



Research Summary: Healthy Skin #1

As featured in Dr. Kenny Mittelstadt's video:
"Healthy Skin 101 with Dr Kenny | What Every Person Should Know"
Date of Publication: 03/31/2026

Research Context:

This topic explores how skin health isn't just about products, routines, or surface-level care. It reflects how multiple systems in the body are functioning and communicating beneath the surface. Your skin is constantly responding to signals from metabolism, inflammation, hormones, and gut health, even when those signals are subtle or not yet obvious in standard testing.

For many people, this helps explain why they can be doing everything right and still feel stuck. The issue is not always what's being applied to the skin, but what the skin is adapting to internally. The research below highlights key patterns that connect these systems, offering a clearer lens into how skin changes develop and why a deeper understanding often leads to better clarity.

Key Findings from the Research:

Study 1 (PMID 38563644):

This study explored advanced glycation end products (AGEs), which form when sugar attaches to proteins in the body, a process known as glycation. Researchers found that these compounds can come from both internal metabolism and diet, especially with frequent blood sugar spikes. Over time, AGEs build up in tissues and increase oxidative stress, which is a form of cellular wear and tear, along with inflammation. In the skin, this affects collagen and elastin, the proteins responsible for structure and flexibility. When these proteins are damaged, skin can lose resilience and show earlier signs of aging. What this means: Your daily blood sugar patterns may influence how your skin holds its structure and adapts over time.

Study 2 (PMID 27554239):

This study focused on the gut-skin axis, describing how the gut microbiome, the collection of bacteria in your digestive system, interacts with the immune system. Researchers found that changes in gut balance can shift immune signaling, increase oxidative stress, and influence inflammatory responses throughout the body. These shifts were linked to skin conditions such as acne and other inflammatory skin patterns. The gut helps regulate how reactive or balanced your immune system is, which directly affects how the body responds to internal and external stressors. What this means: When the gut environment is disrupted, it can influence immune activity in ways that show up on the skin.

Study 3 (PMID 37997995):

Observational data summarized by the National Cancer Institute highlights a consistent pattern between vitamin D levels and cancer outcomes. Individuals with lower vitamin D levels tend to have higher cancer mortality compared to those with higher levels across multiple studies and populations. While observational research cannot prove cause and effect, it does reveal meaningful trends that are worth paying attention to. In this case, vitamin D status may reflect how well the body is regulating immune function and inflammation. In everyday terms, lower vitamin D levels often show up alongside broader patterns of physiological stress or imbalance.



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Functional Medicine Connections:

Here's how these pieces begin to fit together when you step back and look at the system as a whole. Your skin is not operating in isolation. It is part of a larger communication network that reflects how your body is managing energy, immune activity, and internal stress over time. These systems are constantly exchanging information, even when the signals are subtle or not immediately noticeable.

When blood sugar is unstable, it can drive glycation, which affects the structural proteins that give skin its strength and flexibility. That metabolic stress feeds into inflammation, which becomes a shared pathway across multiple systems.

Hormones influence how those signals are carried and expressed, while the gut helps regulate immune activity and barrier function that shapes how much inflammation is produced or resolved.

This is why skin changes can feel inconsistent or difficult to trace over time, especially when multiple systems are interacting simultaneously beneath the surface.

Practical Reflections & Takeaways:

Think about your own patterns for a moment. When your skin changes, whether that's breakouts, sensitivity, or shifts in texture, what else tends to be happening at the same time? Are those changes lining up with periods of higher stress, disrupted sleep, changes in diet, or digestive issues?

It can also be helpful to notice whether your skin feels consistent or unpredictable. Do things improve briefly and then return, or does it feel like you're constantly adjusting without clear direction? Those patterns are not random. They are signals that your body is adapting to something beneath the surface.

Instead of asking what product to try next, consider what your skin might be responding to internally. That shift in perspective can often be the starting point for making sense of what previously felt confusing.

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