SkinHealth Genetic Test
The Science Behind Healthy Skin

Name: Sample Report
Report Number: SK-AGS00000
Report Date: 2018-12-10

Beautifully Unique. Outside and In.
Your skin reveals the stories of your life, from the texture, color, and overall glow to the smile-lines around your mouth and eyes resulting from laughing. Your skin plays a very important role in your personality and makes you who you are today.

*Your genetic journey has begun!*
Your AGS Genetic Journey has Begun:  
**Healthy Skin at Every Age**

Skin is our largest organ, first line of defense, and often one of the first things people notice about us. But how to take the best care of our skin can be a confusing problem. There are many products with big promises about youthful skin, but the evidence for their effects isn’t always clear. It’s easy to spend hundreds of dollars on products that may not work well for you, even when they seem to benefit many others. So why not let your unique genetics help guide your choices?

There are many genes associated with skin function and maintenance. Some genes produce the materials that make our skin firm and elastic, while others play a role in keeping skin hydrated. Whether or not you get sunburn easily, you can suffer from the sun’s damages without even knowing it but your genes can give you the answers.

In this report, we reveal the genetics of your skin that can help you navigate the labyrinth of products available and choose the best strategies to help keep your skin healthy.
TABLE OF CONTENTS

Elasticity and Firmness ............................................. 6

Environmental Sensitivity ......................................... 8

Skin Condition .......................................................... 10

Vitamins and Antioxidants ........................................ 12

Advanced Genomic Solutions
SkinHealth Genetic Test

Excludes impact of genotype on your body

<table>
<thead>
<tr>
<th>Genotype Headline</th>
<th>Gene</th>
<th>SNP or rs number</th>
<th>Circle indicates your genotype</th>
<th>Your gene profile: Red: high risk Green: low risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMP1 rs1799750</td>
<td>-- G GG</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Gene description is written below each genotype headline for more information.
Your Skin Summary

How to read your Summary Page:
Below is your genetic summary page. Pay special attention to the RED High Risk items in the radial pie chart. These are the areas to make immediate changes to improve your skin’s health.

Elasticity and Firmness
Collagen is a protein produced by our skin, helping it look plump and youthful. But as we age, skin firmness and smoothness can decrease. While it can’t completely regenerate itself, certain variants of the genes involved can affect how quickly structural proteins break down.

- Wrinkling: High Risk
- Eye Laxity: Mod Risk
- Skin Glycation: Mod Risk
- Elasticity and Firmness: Low Risk

Environmental Sensitivity
Redness, discomfort, and dehydration associated with sensitive skin may be triggered by the environment. Studies are showing that environmental factors such as pollutants, humidity, and sudden temperature changes in climates can actually sensitize our skin.

- Skin Sensitivity: Mod Risk
- Sun Sensitivity: High Risk
- Inflammation: High Risk
- Crow’s Feet: Mod Risk

Skin Condition
Our body produces oil to help keep our skin soft and supple, but if too much is produced, it can lead to acne flare-ups and an oily shine. Balance is the goal for everyone, since too little oil can lead to dehydration with dry, flaky patches or fine lines while still feeling greasy or oily.

- Hydration: Low Risk
- Oil Production: Mod Risk
- Acne: High Risk

Vitamins and Antioxidants
Eating plenty of fruits and vegetables rich in nutrients is good for your whole body, including your skin. By eating clean or adding supplements to your regular routine, you can improve your skin.

- Antioxidants: Low Risk
- Vitamin A: High Risk
- Vitamin D: High Risk

Your Overall Genetic Skin Recommendation:
Your skin category takes each of your genotypes into consideration and provides a general overview to help tailor your skin care regimen. There is no ideal skin type; you are beautifully unique, outside and in.

1 Elasticity and Firmness: Higher Associated Risk
Your skin would benefit from additional treatments to ensure healthy collagen and tissue support around eyes and mouth to reduce wrinkles and ensure the skin stays firm. Make sure you moderate your diet and take special care to avoid simple carbs and excess sugars, which may contribute to accelerated signs of aging. Microneedling can stimulate collagen production in your skin when done in moderation.

