BEAUTYNOME

Precision Genotype Skin
Care Assessments

Skin and Aging
Skin and the Environment
Skin and the Sun
Skin Profile

Thank you for using LifeNome, the personalized nutrition, fitness and wellbeing advice based on your genes.

We are excited to provide you with one of the most comprehensive genome-based nutrition and well-being information reports currently available. The information provided by LifeNome does not constitute medical advice and is provided solely as complementary insight to assist you and your doctor in making more personalized decisions for your nutrition and well being.

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- Dermal Sensitivity
- Skin Inflammation
- Skin Glycation
- Pollution Defense Impairment
- Photoaging
- Acne
- Skin Antioxidant Deficiency
- Skin Rosacea

My Genetic Strengths Levels

Typical · Slightly Advantaged · Advantaged

My Genetic Risk Levels

Low · Slightly Elevated · Elevated

Your skin changes as you age. Skin aging (or aging in general) is a complex process driven by both genetic and environmental factors. According to a recent JAMA study, 60% of our ageing is based on our genes while only 40% is determined by the environment. Some people are exceptional agers; their skin does not change much over decades while others develop wrinkles earlier in life. Many factors can contribute to this process; but, most importantly, increased collagen breakdown and the glycation process are culprits. Similarly, sagging eyelids can become a frequent concern in some middle-aged and older adults. In this section, explore how your genetic makeup impacts your skin as you age and what actions you could take to facilitate this process.

Collagen Breakdown

Typical

higher than **25%** of the population

WHAT IS 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.

MY TOP GENETIC VARIANTS

3/4
MY TOTAL

YOUR GENETIC VARIANTS

There is no genetic variants (SNPs) associated with Collagen Breakdown out of 4 that we are using for the determination of your predisposition for this trait.

RECOMMENDATIONS

- Consume collagen-rich foods like bone broth. Similarly, sip drinkable collagen for glowing skin.
- Reduce exposure to environmental factors (such as smoking, chlorinated water) that increase MMP levels.
- Please use skin care products enriched with polyphenols, carotenoids, or flavonoids.

REFERENCES

Read more about Collagen Breakdown by checking out the following articles:

Resource 1 | Resource 2 | Resource 3 | Resource 4 | Resource 5 | Resource 6

Sagging Eyelids Risk

Typical

higher than **12%** of the population

MY TOP GENETIC VARIANTS

rs4798147 rs6714226

5/5
MY TOTAL

WHAT IS 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 facto) have protective effects while others are associated with increased incidents of sagging eyelids.

YOUR GENETIC VARIANTS

These are 2 of the genetic variants (SNPs) associated with Sagging Eyelids Risk out of 5 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- Wear sunglasses to minimize sun exposure around the eye area. Also, wear a hat with a wide brim if needed.
- Consume a diet rich in vitamins by including fresh vegetables, fruits, meats, and water.
- Refrain from smoking.

REFERENCES

Read more about Sagging Eyelids Risk by checking out the following articles:

Resource 1 Resource 2 Resource 3

Skin Glycation

Slightly Elevated

higher than **80%** of the population

MY TOP GENETIC VARIANTS

rs17544777 rs1800624 rs3130349

7/7 MY TOTAL

WHAT IS 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. Scientific research identified several genetic variations in NAT2, GLO1, and AGER genes are associated with excessive glycation. A recent study found that the presence of slow NAT2 acetylator types correlates with higher levels of AGEs in their skin. Genetic variations in the glyoxalase 1 enzyme (GLO1) that protects cells from AGEs can lower their activity which leads to the build-up of AGEs. Another gene implicated in glycation and skin aging is AGER receptor. Binding of AGEs to AGER results in activation of collagen breakdown enzymes and the pro-inflammatory cytokines. In simpler terms, it leads to the breakdown of collagen in the skin prompting wrinkles and other complexities.

