

# Support for Skin Barrier Health

Developed and reviewed by the clinical, chiropractic, and naturopathic members of the Standard Process team

## Skin Barrier Function and Significance

The skin serves as a protective barrier between the body and the external environment. It acts as both a physical and chemical barrier and plays a key role in immune function. The stratum corneum, the outermost layer of the epidermis, is composed of dead keratinocytes embedded in a lipid matrix composed of ceramides, cholesterol, and fatty acids. These lipids are vital for maintaining hydration and preventing the entry of pathogens, allergens, and irritants. The skin has an acidic pH which supports the function of enzymes involved in skin barrier repair and helps inhibit the growth of pathogens.

The skin microbiome also contributes to barrier function by competing with pathogens for resources and producing antimicrobial compounds. A balanced microbiome supports skin health.

Environmental factors, allergens, and irritants can compromise skin barrier function. Compromised gut and microbiome health can also contribute to immune dysfunction of the skin. These skin stressors can lead to transepidermal water loss, susceptibility to infections, and exacerbation of skin conditions like eczema and psoriasis. Nutrition and lifestyle interventions can support skin barrier integrity by promoting healthy epidermal and lipid matrix structure and function, modulating immune function, supporting gut and microbiome health, and mitigating skin stressors.

## Supportive Lifestyle Practices

Educate patients on the importance of water for the normal functioning of the skin barrier.<sup>1</sup> Support healthy skin hydration through water intake, limiting hot showers, avoiding harsh soaps, and using a humidifier in dry climates to help maintain skin moisture levels.

Encourage patients to protect their skin from excessive UV radiation by using protective clothing and sunscreen that uses physical barrier technology. While moderate sun exposure is beneficial for skin and overall health, excessive UV radiation can disrupt the production of lipids in the stratum corneum, damage the DNA of skin cells, degrade collagen, and promote the activity of reactive oxygen species.<sup>2</sup>

## Whole Food Nutritional Recommendations

Encourage the consumption of foods rich in polyunsaturated fatty acids (PUFAs) such as cold-water fatty fish, nuts, and seeds. Omega-6 and omega-3 PUFAs play a critical role in skin barrier function by altering the fatty acid and eicosanoid content of the epidermis and by modulating oxidative stress and inflammatory processes.<sup>3</sup> Skin epidermis can synthesize saturated fatty acids, cholesterol, and ceramides but must obtain PUFAs from exogenous sources.<sup>4</sup>

Recommend a variety of foods rich in carotenoids and preformed vitamin A such as tomato, pumpkin, sweet potato, liver, and eggs. Vitamin A plays a key role in supporting skin immune function by modulating the activity of immune and epithelial cells and supporting healthy microbial balance.<sup>5</sup> Carotenoids can help protect the skin from UV radiation through their ability to scavenge reactive oxygen species and promote oxygen delivery to the skin.<sup>6</sup>

# Dietary Supplement Regimen



## Black Currant Seed Oil

Suggested Use: **1 softgel per meal**

Black Currant Seed Oil contains the essential fatty acid gamma-linolenic acid (GLA).

- Encourages proper eicosanoid synthesis\*
- Supports the body's normal tissue repair process\*
- Supports normal blood flow\*
- Supports healthy immune system function\*



## Zypan

Suggested Use: **2 tablets per meal**

Zypan® combines pancreatin, pepsin, and betaine hydrochloride to facilitate healthy digestion.\*

- Supports macronutrient digestion\*
- Hydrochloric acid is involved in maintaining proper gastric pH\*
- Includes stearic acid to coat the pancreatin, helping it to be digested in the correct area of the digestive tract
- Provides enzymatic support for protein digestion\*



## Cod Liver Oil

Suggested Use: **3 softgels per day**

Cod Liver Oil supports healthy skin and eyes.\*

- Cod Liver Oil contains the omega-3 fatty acid, DHA, which is important for normal brain structure\*
- Supports epithelial tissue\*
- Supports healthy inflammatory processes\*
- Excellent source of antioxidant vitamin A



## Calendula 1:2

Suggested Use: **Dilute 5 mL (approximately 1 teaspoon) in water or juice once per day**

Calendula 1:2 contains Calendula flower which is traditionally used in herbal preparations to:

- Help maintain healthy skin\*
- Support the body's normal tissue repair process\*
- Promote healthy vascular system function\*

## Assessing Skin Health Status

## In Office/Physical Exam

- Signs/Symptoms such as itching, redness, dry skin, blisters, lesions, changes in skin color and texture
- Medical Hx: asthma, allergies, autoimmune disease, gut issues

- Key Labs: Complete blood count, IgE antibodies, markers of autoimmunity, fecal calprotectin
- Omega 3 Plus Index Test
- Consider skin biopsy

## REFERENCES

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