2 Environmental Sensitivity: Higher Associated Risk
Your skin type requires extra attention against environmental factors. If you are sensitive to sunlight, use skin creams which provide UV defense and proper hydration. Be wary of UV-based tanning, and do so only in safe moderation. If you are sensitive to airborne contaminants, purifying face masks can help absorb toxins and reduce inflammation and immune responses which can lead to redness, puffy skin and long-term damage.

3 Skin Condition: Moderate Associated Risk
Your skin oil production is higher than the average level which may lead to occasional clogged pores that produce various types of pimples, irritation and inflammation. Regular washing with specialized cleansers can reduce the likelihood. Probiotic-enriched products may also cultivate healthy bacteria on your skin which combats against bad bacteria which contribute to acne breakouts.

4 Vitamins and Antioxidants: Moderate Associated Risk
Your skin would benefit from moderate antioxidant support. Vitamin A enriched skin creams may be a valuable addition to your skin care regimen. Also, ensure your diet contains fresh fruits and vegetables – the more colorful, the better.

www.ags-health.com
# Elasticity and Firmness

Collagen and elastin provide the structural materials for the body’s tissues, and the skin is no exception. Certain genes play roles in the formation and maintenance of these proteins, and variations of them play a role in how quickly the structure breaks down. Fortunately, repair can be stimulated by proper nutrition and certain chemicals. Single Nucleotide Polymorphisms (SNPs) are genetic deviations from the normal genetic code. Below we evaluate five SNPs associated with aging. Some of these SNPs play a role in cellular processes such as glycation, where sugar molecules can bind structural proteins in the skin and disrupt elasticity and firmness.

## Why Do We Experience Sagging Skin?

Sagging skin is due to two age-related reasons: loss of collagen, which gives skin its elasticity, and loss of facial fat, the absence of which causes the skin to droop. External factors such as sun exposure, dietary sugars, and exposure to chemicals (e.g., smoking) can induce wrinkling prematurely. Your skin’s structural proteins can be altered by these environmental factors, making them brittle and break down more easily, resulting in sagging and the formation of lines we associate with wrinkling.

Over time, it is normal, and expected to get visible lines on our face and thinner and drier skin. Our genes largely control these changes and the natural aging process is something we cannot change. On the bright side, there are many things we can do to reduce premature skin aging. By taking genetics into account, specific risk factors can be anticipated, helping you and your dermatologist to devise a targeted skin treatment to reduce and prevent wrinkles.

## Your Genetic Result:

### Wrinkling

#### Increased risk of wrinkling

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GENE PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMP1</td>
<td>rs1799750</td>
<td>GG</td>
<td>1</td>
</tr>
</tbody>
</table>

MMP1 is an enzyme which breaks down collagen in the skin, a process required during the body’s normal maintenance of tissues. Variants of this gene can lead to increased activity and, therefore, higher levels of collagen breakdown in tissues. One study has associated the G allele of rs1799750 with increased age-associated skin wrinkling.

#### Increased MMP production and risk of wrinkling

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GENE PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMP9</td>
<td>rs3918241</td>
<td>AA AT TT</td>
<td>2</td>
</tr>
</tbody>
</table>

MMP9 is associated with the breakdown of the extracellular matrix as part of normal physiological processes. Example of this is wound healing. The A allele is associated with increased activity of the enzyme involved in this breaking down process and therefore also with aging.

#### Increased susceptibility to wrinkling

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GENE PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEM1</td>
<td>rs7616661</td>
<td>GT TT GG</td>
<td>5</td>
</tr>
</tbody>
</table>

EDEM1 is partly responsible for ensuring proteins to be folded properly and eliminating those that are not. EDEM1 has been associated with the lifespan in model systems, and one study which focused on thousands of SNPs identified variant rs7616661 with signs of skin aging. This conclusion is likely due to higher levels of collagen as a result of EDEM1’s protective effects against sun-damage to collagen-producing cells.

### Eye Laxity

#### No reduced risk of developing eye laxity

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GENE PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL1A2</td>
<td>rs11979919</td>
<td>CT TT CC</td>
<td>3</td>
</tr>
</tbody>
</table>

COL1A2 is a gene which encodes a component of type 1 collagen - the most abundant type in the human body. The C allele is associated with increased signs of aging and laxity of the eyelids.

