. Healthy fats, such as omega-3s from flaxseed and walnuts, support your heart and help reduce inflammation. Some supplements can help your heart and help your body use oxygen better. Nitrates can help bring more oxygen to your muscles, so you can do more during exercise. Creatine monohydrate helps your muscles make energy faster, which can improve how you perform. Beta-alanine helps lower lactic acid, so your muscles do not get tired as quickly, letting you exercise longer.

Exercise Recommendations



There are strategies to help improve aerobic fitness. Try to do moderate exercise, like running or swimming, 2 to 4 times a week for 30 to 60 minutes each time. You should also add a few workouts each week that use high-intensity interval training (HIIT). Strength training also helps your body use oxygen better during exercise, which can improve your fitness.

Lifestyle Recommendations



Resting after your workouts is important so you do not overtrain or get hurt. Try to sleep 7 to 9 hours a night and do at least one active-recovery workout each week to help your circulation. Talk to a personal trainer, fitness coach, or sports expert for help creating a workout plan that matches your body and fitness goals.

References : 18, 20

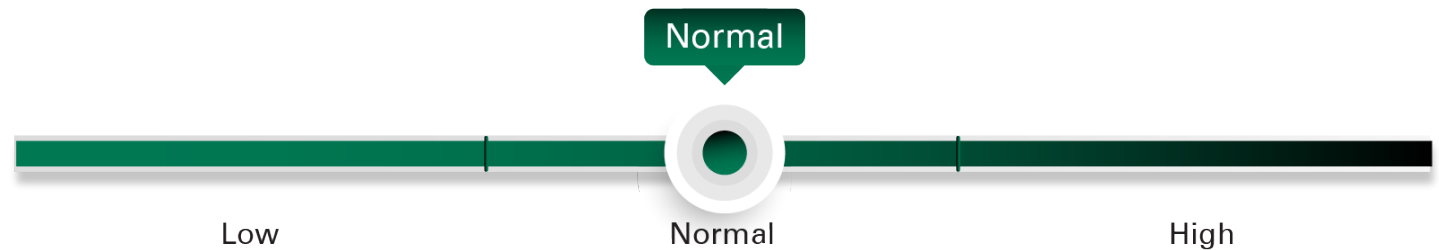
HORMONES

Results Summary

Trait	Genetic Result	Page
Estrogen Level	Normal	29
Melatonin Level	High	30
Progesterone Level	Normal	31
Prolactin Level	Normal	32
Testosterone Level	Normal	33

Estrogen Level

Estrogen is a hormone found in both males and females. It helps control the reproductive system and also affects bone strength, heart health, body weight, and mood.



You have a genetic predisposition for normal estrogen levels.

Dietary Recommendations

A well-balanced diet can promote hormonal balance by supporting the proper functioning of the endocrine system. This includes eating a variety of nutrient-dense whole foods, such as whole-grains, vegetables, fruits, healthy fats, and lean proteins.



Exercise Recommendations

Regular physical activity can help improve the body's natural ability to balance estrogen levels. Strength training, moderate-intensity aerobic exercise, high-intensity interval training (HIIT), and mind-body exercises like yoga and dance can all play important roles in improving metabolism, reducing stress, and supporting hormonal health.



Lifestyle Recommendations

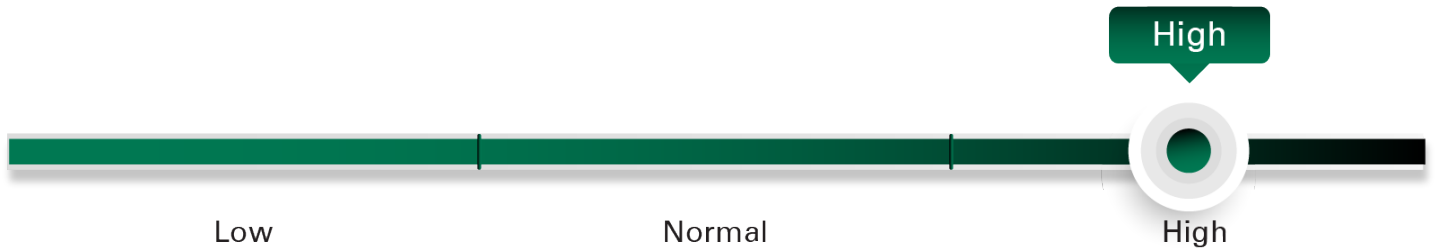
Adopt a lifestyle that supports hormonal balance. Aim for adequate sleep, as hormonal regulation is closely tied to your sleep-wake cycle. Managing stress is also crucial, as chronic stress can lead to higher levels of cortisol, which may further disrupt estrogen balance.



References : 8, 10, 92, 99, 102, 112, 120, 121

Melatonin Level

Melatonin is a hormone made in the brain that helps control your sleep and wake cycle. Its levels go up and down throughout the day to help you know when to sleep and wake up. Melatonin also helps with mood, the immune system, and reproduction.



You have a genetic predisposition for melatonin level oversufficiency.

Dietary Recommendations

Certain foods contain melatonin, which can contribute to higher levels in the body if consumed in large quantities. Limiting foods such as tart cherries, grapes, tomatoes, nuts, and oats may help reduce overall melatonin levels. Tryptophan is a precursor to melatonin. Foods rich in tryptophan can increase melatonin production. Reducing intake of foods such as turkey, chicken, dairy products, seeds, and nuts may help reduce melatonin production.



Exercise Recommendations

Regular aerobic exercise supports balanced hormone production and normalizes melatonin secretion over time. Ideally, exercise in the morning or early afternoon to help reset your body's circadian rhythm. Activities that reduce stress, such as yoga or gentle stretching, support balanced hormone production.



Lifestyle Recommendations

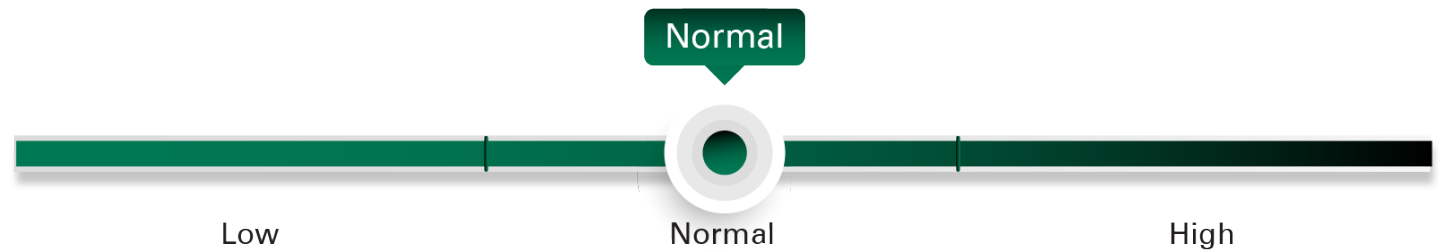
If you are predisposed to high melatonin levels, adopting a lifestyle that helps regulate melatonin levels is important. Ensure you are getting adequate exposure to natural daylight in the morning, as this helps reset your circadian rhythm and regulates melatonin production. Avoid overly dark environments in the daytime, since this can promote the premature production of melatonin, potentially causing you to want to sleep earlier than usual.



References : 61, 65, 129

Progesterone Level

Progesterone is an important hormone for women. It helps control the menstrual cycle and is needed during pregnancy. It also affects mood, bone health, the immune system, and the nervous system. In men, progesterone helps regulate testosterone production, supports sperm development, and contributes to nervous system function.



You have a genetic predisposition for normal progesterone levels.

