yudoyu®

Where YOU begin.

Skincare DNA Analysis Training – Module 2

Review 6 Genetic Skin Health Areas

Collagen Breakdown and Protection
The quality of your collagen and the rate at which it breaks down.

Glycation Response (Wrinkling)
How your body handles excess sugar in you blood.

Pigmentation and UVB Ray Defense
How much (and how evenly) your body produces melatonin and its response to UVB rays.

UVA Ray and Blue Light Defense
How well your body can protect and repair itself from dermal stress caused by UVA and Blue Light

Free Radical Protection
How well your body produces free radicals to defend skin from lifestyle and environmental stressors

Skin Sensitivity
Your inflammatory response to allergens, chemicals, toxins, and even the weather.

Collagen Breakdown and Protection

1-in-3 people have a genetic variation predisposing their skin to **accelerated collagen breakdown** (premature skin aging).

- Imbalance of collagen production and quality
- Slows tissue remodeling
- Poor wound healing
- Accelerated collagen breakdown

Gene Variants

- Collagen Breakdown
  Slows the breakdown and degradation of Collagen fibers
- Collagen Protection
  Protects collagen and skin cell functions from oxidative stress.

Visible Signs:

- Prominent nasolabial folds
- Deeper smile lines
- Skin laxity, sagging
- Hollowing under eyes
- Loss of volume
- Slower healing

