



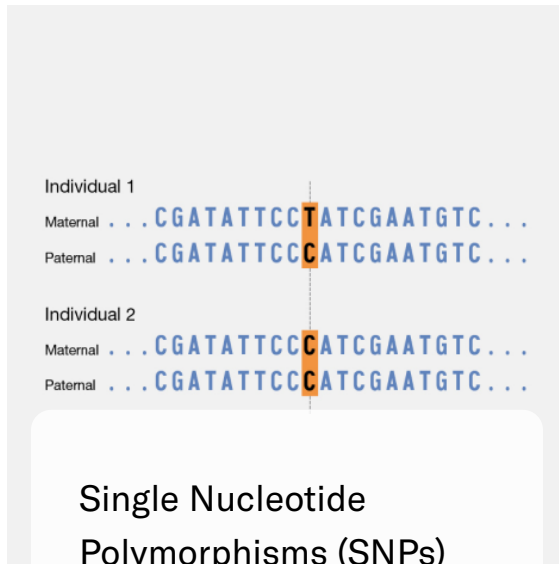
# What are genetic skin traits?



Beauty genomics is an intriguing field of research that investigates the interplay between our genes and our skin's health. It aims to uncover how our individual genetic makeup influences our response to different beauty treatments, cosmetics, and diet in relation to your unique skin needs. By understanding these connections, beauty professionals can develop personalized beauty plans that enhance our appearance, support skin health, and promote longevity in beauty.



# LifeNome's Genomic Process



SNPs are a type of genetic variation that occurs when a single nucleotide (A, T, C, or G) in the DNA sequence is different between individuals in a population. SNPs are the most common type of genetic variation in the human genome.



SNPs can be used as genetic markers to identify and study the relationship between genetic variation and traits or diseases. This association can be established by analyzing large datasets of genetic and phenotypic information from individuals with and without the trait of interest.



Your likelihood of trait expression is the cumulative effect of multiple genetic and non-genetic factors compared to the average risk in the population. Combining polygenic risk assessment with population nutritional assessment can provide valuable insights into the genetic and environmental factors that contribute to nutritional health.

SNP Image Source: <https://www.genome.gov/genetics-glossary/Single-Nucleotide-Polymorphisms>

# How to read your reports

## Trait Name:

Name of the Genetic Trait

## Assessment:

The assessment shows the genetic predisposition likelihood for this trait. A Low assessment means you are unlikely to have a predisposition for this trait. A Moderate assessment means you have a somewhat higher than average predisposition likelihood for this trait. A High assessment means you have a significantly higher likelihood of this trait than the average person in the reference population.

**Skin Rosacea**

Rosacea is a common chronic skin condition characterized by redness and flare-ups that may be triggered by stress, spicy foods, excessive alcohol consumption (especially red wine), sun exposure, skin surface microbes, and small intestinal bacterial overgrowth. While rosacea cannot be cured, it can be controlled by a combination of good skin care and prescription medication. Genetics play a major role in rosacea.

Your Genetic Risk: **High**

Your Rank: **70th Percentile**

8 / 13 Predisposing Variations

100% Coverage

**Your Recommendations**

Try to avoid spicy foods, hot baths, and emotional stress - they can all trigger rosacea symptoms. Foods high in histamines can also trigger rosacea symptoms. Try to use gentle cleansers and face washes - they're less likely to trigger flare-ups of rosacea. Consider applying a gentle, broad-spectrum sunscreen with an SPF of 30 or higher every day. If you notice potential rosacea symptoms, consider consulting a dermatologist.

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## Percentile score:

The population percentile shows where your genetic predisposition likelihood for this trait places you compared to the reference population.

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The population percentile shows where your genetic predisposition likelihood for this trait places you compared to the reference population.

## Predisposing Variants:

Total predisposing genetic variants show the total number of genetic variants in your DNA sample that affect your predisposition likelihood for the trait.

## Coverage:

The coverage reliability score shows what percentage of the target genetic variants for the trait were tested in your DNA sample. Ideally, the number should be closest to 100% to provide the best accuracy. Coverage reliability lower than 65% can mean that your assessment may not be as reliable because not enough genetic variants were present or correctly measured in the tested sample to provide an accurate result.

## Recommendations:

Here are some general recommendations based on your assessment. Remember your health care provider's advice always overrules what is written here.



