# **BEST PRACTICES IN:** Managing Eczema With Natural Ingredients

corticosteroids and oral anti-

histamines. After both 2 and

4 weeks on the oatmeal

regimen, the researchers

reported significant improve-

ments (P < 0.05) in the

Investigators Global Assess-

ment and Eczema Area

Severity Index (Figure).

After 4 weeks, they obser-

ved more than a 45% mean

improvement in both eczema

indices. Likewise, there were

significant improvements

topic dermatitis (AD) continues to be a challenging problem for clinicians, with the incidence increasing between threefold and fivefold since 1960.1 It is estimated that about 17.8 million Americans suffer from AD.<sup>2</sup> According to an independent analysis, as many as one in five young children is affected by the disease.3 Although the etiology and pathophysiology of the disease are not fully understood, Eichenfield et al<sup>4,5</sup> described the disease as a "complex interplay of genetic, immune,



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metabolic, infectious, and neuroendocrine factors and their interaction with the environment." This complex pathogenic interplay partially influences AD development with functional changes in stratum corneum function, including increased transepidermal water loss (TEWL), abnormal ceramide metabolism, increased protease activity in the stratum corneum, and mutations in the genes that encode for filaggrin.

Effective treatment of AD focuses on improving skin barrier integrity, mimimizing pruritus, and decreasing inflammation through the implementation of a layered treatment approach. The aims are to increase the skin's hydration, avoid irritants, apply anti-inflammatory agents, and then establish a maintenance approach to prevent future flare-ups.

It is reasonable to divide over-the-counter (OTC) products that can serve as first-line therapy for this patient population into two categories. The first includes emollients, moisturizers, and skin care products that may improve the skin barrier and minimize symptoms; the second comprises the OTC anti-inflammatory topical medications containing 0.5% hydrocortisone. Although topical corticosteroids, both OTC and prescription strength, are considered first line for controlling disease flares, there are several important natural compounds that can also help control pruritus, dryness, and inflammation.

## What Role Should Colloidal Oatmeal Play?

Colloidal oatmeal is one of the few natural products that has been officially recognized by the US Food and Drug Administration (FDA) for its ability to relieve minor itching and irritation caused by eczema and contact allergens. Several oatmeal by-products have biologically active properties that can improve skin barrier function and the skin's acid/base balance, have a protective effect on the skin, and provide antipruritic effects. Considerable research has been done on the avenanthramides, a family of compounds in colloidal oatmeal that is believed to have significant antiinflammatory effects.

These compounds have been shown to decrease interleukin-8 release in keratinocytes in a dose-dependent manner.<sup>6</sup> In a clinical study, avenanthramides were shown to inhibit histamine release in a dose-dependent fashion.<sup>7</sup> Wallo et al<sup>6</sup> reported that an oilated colloidal oatmeal bath administered to 25 patients with a history of AD over a 4-week period reduced itching and burning scores by 50% and 67%, respectively.

Lee et al<sup>8</sup> conducted a 4-week clinical study in infants (N=23) with mild to moderate AD using a colloidal oatmeal cream and cleanser that also contained d-panthenol and ceramides III and IIIB, in conjunction with topical



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(P < 0.05) in itching, as determined by Visual Analog Scoring, after 2 and 4 weeks using the regimen.





Dermatologist assessments demonstrated significant improvements (P<0.05) in the mean scores for Overall IGA and EASI Composite Scoring after 2 and 4 weeks of using the oat-based skin care regimen when compared to baseline. Source: Courtesy of Johnson & Johnson Consumer Products, Inc.

## What Other Naturally Derived Ingredients May Benefit Patients With AD?

Several other natural compounds have been receiving attention in the dermatologic literature, including licorice extract, feverfew, and aloe vera.

One prescription product containing licorice-derived glycyrrhizic acid, for instance, has been shown to relieve itching, burning, and pain in atopic dermatitis or allergic contact dermatitis. In fact, several studies suggest that licorice extracts have anti-inflammatory properties, as well the ability to inhibit melanogenesis, and block cyclooxygenase and lipoxygenase release.<sup>9,10</sup>

Feverfew, another botanical, has also been shown to have clinical effects in humans. At least one specific feverfew extract is known to have strong anti-inflammatory and antioxidant activity. When 31 patients with a history of clinically sensitive skin used a facial moisturizer containing feverfew parthenolide-free extract in a double-blind clinical trial, investigators reported improvements in erythema, irritation, and roughness ( $P \le 0.05$ ).<sup>11</sup>

The gel of the aloe vera plant contains salicylic acid, magnesium, and polysaccharides and has also been shown to have therapeutic properties. Clinical studies suggest that it has antipruritic, analgesic, anti-inflammmatory, and antibiotic effects.<sup>12</sup>

### The Value of 510(k) Products in Eczema

In recent years, there has been an expansion in this category of products, with several new 510(k) creams designed to relieve burning and itchy skin. These include MimyX, Atopiclair, EpiCeram, Hylatopic, and Eletone, among others. Although few studies have been done to compare these products to one another or to OTC products directly, some of them have been proven superior to their own vehicle for the management of AD, and others have shown corticosteroid-sparing effects and the ability to increase times between disease flares.

At least one clinical trial suggests, however, that an OTC cream may provide moisturization and other skin benefits similar to a 510(k) skin barrier emulsion. When an OTC advanced skin care moisturizing cream was compared to one of these prescription creams in 27 patients with moderate to severely dry skin over a 7-day treatment period, followed by a 2-day regression, researchers found that both products were effective in reducing dryness and scaling as determined by clinical evaluations.<sup>13</sup> There were no significant differences in TEWL between treatment groups, and a measurement instrument used to rate skin conductance registered significantly higher values (P<0.05) for the OTC product than for the 510(k) cream.

It is an exciting time for dermatologists as we apply new research on barrier function abnormalities and new data on a variety of OTC and prescription products that have been shown to improve barrier function in AD. Although it is difficult to determine the relative merits of each of these products, future research will help us further refine our best practices.

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