### Skin Glycation

#### No reduced risk of glycation products in skin

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GENE PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGER</td>
<td>rs2070600</td>
<td>AA GA GC</td>
<td>4</td>
</tr>
</tbody>
</table>

Glycation occurs when tissue-proteins accumulate sugar groups bonded to their cellular structure. The result is brittle skin fibers that are prone to breaking, which leads to common visual effects of skin-aging. The G allele is associated with increased receptors for glycation which then can increase inflammation, trigger matrix metalloproteinases (MMPs) which break down collagen and can lead to loss of supporting structure in the skin and thus increased glycation in the skin.

---

**Note:** The information provided is for educational purposes only and should not be used as a substitute for professional medical advice.
Your Elasticity and Firmness Results:

Your Results Explained:
Your skin would benefit from additional treatments to ensure healthy collagen and tissue support around eyes and mouth to reduce wrinkles and ensure the skin stays firm. Make sure you moderate your diet and take special care to avoid simple carbs and excess sugars, which may contribute to accelerated signs of aging. Microneedling can stimulate collagen production in your skin when done in moderation.

Product Suggestions:
- Products containing Vitamins C, B3, and E are important antioxidants because of their ability to penetrate and repair the skin.
- Use water-soluble, heat-labile local L-ascorbic acid (Vitamin C) in concentrations between 5-15% to induce collagen production.
- Use inhibitors (to slow down and prevent) of matrix metalloproteinase (MMP).
- Reduce sun exposure, use sunscreen with SPF 30 or greater daily.
- Exfoliate 2 to 3 times per week to prevent build up of dead cells and to allow products to be absorbed deeper into the skin.

Professional Treatment Suggestions:
- MMP inhibitors
- Vitamin A acid (Retin A, Renova)
- Collagen Induction Therapy
- High Intensity Focused Ultrasound
- Photo-facial
- Dermaplaning
- Glycolic acid peels
- Microdermabrasion
- Dermabrasion
- Laser resurfacing
- Fractional resurfacing
- Non-ablative laser resurfacing
- Heat and radiofrequency
- Botox® and Fillers

Home Remedies: Test a small area first to confirm no negative reaction.
- **Unsweetened Cocoa Powder** is packed with antioxidants. It helps to keep skin looking younger and fresh. Mix 5 tbsp cocoa powder with 5 tbsp honey, 2 tbsp milk, and 1 tbsp chicory-free coffee powder. This mixture acts as an exfoliating agent as well as face mask. You can apply it on your whole body, twice a week, to tighten and brighten your skin.
- **Egg Whites** contain vitamin A and have astringent properties that help shrink pores by tightening the skin. An egg white face mask is a frugal approach to help firm up skin and smooth out fine lines. Mix one egg white with one squeeze of a lemon. Apply on the affected areas, leave it to dry and rinse off with warm water.

TIPS:

**Wrinkling**
Your genotype shows a high risk of developing premature wrinkles due to elevated MMP and EDEM1 activity. Facial exercises and creams encouraging collagen production can help keep your skin youthful and taut. Vitamin C is a good option to help reduce oxidative damage, while MMP inhibitors, such as retinol and ascorbic acid, can lower your MMP activity and allow your skin to build a better infrastructure.

**Eye laxity**
Your genotype is associated with an increased risk of developing eye laxity, causing the lids and skin around the eyes to droop. Supplementing ascorbic acid (Vitamin C) can stimulate the production of skin-firming proteins like collagen and elastin. Ensure you are eating a healthy diet and consuming sufficient proteins in your diet for replenishing your elastin and collagen. Use of sunglasses is also a big help - early protection against sun-damage is one of the best means of protecting against laxity-development.

**Skin glycation**
Your genotype shows an increased risk of glycation. Moderate your sugar intake (simple carbs), as the risk of glycation increases as blood sugar levels elevate. Use products that contain green tea, which has been shown to reduce glycation and stimulate collagen production.
How your body response to external stimuli can greatly affect your skin condition. These external stimuli include chemicals, toxins and UV light. Different genotypes have different responses to these stimuli, resulting in varying skin sensitivity. You may also be surprised to learn that Crow’s feet, the wrinkles around your eyes and mouth, are largely due to tissue damage related to foreign chemicals. This section introduces your genetic makeup in your sensitivities to chemicals and sun, inflammation response and risk in developing Crow's feet.

