

# Help Prevent and Reverse Post-inflammatory Hyperpigmentation

Commonly considered a cosmetic complaint of adults, PIH can develop in younger patients, when it can be a nuisance and potentially reduce quality of life.

By Jeanine B. Downie, MD

Post-inflammatory hyperpigmentation (PIH) most commonly develops on the face, neck, chest, or other high-visibility areas secondary to inflammatory dermatoses, such as acne, atopic dermatitis, or psoriasis—though other causes are encountered. PIH can form in individuals of any age, including children and adolescents. Left untreated, hyperpigmented patches may fade over time or persist for many years. Because it is easier to prevent PIH than to treat it, clinicians should be proactive in counseling at-risk patients with inflammatory dermatoses to practice appropriate sun protection in hopes of limiting development of hyperpigmentation. Sometimes clinicians can even select specific treatments for the primary presentation (inflammatory dermatitis) that will provide the dual benefit of preventing or concurrently treating pigmentary alterations. For example, topical retinoids or azelaic acid used for acne may also address hyperpigmentation.

## Types of PIH

**PIH Associated with Seborrheic Dermatitis, Acne, Psoriasis, or Eczema.** The latter three are better known, while PIH associated with seborrheic dermatitis (SD) is less commonly addressed. PIH resulting from SD is most likely around the hairline. Any of these common dermatoses is more likely to produce pigmentary alterations in individuals who pick, scratch, and otherwise manipulate the skin, so be attentive to patient habits and caution patients against these behaviors.

**PIH Associated with Allergies.** Two common pigmentary alterations are associated with seasonal and environmental allergies. These are the characteristic

dark circles or “raccoon eyes” that identify allergy sufferers and what I call the “Salud line.” Named for the Spanish exclamation wishing good health to a person who sneezes, the Salud line is the pigmented band that forms horizontally across the bridge of the nose as a result of manipulation by patients who consistently dab at their noses (following a sneeze or in response to a runny nose).

Most patients are surprised to learn that they actually contribute to the development/persistence of this hyperpigmented band through nose rubbing. Encourage each patient to gently dab below the nares with a soft tissue rather than rub the nose continuously. Patients must also use sunscreen daily.

**PIH Associated with Bug Bites.** This presentation tends to be at its height during the warm summer months of mosquito season, though patients may present for treatment any time of year. Other insect bites can also play a role. Patient manipulation of the bite is contributory; therefore counseling patients to avoid picking/scratching bites is key to preventing future occurrences. Additionally, I have patients ice the red, inflamed bite to decrease the itch and residual inflammation.

**PIH Associated with Flexural Friction.** Development of hyperpigmentation of the elbows and knees results from recurrent friction and probably involves some genetic predisposition. In my experience, this presentation is especially prevalent among patients with olive skin, especially those of Asian and African descent.

**PIH Associated with First Degree Burns.** PIH may result from burns. Generally, the approach to PIH secondary to burns is the same as for other forms of trau-



ma-induced PIH. However, appropriate acute care of the burn is critical to promote healing and prevent adverse effects, such as infections. Patients should apply antibacterial cream, such as Biafine (Ortho Dermatologics), and cover the affected area until fully healed. Once healed, patients may apply sunblock in order to treat and prevent hyperpigmentation.

### Basic Skincare to Reduce PIH

**General Advice.** Warn all patients against manipulation—picking, scratching, rubbing, etc.—of currently hyperpigmented areas and inflammatory lesions of any type. Certainly the apparent “pickers” require special warnings, but it’s important to urge all patients not to manipulate their skin. Stress the need for use of an appropriate broad-spectrum sunscreen and the need for sun avoidance as much as possible. As experience shows, many patients still have a false sense of security about sunscreens, believing that a morning application confers ample protection for a full day. Offer specific advice on sunscreen use and re-application (SPF 30 or higher, reapplied every two hours) and urge sun avoidance and physical protection (hats, clothing, etc.).

Gentle skincare with moisturizing, non-irritating formulations (such as Cetaphil Gentle Skin Cleanser, Galderma or CeraVe Hydrating Cleanser, Coria Laboratories) is recommended for most inflammatory dermatoses and may have the benefit of reducing skin dryness, irritation, inflammation, and itch.

PIH in younger patients may not require treatment, as pigmented patches may fade with time, especially when patients use proper sun protection. However,

interventions may be appropriate for older patients or those who are bothered by the appearance of hyperpigmentation.

### Interventions

**Essential.** As noted above, sunscreen use is a must for all patients treating PIH or attempting to prevent worsening or recurrence. Choice of a specific product depends on physician and patient preference. Regular use of a broad-spectrum formulation is key.