Dietary Recommendations

A well-balanced diet can promote hormonal balance by supporting the proper functioning of the endocrine system. This includes eating a variety of nutrient-dense whole foods, such as whole-grains, vegetables, fruits, healthy fats, and lean proteins.



Exercise Recommendations

While exercise alone may not directly affect progesterone levels, it can help regulate the hormonal system, reduce stress (which can deplete progesterone), and maintain a healthy body composition.



Lifestyle Recommendations

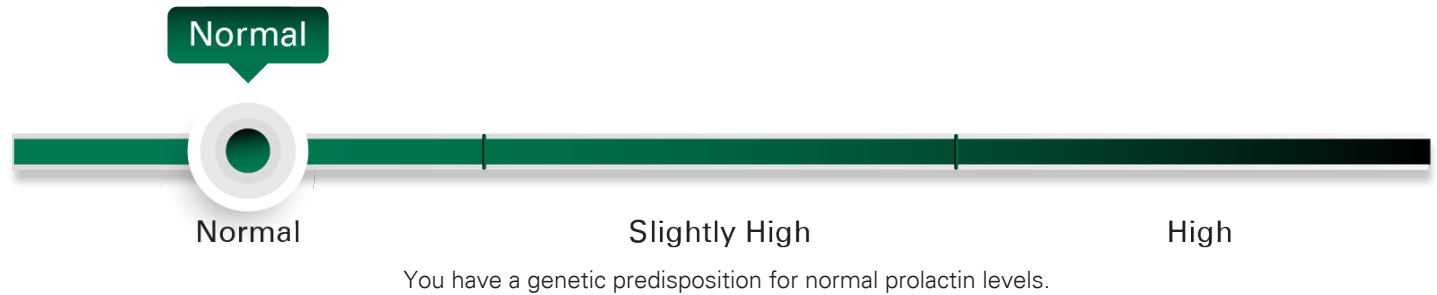
Focus on a balanced lifestyle that supports healthy progesterone levels. Practice relaxation techniques such as meditation or yoga to reduce stress, since stress produces cortisol, which can interfere with progesterone production. Adequate sleep, 7-9 hours per night, is also important for hormonal balance. Avoid environmental toxins, such as BPA and pesticides that may mimic estrogen and disrupt hormonal balance.



References : 91, 99, 101, 120

Prolactin Level

Prolactin is a hormone primarily produced by the pituitary gland that plays important roles in both men and women. In women, prolactin is crucial for stimulating milk production in the mammary glands after childbirth, supporting breastfeeding. It also helps regulate menstrual cycles. In males, prolactin plays a role in testosterone and sperm production.



Dietary Recommendations

A well-balanced diet plays a crucial role in maintaining hormonal stability and overall health. Focus on whole, unprocessed foods such as vegetables, fruits, whole grains, and lean proteins. Include foods rich in vitamin B6 (e.g., bananas, spinach, and chickpeas) and zinc (e.g., nuts, seeds, and seafood) since these contribute to hormone regulation. Limit excessive intake of refined sugars, processed foods, and saturated fats, which can disrupt overall hormonal function.



Exercise Recommendations

Regular physical activity can be beneficial for overall hormonal balance. Engage in moderate-intensity exercises such as brisk walking, swimming, or cycling for at least 150 minutes per week. Resistance training 2-3 times a week can also enhance metabolic health.



Lifestyle Recommendations

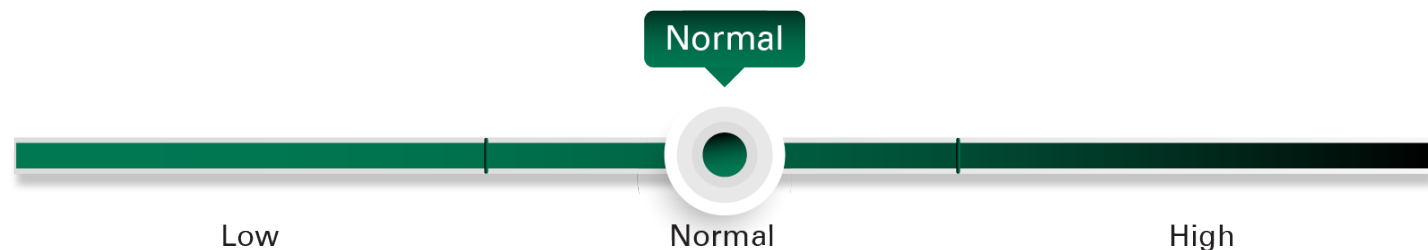
Prioritize regular sleep, aiming for 7-9 hours per night, to regulate hormone production. Limiting alcohol and reducing caffeine intake can promote hormonal health.



References : 122

Testosterone Level

Testosterone is a hormone that plays a vital role in many processes, not just in men but also in women. It plays a role in muscle mass, bone density, energy levels, mood regulation, sexual health, and mental well-being.



You have a genetic predisposition for normal testosterone levels.

Dietary Recommendations

A balanced diet can play a significant role in supporting healthy hormone levels. Since testosterone is a fat-soluble hormone, your diet should include healthy fats such as monounsaturated fats and omega-3 fatty acids. Zinc is crucial for testosterone production. Include zinc-rich foods such as spinach and other leafy greens, chickpeas, and lentils.



Exercise Recommendations

Healthy testosterone levels can be supported by regular physical activity, especially through exercises that promote strength, endurance, and overall well-being. Include activities such as cardio workouts and resistance training, which have been shown to support healthy testosterone levels.



Lifestyle Recommendations

Testosterone is primarily produced during sleep, so insufficient sleep can lower testosterone levels. Aim for 7-9 hours of quality sleep each night. Make sure your sleep environment is conducive to rest by keeping it cool, dark, and quiet. Managing stress is also crucial, as chronic stress can lead to higher levels of cortisol, which may disrupt testosterone balance.



References : 56, 85

NUTRITION

Results Summary

Trait	Genetic Result	Page
Antioxidant Supplementation	Benefit	35
Caffeine Metabolism	Above Normal	36
Caffeine Related Anxiety	Normal	37
Gluten Sensitivity	Slightly High	38
Lactose Sensitivity	Average	39
Low Caloric Diet Effectiveness	Slightly Effective	40
Low Carb Diet Effectiveness	Effective	41
Low Fat Diet Effectiveness	Normal	42
Mediterranean Diet Effectiveness	Slightly Effective	43
Peanut Sensitivity	Low	44
Sodium Sensitivity	Average	45

Caffeine Metabolism

Caffeine is a drug used by people all over the world to feel more awake. When you drink caffeine, your body breaks it down and gets rid of it in a process called caffeine metabolism. How long caffeine stays in your body depends on things like your genes, age, health, and lifestyle. It typically lasts for about 1.5 to 9.5 hours. Caffeine affects the body in several ways. Caffeine helps break down fat, dilates blood vessels, increases urine production, and can make it easier to breathe by relaxing the muscles in your lungs.

Above Normal

Normal

Above Normal

Your genetics indicate a predisposition for above normal caffeine metabolism.

Dietary Recommendations



Having a fast caffeine metabolism allows your system to clear it more quickly, which can allow for more flexibility throughout the day. It is still important to be mindful of the amount of caffeine consumed and shoot for a well-balanced lifestyle approach. Try to incorporate a nutrition profile including fruits, vegetables, lean proteins, omega-3 fatty acids (e.g., salmon, sardines, and flaxseed), and healthy fats to support your system, aid in tissue repair and recovery, reduce inflammation, and stabilize energy levels. It is best to opt for decaffeinated alternatives of your favorite beverages. Mix up your caffeine intake by trying options like green tea and matcha, which have a more gentle release of caffeine and contain L-theanine, which has a calming effect. With caffeine's diuretic effect, keep hydrated (approximately half your body weight in liquid ounces) to lessen the development of dehydration. Even slight dehydration can lead to neuro-related symptoms. Caffeine is an excellent pre-workout supplement. If desired, ingesting between 150-300 mg of caffeine should be tolerable and is the typical amount in the general branded pre-workout (or 2-3 cups of coffee).