### Skin Sensitivity

**Moderate risk of atopic dermatitis**

NAT2 plays an essential role in the processing of certain xenobiotics through a chemical reaction called acetylation. Overly rapid processing of these chemicals can produce toxic by-products that can result in irritation and inflammation. Therefore the rapid acetylation G allele is associated with increased risks of atopic dermatitis and inflammation as a result of exposing to foreign contaminants.

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GEN PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAT2</td>
<td>rs1799930</td>
<td>AG GG</td>
<td>14</td>
</tr>
</tbody>
</table>

### Sun Sensitivity

**Increased risk of burn and skin-related wrinkling**

BNC2 plays a role in skin color saturation and variants of the gene are associated with pigmented spots on the skin. Individuals with the C allele of rs10733310 are more likely to develop dark spots on their faces, hands, and forearms, especially after sun exposure.

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GEN PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNC2</td>
<td>rs10733310</td>
<td>CA CC</td>
<td>3</td>
</tr>
</tbody>
</table>

**Moderate risk of skin pigmentation**

SLC45A2 plays a role in lighter skin, especially for individuals of European ancestry, and it has also been associated with melanin production in some Asian populations as well. The A allele is associated with increased skin pigmentation, which often requires more protection against sun-related skin damage.

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GEN PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLC45A2</td>
<td>rs26722</td>
<td>AA GA GG</td>
<td>10</td>
</tr>
</tbody>
</table>

**Vulnerable to lentigenes and sunburns**

A lentigo is a patch of darkened skin, typically the result of sun-exposure over time, and commonly associated with age. Individuals with the G allele appear to confer some protective effects against the development of lentigenes and reduce tendency for sunburn.

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GEN PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RXFP3</td>
<td>rs16891982</td>
<td>CG GG CC</td>
<td>11</td>
</tr>
</tbody>
</table>

### Inflammation

**Increased inflammatory response**

IL6 helps regulate the inflammation response. Over-expression has been shown to play a role in chronic inflammation. Possessing the G allele of rs1800795 results in higher expression of the IL6 gene and therefore, higher levels of IL6 in the blood. The C allele is associated with reduced risk of psoriasis.

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GEN PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL6</td>
<td>rs1800795</td>
<td>CG GG CC</td>
<td>8</td>
</tr>
</tbody>
</table>

**Increased risk of skin inflammation**

IL1RL1 is a gene associated with the inflammatory response and is implicated in atopic eczema. Individuals with the A allele have increased likelihood to develop skin inflammation. Atopic dermatitis affects nearly 20% of people. While some people grow out of the condition, changes in diet and lifestyle can also be made to reduce or eliminate symptoms.

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GEN PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL1RL1</td>
<td>rs1041973</td>
<td>AA CA CC</td>
<td>9</td>
</tr>
</tbody>
</table>

### Crow’s Feet

**Moderate risk of developing crow’s feet around the eyes**

The gene AHR encodes for a receptor that plays a crucial role in dealing with foreign substances in the body by regulating the proteins that break down and clear them. Individuals carrying the A allele have been shown to have a higher risk of accumulating DNA and tissue damages related to foreign chemicals. Consistent with these findings, the A allele has also been correlated with the development of crow’s feet (wrinkles around the eyes), a sign of skin aging that is primarily induced by environmental factors.

<table>
<thead>
<tr>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GEN PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHR</td>
<td>rs2066853</td>
<td>AA AG GG</td>
<td>3</td>
</tr>
</tbody>
</table>
Your Environmental Sensitivity Results:

Your Results Explained:
Your skin type requires extra attention against environmental factors. If you are sensitive to sunlight, use skin creams which provide UV defense and proper hydration. Be wary of UV-based tanning, and do so only in safe moderation. If you are sensitive to airborne contaminants, purifying face masks can help absorb toxins and reduce inflammation and immune responses which can lead to redness, puffy skin and long-term damage.