# Traits to Prioritize

Here is a summary of your genetically-influenced traits that have a moderate or high likelihood of affecting your skincare choices. Explore the detailed report for each to learn why these traits deserve your attention and how to personalize your skincare choices and lifestyle for the best results.

Dermal Sensitivity

Medium

Skin Antioxidant Deficiency

Medium

Premature Skin Aging Due to Sun Exposure

High

Skin Barrier Impairment

High

Poor Tanning Ability

Medium

Skin Glycation

Medium

Sagging Eyelids Risk

Medium

Skin Rosacea












High

Sensitivity to Sun

High

# Traits without Significant Risk/Advantage

Here is a summary of skin care characteristics we've tested and found no reason to believe your genetics would affect them adversely. Enjoy the peace of mind knowing you don't need to worry about these aspects of your skincare beyond your typical routine.

Acne	 Low	Protection Against Excessive Cellulite	 Low
Collagen Breakdown	 Low	Skin Detoxification Impairment	 Low
Metal Contact Sensitivity	 Low	Skin Inflammation	 Low
Skin Dryness	 Low	Skin Stretch Marks	 Low
Facial Pigmented Spots	 Low	Youthfulness	 Low
Pollution Defense Impairment	 Low		

# Sagging Eyelids Risk

Sagging eyelids (hooded eyes or dermatochalasis) are a frequent concern in middle-aged and older adults. It happens due to a loss of elastic fibers and a disruption of the collagen network. Sagging eyelids are usually a cosmetic concern, although they can cause visual field loss, ocular or eyelid irritation. They may also be a cause of headaches due to forced brow elevation to increase the visual field. A recent study identified nearly 30 genetic variations associated with sagging eyelids. These variations are located in 6 different genetic regions that contain four genes TGIF1, SMYD3, ATP8A1, and PJA2. Interestingly, some of the identified genetic variations, including variation in the TGIF1 gene (an inducer of transforming growth factor) have protective effects while others are associated with increased incidents of sagging eyelids.

Your Genetic Risk:

Medium

Your Rank:

75th Percentile

3/5

Predisposing  
Variations

100%

Coverage

## Your Recommendations

Try to wear sunglasses to minimize sun exposure. Consider wearing a hat with a wide brim if needed. Try to consume a diet rich in vitamins by including fresh vegetables, fruits, meats, and water. Consider including collagen rich foods or sip collagen-infused drinks to rejuvenate your skin. Try to refrain from smoking, which can damage your skin further.





# Skin Glycation

Our bodies use glucose as its main source of fuel. If glucose is not metabolized properly, it can bind to skin's collagen and elastin fibers forming abnormal cross-links. This leads to structural and functional tissue impairment which produces advanced glycation products (AGEs). This process, called glycation, is responsible in accelerated aging of the skin as it impairs skin's ability to regenerate and self-repair. Glycation has been described as caramelization (hardening) of the skin from the inside out. The skin-damaging effects of glycation cause wrinkles, dryness, skin laxity.

Your Genetic Risk:

Medium

Your Rank:

85th Percentile

3/7

Predisposing  
Variations

100%

Coverage

## Your Recommendations

Consider using skincare products infused with anti-glycation agents, such as green tea, blueberries or pomegranate. Try to include more complex carbs (such as those found in peas, beans, whole grains, and vegetables) in your diet. Think about consuming a diet rich in polyphenols (found in nuts, berries etc) and antioxidants (found in fruits, green leafy vegetables etc) to promote healthy blood sugar. Try to monitor your sugar (refined or unrefined) intake. Consider taking plant-based glycation inhibitors or reversing agents, such as salacia, fenugreek, cinnamon, turmeric, ginseng, gymnema, banaba, or kudzu.



# Collagen Breakdown

Collagen is a connective tissue protein that makes up around a quarter of all the protein found in the body. It helps support and strengthen bones, teeth, tendons, skin, and internal organs. In particular, it affects your skin elasticity. Skin elasticity is the skin's ability to stretch and revert to its original form without developing wrinkles and imperfections. It is determined by collagen that makes up to 75% of our skin. The smoothness, firmness, and elasticity of the skin depend on the balance between collagen synthesis and its breakdown. Levels of MMPs increase in the course of normal aging and exposure to environmental factors (UV radiation) and irritation. In addition, genetic variants also increase activity of MMPs contributing to accelerated loss of collagen and premature skin aging.