YOUR GENETIC VARIANTS

These are 3 genetic variants (SNPs) associated with Skin Glycation out of 7 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- To protect your face against AGEs, use skin-care products infused with anti-glycation agents such as green tea, blueberries or pomegranate.
- Include more complex carbs (peas, beans, whole grains, and vegetables) to your diet.
- Consume a diet rich in polyphenols (nuts, berries etc) and antioxidants (fruits, green leafy vegetables etc) to promote healthy blood sugar.
- Monitor your sugar (refined or unrefined) intake.

REFERENCES

Read more about Skin Glycation by checking out the following articles:

Resource 1 Resource 2 Resource 3

Youthfulness

Typical	higher than 70% of the population

WHAT IS 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.

MY TOP GENETIC VARIANTS	1/1 MY TOTAL

YOUR GENETIC VARIANTS

There is no genetic variants (SNPs) associated with Youthfulness out of 1 that we are using for the determination of your predisposition for this trait.

RECOMMENDATIONS

- Maintain a regimen for healthy skin and body.
- Use the appropriate, age-related, anti-aging skincare products and supplements.
- Eat a healthy diet and keep an active lifestyle.

REFERENCES

Read more about Youthfulness by checking out the following articles:

Resource 1 Resource 2 Resource 3 Resource 4

The health of your skin is determined by two factors: the environment and genetics. While many skin problems are caused by irritants and chemicals in the air (such as automobile exhaust, allergens, and industrial smoke), variants in the genes also play a key role in skin protection, barrier function, and detoxification. Hence, our skin maintains a sophisticated system to defend itself from both internal and external toxins. In this section, explore how your genetic makeup affects your skin's sensitivity to environmental factors, and use this knowledge to be more proactive about protecting your skin.

Contact Skin Sensitivity

Typical

higher than **25%** of the population

MY TOP GENETIC VARIANTS

rs2367563

5/5
MY TOTAL

WHAT IS CONTACT SKIN SENSITIVITY?

Contact skin sensitivities (contact allergy) are becoming more prevalent around the world. One of the most common types is the allergic reaction to nickel or other metals.The rise of contact allergy can be due to increased exposure to nickel in the environment as it is found in everyday items (jewelry, belt buckles, watch straps, metal zips, bra hooks, buttons, pocket knives, lipstick holders etc). Recent studies have identified genetic variations which are associated with the presence of nickel and other metal sensitivity.

YOUR GENETIC VARIANTS

This is 1 genetic variant (SNP) associated with Contact Skin Sensitivity out of 5 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- The presence of sensitivity in your family may be a positive predictor. In such cases, please be cognizant of the symptoms of contact sensitivities.
- In the event of allergic symptoms on your skin after exposure to nickel or other metals, consult your healthcare provider immediately.
- In addition, if you have sensitivity to nickel, you may also be sensitive to other metals as well (such as copper etc). As copper is believed to play an important role in maintaining healthy skin, one of the latest trends in skin-care is to use copper peptides in anti-aging products (and even in pillows!). So, please practice caution!

REFERENCES

Read more about Contact Skin Sensitivity by checking out the following articles:

Resource 1 Resource 2

Dermal Sensitivity

Elevated

higher than **90%** of the population

MY TOP GENETIC VARIANTS

rs1051740 rs10994675 rs1665050

16/16 MY TOTAL

WHAT IS DERMAL SENSITIVITY?

Skin sensitivity is largely determined by the skin barrier function. This determines skin permeability and the prevention of the entry of harmful pathogens and toxins. In addition, a hyper-reactive immune response to allergens and deficiency in protection from environmental toxins can both contribute to overall skin sensitivity risk. In some cases, dermal sensitivity leads to atopic dermatitis, or eczema, which is in fact one of the most common skin conditions (with prevalence rates of up to 20% in children and 3% in adults in the developed world). Eczema is characterized by very dry skin, and a typical age-related distribution of inflammatory lesions that are frequently infected by bacteria and viruses. It is important to consult a dermatologist if you experience any of these symptoms. Your overall dermal sensitivity risk has been calculated using the results from a large genome-wide study where a number of genetic variants associated with increased risk of skin sensitivity were identified.