Exercise Recommendations



Staying active using all forms of movement enhances blood flow, lowers inflammation, promotes neural connections, and can serve as a natural stimulant. Target 150 minutes of low to moderate intensity exercise or 75 minutes of higher intensity exercise per week. Focus on a balanced strength training approach by targeting all the major muscle groups (e.g., legs, core, back, chest, and arms) to ensure muscular balance and stability. Athletic movements that mimic everyday functional activities, such as squats, lunges, and deadlifts, improve joint stability and strength. Vary your workouts by periodizing training cycles throughout the year to mitigate overtraining in one area or type of activity. Cycles may include but are not limited to high-intensity interval training (HIIT), pure strength training, mobility training, endurance training, and/or yoga or meditation.

Lifestyle Recommendations



There should be no effect with ingesting caffeine later in the day or close to bedtime, but do be mindful that there is potential to affect your sleep regardless. It is important to aim for 7-9 hours of sleep per night. Try to be consistent in your wake and rest times. Continue to be mindful of caffeine in unexpected places like chocolate, sparkling waters, medications, and energy drinks. Offer yourself a natural energy boost by focusing on mindfulness practices like breathing exercises, nature walking, and yoga.

References : 84

Caffeine Related Anxiety

Caffeine is a common drug that people use to feel more awake. It affects the brain and can speed up the body's systems. Sometimes, drinking caffeine can cause or make anxiety worse, which is called caffeine-related anxiety. Caffeine can make your heart beat faster, give you more energy, and make you feel nervous, jumpy, or shaky. These feelings are a lot like the symptoms people with anxiety disorders experience.



Dietary Recommendations



Having a normal predisposition for caffeine related anxiety, moderate caffeine consumption (2-4 cups of coffee per day) is typically well-tolerated. Keeping a well-balanced nutrition profile including fruits, vegetables, lean proteins, omega-3 fatty acids (e.g., salmon, sardines, and flaxseed), and healthy fats supports your system, aids in tissue repair and recovery, reduces inflammation, and stabilizes energy levels and mood. Try caffeine options like green tea and matcha, which have a gentler release of caffeine and contain L-theanine, which has a calming effect. With caffeine's diuretic effect, keep hydrated (approximately half your body weight in liquid ounces) to lessen the development of dehydration. Even slight dehydration can lead to anxiety-related symptoms.

Exercise Recommendations



Staying active using all forms of movement enhances blood flow, lowers inflammation, and promotes neural connections, which has been shown to reduce stress and anxiety. Target 150 minutes of low to moderate intensity exercise, or 75 minutes of higher intensity exercise per week. Focus on a balanced strength training approach by targeting all the major muscle groups (e.g., legs, core, back, chest, and arms) to ensure muscular balance and stability. Athletic movements that mimic everyday functional activities, such as squats, lunges, and deadlifts, improve joint stability and strength. Vary your workouts by periodizing training cycles throughout the year to mitigate overtraining in one area or type of activity. Cycles may include but are not limited to high-intensity interval training (HIIT), pure strength training, mobility training, endurance training, and/or yoga or meditation. Caffeine is an excellent pre-workout supplement. Begin with a standard dose (85-100 mg or approximately one cup of coffee) and monitor yourself throughout the session. If desired, ingesting between 150-300 mg of caffeine should be tolerable and is the typical amount in the general branded pre-workout.

Lifestyle Recommendations



Avoid having caffeine within 6 hours of bedtime so as not to affect your sleep. Sleep lessens anxiety symptoms. It is important to aim for 7-9 hours of sleep per night. Be mindful of caffeine in unexpected places like chocolate, sparkling waters, and energy drinks. Manage your stress by focusing on mindfulness practices like breathing exercises, nature walking, and yoga.

References : 98

Gluten Sensitivity

Gluten sensitivity happens when people have bad reactions to gluten, a protein found in wheat, rye, and barley. People with gluten sensitivity can have many different symptoms. Common problems include stomach pain, diarrhea, constipation, or bloating. Other effects outside the stomach can be feeling very tired, having low iron (anemia), or losing bone strength. There are two main types of gluten sensitivity: Celiac Disease (CD), which is an autoimmune disease, and Non-Celiac Gluten Sensitivity (NCGS), which is not an autoimmune disease. Doctors will check for Celiac Disease first, and if you do not have it, then you might be diagnosed with NCGS. In this report, when we talk about gluten sensitivity, we are talking about Celiac Disease.



Dietary Recommendations



To account for the increased risk of gluten sensitivity, incorporate naturally gluten-free whole foods such as fresh fruits in berry form, vegetables, lean proteins, fatty fish, legumes, nuts, and seeds to help with inflammation and support gut health. You should try to avoid gluten (found in wheat, rye, barley, and certain oats) to the best of your ability. While there are many gluten-free alternatives, be aware that many are higher in sugar and lower in fiber. Higher fiber foods can help promote proper digestion. Additional supplements to help in symptom management include prebiotic foods containing garlic, onions, and bananas, and probiotic foods like yogurt and kefir. Both help to support beneficial or good gut bacteria, which in turn may help strengthen gut integrity. Vitamin D and calcium support bone health. Adding in key micronutrients such as folate, vitamin B12, zinc, and magnesium is also helpful, as these are often deficient in this type of gluten sensitivity.

Exercise Recommendations



Staying active using all forms of movement enhances blood flow, lowers inflammation, and promotes neural connections. Target 150 minutes of low to moderate intensity exercise or 75 minutes of higher intensity exercise per week. Should the digestive system be upset, target gentler exercises similar to yoga, Pilates, or swimming, which are easier on the system. If symptom free, focus on a balanced strength training approach by targeting all the major muscle groups (e.g., legs, core, back, chest, and arms) to ensure muscular balance and stability. Athletic movements that mimic everyday functional activities, such as squats, lunges, and deadlifts, improve joint stability and strength. Vary your workouts by periodizing training cycles throughout the year to mitigate overtraining in one area or type of activity. Cycles may include but are not limited to high-intensity interval training (HIIT), pure strength training, mobility training, endurance training, and/or yoga or meditation.

Lifestyle Recommendations

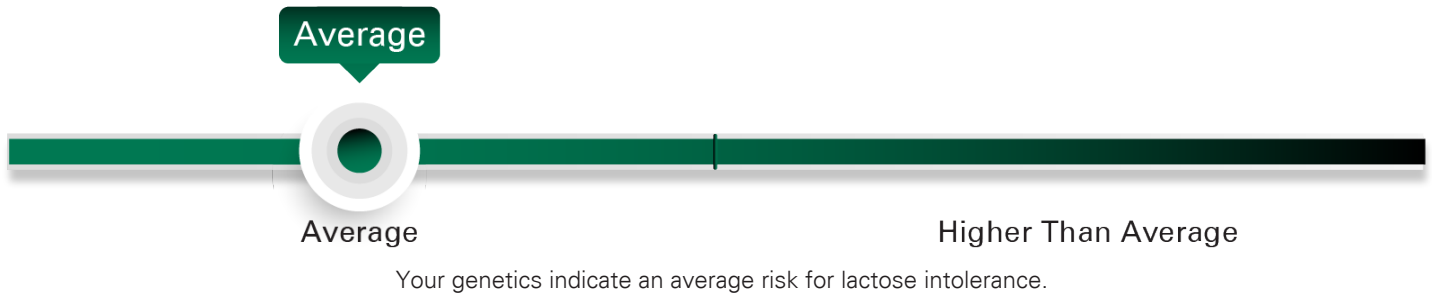


Discuss with a healthcare provider the potential of confirming a genetic variant specific to Celiac Disease through human leukocyte antigen (HLA) typing. Continued health visits to a provider can help detect early signs of celiac-related issues. Practice mindfulness techniques or meditation daily to help reduce stress, as stress can upset the gastrointestinal system. Watch for hidden gluten-based ingredients in sauces, dressings, and processed foods. If desired, consulting with a registered dietician can be helpful to determine the best gluten-free approach for you. Quality sleep is essential for overall health and immune function. Aim for 7-9 hours per night.