Your Genetic Risk:



Your Rank:

25th Percentile

0/3

Predisposing  
Variations

75%

Coverage

## Your Recommendations

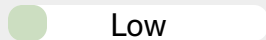
Collagen-rich foods include bone broth, fish, eggs, and garlic. Environmental factors (such as smoking and chlorinated water) can accelerate collagen breakdown. Skincare products enriched with polyphenols, carotenoids, or flavonoids can slow down collagen breakdown.



# Youthfulness

The research into genetics for younger looking skin has recently yielded results showing several genetic variations. Individuals with these genetic variations look years younger and their facial skin showed fewer signs of aging. These genes are not only important for outward appearance but are also necessary to study general anti-aging and longevity.

Your Genetic  
Strength:



Low

Your Rank:  
70th Percentile

0/1  
Predisposing  
Variations

100%  
Coverage

## Your Recommendations

A diet rich in fruits and vegetables can make your skin look younger. Staying hydrated can keep your skin healthy. Regular exercise habits will keep you in better shape for longer.

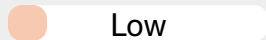




# Skin Detoxification Impairment

Human skin has a sophisticated detoxification system that involves converting environmental toxins into water-soluble forms. Glutathione is a master detoxifier produced naturally by the liver. It plays a critical role in maintaining optimal levels of vitamins C and E. Natural production of glutathione drops by roughly 10% per decade. This means that as we age, our skin isn't able to efficiently detoxify itself as it once did, which can result in skin inflammation and premature aging.

Your Genetic Risk:



Your Rank:

65th Percentile

3/6

Predisposing  
Variations

66%

Coverage

## Your Recommendations

Cruciferous vegetables are great at helping your skin detoxify. The same applies to vegetables high in sulfur, like garlic or onion. Your body naturally detoxifies itself - the best thing you can do to help it is to protect it from environmental toxins, like pollution or UV rays.



# Dermal Sensitivity

Your skin barrier (the outermost layer of skin that keeps the bad stuff out and the good stuff in) is your skin's first line of defense against things like pollutants, over-exfoliation, and UV exposure. If this function is compromised, your skin is more susceptible to toxin exposure, which can result in dryness, eczema, psoriasis, and atopic dermatitis. Your genetic dermal sensitivity risk has been calculated using the results from large genome-wide studies in which a number of genetic variants associated with increased risk of skin sensitivity were identified.

Your Genetic Risk:

Medium

Your Rank:

85th Percentile

8/15  
Predisposing  
Variations

93%  
Coverage

## Your Recommendations

Try to choose skincare products made for those with sensitive or hypersensitive skin. Consider oils instead of skin-damaging perfumes. Avoid hot showers - instead, take warm ones regularly. These open up your pores and make them easier to clean without damaging them. Be careful around household chemicals: remember to wear gloves whenever you handle them to avoid damaging your skin further. If you experience symptoms of eczema, you may want to consult your doctor for next steps.



# Pollution Defense Impairment

Pollution is everywhere, and it can lead to premature signs of aging (fine lines and wrinkles), dark spots, and inflammation. Where you live is a key indicator of how much pollution exposure your skin gets. Those who live in big cities are more prone to the harmful effects of pollution than those who live in the countryside.

Your Genetic Risk:



Your Rank:

45th Percentile

1/5  
Predisposing  
Variations

100%  
Coverage

## Your Recommendations

Growing indoor plants can help purify the air, fighting against pollution. If you wear makeup, it may be trapping pollutants and toxins throughout the day. Sunscreen doesn't just protect against UV rays - it protects against pollution, too.





# Metal Contact Sensitivity

Also known as contact allergy, contact skin sensitivity occurs when the skin has an allergic reaction to nickel or other metals. Many substances can cause these reactions, including soaps, cosmetics, fragrances, jewelry, and plants. Contact allergies typically appear as red, itchy rashes, which may be severe. Dry, cracked, scaly skin, bumps, blisters, oozing, crusting, swelling, burning, or tenderness may also occur.

Your Genetic Risk:



Your Rank:

75th Percentile

1/4  
Predisposing  
Variations

80%  
Coverage

## Your Recommendations

Nickel is one of the most common alloys to have a sensitivity to - minimizing your exposure to it can reduce the risk of a reaction. Checking what your jewelry, watches, or other metal items you regularly come in contact with are made of can help limit your risk of an allergic reaction. If you experience symptoms of an allergy after coming into contact with a metal, you may want to consult your doctor for a diagnostic test.