YOUR GENETIC VARIANTS

These are 3 genetic variants (SNPs) associated with Dermal Sensitivity out of 16 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- Please use sensitive or hypersensitive labeled skin care products made with organic ingredients
- >Protect your skin from environmental pollutants, toxins and allergens by taking necessary precautions.
- Wear gloves while dealing with chemicals (e.g. house or garden work).
- If you notice symptoms of atopic dermatitis, or eczema, consult a dermatologist immediately!
- Please consult reports on skin barrier function, skin inflammation and skin pollution defense for further information.

REFERENCES

Read more about Dermal Sensitivity by checking out the following articles:

Resource 1 Resource 2 Resource 3

Pollution Defense Impairment

Slightly Elevated

higher than **65%** of the population

MY TOP GENETIC VARIANTS

rs1051740 rs2965749

5/5 MY TOTAL

WHAT IS POLLUTION DEFENSE IMPAIRMENT?

Air pollution is the cause of increased signs of aging, dark spots, and inflammation. The Chinese Dermatologist Association has found that those living in highly polluted areas (i.e. big cities) age 10 times faster than those who live in the countryside. Two important enzymes, EPHX1 and NQO1, protect our bodies from systemic absorption of highly reactive foreign chemicals (epoxides and quinones) from within the epidermis (most superficial layer of our skin). Biotransformation enzyme, EPHX1, plays a critical part in preventing the absorption of epoxides by catalyzing them into a less reactive, water-soluble form. Similarly, NQO1 converts coenzyme Q10 (ubiquinone) to its reduced form, ubiquinol, which then scavenges free radicals in the mitochondria and skin lipid membrane. Genetic variants in the EPHX1 gene cause epoxide hydrolase deficiency while SNPs in the NQO1 gene slow down production of ubiquinol. Individuals who have reduced levels of these two enzymes have significantly diminished skin defense from environmental toxins.

YOUR GENETIC VARIANTS

These are 2 of the genetic variants (SNPs) associated with Pollution Defense Impairment out of 5 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- If you reside in a big city with increased levels of pollution, please reduce exposure to these environmental pollutants (cigarette smoke, automobile emissions, benzene) by growing indoor plants that clean air. Likewise, spend more time in nearby parks or greenery.
- Consider investing in good quality skin care products which are designed to help your skin. Choose skin care products that especially contain antioxidants and coenzyme Q10. Experts advise applying a high numbered SPF even when cloudy as it provides an extra layer of protection.
- Remove makeup and properly cleanse your skin at night to remove harmful toxins and microbes.
- Consider supplementing with ubiquinol (bioavailable form of coenzyme Q10), and antioxidants such as astaxanthin.

REFERENCES

Read more about Pollution Defense Impairment by checking out the following articles:

Resource 1 Resource 2 Resource 3 Resource 4

Skin Barrier Sensitivity

Typical

higher than **35%** of the population

WHAT IS SKIN BARRIER SENSITIVITY?

Our skin barrier serves a crucial, protective function for the skin by preventing entry of harmful microbes, toxins, and allergens while maintaining proper skin hydration. Skin barrier function is performed primarily in the outermost layer of the epidermis called the Stratum Corneum (SC). Stratum Corneum is also responsible for thermoregulation and innate immunity. Genetic variations in the Flaggirin (FLG) gene may cause skin barrier defects increasing its permeability and promoting skin sensitivity and irritation. In more extreme cases, genetic variations in the FLG gene are also associated with eczema and allergies. In up to 10% persons of European ancestry, parts of the FLG gene are deleted. As a result, this has strongly predisposed those people to eczema, asthma, and other severe allergies. Variations in the FLG gene may be the cause of sensitive or hypersensitive skin. People with a sensitive skin barrier are also three times more likely to suffer from a peanut allergy.

MY TOP GENETIC VARIANTS

4/4
MY TOTAL

YOUR GENETIC VARIANTS

There is no genetic variants (SNPs) associated with Skin Barrier Sensitivity out of 4 that we are using for the determination of your predisposition for this trait.

RECOMMENDATIONS

- Follow general plan of care based on your skin type.
- Please consult your reports on overall skin sensitivity, skin inflammation and skin pollution defense for further information.