Product Suggestions:
- Avoid sugary foods and drinks, as sudden raise in blood sugar can increase chemical reactions that make skin and collagen brittle and susceptible to damage.
- Avoid heavily scented soaps and perfumes, which contain aromatic compounds that can irritate the skin.
- The use of cleansing masks, especially those made with charcoal can help absorb pollutants that have built up.
- Topical Vitamin C can also help rejuvenate skin, stimulate collagen production and firm lines.

Professional Treatment Suggestions:
- Fillers such as Juvaderm® or the use of Botox® may help alleviate wrinkles and damages that have occurred over time. But please note that such treatments do not eliminate the root causes.

Home Remedies: Test a small area first to confirm no negative reaction.
- **Honey** is known for its anti-inflammatory, antibacterial, and antiseptic properties. You can use as a regular cleansing agent when mixed with water. For sensitive skin, add coconut oil and milk to make a scrub. This mixture can also be used as a face mask. Apply on the face and wash off with lukewarm water after 20 minutes. Honey also heals your sunburn. Just dab on the affected area and wash off after a while.
- **Mayonnaise and Baby Oil** have the ability to treat dry and chapped skin caused by harsh environmental elements. Combine 2 tbsp of real mayonnaise with 2 tbsp of baby oil and then smooth onto any dry skin area (face, neck, elbows, feet, etc.). Leave on skin for 20 minutes, then rinse off well.

Your skin type requires extra attention against environmental factors. If you are sensitive to sunlight, use skin creams which provide UV defense and proper hydration. Be wary of UV-based tanning, and do so only in safe moderation. If you are sensitive to airborne contaminants, purifying face masks can help absorb toxins and reduce inflammation and immune responses which can lead to redness, puffy skin and long-term damage.

Product Suggestions:
- Avoid sugary foods and drinks, as sudden raise in blood sugar can increase chemical reactions that make skin and collagen brittle and susceptible to damage.
- Avoid heavily scented soaps and perfumes, which contain aromatic compounds that can irritate the skin.
- The use of cleansing masks, especially those made with charcoal can help absorb pollutants that have built up.
- Topical Vitamin C can also help rejuvenate skin, stimulate collagen production and firm lines.

Professional Treatment Suggestions:
- Fillers such as Juvaderm® or the use of Botox® may help alleviate wrinkles and damages that have occurred over time. But please note that such treatments do not eliminate the root causes.

Home Remedies: Test a small area first to confirm no negative reaction.
- **Honey** is known for its anti-inflammatory, antibacterial, and antiseptic properties. You can use as a regular cleansing agent when mixed with water. For sensitive skin, add coconut oil and milk to make a scrub. This mixture can also be used as a face mask. Apply on the face and wash off with lukewarm water after 20 minutes. Honey also heals your sunburn. Just dab on the affected area and wash off after a while.
- **Mayonnaise and Baby Oil** have the ability to treat dry and chapped skin caused by harsh environmental elements. Combine 2 tbsp of real mayonnaise with 2 tbsp of baby oil and then smooth onto any dry skin area (face, neck, elbows, feet, etc.). Leave on skin for 20 minutes, then rinse off well.
Skin Condition

Keeping your skin hydrated is essential. Certain genes play a role in the transportation of water and a chemical called glycerol, which helps keep skin moisturized. People who are predisposed to dry skin benefit from products that supply water and essential vitamins to the skin, and stimulate the production of oils that keeps skin hydrated. Many factors come into play with oily skin but to explain it simply, too much oil can clog pores and create an environment where favors bacterial growth and infection that may lead to blemishes and pimples. We look at SNPs involved in the production of the hormone dihydrotestosterone (DHT). Oil production from the skin is positively correlated with circulating level of DHT.

What is Combination Skin and What Causes it?

Combination Skin, more commonly referred to as “T-zone”, means you may sometimes feel your skin has a split personality - oily with large pores on the forehead, nose and chin; meanwhile feeling dry and sometimes even flaky on the cheeks and under the eyes. In general, the nose, chin, and forehead of those with combination skin have more active oil glands, which is why these areas may be prone to clogging pores. The cheeks, on the other hand, may have less active oil glands and thus they may appear dry.

In many cases, if you have combination skin and you use harsh products or products with drying ingredients like sulfates and alcohol to treat the oily sections, you may unintentionally make the dry areas even more dry and stimulate the skin to produce more oil in the T-zone areas. It can quickly turn into a viscous circle.