Collagen Breakdown and Protection

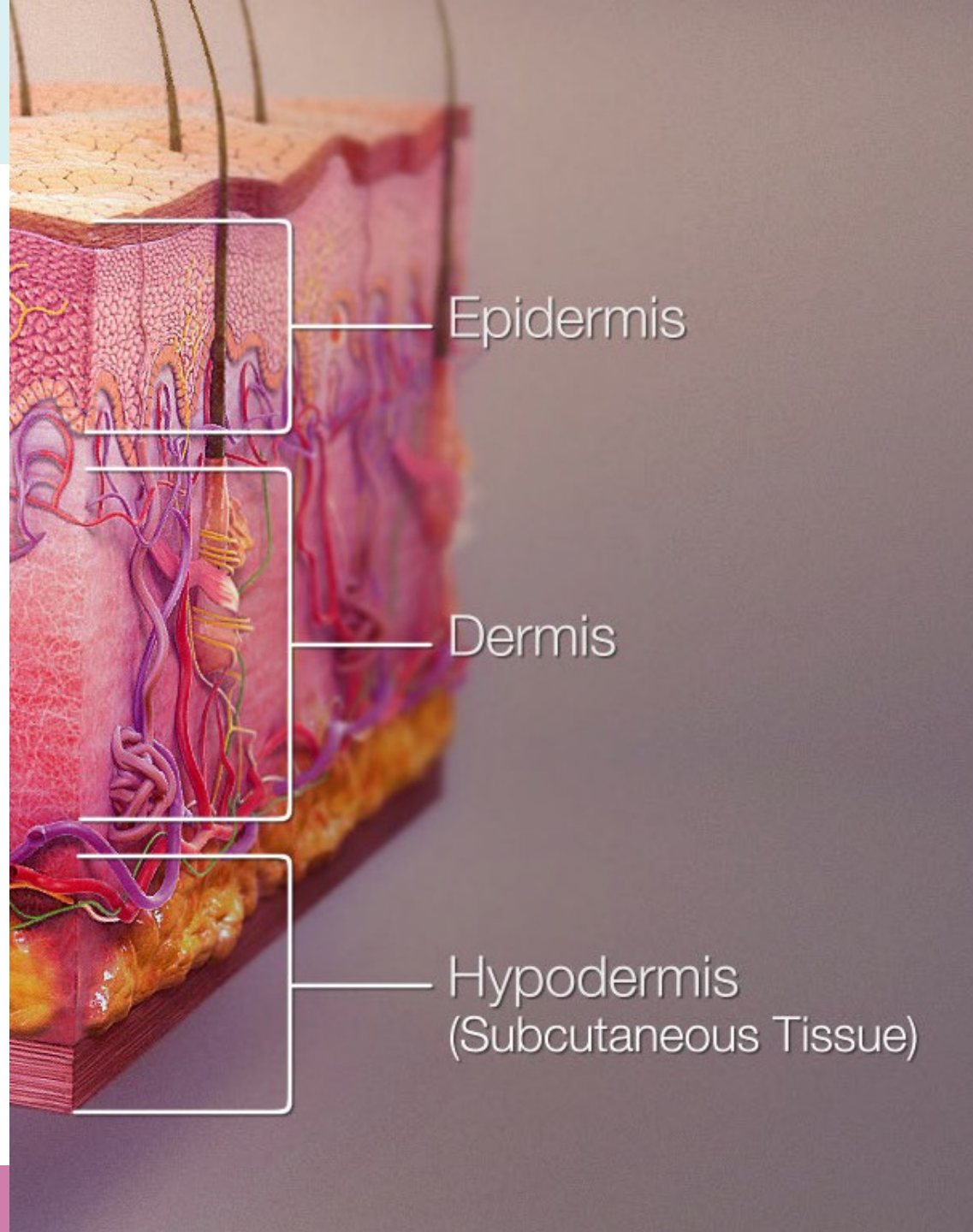
Know the Science

Sandwiched between the epidermis and hypodermis lies the dermis containing blood vessels nourishing the skin and storing structural proteins that keep the skin firm, plump and wrinkle-free. As we age, our bodies struggle to replenish collagen storage.

In healthy, youthful skin, the production and breakdown of collagen are in balance: damaged or redundant collagen is degraded, while the deficit is replenished by ongoing creation.

Unfortunately, for 1-in-3 of us, this intricate balance gets disrupted with a gene variation that can cause an oversupply of an enzyme called Matrix Metallopeptidase-1 (MMPs) or Collagenase. Too little collagen is produced, and too much is degraded. The more this occurs, the more wrinkles, roughness, and sagginess we tend to have. MMP levels are known to increase with age as a result of photoaging as well as natural aging.

Representing 75% of the skin's dry weight, collagen keeps the skin firm, plump and wrinkle-free. Collagen quantity and quality play a major role in our skin's appearance.



Glycation Wrinkling

1 in 2 people has **reduced protection against Glycation,** which binds collagen and elastin fibers, forming chemical bridges that cause **some signs of aging, such as wrinkling**.

- Glucose bonding of collagen and elastin
- Decreases skin elasticity
- Stiffened collagen fibers
- Weakens connection between the epidermis and dermis

Gene Variants

- Glycation Interruption
  Controls serum glucose levels, and energy intake and release

Visible Signs

- Upper lip and chin lines
- Vertical lines across cheeks
- Fine lines, uneven skin texture
- Rough surface area
- Leathery or crepe-looking skin
- Eye area dryness and lines

Glycation Wrinkling – **External Sources**

SMOKING

Smoking elevates the level of **Advanced Glycation End-Products** (AGEs).

AGEs are formed when tobacco leaves are dried in the presence of sugars. During inhalation, these AGEs are absorbed in the lungs. **AGEs in the skin** (measured with skin autofluorescence) **are higher in smokers** than non-smokers.

BAKED FOOD

Have you ever wondered why some people follow a raw food diet? Apart from it being good for you, there is another good reason.

That reason is **the Maillard reaction** – or simply the browning of food. This reaction occurs when the sugar molecules inside a piece of steak, for example heat up causing the molecule to cross-link with a protein. The browning effect is the result of Advanced Glycation End Products.

DIABETES

Diabetics are at greater risk of glycation and AGEs as they cannot effectively break down the sugars consumed from food.

Excess sugar is stored in fatty tissues for much longer than necessary, ultimately causing the sugar to travel throughout the bloodstream in higher doses, causing cross-linking in every part of the body.

UVB Rays and Pigmentation - **Melanin**

3 in 4 people are predisposed to **irregular melanin production** processors.

- Increased UVB radical epidermal damage
- Irregular cell function and repair
- Ineffective melanin rate and production

Gene Variants

- Melanin Processing
  Helps produce and regulate melanin which helps protect the skin from the sun.

- Photo Defense
  Breaks down free radicals produced from UVB rays (burning rays) once they have entered the epidermis.

Visible Signs

Pigmentation Spots

- Blemishes and freckles
- Brown (sun) spots
- Uneven pigmentation

Redness

- Broken capillaries
- Sun sensitivity
- Patches of redness

UVA (Aging Rays) + Blue Light Defense

2 in 5 people have a genetic variation that **decreases the skin's UV repair** and its **protection** from sun-related free radicals.

