



SMALL MOLECULE TECHNOLOGIES, INC.

# MOLECULES & HEALTH

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## Reducing Atopic Eczema



Atopic dermatitis is one of the most common chronic skin diseases, affecting approximately 20% of the population. Eczema usually starts in the first year of life, but it can manifest at any age. The lifetime prevalence of eczema has increased worldwide for the past 30 years, and recently the prevalence for adults was estimated to be approximately 10% of the population.

Eczema is characterized by intensely pruritic (itchy), inflammatory lesions experienced in a continuous course for long periods or in a relapsing-remitting course that includes repeated flare-ups. Eczema is more common in children, but even adults who have “outgrown” eczema typically continue to have sensitive hyper-re-

active skin and can have recurrences after long periods without symptoms.

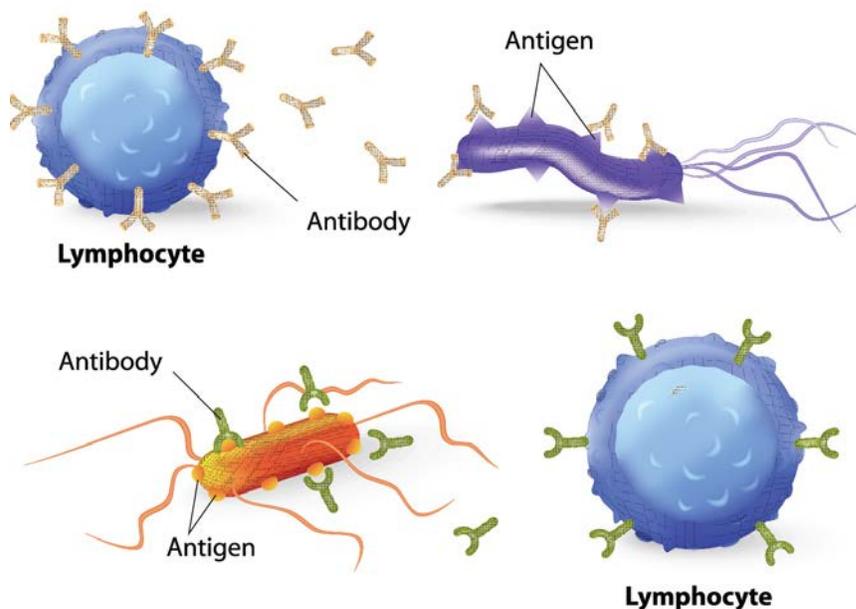
Small Molecule Technologies skin and wound care products contain potent anti-inflammatory small molecule ingredients including the beneficial polyphenols oleuropein, resveratrol, and epigallocatechin-3-gallate (EGCG) from olives, grapes, and green tea, respectively, as well as the important small molecules, melatonin, and L-glutathione. In addition, dipotassium glycyrrhizinate from licorice, avenanthramides in oats, aloe vera and shea butter have

also been shown to possess anti-inflammatory activities.

### Immune Imbalance and the Skin Barrier

Atopy is an inherited tendency to make immunoglobulin E (IgE) antibodies in response to small amounts of common allergens such as pollen, house dust mites and food allergens. Evidence suggests that the modern western lifestyle has led to the reported increase in eczema that has occurred in recent years. One hypothesis put forth to explain this increase called the “hygiene hypothesis” proposes that a de-

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crease in childhood exposure to previously common infections has increased susceptibility to atopic diseases such as eczema.

The two main hypotheses for the cause of eczema involve either an immunological imbalance or a skin barrier defect. Support for the immune imbalance hypothesis was provided by the recent discoveries that genetic variations in distinct immune-related pathways are associated with atopic eczema including inflammation and humoral lymphocyte (T-cell) activation and antigen presentation-related pathways.

In support of the skin barrier defect hypothesis, genes encoding epidermal structural proteins have been associated with atopic eczema including filaggrin, a protein that links keratin filaments with disulfide bonds to form a tight skin barrier. Approximately 50% of individuals with eczema have mutations in the gene encoding filaggrin. Filaggrin also contributes to skin homeostasis by stabilizing skin pH, by moisturizing the skin by producing natural moisturizing factors and by helping produce antimicrobial peptides.

## Keeping Moisture in Skin with Emollients to Avoid Flare-ups

Most individuals with eczema have sensitive skin that is prone to xerosis (abnormally dry skin) and irritation. Emollients such as those found in Small Molecule Technologies Renewal Moisturizer from shea butter, oats and aloe vera help moisturize skin.

In fact, emollients are considered the first-line therapy for mild eczema, and using emollients during periods of quiescence can decrease the tendency for eczema flare-ups.

All of the Small Molecule Technologies skin and wound care products, including Renewal Moisturizer are non-sensitizing and non-irritating.

## Reducing Eczema Flare-ups

Topical corticosteroids like Small Molecule Technologies Hydrocortisone Cream 1% are used as first-line therapy for atopic eczema flare-ups. Corticosteroids activate nuclear glucocorticoid receptors that alter the expression of cytokines involved in the inflammatory response. Hydrocortisone is a corticosteroid that is frequently prescribed to treat eczema and the associated inflammation and itching. Small Molecule Technologies Hydrocortisone Cream 1% is provided in a cream



base that has been enriched with Small Molecule Technologies and key scientific ingredients to facilitate skin hydration, nourishment and repair.

Individuals with eczema should avoid long, hot baths, harsh soaps and potentially irritating substances including woolen clothing. Small Molecule Technologies Clean N Moist is a soothing cleansing lotion that is perfectly pH balanced to ensure the most fragile skin is gently cleansed without causing irritation. Clean N Moist cleanses, nourishes and provides a protective barrier to help keep skin hydrated.

It's good to know that Small Molecule Technologies skin and wound care products were designed for sensitive skin. Small Molecule Technologies Renewal Moisturizer and Clean N Moist help keep skin nourished, hydrated and protected to help prevent eczema flare-ups. Small Molecule Technologies Hydrocortisone Cream 1% helps soothe the itching and inflammation associated with eczema flare-ups.

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