**Absolutely Contraindicated.** Patients must not use any OTC fade creams that are not recommended by the physician by name. Illegally imported OTC fade creams available in many parts of the country may contain undisclosed corticosteroids at potentially harmful concentrations of mercury, lead, and/or arsenic, which can lead to kidney toxicity. The majority of these unregulated products are improperly imported from foreign countries where production standards and safety regulations may be lax. Patients must avoid these products.

**Optional “Preventives.”** Use of a hydrating, soothing moisturizer for patients with atopic dermatitis/eczema (see previous columns online at [PracticalDermatologyPeds.com](http://PracticalDermatologyPeds.com) for recommendations) can improve comfort and reduce skin dryness and itch, thus reducing the risk of PIH. Furthermore, gently rubbing lotion on skin may replace potentially traumatic scratching.

An over-the-counter or prescription low-potency corticosteroid applied to the site of a bug bite or plant dermatitis can reduce itch and associated scratching. Topical corticosteroids should be used cautiously and only for brief periods of time by patients.

Non-steroidal anti-itch therapies are also available. Soothing ingredients like colloidal oatmeal are included in many moisturizers (such as Aveeno Skin Relief Moisturizing Lotion, Johnson and Johnson Consumer Companies), as are agents like camphor and menthol (as in Sarna Original Anti-itch Lotion, Stiefel) that produce a mild cooling sensation to compete with the itch. Pramoxine is a mild anesthetic used to reduce itch. It is found OTC in Sarna Sensitive Anti-itch Lotion (Stiefel), Aveeno Calamine

and Pramoxine HCL Anti-Itch Cream (Johnson and Johnson Consumer Companies), and by prescription in Pramoxone (Ferndale Laboratories), which also includes hydrocortisone.

### The Role for Hydroquinone.

The patient's age, any negative impact of PIH on quality of life, or other relevant factors will determine whether hydroquinone-based therapy is appropriate. There have been widely publicized but often mis-represented debates in the medical community about the safety and regulation of hydroquinone. Most dermatologists agree that when a prescription-strength or established OTC formulation of hydroquinone is used in appropriate quantities for brief periods of time, there is little to no long-term risk associated with treatment. Following is a brief overview of hydroquinone-based therapies for management of PIH. Referral to a dermatologist may be indicated to determine if therapy is appropriate in any given patient.

Ambi Skin Discoloration Fade Cream (Johnson and Johnson Consumer Companies) is a trusted OTC formulation has been on the market for many years. It contains hydroquinone 2% and is formulated with no undesirable or hidden ingredients and may be suitable for select patients with PIH.

Among prescription hydroquinone products, three comprise the majority of my prescriptions: TriLumaCream (fluocinolone acetonide 0.01%, hydroquinone 4%, tretinoin 0.05%; Galderma), EpiQuin Micro (hydroquinone 4%; SkinMedica), formulated in a microsphere delivery vehicle, and Lustra Ultra (hydroquinone 4%, retinol 0.3%; TaroPharma), which contains antioxidants and sunscreen.

For the occasional patient with very sensitive skin who requires an especially gentle formulation, I prescribe Aclaro (JSJ Pharmaceuticals). It should be noted that TriLuma contains fluocinolone acetonide 0.01%, a low-potency corticosteroid, and tretinoin, which provides a complementary action to the corticosteroid. While long-term use of corticosteroids has been associated with skin atrophy, tretinoin builds collagen and thickens the skin.

**Table 1. PIH Avoidance/Treatment Strategies**

- Wear sunscreen SPF 30 or higher everyday. Apply 30 minutes before going outdoors and re-apply as needed throughout the day, especially after swimming or sweating.
- Avoid prolonged UV exposure by seeking shade, wearing broad-brimmed hats, and wearing UV-filtering clothing.
- Avoid picking, scratching, "popping" or other skin manipulation. Avoid harsh soaps and "scrubs."
- Use gentle skincare to avoid worsening skin inflammation and possibly to confer skin benefits.
- Apply soothing moisturizers or topical formulations to reduce itch and associated scratching for bites, dermatitis, and eczema.
- Consider treating the primary dermatitis with a drug that will also benefit PIH (such as retinoids or azelaic acid for acne).
- Consider hydroquinone-based OTC or prescription skincare if appropriate.
- Caution patients against using any "fade creams" not specifically recommended by the physician.

### An Ounce of Prevention

Sun protection is the cornerstone of prevention of PIH. Patients should use a sunscreen SPF 30 or higher every day and re-apply as needed throughout the day. Overall UV avoidance and wearing sun protective clothing are also important. Interventions aimed at reducing itch and improving skin comfort may reduce scratching and mechanical skin manipulation known to contribute to PIH formation.

PIH can be effectively treated in many cases with prescription or OTC fading creams. Referral to a local dermatologist may be indicated to determine the appropriateness of treatment and ideal parameters. Additionally, skillfully administered procedures, such as chemical peels and laser treatments, can reduce hyperpigmentation.

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