- Increased UV or (Blue Light) radical dermal damage
- Increased mitochondrial damage
- Structural damage to DNA that is responsible for Collagen

Gene Variants

- UV Repair
  Repairs genetic damage caused by UVA + Blue Light exposure.

- UV Radical Protection
  Repairs DNA mutations caused by 8-oxo-G radicals (oxidative stress).

Visible Signs

- Fine Lines and wrinkles
- Thinning skin
- Dark tanning from UVA rays
- Leathering of skin
- Deep furrows or expression lines

UVB + UVA Protection

Your genes play an essential role in determining how well your skin can naturally cope under the strains of the sun.

Consistently preventing skin damage from the sun's UV rays should be the most critical aspect of your skincare strategy.

Proper UV protection may help prevent photoaging and additional damage and facilitate reversing some existing signs of aging.

Improve your **UV IQ**

UVA Rays

The effects of UVA rays often do not become apparent until years after the damage has already been done.

Its spectrum is strong enough to bypass the top layers of skin and damage the deeper layers known as the dermis. **These rays cause the skin to age prematurely.**

UVA rays are primarily present when the sun is at an angle, generally between 8am – 10am and 2pm – 6pm, and become magnified on cloudy or overcast days and when reflected through glass, such as when driving or near windows.

UVB Rays

Unlike UVA rays, its spectrum isn't strong enough to travel into the deeper layers of skin therefore, most of the damage is done on the superficial layers taking the form of sunburns, peeling, swelling, pigmentation and Browning of the skin.

UVB rays are most prominent when the sun shines directly down between 10am -2pm.

Blue Light

Research has discovered that blue light from the sun, screens, LED, and fluorescent lights may harm our skin.

- Blue light can penetrate the dermis, but not as deeply as UV radiation.
- Exposure to blue light can generate unstable ROS molecules, leading to skin damage and aging.
- Studies suggest blue light contributes to collagen breakdown.
- Prolonged exposure or intense blue light may cause hyperpigmentation.
- Watching TV or scrolling through your phone at night can interfere with sleep quality, affecting overall skin health.
- Blue light also has antibacterial properties, which might make it helpful in treating acne, but more research is needed.

Free Radical Defense

1 in 2 people is predisposed to **reduced skin antioxidant protection**.

- Increased cellular destruction
- Premature cell death
- Increased mitochondrial damage
- Decreased antioxidant functioning
- Decreased pollution defense

Gene Variants

- Superoxide Radical Defense
  Protects from oxidative damage and converts free radicals into less harmful products.

- Glutathione Production
  Detoxifies hydrogen peroxide compounds and minimizes damage.

- Pollution Defense
  Detoxifies environmental pollutants.

Visible Signs

- Rough texture
- Uneven skin tone
- Dull and lifeless skin
- Tired looking appearance
- Excessive dryness
- Excessive oiliness
- Blemishes