REFERENCES

Read more about Skin Barrier Sensitivity by checking out the following articles:

Resource 1 | Resource 2 | Resource 3

Skin Detoxification Impairment

Typical

higher than **30%** of the population

MY TOP GENETIC VARIANTS

rs2302109

10/10
MY TOTAL

WHAT IS SKIN DETOXIFICATION IMPAIRMENT?

Human skin maintains a sophisticated detoxification system by converting environmental toxins and reactive oxygen species (ROS) into water-soluble forms (by a mechanism called conjugation) and pairing these products with glutathione. Glutathione is a master detoxifier produced naturally by the liver. It is also found in fruits, vegetables, and meats. Glutathione also plays a critical role in maintaining optimal levels of vitamins C and E. Genetic variations in several enzymes can lower glutathione activity compromising its detoxification capacity which then results in the accumulation of ROS. Insufficient ROS detoxification may result in cellular damage, and may contribute to skin inflammation and premature aging. This also increases the individual's susceptibility to environmental toxins (automobile emissions, allergens, and cigarette smoke).

YOUR GENETIC VARIANTS

This is 1 genetic variant (SNP) associated with Skin Detoxification Impairment out of 10 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- To help your body maintain glutathione activity, consume a diet rich in cruciferous vegetables; also eat vegetables high in sulfur, including garlic and onions.
- >Minimize your toxic burden to maintain your naturally produced glutathione levels.
- If you experience sluggishness, consider taking supplements of glutathione or cruciferous vegetable extract after consulting your physician. Natural production of glutathione drops by roughly 10% per decade.

REFERENCES

Read more about Skin Detoxification Impairment by checking out the following articles:

Resource 1 Resource 2 Resource 3

The sun plays an integral part in our well being and we draw our energy from it in various ways. One such example is when your skin synthesizes sunlight to help manufacture Vitamin D. While sunlight is life-giving, ultraviolet light (also found in sunlight) is detrimental and can age unprotected skin faster. Humans vary over 1000-fold in their sensitivity to the effects of ultraviolet radiation which is largely determined by their genetics. Skin pigmentation, tanning ability, and sensitivity to sun have high heritability. People with lighter skin tones can be susceptible to painful sunburns from being exposed to the sun for prolonged periods of time. Similarly, people with darker skin tones or those who tan well mistakenly assume that the sun may not impact them negatively. But, in reality, there are other adverse reactions that their skin may be experiencing which are not visible to the naked eye. In this section, you can gain insight on how your genetic makeup influences how your skin is impacted by sun exposure and the necessary measures you can take to limit further damage.

Facial Pigmented Spots

Typical

higher than **5%** of the population

MY TOP GENETIC VARIANTS

rs17176204 rs463701

6/6 MY TOTAL

WHAT IS FACIAL PIGMENTED SPOTS?

Facial pigmented spots (solar lentigines and seborrheic keratosis) are a common feature of aging skin and are usually a result of sun exposure. With age, the repeated UV exposure causes melanin, a compound responsible for pigmentation as well as protecting the skin, to cluster or clump together. These clumps form an area of hyperpigmentation.Pigmented age spots develop earlier and are more pronounced in Asian than in Caucasian skin (as a result of SLC45A2). While there are some similarities in manifestation of pigmented spots in different populations (determined by the MC1R, ASIP, IRF4, BNC2 genes), there are also ethnic differences.

YOUR GENETIC VARIANTS

These are 2 of the genetic variants (SNPs) associated with Facial Pigmented Spots out of 6 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- Follow general guidelines to protect your skin from UV exposure. Apply moisturizer with SPF 20 and higher throughout the year.
- Monitor any changes in the color, size or texture of moles and other skin lesions.
- Visit a dermatologist regularly to do a full-body check and follow the prescribed precautions.

REFERENCES

Read more about Facial Pigmented Spots by checking out the following articles:

Resource 1 Resource 2 Resource 3

Photoaging

Slightly Elevated

higher than **50%** of the population

MY TOP GENETIC VARIANTS

rs17740066 rs377374 rs470647

6/6
MY TOTAL

WHAT IS PHOTOAGING?