# Skin Barrier Impairment

Our skin barrier serves a crucial protective function by preventing the entry of harmful microbes, toxins, and allergens while maintaining proper skin hydration. It is responsible for keeping the bad stuff (such as pollution, UV rays, and other environmental aggressors) out and the good stuff (moisture) in. When the skin barrier function is compromised, it can be more prone to sensitivity, irritation, and dryness.

Your Genetic Risk:

High

Your Rank:

95th Percentile

3/3

Predisposing  
Variations

75%

Coverage

## Your Recommendations

Only use skincare products made for those with sensitive or hypersensitive skin. Use oils instead of skin-damaging perfumes. Avoid hot baths. Be careful around household chemicals: remember to wear gloves whenever you handle them to avoid damaging your skin further. If you wear makeup, remember to throw out any old products, as they may spoil and damage your skin. Avoid waterproof cleansers and liquid liners, as they are shown to be more harmful than other cosmetics. If you experience symptoms of skin barrier sensitivity, you should consult your doctor.



# Premature Skin Aging Due to Sun Exposure

Photoaging is the premature aging of the skin due to sun exposure. Not only does UV exposure cause DNA damage and oxidative stress, but it also disrupts the skin barrier function, which is essential in keeping the skin healthy, hydrated, and protected from the elements. Clinical data suggest that people with thinner, fairer skin are more susceptible to photoaging.

Your Genetic Risk:

High

Your Rank:

80th Percentile

5/6

Predisposing  
Variations

100%

Coverage

## Your Recommendations

Apply a moisturizer with SPF 40 or higher to deter photoaging, and reapply it every two hours. If you have oily skin, apply an SPF powder instead to soak up excess grease while still ensuring that your skin is protected. Bring an umbrella if you're going to be out in the sun to block UV rays and slow down the photoaging process. Wear a wide-brimmed hat if you're going to be out when the sun is strongest - between 10 am and 4 pm. Monitor any changes in the color, size, or texture of moles and other skin lesions. Be sure to contact a dermatologist regularly for full-body checkups, and ask them for a plan to deal with photoaging.



# Facial Pigmented Spots

Sunspots, also known as solar lentigines, are a common side effect of sun exposure. Sun exposure can trigger melanin production (the compound responsible for pigmentation), and the more sun exposure the skin gets, the more susceptible it is to melanin production. The most common areas sunspots pop up are on the face, hands, and arms.

Your Genetic Risk:



Your Rank:

20th Percentile

2/6  
Predisposing  
Variations

100%  
Coverage

## Your Recommendations

Applying a moisturizer with SPF 20 or higher can help deter facial pigmented spots. Topical products containing vitamin C, niacinamide, or azelaic acid can help brighten your skin. The sun is strongest between 10 am and 4 pm, so it could be a good idea to wear a wide-brimmed hat if you're planning on being out during those hours.





# Poor Tanning Ability

Tanning is the physiologically stimulated response to ultraviolet (UV) radiation. UV exposure increases the production of melanin (a type of melanin), which darkens the skin in an attempt to protect it from damage. Your skin's ability to tan is determined by genetics, and many genes are involved in the production of melanin. Studies have shown that those with lighter eyes and fairer skin don't tan as easily as their darker-skinned counterparts.

Your Genetic Risk:

Medium

Your Rank:

70th Percentile

7/19  
Predisposing  
Variations

100%  
Coverage

## Your Recommendations

Try to apply a moisturizer with SPF 30 or higher to avoid getting burned, and reapply it every two hours. Consider incorporating foods with beta carotene - like carrots, sweet potatoes, and kale - into your diet. You can try to eat more foods with lycopene - like tomatoes, watermelon, and guava - which help your skin naturally resist UV rays. Try to wear a wide-brimmed hat if you're going to be out when the sun is strongest - between 10 am and 4 pm. Note that you most likely won't be able to tan for more than two to three hours a day. This is because of how your skin produces melanin: after a while, more exposure just won't get you any darker.



# Sensitivity to Sun

A number of factors can lead to skin sensitivity to the sun. For example, paler skin tones (those with less melanin) have less natural protection and can be more prone to UV sensitivity. Additionally, since the skin thins out as we age, older people tend to have more fragile skin and are more susceptible to the damaging effects of UV rays. Finally, certain medical conditions (such as lupus) and medications (such as retinol and antibiotics) can make the skin more sensitive to the sun.

