



# Helping Prevent Nocturnal Itching



Nocturnal itching disrupts sleep and can contribute to depression, agitation, anxiety and poor work performance. Often patients are unaware of scratching at night that contributes to skin inflammation and the risk of skin wounding and infection. Many individuals experience more itchy (pruritic) skin at night than during the day. In fact up to 65% of patients with inflammatory skin conditions including psoriasis, atopic dermatitis (eczema), and chronic idiopathic urticarial (hives) reported increased itching at night.

The fact that skin itches more at night than during the day may be related to the circadian rhythm of skin that corresponds with the 24 hour daily cycle. Healthy skin has

decreased trans-epidermal water loss (TEWL), a well hydrated epidermis, and a slightly acidic pH. Several of these skin factors have been found to fluctuate in a circadian fashion, suggesting that the skin barrier function may be

stronger (lower TEWL) at certain times than others. In fact, it has been shown that TEWL is significantly increased during the night and minimal during the morning. Thus, it is thought that the decreased skin barrier found at night facilitates entry of irritants and other agents that cause itch.

## Protecting the Circadian Rhythm and Decreasing Inflammation

Viniferamine<sup>®</sup> skin and wound care products include ingredients that have been shown to enhance the skin barrier including the polyphenol, oleuropein, and melatonin (which is found naturally in skin but has decreased levels in aging skin). Disruptions in



the circadian rhythm are thought to perpetuate nocturnal itching. Melatonin helps preserve the natural circadian rhythm of cells and it has been shown to regulate the circadian rhythm of skin fibroblasts.

Corticosteroids including glucocorticoids like cortisol decrease inflammation, have varying levels that are also controlled by the circadian rhythm, and are at their lowest levels in the evening and at night. Since inflammation is associated with pruritus, low levels of corticosteroids are thought to contribute to nocturnal itching. Furthermore, several inflammatory cytokines are associated with itching including IL-2, which was shown to have increased levels at night.

Viniferamine<sup>®</sup> skin and wound care products include potent anti-inflammatory ingredients including the 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 possess anti-inflammatory activities.

### **Decreasing Xerosis (Chronic Dry Skin)**

One of the most common reasons for itchy skin is xerosis or chronic dry skin. Moisturizers like Viniferamine<sup>®</sup> Renewal Moisturizer with emollients (from shea butter, oats and aloe vera) can play a central role in treating nocturnal itching. Renewal Moisturizer

not only moisturizes the skin but also helps prevent water evaporation from skin. In addition, Renewal Moisturizer helps maintain the normal acidic pH of skin that is required for reducing tryptase activity, a known activator of proteinase-activated receptor-2 (PAR-2) that mediates itch in human skin.

Itching caused by xerosis can also be reduced by avoiding harsh soaps and gels and by using mild cleansers like Viniferamine<sup>®</sup> Clean N Moist that is designed to match the natural chemistry of skin. Clean N Moist is perfectly pH balanced to ensure that even the most fragile skin is gently cleansed without causing irritation. Clean N Moist and Renewal Moisturizer include ingredients that hydrate, nourish and protect fragile skin.

Aging skin is susceptible to pruritus due to the cumulative effects of the environment (including UV radiation) on the skin and changes in skin structure that occur with age. Loss of collagen and impaired blood circulation

are also involved. In addition, decreased skin lipids and reduced production of sweat and sebum contribute to pruritus. Moreover, increased skin folding decreases the surface area for skin to interact with environmental humidity and maintain hydration.

Viniferamine<sup>®</sup> skin and wound products have ingredients that help increase skin lipids and skin hydration including nicotinamide (niacinamide) that increases the biosynthesis of ceramides and other important skin lipids and potassium glycyrrhizate (from licorice) that protects the important glycosaminoglycan (GAG), hyaluronic acid from degradation. Hyaluronic acid has a high capacity for binding water due to its large size and negative charge.

It should be noted that certain medical conditions (including diabetes, liver or kidney disease) or medications (certain antibiotics, antidepressants, statins, and chemotherapeutic agents) can cause itching. Specific infections can also cause itching, for example, intense nocturnal itching can result



from skin infection by the mite *Sarcoptes scabiei* that causes scabies, which is highly contagious in institutional settings. Typical pruritus related to xerosis can be reduced by using humidifiers, and by avoiding hot baths and irritating fragrances.

It's good to know that Viniferamine<sup>®</sup> skin and wound care products are non-sensitizing and non-irritating, as well as pH balanced to protect the natural pH of skin. Viniferamine<sup>®</sup> products include potent anti-inflammato-

ry ingredients that help decrease pruritus, as well as nourish and protect skin. In addition, Viniferamine<sup>®</sup> products contain ingredients that increase skin barrier function, skin lipids and skin hydration. Moreover, Renewal Moisturizer and Clean N Moist include a sophisticated silicone complex to maintain skin hydration, protect against irritants and help prevent nocturnal itching.

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