Skin photoaging is defined as premature aging of the skin due to sun exposure (UV radiation). UV radiation causes DNA damage, oxidative stress, and disrupts normal architecture of skin connective tissue that impairs skin function. Clinical data suggests that extrinsic skin aging parameters have a strong genetic basis. Studies have identified genetic variations in STXBP5L and FBXO40 genes. This was determined by careful analysis of age, smoking history, hormonal status, body-mass index, hair color at age 20,estimated sun exposure, and intensity. Another recent study also found that the MC1R gene, which is responsible for producing pale skin and red hair, is also linked to the susceptibility for increased photoaging.

YOUR GENETIC VARIANTS

These are 3 genetic variants (SNPs) associated with Photoaging out of 6 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- Follow general recommendations appropriate for your skin type to minimize UV exposure damage.
- Use sunscreen with SPF 30 and higher.
- Please consult reports on sun sensitivity and pigmented spots for further information.

REFERENCES

Read more about Photoaging by checking out the following articles:

Resource 1 Resource 2 Resource 3

Poor Tanning Ability

Typical

higher than **22%** of the population

MY TOP GENETIC VARIANTS

rs1015362 rs11648785 rs12203592

18/19
MY TOTAL

WHAT IS POOR TANNING ABILITY?

Tanning is the physiologically stimulated response to ultraviolet (UV) radiation in sunlight. UV exposure increases the production of eumelanin(one of the types of melanin) that darkens the skin in an attempt to protect it from damage. Ability of skin to tan is variable and is determined by genetics. Many genes are involved in the production of melanin which is the substance that gives skin, hair, and eyes their color. Large studies identified a number of genetic variants in the key pigmentation genes that are associated with tanning phenotype. Variants in the tyrosinase (TYR) gene encode skin color. MC1R gene is strongly associated with red hair, freckling and sun sensitivity: nearly all people with red hair have genetic variants in the MC1R gene, and hence diminished ability to tan. Similarly, genetic variants of OCA2 gene are responsible for the production of light colored eyes and light skin tones in East Asia. People with a number of genetic variants in the pigmentary genes tend to have lighter eye color, fair skin, and diminished ability to tan.

YOUR GENETIC VARIANTS

These are 3 genetic variants (SNPs) associated with Poor Tanning Ability out of 19 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- Follow general recommendations appropriate for your skin type to minimize UV exposure damage. Always wear sunscreen with SPF 20 and higher.
- Monitor any changes in the color, size, or texture of moles and other skin lesions.
- Visit your dermatologist regularly to do a full-body check even if you tan well or have darker skin. Please take precautions as prescribed.

REFERENCES

Read more about Poor Tanning Ability by checking out the following articles:

Resource 1 Resource 2

Sensitivity to Sun

Typical

higher than **18%** of the population

MY TOP GENETIC VARIANTS

rs1015362 rs12203592 rs13016963

17/18
MY TOTAL

WHAT IS SENSITIVITY TO SUN?

Humans vary over 1000-fold in their sensitivity to the harmful effects of ultraviolet radiation. Skin pigmentation, tanning ability and sensitivity to sun have high heritability. Several large-scale studies identified genetic variations that affect our skin sensitivity and tendency to get sun burns. The main determinants of sensitivity to sun are skin pigmentation genes (ASIP, TYR, MC1R, and OCA2) that are also associated with poor tanning. In addition, skin DNA repair genes are strongly associated with tendency to sun burns, and increased risk of melanoma. Interestingly, the DNA repair genes (NTM, ERCC1) have no association in either direction with tanning ability. This implies that there is a pigmentation-independent mechanism underlying sunburn reaction.

YOUR GENETIC VARIANTS

These are 3 genetic variants (SNPs) associated with Sensitivity to Sun out of 18 that we are using to determine your predisposition for this trait.