References : 33, 41, 49, 124, 125

Lactose Sensitivity

Lactose intolerance means that a person's body cannot break down lactose, which is a type of sugar in milk and other dairy foods. This happens because their intestines do not make enough of an enzyme called lactase, which is needed to digest lactose. People with lactose intolerance often get an upset stomach, feel bloated, or have diarrhea after eating or drinking dairy. It is important to know that being lactose intolerant is not the same as having a dairy allergy.



Dietary Recommendations



Following general health tips can help your digestion if you have a normal risk for lactose intolerance. Eat a balanced diet with fresh fruits, vegetables, lean meats, fish like salmon or sardines, flaxseed, healthy fats, and foods high in fiber to help your body and keep your energy steady. If you have not had problems with dairy before, you can still eat it in moderate amounts. If you do have trouble with milk or dairy foods, pick lactose-free products, which give you the same nutrients. Eating probiotic foods like yogurt, kimchi, or other fermented foods can help keep your stomach healthy and make digestion easier. You can also use lactase supplements. Taking these before meals can help stop stomach problems if you eat foods that have lactose.

Exercise Recommendations



Including a variety of exercises in your routine helps your circulation, lowers inflammation, and keeps your brain healthy, which can help reduce stress and anxiety. Try to get at least 150 minutes of easy to moderate exercise, or 75 minutes of harder exercise every week. When you lift weights, make sure you work all your main muscle groups, like your legs, core, back, chest, and arms, to keep your muscles balanced and strong. Doing exercises like squats, lunges, and deadlifts can make your joints stronger and help you move better in daily life. Your workouts can include high-intensity intervals, strength training, stretching, endurance training, and even yoga or meditation.

Lifestyle Recommendations



Learn to identify lactose sources that activate symptoms of intolerance. Adjust your intake or think about an alternative. Monitor your nutrient levels with the help of a healthcare provider to ensure calcium and vitamin D levels are normal. Be mindful and slower when eating to allow your digestive system time to work, which can allow for reduced discomfort after meals. Practice mindfulness techniques or meditation daily to help reduce stress, as stress can upset the digestive system. Should symptoms persist, begin to track which foods may be the problem and consult with your healthcare provider.

Low Caloric Diet Effectiveness

A low-caloric diet typically involves limiting the overall number of calories an individual consumes in a day, usually with the goal of weight loss. Recommendations include eating whole foods that are naturally low in calories, such as fruit, vegetables, lean meats, and low-fat dairy products. This diet often helps improve markers such as cholesterol, blood pressure, and insulin sensitivity. The effectiveness of a low-caloric diet can vary and is influenced by an individual's genetics.



Your genetic risk score indicates that you may respond slightly better to a low-caloric diet compared to the standard population.

Dietary Recommendations

Adopt a balanced, sustainable approach to nutrition. A moderate calorie deficit should be used to support gradual weight changes and minimize metabolic adaptation. Protein intake should be prioritized to help preserve muscle mass and promote satiety. Nutrient-dense whole foods, including a variety of vegetables, fruits, whole grains, lean proteins, and healthy fats, should form the foundation of the diet to prevent micronutrient deficiencies. Occasional "diet breaks" may reduce the risk of long-term metabolic slowdown.



Exercise Recommendations

Incorporating regular, moderate-intensity aerobic exercise can significantly enhance the positive effects of caloric restriction. Include activities such as brisk walking, cycling, or swimming for 30-45 minutes most days of the week. These can improve cardiovascular health as well as improve fat metabolism. Resistance training is also recommended 2-3 times per week to preserve lean muscle mass, which can be lost during calorie reduction.



Lifestyle Recommendations

Incorporate stress-reducing practices such as meditation, gentle yoga, or daily walks. This reduces cortisol levels and promotes metabolic health. Target 7-9 hours of sleep per night because poor sleep can disrupt appetite-regulating hormones and undermine dietary efforts.



References : 44, 67

Low Carb Diet Effectiveness

A low-carb diet restricts the intake of carbohydrates, focusing instead on protein and fat-rich foods, such as meat, fish, eggs, and non-starchy vegetables. A low-carb diet is generally used for weight loss, but may have additional health benefits, including blood sugar control. The response of an individual to a low-carb diet is influenced, in part, by the genetics of that individual.



Your genetic risk score indicates that you may respond better to a low-carb diet compared to the standard population.

Dietary Recommendations



A typical low-carb diet is comprised of about 25% carbs or less (calorically). Your main source of carbohydrates should come from plant foods such as starchy vegetables (e.g., sweet potatoes, regular potatoes, squash, parsnips, beets) and fruit. Avoid refined carbohydrates, including sugar and sugary products such as sugar-sweetened beverages, sugary cereals, candy, and baked goods. Consider avoiding grains entirely, with the exception of white rice occasionally, which is easy for the body to digest. Consult a registered dietitian to ensure nutritional adequacy if you intend to further restrict carbohydrates in your diet. This diet is especially beneficial for diabetics who are on medication.

Exercise Recommendations



Strength training 3-4 times per week improves insulin sensitivity, promotes fat oxidation, and helps preserve lean muscle mass, which is essential when carbohydrate intake is reduced. Moderate-intensity aerobic activities like brisk walking, cycling, or swimming performed on most days can support fat metabolism and cardiovascular health.

Lifestyle Recommendations



A low-carb diet can sometimes affect cortisol levels, so commit to sleep health and stress management. Target 7-9 hours of sleep per night for healthy hormonal balance. Good sleep hygiene includes keeping a regular bedtime routine and limiting screen time at least 30 minutes before bed. Incorporate mindfulness practices like meditation and deep breathing to help maintain a balanced mental state.

References : 58

Low Fat Diet Effectiveness

A low-fat diet limits total fat intake to 30% or less of daily energy intake and emphasizes foods naturally low in fats, such as fruits, vegetables, lean meats, and whole grains. A low-fat diet may assist with weight loss and lowering cholesterol levels. The response of each individual to a low-fat diet can vary and is influenced by genetic variations.



Your genetic risk score falls within the normal range. You are not likely to benefit more from a low-fat diet compared to the average population.

Dietary Recommendations

Focus on a balanced intake of healthy fats, moderate carbohydrates, and adequate protein. Sources of healthy fats include fatty fish (e.g., salmon, tuna, sardines), avocado, nuts, seeds, extra virgin olive oil, coconut oil, and avocado oil.



Exercise Recommendations

Focus on strength training 3-4 times per week to build lean muscle mass and support hormone balance. Complement this with lower-intensity aerobic fitness activities like walking, swimming, or cycling a few times per week.



Lifestyle Recommendations

Incorporate stress-reducing practices such as meditation, gentle yoga, or daily walks. This reduces cortisol levels and promotes metabolic health. Target 7-9 hours of sleep per night because poor sleep can disrupt appetite-regulating hormones and undermine dietary efforts.