Your Genetic Result:

<table>
<thead>
<tr>
<th>Hydration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moderate water retention and skin protection</strong></td>
</tr>
<tr>
<td>AQP3 facilitates transport of water through our body’s cells. In addition, AQP3 also transports glycerin, a substance that attracts water and helps maintain water balance in the skin. Lower AQP3 results in poor moisture retention and dry skin. A 2014 study found that the G allele of rs17553719 is associated with decreased production of AQP3.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oil Production</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moderate increase of oil production</strong></td>
</tr>
<tr>
<td>Dihydrotestosterone (DHT) is a hormone produced by both sexes, but more in men than women. The circulating level of DHT is positively associated with oil production in the skin. The A allele is associated with increased DHT production and therefore may result in more oils on the skin.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acne</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High risk of acne occurrence and potential scarring</strong></td>
</tr>
<tr>
<td>FST is the gene which encodes follistatin, which impacts tissue repair, healing, and acne occurrences when expressed at high levels. In those of European descent, the T allele is associated with increased risk of acne, and likely to have a higher risk of acne-related scarring.</td>
</tr>
</tbody>
</table>

| **High risk of acne occurrence and related inflammation** | DDB2 rs747650 | AA GA GG |
| This SNP plays a role in androgen metabolism and inflammatory response. The A allele is associated with increased incidence of acne, an effect that was abundant in the Asian populations. |

| **Increased risk of acne occurrence** | SELL rs7531806 | AA GA GG |
| The variant rs7531806 is associated with selectins, which are proteins that influence skin inflammation and immune response. The A allele is associated with an increased incidence of acne and related symptoms. Changes to selectin function have been implicated in increased acne and resulting scar-formation. |
Your Skin Condition Results:

Your Results Explained:
Your skin oil production is higher than the average level which may lead to occasional clogged pores that produce various types of pimples, irritation and inflammation. Regular washing with specialized cleansers can reduce the likelihood. Probiotic-enriched products may also cultivate healthy bacteria on your skin which combats against bad bacteria which contribute to acne breakouts.

Product Suggestions:
- Avoid harsh soap, wool, fragrances and hot water
- Humectants (ceramides, glycerin, sorbitol, hyaluronic acid, lecithin)
- Sealants (petrolatum, silicone, lanolin, mineral oil)
- Drink plenty of water (coffee, soda, juices, cocktails do not count)
- If acne prone, consider dietary changes and avoid dairy when possible
- Encourage a healthy gut by consuming probiotics and prebiotics

Professional Treatment Suggestions:
- Humidification treatment
- Exfoliate
- Treatments that use shea butter, sunflower seed oil, argan oil, olive oil, sweet almond oil, jojoba oil, avocado oil, and other plant extracts
- Hyaluronic acid for internal hydration and moisture protection

Hydration
Your genotype is associated with efficient water transport and glycerol production. You can still benefit from using a reliable moisturizer.

Oil Production
Your genotype is associated with a moderate increase in skin oil production. Daily use of blotting papers and cosmetic clays can help absorb excess oil before they clog pores and produce irritating infections. Skin products and masks that use oatmeal or honey can also help retain moisture while removing excess oils.

Acne
Your genotype is associated with a higher risk of acne problem. To reduce the risk of outbreaks, you may consider special facial cleansers rich in substances that keep pores and hair follicles clear. Viable and non-viable probiotics may also be used to shift the balance of your skin microbiome, or compensate for imbalanced skin bacteria.

Home Remedies: Test a small area first to confirm no negative reaction.
- Lemon is one of the best ingredients that you can use to promote clear skin. The citric acid present in lemon helps keep the skin clear and its Vitamin C content helps reduce dark spots. Apply fresh squeezed lemon juice to your entire face and neck and leave on for 10 minutes and then wash off with lukewarm water.
- Pure Baking Soda balances pH level of the skin which is very important to maintain clear skin. It also works as an excellent exfoliating agent. Mix 2 tbsp of pure baking soda with 2 tbsp of water or lemon juice to make a paste. Cleanse your face and use the paste to gently exfoliate the skin.

www.ags-health.com
Vitamins and antioxidants are naturally occurring substances that may protect cells. Antioxidants can help you develop defenses against free radicals such as UV and toxins, while Vitamin A (retinoids) can improve oily skin, wrinkles and acne. Vitamin D is highly responsible for your constant skin renewal. All of these substances are known to also prevent and treat cancer. These ingredients are already promoted in a number of skin care products available both over-the-counter and by prescription.

