



The Dry Eye, Cosmetics & Anti-Aging Face Cream Connection

What Eye Care Professionals Should Know About Skin Health

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Dry eye complaints are on the rise world-wide – but there's a poor correlation between patients' subjective experience and what medical tests detect.

What can explain the disconnect?

Many factors – including age, gender, air pollution, computer use, and contact lenses – play a role in dry eye problems. But few are aware of another big driver: The exploding use of cosmetics and anti-aging face creams.



The TRP System: A Revolutionary Discovery for Dry Eye Management

In 2021, the Nobel Prize in Physiology or Medicine was awarded for the discovery of special TRP ion channels. The TRP system can explain why the products we put on our face impact our eye health.

Scientists have long recognized that regular use of cosmetics and preservative-laden skin products influence eye health. Commonly, it's thought that eye irritation might be due to cosmetic and face cream ingredients migrating onto the ocular surface.

But there is also another mechanism at work: Beauty products can activate special TRP ion channels that trigger pain and inflammation.

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These receptors sense environmental factors, like temperature, pressure, pH levels and chemicals in our environment. They then send this information to the brain to compose a response, like blinking or tearing, via the trigeminal nerve.

The ocular surface and eye tissue are densely “innervated” with TRP systems, which is why these areas are so sensitive to the environment.

Dry eye sufferers typically exhibit TRP imbalances in their ocular tissue. This makes the eye less able to adjust to environmental changes.

There are at least 28 different types of TRP channels, and many of them are involved in dry eye symptoms. No single substance or condition will modulate them all. As such, new medical devices or drugs must combine multiple components that work in synergy if the target is to improve overall TRP balance.



How Anti-Aging Creams Become Dry Eye Producers

Retinoids activate TRPV1, which initiates inflammation.

Vitamin A derivatives, or retinoids, are among the most common ingredients found in anti-aging creams. They're often thought to reduce wrinkles and improve skin appearance after initial irritation.

Unbeknownst to many, retinoids can contribute to Meibomian gland dysfunction and eye discomfort – even when applied far away from the eye. This could be because retinoids stimulate at least one type of TRP (TRPV1), which initiates inflammation. Another common skin cream ingredient – the preservative phenoxyethanol – also stimulates TRPV1. As do external factors like UV radiation and air pollution.

“TRPV1 inhibitors include anti-inflammatory ingredients, like omega-3s, melatonin, and many antioxidants and plant extracts.”



Chronic stimulation of TRPV1 and the resulting inflammation may have consequences for not just the eyes, but the skin too. Some experts worry that while retinoids can smooth wrinkles in the short-term, high doses and prolonged use may actually accelerate skin aging over time.

Interestingly, a variety of skin problems, like rosacea and photodamaged skin, are also characterized by over-stimulated TRPV1 and strongly correlated with dry eye problems. That's another reason to address both skin and eye issues at the same time.



Barristrong®: Improving Eye Comfort with Skin Cream

Understanding the TRP system opens an opportunity to create an effective anti-aging face cream that delivers eye moisturizing benefits at the same time.

TRP systems linked to the eyes are not only present on the ocular surface. They are also found in the nose and skin around the eyes.

Inspired by these findings, we hypothesized that modulating the correct TRP channels through face cream could yield dual effects: upping anti-aging skin protection and stimulating eye moisture.

This led to the creation of Barristrong, a groundbreaking cream that could herald in a new field of medicine we like to refer to as derma-ophthalmology.



What is Barristrong?

Built on a decade of R&D, Barristrong is a patented face cream developed by physicians for eye clinics.

Barristrong contains natural anti-inflammatory ingredients known to modulate skin-embedded TRP ion channels – including omega-3s, melatonin and antioxidants. This may allow the cream to transduce signals to the eye via the

trigeminal-facial-parasympathetic nerve loop and improve eye comfort.

As proof of concept, we showed that more than 90% of 100 testers experienced positive changes within a few days of applying Barristrong around the eyes. The effect was more pronounced when the cream was also put in the entrance of the nose.

Barristrong's Skin Effects

Besides evaluating Barristrong's impact on eye comfort, we also tested its effects on skin metrics, like cell survival, UV radiation, and biofilm. In addition, we examined its anti-inflammatory potential, mucosal absorption, and anti-itch and wound healing abilities.

Equally important was registering users' response to Barristrong as a cosmetic cream. An overwhelming majority remarked that the cream felt soothing and easy to apply with a pleasant herbal smell, leaving the skin feeling softer and

less sensitive after a few days. Users also reported a strong anti-itch effect on eczema and insect bites appearing within 20 minutes, indicating powerful TRPV1 blockage.

In the end, we concluded that Barristrong's skin action may be attributed to three synergistic effects: tightening surface barriers (hence the name Barristrong), providing good nutrition for the skin microbiome, and reducing TRPV1 over-expression.



Barristrong at Eye Clinics

Eye care professionals are well suited to educate patients about how skin products can impact their eyes – and offer better options. Barristrong’s unique formulation and mode of action provides a new tool to address eye comfort and

people’s desire to age gracefully. For patients, it’s a safe, easy solution that replaces eye drops and anti-aging creams. For practitioners, it’s a smart business move that supports patients holistically.

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