References : 45, 72, 86

Mediterranean Diet Effectiveness

The Mediterranean Diet focuses on eating lots of plant foods and healthy fats that are common in countries near the Mediterranean Sea. While the Mediterranean diet offers widespread health benefits, including weight management and reduced risk of diseases, the extent of its effectiveness for each person is influenced by their individual genetic makeup.



Your genetic risk score indicates that you may respond slightly better to a Mediterranean diet than the average population. You may likely see more marked benefits in terms of weight loss and metabolic health.

Dietary Recommendations

Incorporate the key components of the Mediterranean Diet into your eating patterns. Focus on a variety of nutrient-dense, plant-based foods while emphasizing healthy fats and lean proteins. Extra virgin olive oil should be the primary fat source. Replace refined grains with whole grains like quinoa, barley, and brown rice. Consume a wide range of colorful vegetables, fruits, legumes, and nuts to provide antioxidants and fiber. Eat a variety of fatty fish like salmon, sardines, and mackerel at least 2-3 times a week. Red meat and dairy should be consumed in moderation.



Exercise Recommendations

Implement an exercise routine that emphasizes consistency, balance, and activities that promote cardiovascular health, strength, and overall well-being. Include moderate-intensity aerobic activity, such as brisk walking, cycling, or swimming, performed 4-5 times per week for 30-60 minutes to improve heart health and lipid profiles. Strength training 2-3 times per week is also recommended to preserve lean muscle mass and support healthy weight management.



Lifestyle Recommendations

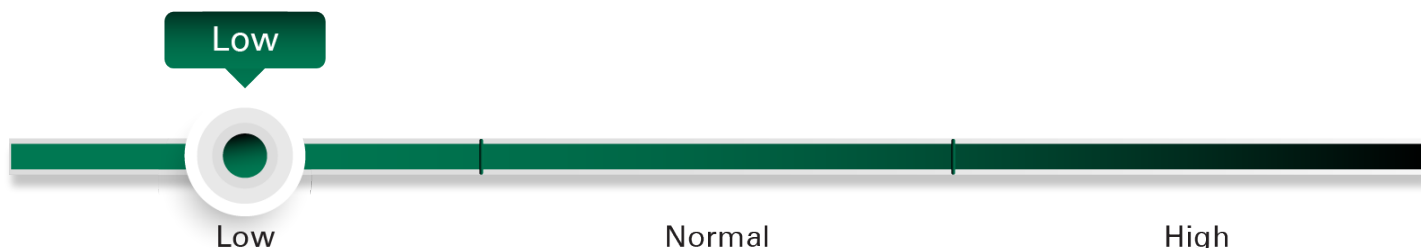
Incorporate stress-reducing practices such as mindfulness, spending time in nature, and fostering strong social connections. Be certain to get 7-9 hours of sleep per night because inadequate sleep can affect appetite regulation and increase cravings for unhealthy foods. It is important to avoid smoking, as this promotes inflammation, which counteracts the anti-inflammatory effect of the Mediterranean Diet.



References : 27, 40, 111, 115

Peanut Sensitivity

Peanut sensitivity happens when a person's immune system reacts to proteins in peanuts. Some people may have mild symptoms like hives or stomach pain, while others can have serious problems like trouble breathing, which might need a doctor right away. Both a person's genes and exposures in their environment affect whether they develop peanut sensitivity. In particular, certain genes linked to the immune system can make someone more likely to become sensitive to peanuts.



Your genetics indicate you have a low predisposition for peanut sensitivity.

Dietary Recommendations

You have a low genetic risk for peanut sensitivity. However, if you suspect a peanut sensitivity, consult your physician prior to consuming peanuts or peanut-based products. Pay close attention to ingredient labels, as peanuts are often used in processed foods. Opt for whole, unprocessed foods whenever possible.



Exercise Recommendations

Include both cardio and strength exercises in your routine to improve fitness. Aim for at least 150 minutes of moderate cardio each week. Do strength exercises 2-3 times a week to build muscle, boost your metabolism, and keep your bones strong.



Lifestyle Recommendations

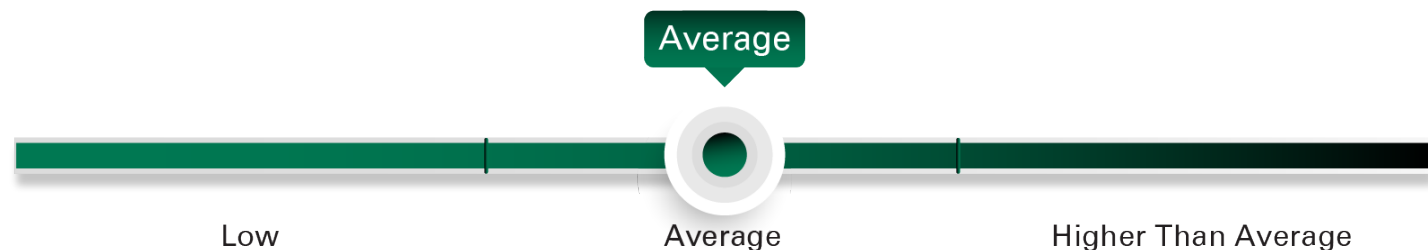
Mindfulness and good sleep are important for your overall well-being. Try meditation, deep breathing, or yoga to lower stress and help you stay calm when things get tough. Getting enough sleep is also important for letting your body recover, helping you think clearly, and keeping your immune system strong.



References : 53

Sodium Sensitivity

How an individual's blood pressure responds to changes in salt (sodium) intake is referred to as sodium sensitivity. An increase in blood pressure due to salt intake is deemed sodium-sensitive hypertension. This type of sensitivity is linked to genetics, environment, and lifestyle factors. Particular populations of older adults and African Americans tend to be the most prevalent.



Your genetics indicate an average likelihood for hypertension related to sodium sensitivity.

Dietary Recommendations



General recommendations for hypertension apply to a normal risk for sodium sensitivity. The American Heart Association (AHA) recommends a daily sodium intake of 2300 mg and avoiding excessive salt intake. These potential nutrition profiles or guidelines have been shown to help and/or prevent hypertension and other cardiovascular associated illnesses. The Dietary Approaches to Stop Hypertension (DASH) diet emphasizes fruits, vegetables, whole grains, lean proteins, and low-fat dairy while limiting foods higher in salt, sugar, and saturated fats. This type of profile is specific to hypertension. The Mediterranean style approach typically includes fruits, vegetables, grains, potatoes, nuts and seeds, and olive oil as the primary fat source. Low to moderate amounts of dairy, eggs, fish, red meat, and poultry are recommended, while little to no processed sugar, sweets, or butter should be ingested. This approach focuses more on overall wellness. Potassium rich foods like bananas, tomatoes, oranges, and potatoes can help balance sodium levels, which in turn aids in blood pressure regulation. Staying hydrated helps overall kidney function, which is crucial for individuals with sodium sensitivity. Be mindful of excessive alcohol intake as it can worsen blood pressure and increase your cardiovascular risk.

Exercise Recommendations



All types of exercise can help lower blood pressure. Aim for 150 minutes of low to moderate exercise or 75 minutes of high-intensity exercise each week. Make sure to work on all major muscle groups, like your legs, core, back, chest, and arms, to keep your muscles balanced. Exercises like squats, lunges, and deadlifts help make your joints stronger and more stable. Change up your workouts throughout the year to avoid overtraining specific muscle groups. This can include high-intensity interval training (HIIT), strength training, improving flexibility, building endurance, or doing yoga and meditation.