Your Genetic Risk:

High

Your Rank:

95th Percentile

8/18  
Predisposing  
Variations

100%  
Coverage

## Your Recommendations

Apply a moisturizer with SPF 40 or higher to reduce your exposure to the sun, and reapply it every two hours. If you have oily skin, apply an SPF powder instead to soak up excess grease while still ensuring that your skin is protected. Bring an umbrella if you're going to be out in the sun to block UV rays. Wear a wide-brimmed hat if you're going to be out when the sun is strongest - between 10 am and 4 pm. Monitor any changes in the color, size, or texture of moles and other skin lesions. Be sure to contact a dermatologist regularly for full-body checkups and ask them for a plan to deal with sunlight sensitivity.



# Skin Rosacea

Rosacea is a common chronic skin condition characterized by redness and flare-ups that may be triggered by stress, spicy foods, excessive alcohol consumption (especially red wine), sun exposure, skin surface microbes, and small intestinal bacterial overgrowth. While rosacea cannot be cured, it can be controlled by a combination of good skin care and prescription medication. Genetics play a major role in rosacea.

Your Genetic Risk:

High

Your Rank:

95th Percentile

3/10  
Predisposing  
Variations

90%  
Coverage

## Your Recommendations

Avoid spicy foods, hot baths, and emotional stress - they can all trigger rosacea symptoms. Foods high in histamines can also trigger rosacea symptoms. Use gentle cleansers and face washes - they're less likely to trigger flare-ups of rosacea. Apply a gentle, broad-spectrum sunscreen with an SPF of 30 or higher every day. Fragrance-free sunscreens are less likely to irritate your skin. If you notice potential rosacea symptoms, consult a dermatologist.



# Protection Against Excessive Cellulite

Cellulite most commonly appears under the skin on the thighs, hips, buttocks, and abdomen. It is caused by fat deposits under the skin and is more common in women than in men. There are several factors that can contribute to the production of cellulite, including excessive weight, total body fat, poor diet, fad dieting, lack of physical activity, dehydration, hormone changes, and genetic predisposition.

Your Genetic Strength:



Low

Your Rank:  
80th Percentile

0/1  
Predisposing  
Variations

100%  
Coverage

## Your Recommendations

Staying active reduces cellulite by improving circulation. Studies have shown that staying hydrated can reduce cellulite. Those who get enough sleep tend to have less cellulite than those who don't.





# Acne

Acne affects roughly 3 million people a year in the U.S. While many people equate acne with inflamed breakouts, it can also take the form of blackheads, whiteheads, papules, and pustules. Acne occurs when dirt, oil, and dead skin cells clog the hair follicles. It can also result from stress, product overuse, hormonal imbalances, and genetics.

Your Genetic Risk:



Low

Your Rank:

15th Percentile

4/8

Predisposing  
Variations

88%

Coverage

## Your Recommendations

Touching your face may introduce acne-causing bacteria to your skin and clog your pores. Scrubbing your skin too harshly could introduce irritation. Non-comedogenic (non-pore-clogging) skincare and makeup products will let your skin breathe.



# Skin Dryness

Dry skin lacks oil and is largely determined by your genetic predisposition. It can be exacerbated by things like UV exposure, over-exfoliation, and hot showers. Dry skin is often characterized by a rough, flaky texture or itchy skin. There are known genetic variations that contribute to the degree of skin dryness in humans. In fact, more than 40% of skin dryness is attributed to genetic factors.

Your Genetic Risk:



Low

Your Rank:

45th Percentile

0/3

Predisposing  
Variations

100%

Coverage

## Your Recommendations

Exfoliation can clear up any dead skin cells and reduce flakiness. Moisturizing immediately after exfoliating can prevent dryness. Drinking water can prevent dryness, but may not necessarily reduce existing dryness.



# Skin Antioxidant Deficiency

Antioxidants are essential in warding off the harmful effects of free radicals. Free radicals are tiny particles in the air that are known to cause skin issues, such as premature wrinkles, uneven skin tone, and dullness. When the skin has adequate levels of antioxidant protection, it is less susceptible to these side effects.