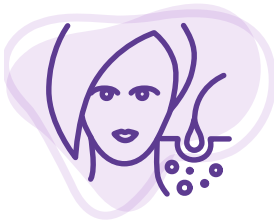
RECOMMENDATIONS

- Follow general recommendations appropriate for your skin type to minimize UV exposure damage. Always wear sunscreen with SPF 20 and higher
- Monitor any changes in the color, size, or texture of moles and other skin lesions.
- Visit your dermatologist regularly to do a full-body check even if you tan well or have darker skin. Please take precautions as prescribed.

REFERENCES

Read more about Sensitivity to Sun by checking out the following articles:

Resource 1 Resource 2 Resource 3



While environment, diet, stress, age, and hormones contribute to how your skin looks and feels, genetics also play a large role. They are important in determining whether your skin is inherently dry, prone to acne, rosacea, or stretch marks. Genetic variants in some key enzymes may impact skin's antioxidant capacity or inflammation. In this section, explore various skin care characteristics and learn how to choose the best skin care products for your unique skin needs.

Acne

Slightly Elevated

higher than **80%** of the population

MY TOP GENETIC VARIANTS

rs1060573 rs1159268 rs149709

9/9 MY TOTAL

WHAT IS ACNE?

Acne (acne vulgaris) is most common in teenagers and young adults. It may also occur in adult women and men signaling hormonal imbalances. There are up to 3 million cases a year in the US. Of those affected, moderate to severe problems occur in 20%. Acne happens when hair follicles become clogged with dead skin cells and oil from the skin. Symptoms range from un-inflamed blackheads to pus-filled pimples or large, red, and tender bumps. In addition to hormonal changes and stress, genetics also contributes to the likelihood of acne.

YOUR GENETIC VARIANTS

These are 3 genetic variants (SNPs) associated with Acne out of 9 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- Keep your face clean, use warm water (not hot) and mild facial cleanser while cleansing.
- >Avoid scrubbing your skin harshly and moisturize your skin.
- Refrain from too much sun exposure.
- Avoid spicy and oily foods.
- If you develop acne, try an over-the-counter acne product. But if the symptoms persist, consult a dermatologist.

REFERENCES

Read more about Acne by checking out the following articles:

Resource 1 Resource 2 Resource 3

Dryness

Typical

higher than **45%** of the population

MY TOP GENETIC VARIANTS

3/3 MY TOTAL

WHAT IS DRYNESS?

Balanced levels of hydration is absolutely fundamental for healthy skin. Aquaporin channels, a family of integral cell membrane proteins, play central role in keeping our skin hydrated by allowing the movement of water and glycerol across the cell membrane. The quality of aquaporin channels in human skin is strongly affected by aging, chronic sun exposure, and inflammation. The most abundant (and best studied) aquaporin in the skin is the AQP3 gene. It transports water, glycerol, and small solutes (urea) across the plasma membrane hence regulating skin hydration, skin barrier recovery, and wound healing. Another group of genes expressed in skin are called claudins. They are tight junction membrane proteins that form paracellular barriers and pores that determine tight junction permeability. Genetic variations in the AQP3 and CLDN1 genes can result in their diminished expression and reduced activity. This, in the epidermis, leads to impairments in skin intrinsic hydration capacity and skin dryness.

YOUR GENETIC VARIANTS

There is no genetic variants (SNPs) associated with Dryness out of 3 that we are using for the determination of your predisposition for this trait.

RECOMMENDATIONS

- Keep your skin well hydrated. Drink plenty of water to hydrate from within. Also, use a good quality moisturizer; use a light one during summer and a richer one during winter.
- Exfoliate your skin regularly and moisturize.
- Check your reports for genetic-based predispositions to impaired skin barrier function, overall dermal sensitivity and contact dermal sensitivity.

REFERENCES

Read more about Dryness by checking out the following articles:

Resource 1 Resource 2 Resource 3

Protection from Skin Cellulite

Typical

higher than **80%** of the population

MY TOP GENETIC VARIANTS

1/1
MY TOTAL

WHAT IS PROTECTION FROM SKIN CELLULITE?