Lifestyle Recommendations



Check food labels for the amount of sodium in packaged and/or processed foods to ensure lower sodium options. Chronic stress can contribute to higher blood pressure. If you smoke, consider stopping or cutting back. Practice mindfulness techniques or meditation daily to help reduce stress. Poor sleep can elevate blood pressure and stress hormones. Aim for 7-9 hours of quality sleep each night. Monitor your blood pressure at home to help track your levels and adjust lifestyle habits as needed. Contact your healthcare provider to assist in monitoring and/or managing your blood pressure should the need arise.

References : 19, 89, 97, 100

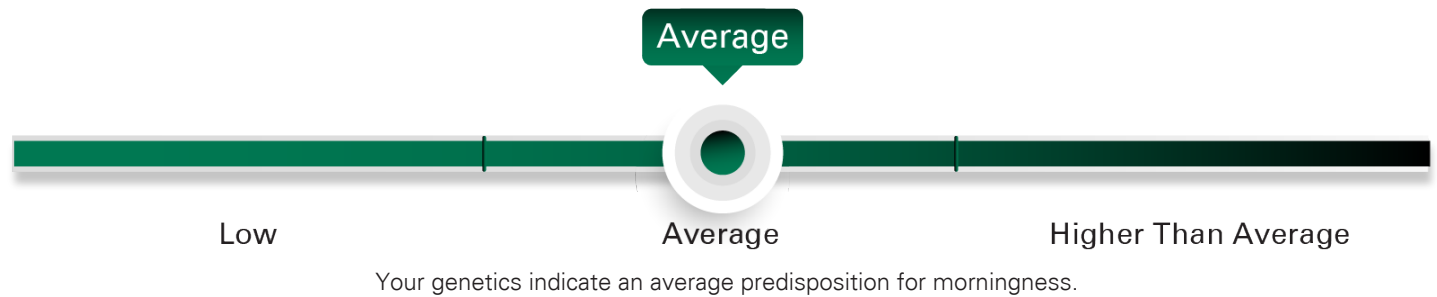
SLEEP

Results Summary

Trait	Genetic Result	Page
Morningness	Average	47
Sleep Quality	Higher Than Average	48

Morningness

Morningness means you feel awake and ready in the morning. This is mostly because of your body's natural clock, but things around you, like light, can also affect it. People who like mornings often go to bed early and wake up early.



Dietary Recommendations



Regardless of morningness status, a person's diet can play an important role in promoting good sleep. Avoid large, heavy meals close to bedtime and consuming caffeine in the afternoon or evening, since each of these things can potentially disrupt sleep. Alcohol may initially make you sleepy, but it can disrupt your sleep cycle. A small snack of complex carbohydrates and protein, such as a banana and a handful of nuts, taken 2-3 hours before bedtime can promote good sleep.

Exercise Recommendations



Regardless of morningness status, regular physical activity plays a key role in good sleep. Engaging in moderate exercise, such as walking, biking, or swimming during the day, can reduce stress and promote more restful sleep. Try to finish your workout 3-4 hours before bedtime since exercise can increase adrenaline, making it harder to wind down. Regular physical activity not only helps you fall asleep faster but also improves sleep duration and overall sleep quality by supporting the body's natural circadian rhythms.

Lifestyle Recommendations

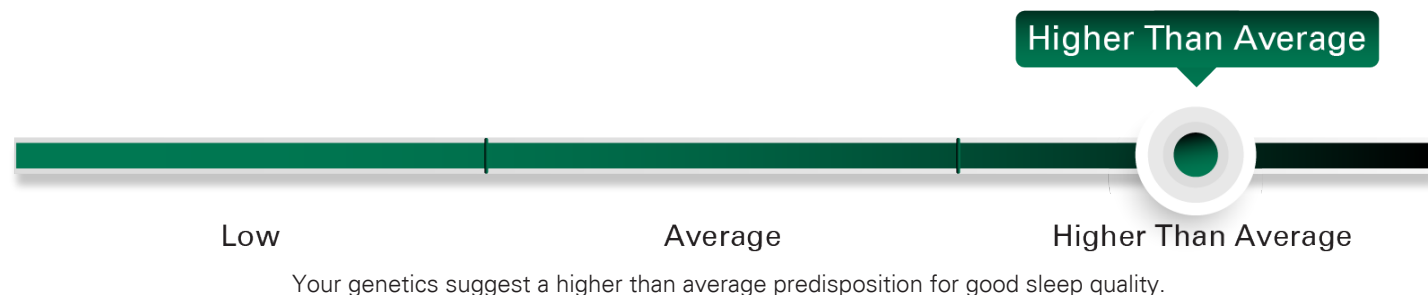


Good sleep hygiene is essential for promoting quality sleep. One of the most important habits is maintaining a consistent sleep schedule by going to bed and waking up at the same time every day, even on weekends, to help regulate your circadian rhythms. A relaxing bedtime routine, such as reading or taking a warm bath, can signal to your body that it is time to wind down. Your sleeping environment is also important. Make sure your bedroom is cool, dark, and quiet. Limit screen time at least 30 minutes before bed, since blue light can interfere with sleep hormone production.

References : 57

Sleep Quality

Sleep quality refers to how well you sleep, not just how many hours you get. It looks at things like how quickly you fall asleep, how many times you wake up during the night, how long you stay awake if you do wake up, and how much of your time in bed is spent sleeping.



Dietary Recommendations



A person's diet can play an important role in promoting good sleep. Avoid large, heavy meals close to bedtime and consuming caffeine in the afternoon or evening, since each of these things can potentially disrupt sleep. Alcohol may initially make you sleepy, but it can disrupt your sleep cycle. A small snack of complex carbohydrates and protein, such as a banana and a handful of nuts, taken 2-3 hours before bedtime can promote good sleep.

Exercise Recommendations



Being active during the day helps you sleep better at night. Doing exercises like walking, biking, or swimming can lower stress and make your sleep more restful. If you are a morning person, try to finish exercising 3-4 hours before bedtime, because working out too late can give you extra energy and make it hard to relax for sleep. Regular exercise not only helps you fall asleep faster, but also helps you sleep longer and better by keeping your body's inner clock on track.

Lifestyle Recommendations



Good sleep hygiene is essential for promoting quality sleep. One of the most important habits is maintaining a consistent sleep schedule by going to bed and waking up at the same time every day, even on weekends, to help regulate your circadian rhythms. A relaxing bedtime routine, such as reading or taking a warm bath, can signal to your body that it is time to wind down. Your sleeping environment is also important. Make sure your bedroom is cool, dark, and quiet. Limit screen time at least 30 minutes before bed, since blue light can interfere with sleep hormone production.