Antioxidant Support

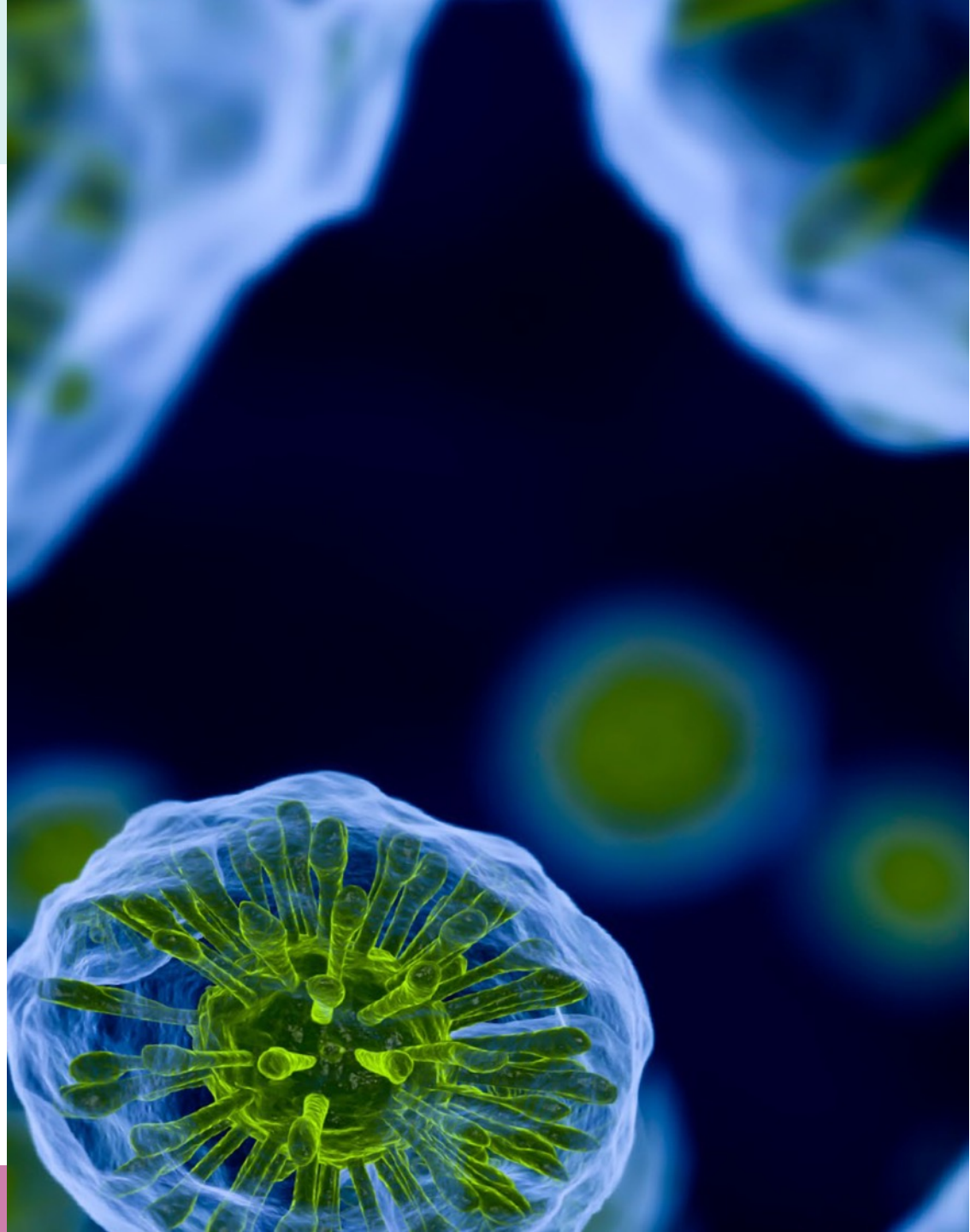
Know the Science

Free radical oxidation causes significant damage and impairment to skin cells.

This kind of free radical damage leads to the generation of even more free radicals! It's a chain reaction that can wreak havoc in every layer of the skin - including the Hypodermis, Dermis, and the particularly vulnerable Epidermis. Cellular destruction in any skin's layers can lead to a dull, lifeless, aged complexion.

Discoloration, blotchiness, and an uneven skin texture are the tell-tale hallmarks.

Scientists now believe that free radicals are causal factors in nearly every known disease, from heart disease to arthritis to cancer and cataracts. In fact, free radicals are a big culprit in the aging process itself.



Skin **Sensitivity**

4 in 5 people have a genetic variation that may cause an **overreactive inflammation response**.

- Irregular tissue healing
- Decreased cellular defense
- Enhanced sensitivity
- Overactive inflammatory signaling

Gene Variants

- Inflammation
  Defends cells against invaders.
- Xenobiotic Detox
  Detoxifies alcohol and cigarette smoke.
- Skin Sensitivity
  Detoxifies pollution and chemicals.

Visible Signs

- Dryness
- Redness, rashes, or skin bumps
- Chemical sensitivity
- Prolonged redness after skin treatments

Skin **Sensitivity**

Know the Science

Without inflammation, your skin could not protect itself or heal. It is the body's short-term immune response for healing and countering infection and invasion by foreign substances like germs, bacteria, allergens, and toxins.

Sometimes the body overcompensates and releases too many inflammatory proteins in response to an issue that requires much less. As a result, the body overreacts to everything, thinking that perfume is a virus and a skincare product is an enemy.

This type of sensitivity is a problem because the trauma caused by a constant oversupply of inflammation dramatically ages the skin. Often subtle, the signs include skin sensitivity, redness, and irritation.

An inflammatory build-up can lead to skin irritations, sensitivity to perfumed products, active skincare ingredients, and general environmental pollution. These responses can manifest into redness, rashes, and acne.

Our mission is to simplify skincare and empower you with easy-to-understand recommendations and guidance so you can make informed decisions about your skin health.

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