Cellulite is a condition when skin on thighs, hips, buttocks, and abdomen appears lumpy because of excess of fat beneath the skin. It is most common in women than men and even thin people are prone to it. There are many causes of cellulite including excessive weight, total body fat, poor diet, fad dieting, lack of physical activity, dehydration, hormone changes, and genetic predisposition. A small study of 200 lean women with cellulite and 200 BMI-matched controls identified two variations in ACE and HIF1A genes that were significantly associated with appearance of cellulite. Many treatments for cellulite, include massages, cellulite creams, lasers, and injections.Most of these treatments can work only in combination with a healthy, active lifestyle.

YOUR GENETIC VARIANTS

There is no genetic variants (SNPs) associated with Protection from Skin Cellulite out of 1 that we are using for the determination of your predisposition for this trait.

RECOMMENDATIONS

- Follow general rules to minimize cellulite by maintaining a healthy weight: stay active and eat a healthy diet.
- Stay hydrated.
- For improved circulation, try daily dry skin brushing in circular motions.
- Use anti-cellulite creams. Recent clinical studies have suggested that caffeine-containing creams are effective in reducing the orange skin appearance caused by cellulite

REFERENCES

Read more about Protection from Skin Cellulite by checking out the following articles:

Resource 1 | Resource 2 | Resource 3 | Resource 4

Skin Antioxidant Deficiency

Slightly Elevated

higher than **50%** of the population

MY TOP GENETIC VARIANTS

rs35652124 rs4880 rs6721961

7/7 MY TOTAL

WHAT IS SKIN ANTIOXIDANT DEFICIENCY?

A balance between free radicals and intrinsic antioxidants is necessary for proper physiological functioning as well as to maintain youthful and healthy skin. Increased amounts of free radicals contribute to a dangerous chain of reactions that target tissues and organs in the body, including skin. This can trigger many chronic and late-onset diseases while also leading to premature aging by damaging the skin's proteins and lipids. To prevent such an occurrence, a master regulator gene, NRF2 (NF-E2-Related Factor 2), prompts the activation of SOD2/CAT(enzyme/protein) when it is triggered by oxidative stress and electrophiles. These enzymes convert free radicals into less harmful products. Genetic variations in NRF2, SOD2, and CAT can result in reduced antioxidant activities which then increases risk of damage to the skin's lipids and proteins.

YOUR GENETIC VARIANTS

These are 3 genetic variants (SNPs) associated with Skin Antioxidant Deficiency out of 7 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- Follow skin care recommendations that are infused with natural antioxidants (vitamin C, carotene, vitamin E, glutathione, green tea extract) which boost your skin's intrinsic antioxidant capacity.
- During the day, practice wearing antioxidant-rich day creams and sunscreen to help create a strong defense against aging. For the night, use antioxidant-infused night creams which promote cellular repair and healing.
- Consume more antioxidant-rich foods in your diet such as blueberries, red berries, dark green leafy vegetables, sweet potatoes, oranges, nuts, whole grains, and green tea.
- Consider intake of supplements that boost antioxidant NRF2 after consulting your physician.

REFERENCES

Read more about Skin Antioxidant Deficiency by checking out the following articles:

Resource 1 Resource 2 Resource 3 Resource 4

Skin Inflammation

Elevated

higher than **95%** of the population

MY TOP GENETIC VARIANTS

rs17388568 rs1800629 rs1800795

9/9
MY TOTAL

WHAT IS SKIN INFLAMMATION?

Skin inflammation is the result of a complex biological process where the cells in the skin have a hyperactive response to allergens or toxins and produce inflammatory hormones called cytokines and chemokines. There are two types of inflammation: acute and chronic. Acute inflammation is a signal to the skin to start the repair process after being exposed to triggering stimulus, such as germs or environmental toxins. It usually lasts 2-4 days (generally the amount of time required for wounds or infections to heal).When an inflammation is chronic and serves no purpose, it becomes destructive and can damage the skin. There are a number of stimuli that induce chronic inflammation: overexposure to UV rays, stress, toxins(e.g. pollution, smoking, trauma, alcohol, immune reactions, infections etc), pathogens, and foreign bodies (dirt and debris). Chronic inflammation plays an important role in overall skin sensitivity, and susceptibility to wound infection. It can also be triggered by excess of free radicals. In addition, genetic variations in several pro-inflammatory and anti-inflammatory cytokines genes are associated with higher risks of chronic skin inflammation.