References : 34, 57, 95

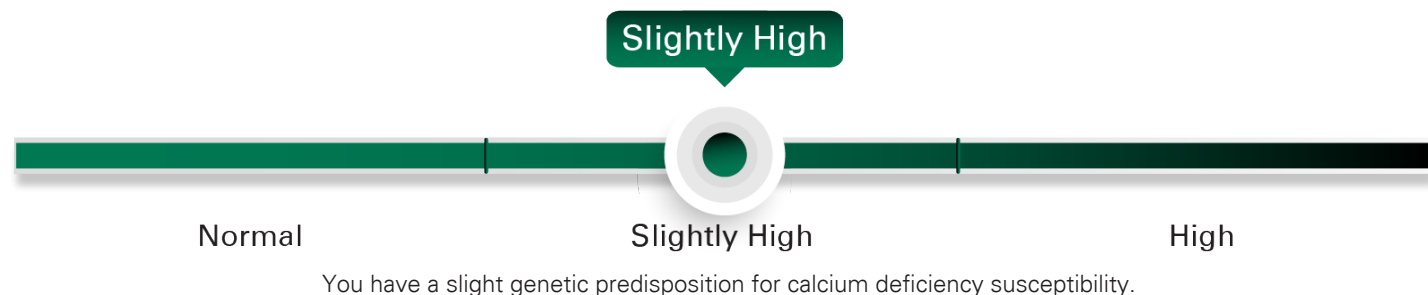
VITAMINS

Results Summary

Trait	Genetic Result	Page
Calcium Deficiency	Slightly High	50
Iron Deficiency	High	51
Magnesium Deficiency	Normal	52
Vitamin A Deficiency	Slightly High	53
Vitamin B1 Deficiency	Normal	54
Vitamin B12 Deficiency	Slightly High	55
Vitamin B6 Deficiency	Slightly High	56
Vitamin B9 Deficiency	Normal	57
Vitamin C Deficiency	Normal	58
Vitamin D Levels	Normal	59
Vitamin E Deficiency	Slightly High	60
Vitamin K Deficiency	Normal	61

Calcium Deficiency

Calcium is an important mineral that makes up a big part of our bones and teeth. It helps your nerves work properly, controls how your muscles move, and helps your body release hormones like insulin. Our bodies cannot make calcium on their own, so we need to get it from the foods we eat. Not getting enough calcium can lead to weaker bones and osteoporosis. Some people have certain genes that can cause them to have lower calcium levels. Adults should get about 1,000 mg of calcium each day, and people over 50 need about 1,200 mg each day. Things that can make it more likely to have too little calcium include drinking too much alcohol or coffee, eating foods high in certain substances called phytates and oxalates, not having enough vitamin D or magnesium, and using steroids for a long time.



Dietary Recommendations



Boost your calcium levels with dairy products, calcium-fortified milk alternatives (e.g., almond milk and coconut milk), fish with edible bones (e.g., salmon and sardines), nuts, seeds, legumes, and green leafy vegetables such as kale, spinach, bok choy, and broccoli. Dried herbs such as dill, basil, marjoram, and thyme (use generously in your food) are other good sources of calcium. Optimize your calcium absorption by combining calcium-rich foods with foods containing vitamin D (e.g., broccoli with salmon). Pre-soaking your legumes and seeds in water overnight and blanching green leafy vegetables for 10 minutes helps reduce phytates and calcium oxalate (interferes with calcium absorption), significantly improving calcium bioavailability. Sprouting or fermenting your seeds and legumes is another way of significantly reducing phytates.

Exercise Recommendations



Calcium helps build and maintain strong bones. It is important to focus on exercises that promote bone health and muscle strength. Weight-bearing exercises, such as walking, jogging, and dancing, stimulate bone growth and strengthening. Similarly, strength training such as weight lifting or resistance band exercises can improve bone density and stimulate bone growth.

Lifestyle Recommendations



Try to meet your calcium requirements through your diet, as high intake of calcium supplements may increase the risk of heart disease. It is safer to support bone health with vitamin K2, which helps direct calcium into the bones and prevents it from building up in the blood vessels. Also, sufficient vitamin D levels are important for calcium absorption. The best way to boost vitamin D is by exposure to ultraviolet rays (UVB) from the sun. However, if you live at higher latitudes, need to avoid the sun, or do not convert sunlight into vitamin D efficiently, consider supplementing with vitamin D3 (cholecalciferol), the active form of vitamin D. Inform your health practitioner of all supplements you are taking, especially if you are on prescription medications, as calcium may affect the efficacy of certain medications, such as digoxin, levothyroxine, and tetracycline antibiotics.

References : 106

Vitamin A Deficiency

Vitamin A is important for your immune system, having healthy babies, good eyesight, strong bones and teeth, making red blood cells, repairing body tissues, and healthy skin. Vitamin A comes in two forms: retinol, which the body can use right away, and provitamin A carotenoids (like beta-carotene, lutein, and lycopene), which need to be changed into retinol by the body. Carotenoids are found in plants, while retinol comes from animal-derived foods. Some benefits for your immune system can only come from retinol. The amount of retinol in your blood only drops when your liver stores are almost gone, so tests might not show a shortage until it is serious. Research shows that some people have genes that make it harder to turn carotenoids into retinol, which can lower their vitamin A levels. Those who need more vitamin A include women who are pregnant or have just had a baby, children, and vegans. Men should get 900 mcg of vitamin A each day, and women should get 700 mcg.



You have a slight genetic predisposition for vitamin A deficiency susceptibility. You may not be efficient in converting carotenoids into retinol (active form of vitamin A).

Dietary Recommendations



As you are likely to be less efficient in converting beta carotene to retinol, increase your vitamin A levels by eating foods from animal-derived sources such as liver, cod liver oil, egg yolk, fish, cheese, butter, and whole milk. Avoid reduced fat varieties as they will have a lower vitamin A content (vitamin A is found in the fat component of those foods). Plant sources contain carotenoids (beta-carotene, lutein, lycopene), which are converted into retinol and are a less efficient source of vitamin A for your genetic profile. You may also increase your vitamin A levels through supplementation.

Exercise Recommendations



With a slight predisposition for vitamin A deficiency, it is important to exercise in ways that promote efficient delivery and absorption of nutrients. Moderate intensity exercises like walking, jogging, or cycling improve blood circulation and supports efficient delivery of nutrients, such as vitamin A. Exercises that promote muscle mass, such as weightlifting or bodyweight exercises like squats or push-ups, can increase the ability of the body to store vitamin A.

Lifestyle Recommendations



Smoking and alcohol use can deplete vitamin A stores, so reducing or quitting these habits can help support healthy levels.

References : 23, 36, 50, 64, 80

Vitamin B1 Deficiency

Vitamin B1, also known as thiamine, is important for your nerve and immune systems, helps with fighting depression, and supports you when you are stressed. Thiamine also helps your body break down carbohydrates and fats for energy. A severe lack of thiamine can lead to certain diseases like maple syrup urine disease and beriberi. Not getting enough vitamin B1 can occur if you do not eat well, drink too much alcohol, have trouble absorbing food in your stomach or intestines, or your body needs more than the usual amount of vitamin B1. People who may need more vitamin B1 include those who are depressed, under stress, drink too much alcohol, suffer from anorexia, have conditions that make it hard to absorb food (e.g., Crohn's disease) are on dialysis, have diabetes, or have had bariatric surgery. Adult men should get 1.2 mg of vitamin B1 each day, and adult women should get 1.1 mg.

Normal

Normal

Slight Deficiency

Your genetic risk score for vitamin B1 deficiency susceptibility falls within the normal range.

Dietary Recommendations

Maintain your thiamine levels by including pork, organ meats (e.g., liver), legumes, nuts, sesame seeds, and sunflower seeds in your diet. Vitamin B1 may be destroyed by heat and is lost in water during cooking. Avoid prolonged cooking time and use just enough water for cooking. Consider consulting your healthcare provider to check your vitamin B1 levels and to discuss supplementation.



Exercise Recommendations

For someone with normal levels of vitamin B1, incorporate a balanced and varied exercise regimen that includes aerobic activity, strength training, and flexibility. These will improve cardiovascular health, build strength, and promote overall well-being.



Lifestyle Recommendations

Based on your genetic risk score, you do not require supplementation.



References : 127

Vitamin B6 Deficiency

Vitamin B6, also called pyridoxine, helps with many important jobs in the body. It is needed to use fat and protein from food, keep the immune system and nerves healthy, make hemoglobin (which carries oxygen in the blood) and neurotransmitters, and keep certain blood levels normal. If you do not have enough vitamin B6, you may get inflamed nerves, feel irritable or depressed, have trouble thinking clearly, or have skin problems such as rashes, cracked lips, and a sore tongue or mouth. Adults need about 1.3 mg of vitamin B6 each day. After age 50, men need 1.7 mg, and women need 1.5 mg a day. You may need more vitamin B6 if you are pregnant or breastfeeding, feeling depressed, have high homocysteine levels, heart problems, ADHD, asthma, memory loss or Alzheimer's, morning sickness, PMS, or if you take certain medicines like birth control pills or pain relievers.