Your Genetic Risk:

Medium

Your Rank:

75th Percentile

3/7

Predisposing  
Variations

100%

Coverage

## Your Recommendations

Try to apply day creams and sunscreens that are rich in antioxidants. Try to do the same with night creams rich in antioxidants, as they can also help promote cellular repair and healing. Consider incorporating foods rich in antioxidants into your diet, like blueberries, red berries, dark green leafy vegetables, sweet potatoes, oranges, nuts, whole grains, and green tea. Additionally, any foods rich in Vitamins A, C, or E, beta-carotene, lycopene, selenium, and lutein tend to be great sources of antioxidants.



# Skin Inflammation

Skin inflammation occurs when the skin has a hyperactive response to allergens or toxins. There are two forms of inflammation: acute and chronic. Acute inflammation is usually short-term, and the skin is able to repair itself within two to four days. Chronic inflammation is long-term and may cause tissue damage, increased skin sensitivity, and increased susceptibility to wound infection.

Your Genetic Risk:



Your Rank:

50th Percentile

3/8

Predisposing  
Variations

88%

Coverage

## Your Recommendations

Learning which toxins irritate your skin the most is the key to avoiding them. Natural skincare products tend to cause less inflammation than artificial ones. Reducing your stress levels and increasing your sleep time can help reduce inflammation.

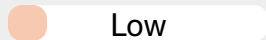




# Skin Stretch Marks

Stretch marks are a form of scarring that can appear on several parts of the body, including the belly, thighs, hips, breasts, upper arms, and lower back. When stretch marks first appear, they tend to be red, purple, pink, reddish-brown, or dark brown, depending on your skin color. Stretch marks are common and form for a variety of reasons. These include rapid growth, weight changes, pregnancy, and hormonal changes associated with puberty, bodybuilding, or hormone replacement therapy.

Your Genetic Risk:



Your Rank:

80th Percentile

4/6

Predisposing  
Variations

100%

Coverage

## Your Recommendations

Stretch marks are common, don't pose a health risk, and do not necessarily require treatment. Nevertheless, maintaining a healthy weight by finding the right diet and exercising often can help reduce the occurrence of stretch marks. Applying oils can help keep your skin flexible, which can prevent stretch marks.



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# LEGAL AGREEMENT AND TERMS AND CONDITIONS

## **Privacy Policy**

LifeNome abides by the Genetic Information Nondiscrimination Act, or GINA, a U.S. federal legislation with bipartisan support that protects Americans from discrimination with respect to health insurance and employment decisions on the basis of genetic information. GINA has passed through Congress and was signed into law by the President on May 21, 2008. As a result, American insurance companies and health plans (including both group and individual insurers, as well as federally-regulated plans) will be prohibited from: looking at your predictive genetic information or genetic services before you enroll; “requesting or requiring” that you or your family members take a genetic test; restricting enrollment based on genetic information; or changing your premiums based on genetic information. GINA also prohibits U.S. employers (including employment agencies, labor organizations, and training programs) from: discriminating against whom they hire or how much they pay on the basis of genetic information; “requesting or requiring” that you or your family members take a genetic test; or disclosing your genetic information in their possession except under specific and specially controlled circumstances. We also abide by COPPA which applies to the online collection of personal information from children under 13. The new rules spell out what a Website operator must include in a privacy policy, when and how to seek verifiable consent from a parent and what responsibilities an

operator has to protect children’s privacy and safety online.

## **Data Usage and Storage**

At LifeNome, you control your data and profile and can delete your data and profile at any time. This will erase your raw genetic data from our databases. The well-being reports generated will be kept for your future reference. LifeNome does not share any personally identifiable genetic information with any other third party entities. You understand that LifeNome may use your genotype and phenotype data as part of an aggregate and anonymous research analysis to improve its genomics algorithm.

## **Data Security**

LifeNome takes the security of your data seriously. We use state-of-the-art security measures and encryption technologies to safeguard your personal information. You will be responsible for safeguarding your login information and should not share your authentication information to any third party. Please notify us of any unauthorized use of your password.

## **Statement of Limitations**

LifeNome provides non-disease wellness information only. The information provided by LifeNome does not constitute medical advice and

is provided solely as complementary insight to assist you, your nutritionist, fitness instructor, and/or health-care provider in making more personalized decisions for your well-being. Genetic predispositions do not mean a condition is actually present. Many environmental and behavioral factors impact the actual presence of a condition.

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