YOUR GENETIC VARIANTS

These are 3 genetic variants (SNPs) associated with Skin Inflammation out of 9 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- Carefully read the list of ingredients in your skin care, personal care, or hair dyes to avoid contact with toxins.
- Use natural skin care products made from good quality ingredients for sensitive skin.
- Catalog your inflammations and which ingredients (natural or synthetic) may have been responsible.
- Reduce your stress levels (workout, hobbies etc) while simultaneously increasing your sleep time. Please stay active!
- If you develop skin rashes, or suspect a serious skin inflammatory condition, seek medical assistance immediately!

REFERENCES

Read more about Skin Inflammation by checking out the following articles:

Resource 1 Resource 2 Resource 3

Skin Rosacea

Slightly Elevated

higher than **78%** of the population

MY TOP GENETIC VARIANTS

rs12203592 rs2040406 rs2187668

10/11
MY TOTAL

WHAT IS SKIN ROSACEA?

Rosacea is a common but often overlooked chronic skin condition. According to the US National Rosacea Association, well over 16 million Americans may have rosacea and aren't aware. Rosacea cannot be cured, but it can be controlled. It is a chronic and potentially life-disrupting disorder of the facial skin, often characterized by flare-ups and remissions. Individuals with fair skin who tend to flush or blush easily are believed to be at greatest risk of rosacea but it can affect all segments of the population. Many causes of rosacea have been proposed: from excess alcohol consumption (especially red wine), sun exposure, skin surface microbes, and small intestinal bacterial overgrowth. Some people report that spicy foods, hot baths, and emotional stress trigger rosacea symptoms. Genetics is a big factor in developing rosacea. A large study has recently identified several genetic variations significantly associated with rosacea. Interestingly, these variations have links to allergies and other autoimmune diseases as well.

YOUR GENETIC VARIANTS

These are 3 genetic variants (SNPs) associated with Skin Rosacea out of 11 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- If you have a tendency to blush or flush more easily, monitor the triggers. Maintain a healthy diet.
- Devise a skin care plan to control and monitor these symptoms.
- If you notice rosacea symptoms (flushing, redness, bumps, pimples, small visible blood vessels), consult a dermatologist. If diagnosed earlier, rosacea symptoms can be controlled and reversed.
- Please understand that genetic predispositions do not always become a condition. However, it is beneficial to understand the predispositions and be wary of the symptoms.

REFERENCES

Read more about Skin Rosacea by checking out the following articles:

Resource 1 Resource 2 Resource 3

Skin Stretch Marks

Typical

higher than **50%** of the population

MY TOP GENETIC VARIANTS

rs7787362

6/6
MY TOTAL

WHAT IS SKIN STRETCH MARKS?

Both men and women are prone to stretch marks (striae, singular stria or striae distensae) on several parts of their bodies, including the belly, thighs, hips, breasts, upper arms, and lower back. Stretch marks are a form of scarring on the skin: the marks often start off with a reddish hue and as they progress, take an off-color appearance. Stretch marks are often the result of the rapid stretching of the skin dermis associated with rapid growth, weight changes, pregnancy (usually during the last trimester) or hormonal changes associated with puberty, bodybuilding, or hormone replacement therapy. Recent study identified several genetic variants in elastin gene (ELN) that are significantly associated with stretch marks.

YOUR GENETIC VARIANTS

This is 1 genetic variant (SNP) associated with Skin Stretch Marks out of 6 that we are using to determine your predisposition for this trait.

RECOMMENDATIONS

- Preempt stretch marks: it is always much better to prevent than to cure.
- Maintain a healthy weight
- If you are pregnant or experiencing weight gain/loss, apply organic oil (such as argan oil or vitamin E oil) to your skin to maintain its elasticity, prevent the breakdown of essential structural proteins like collagen and elastin, and aid the skin to rejuvenate itself.

REFERENCES

Read more about Skin Stretch Marks by checking out the following articles:

Resource 1 Resource 2