Dietary Recommendations

Improve your levels of vitamin B6 by consuming pork, beef, organ meats (e.g., liver), poultry, and fish. Good plant sources include legumes, avocado, potatoes, sweet potatoes, pistachios, and sunflower seeds. Vitamin B6 from animal-derived sources is more bioavailable than plant sources. Optimize the vitamin B6 in your foods by avoiding prolonged cooking at high temperatures, freezing, and canning.



Exercise Recommendations

Vitamin B6 is involved in cognitive function and the production of neurotransmitters. Individuals prone to deficiency should consider a fitness regimen that features core stability and balance exercises such as planks, leg raises, and stability ball exercises. These exercises improve stability and benefit brain health by enhancing coordination. Exercises that reduce stress levels, such as stretching, yoga, or Pilates, are recommended for individuals with a potential deficit in vitamin B6, as these may mitigate symptoms such as irritability or fatigue.



Lifestyle Recommendations

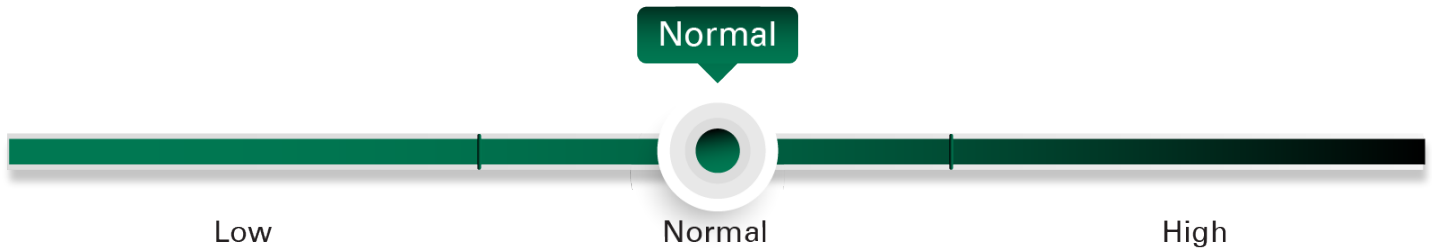
Supplemental vitamin B6 is typically found in the form of pyridoxine hydrochloride, which needs to be converted by your liver to its usable form. The active form, Pyridoxyl-5-Phosphate (P-5-P), would be more beneficial, as it provides you with readily usable vitamin B6. Being a water-soluble nutrient, it is quickly eliminated in urine, so it is best to take B vitamins and other water-soluble vitamins in divided doses throughout the day. Supplementing with a combination of vitamins B2, B6, B12, and folate would be beneficial, as it supports the methylation cycle, which is essential to life.



References : 47, 59, 116

Vitamin D Levels

Vitamin D is a fat-soluble vitamin that is critical to bone and muscle health, and functioning of your immune, endocrine, and cardiovascular systems. Your body creates vitamin D in the skin with exposure to UVB rays from sunlight. In addition, vitamin D can be obtained through your diet. Low levels of vitamin D can lead to health issues, including weakened bones, fatigue, muscle weakness, and decreased immune response. However, excessive levels of vitamin D—usually due to over-supplementation, can lead to toxicity resulting in nausea and dangerously high levels of calcium in the blood.



Your genetics indicate you are predisposed to normal vitamin D levels.

Dietary Recommendations

Maintain healthy vitamin D levels through a balanced and consistent diet. Include a variety of vitamin D-rich foods such as fatty fish, egg yolks, and fortified products like milk. Combine these foods with healthy fats, like olive oil and avocados, to aid absorption.



Exercise Recommendations

Implement a well-rounded exercise program that includes both aerobic activities, like walking, jogging, cycling, or swimming, and strength training exercises, like weightlifting or resistance band workouts. These are important for cardiovascular health, muscle strength, and bone density.



Lifestyle Recommendations

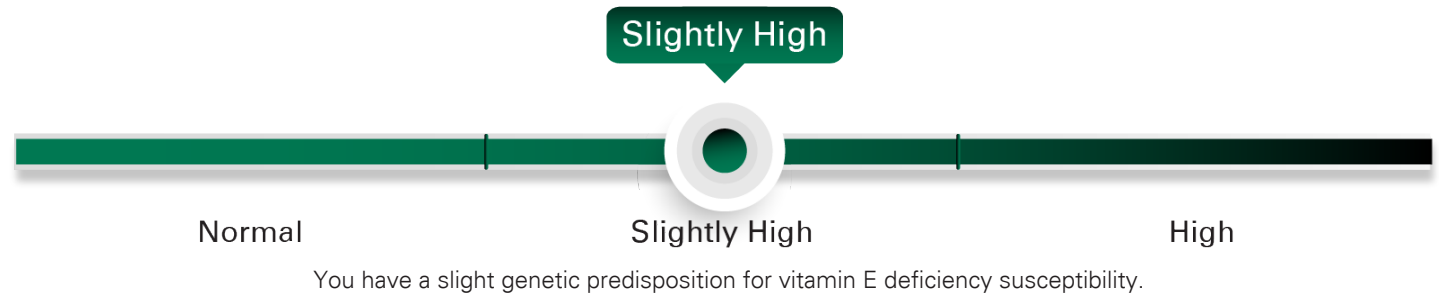
Maintain vitamin D levels through a balanced lifestyle, with regular outdoor activities. Maintaining a healthy weight, managing stress, and getting adequate sleep also contribute to overall well-being and can positively influence vitamin D levels.



References : 32, 71

Vitamin E Deficiency

Vitamin E is an antioxidant that helps protect your cells from damage. It is important for your immune system, blood vessels, skin, and many other parts of your body. Vitamin E can lower the risk of serious blood clots, reduce inflammation, and help protect your skin from the sun. It is not unusual to have problems with vitamin E levels. These are often caused by diet, trouble absorbing fats, or genetics. Some people have genes that make it harder for their bodies to use vitamin E from foods. Adults should get 15 mg of vitamin E each day, and women who are breastfeeding need 19 mg each day. You may need more vitamin E if you smoke, are overweight, exercise a lot, or have dry skin.



Dietary Recommendations

Improve your vitamin E levels by consuming olive oil, avocado oil, avocados, almonds, almond butter, sunflower seeds, sunflower seed butter, hazelnuts, spinach, and beet or turnip greens. Grass-fed meat and dairy, as well as eggs from pastured chickens, are also good sources of vitamin E.



Exercise Recommendations

Incorporate a well-rounded exercise regimen. Aerobic exercise, such as walking, jogging, or cycling, improves the body's circulation, which helps distribute nutrients like vitamin E throughout the body. People with vitamin E deficiency may experience muscle weakness, so strength training exercises like weightlifting, resistance band workouts, or bodyweight exercises are encouraged to maintain muscle health.



Lifestyle Recommendations

Vitamin E comes in various forms, with d-alpha tocopherol, the natural form of vitamin E, being more bioavailable. Gamma tocopherol works in synergy with alpha tocopherol. Look for a formulation that combines gamma tocopherol with d-alpha tocopherol at a ratio of 1:2. High doses of vitamin E supplements may increase the risk of bleeding for those taking blood thinners or with vitamin K deficiency. Do not exceed 1,000 mg per day without the supervision of your health professional.



References : 69, 70

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