### Your Genetic Result:

<table>
<thead>
<tr>
<th>Antioxidants</th>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GENE PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moderate protection against oxidative stress</strong></td>
<td>NQO1</td>
<td>rs1800566</td>
<td>CC TT TT</td>
<td>12</td>
</tr>
<tr>
<td>NQO1 prevents organic molecules called quinones from being converted to free radicals which cause oxidative stress. Carriers of the T allele may have reduced protection against free radicals as a result of decreased production of NQO1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reduced protection against oxidation</strong></td>
<td>SOD2</td>
<td>rs4880</td>
<td>CC TC TT</td>
<td>12</td>
</tr>
<tr>
<td>SOD2 is responsible for breaking down the toxic chemical superoxide into less damaging molecules. Increased expression of this gene implies more protection against oxidative stress, although over-expression has also been linked to uncontrolled cell growth. The C allele is associated with increased production of SOD2, and may provide more protection against oxidative stress-related skin damage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reduced risk of oxidative stress</strong></td>
<td>CAT</td>
<td>rs1001179</td>
<td>CC CT TT</td>
<td>12</td>
</tr>
<tr>
<td>The CAT gene encodes an essential enzyme that acts as a protective wall against oxidative stress, catalase, which converts reactive oxygen molecules to water and oxygen. The T allele is associated with increased expression of catalase, and may strengthen defense against oxidation-related skin aging.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lower risk of oxidative damage</strong></td>
<td>GPX1</td>
<td>rs1800668</td>
<td>TT CC TC</td>
<td>12</td>
</tr>
<tr>
<td>Considered one of the most essential proteins with antioxidant property, GPX1 helps fight oxidative stress. The T allele of rs1800668 is associated with increased production of GPX1, while the C allele appears to produce less of the enzyme. Reduced production of GPX1 is associated with lower enzyme activity and therefore increased risk of oxidative damage to skin health.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vitamin A</th>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GENE PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reduced ability to form active Vitamin A</strong></td>
<td>BCMO1</td>
<td>rs12934922</td>
<td>AT TT AA</td>
<td>15</td>
</tr>
<tr>
<td>BCMO1 is associated with converting beta-carotene into Vitamin A which is an antioxidant and nutrient. Vitamin A plays an essential role in vision, the immune system and skin health. Individuals with a T allele would benefit from enriching their diet with foods containing beta-carotene or supplements. High level of beta-carotene encourages skin renewal and protects against sun-damage and abnormal pigmentation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reduced ability to form active Vitamin A</strong></td>
<td>BCMO1</td>
<td>rs7501331</td>
<td>CT TT CC</td>
<td>15</td>
</tr>
<tr>
<td>BCMO1 is essential in converting beta-carotene to its active form (Vitamin A) that is obtained from diet or supplement to benefit overall health. Skin health, in particular, benefits from active Vitamin A molecules to heal damaged skin and, in some cases, reduces the appearance of wrinkles. Therefore, a reduced formation of active Vitamin A can lead to a weakened skin health. Skin that is richer in Vitamin A often present with fewer wrinkles and a clearer, brighter complexion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vitamin D</th>
<th>GENE</th>
<th>SNP</th>
<th>YOUR GENOTYPE</th>
<th>YOUR GENE PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reduced Vitamin D serum level</strong></td>
<td>near-CYP2R1</td>
<td>rs10741657</td>
<td>AG CC AA</td>
<td>16</td>
</tr>
<tr>
<td>CYP2R1 is an important gene in Vitamin D metabolism, which converts the molecule into calcidiol - the main form that circulates through our bloodstream. Carriers of the GG genotype tend to circulate lower levels of Vitamin D compared to the AA genotype.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reduced Vitamin D serum level</strong></td>
<td>near-DHCR7</td>
<td>rs12785878</td>
<td>GG CT TT</td>
<td>16</td>
</tr>
<tr>
<td>Vitamin D contributes to skin cell growth, repair, and metabolism. It optimizes the skin’s immune system and helps destroy free radicals that can cause premature aging. A study of nearly 34,000 people showed a clear association between Vitamin D levels and this SNP. Carriers of the G allele have a reduced level of circulating Vitamin D in their body, while individuals with two G alleles average even lower levels.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Your Vitamins and Antioxidants Results:

Your Results Explained:

Your skin would benefit from moderate antioxidant support. Vitamin A enriched skin creams may be a valuable addition to your skin care regimen. Also, ensure your diet contains fresh fruits and vegetables - the more colorful, the better.

Product Suggestions:

- You can combat free radicals by ensuring a diet rich in antioxidants, which can provide protection, and are plentiful in strawberries or blueberries.
- You may also consider skin creams with antioxidant ingredients such as green tea and Vitamin E.
- Look for anti-aging skin treatments with powerful antioxidants from certified organic botanical juices, vitamins and peptides such as lycopene, green tea, coffee berry, resveratrol, grape seed, genistein, or niacinamide.

Professional Treatment Suggestions:

- Nourishing Antioxidant Wrap
- Dermaplaning
- Vitamin C Serum
- Hydrofacial
- Microdermabrasion
- 30% TCA Peel
- Hyaluronic Acid Serum with Vitamin A, C, D, E

Home Remedies: Test a small area first to confirm no negative reaction.

- **Mint** contains menthol, which has cooling and soothing properties, and Vitamin A, B6 and C that help keep the skin glowing. It also has healing properties that help fight off skin infections. Put 1 tsp of mint powder and 1 tbsp of plain yogurt in a bowl. Stir to get a smooth paste. Apply the mixture to face and neck. Leave until it dries naturally, then rinse off.

- **Aloe Vera** is beneficial for the skin as it has antibacterial properties that help kill bacteria that cause acne. It can also help soothe irritated skin and heal scars. It is also a great natural skin moisturizer. Extract the gel from an aloe vera leaf, apply the gel on your face using a cotton ball. Allow it to dry on its own for about half an hour and then rinse off with lukewarm water.
References


Disclaimer

Advanced Genomic Solutions (AGS) Ltd. is accredited by the College of American Pathologists (CAP Number: 9479295) and Clinical Laboratory Improvement Amendments (CLIA) of 1988 (CLIA Number: 99D2143058) to perform high complexity clinical testing. This test is not intended for the purpose of medical diagnosis / medical treatment and is used for advisory purposes only. The genetic tests are only intended as serving an advisory role in health plan decisions. The test only detects specific allele(s) instead of all alleles for the genes. It does not rule out the possibility that other alleles in the genes might be potential variants. Individuals carrying non-tested alleles may have different responses and phenotype results. Apart from genetics factors, non-genetic factors such as age, diet, supplements, concomitant medications, personal health history, family health history, ethnicity, pregnancy, and environmental factors, all need to be taken into account when making decisions for health plan change. This report contains personal privacy information, non-authorized person should not read or transferred to others. The laboratory disclaims all responsibility for any negative or potentially negative side effects experienced by the user.

Methodology and Limitations

Testing for genetic variation/mutation on listed genes was performed using PCR with allele-specific probes and/or the application refractory mutation system (ARMS). Test results do not rule out the possibility that this individual could be a carrier of other mutations/variations not detected by this gene mutation variation panel. Rare mutations surrounding these alleles may also affect our detection of genetic variations. Other non-genetic and genetic factors that are not tested by this assay can affect the responses and phenotype results.

Privacy Statement

Unlike other genetic companies, AGS does not sell or transfer our client's data or any personal information. AGS adheres to strict confidentiality and privacy laws that ensure all our clients genetic information is kept private. No exceptions.

We Take Your Privacy Very Seriously

Confidentiality is a respected part of the AGS code of ethics. Your privacy is our number one priority. We pledge to uphold the highest standards of bioethics and maintain rigorous policies and procedures to keep your data safe and secure. We will not even share your DNA data with your physician without your permission and we will never sell your data. That is our strict policy. We guarantee it.