

Facial Spots, Pigmentation, and Discoloration

James J. Romano, MD

Many people notice some color changes in the face. These changes range from a mild increase in freckling to severe dark blotches, with a wide range in between these two extremes. Some changes may present as a darkening of normal moles and blotches, an increase in the number and color of spots, or patches with varying degrees of discoloration. In my practice, I have found that these are very correctable conditions that we can treat with a cream program. In most cases, the improvement can be permanent.

How discoloration occurs

Many underlying conditions are responsible for these skin changes. The most recognized cause is sun damage, either by itself or as an added insult on top of other factors. Numerous medications, especially hormones, have been implicated in skin discoloration disorders. These drugs can sensitize the skin to the sun or may produce pigmentation all on their own. Enhancement of MSH (Melanocyte Stimulating Hormone) by some medications like birth control pills or even pregnancy can be another cause. Finally, hormonal therapy by itself can have a direct impact on skin coloration. In these situations, the medication either stimulates more melanin to be produced, or suppresses the process that decreases melanin production. The result is increased discoloration regardless of the skin type or color. When this occurs in patients that already have some natural increased color or freckles, the risk of skin discoloration increases that much more. Freckles (and some skin spots) are genetically programmed into the skin and many times are not even visible to the eye until some process makes them darken. Any of these causative factors can be dramatically intensified with even mild sun exposure.

Regardless of how it occurs, the end result is an increase in melanin granules leading to dark pigment, blotchiness, spots, discoloration, darker moles, and irregular coloration.

Treatment

The good news is there are several very safe and predictable treatment options for skin discoloration, ranging from the simplest option – sun avoidance – to advanced techniques such as laser treatment. The best treatment option for you will depend on:

- the degree of pigmentation to be corrected;
- coordination with your chemotherapy schedule;
- your personal lifestyle;
- how complete and rapid a result you desire.

Retin-A and Bleaching Creams

I often favor treatment with Retin-A and bleaching creams. This program generally produces excellent results, and is safe, predictable, and reversible. You'll see results very quickly, and can stop or interrupt the program at any time, increase or decrease the intensity, or continue your sun activities. If you wish, this program can be a precursor to a peel or laser treatment at a later date. For these reasons, I present this to my patients as a "no lose" situation

The program consists of an aggressive and physician-supervised skin-bleaching regimen using Retin-A, glycolic acids, and a skin lightener called hydroquinone. A major of this treatment option is that it is totally customizable and individualized to each patient. I reassure patients that have used Retin-A alone -- and don't like the side effects -- that this combination of products produces a very different experience, and is well worth the effort. The simple, twice a day Retin-A/skin bleaching regimen works best for patients concerned with pigmentation, but can also soften wrinkles and improve skin texture. Additionally, when used as a preparatory step for laser and facial cosmetic surgery, it gives an overwhelming high degree of satisfaction. Very importantly, the regiment complements what is offered by your esthetician, and usually does not present any conflict with her services or products. In fact, I often work with the referring esthetician in following these patients.

Retin-A – How it works

The therapeutic effects of topical Retin-A on skin have been recognized for at least the past 35 years. Vitamin A is a fat-soluble vitamin known as Retinol; derivatives of this, including Retin-A, are known as the retinoids. Retinol is available in our diet as the vitamin itself or as precursors known as the carotenes, Beta-carotene (found in carrots) being the most popular example. These vitamins are absorbed through the intestines and stored in the liver. Retinol is the actual protein in the cells of the retina that react to light, and Vitamin A has been used for over 3000 years to treat visual disturbances, especially night blindness. Vitamin A also maintains specialized epithelial surfaces such as the mucous membranes, skin, the intestinal lining, and other organs. More recently, Retinols have been discovered to play a role in the development of tissues and organs, tumor growth suppression, and the immune system.

Retin-A has been used for acne treatment since the late 1960's, triggering the revolution in non-surgical treatment and rejuvenation of the skin. Available in creams or gels in different strengths, Retin-A produces a mild superficial peel of the epidermis and affects not only the surface (epidermis) but deeper layer of the skin (dermis). In the epidermis it affects the dispersion and depletion of melanin, as well as thickens and strengthens the actual tissue. At the dermal layer, it activates collagen producing cells, increases blood vessel development and nutrition, and causes cells to divide faster.

FDA approved for use on photodamaged skin in the late 1970's, Retin-A stimulates repair, cell division, and collagen thickening, and decreases clogged pores. It improves acne, lightens spots, and smoothes wrinkles. Minimal side effects include temporary peeling, redness and sun sensitivity, requiring that Retin-A be used in conjunction with a sunscreen. In the 1980's, Retin-A became a part of other cosmetic procedures such as peels and dermabrasion. Later, as we learned more about the benefits of Retin-A, physicians began to incorporate it into aggressive skin treatment protocols that provide for very safe and predictable skin rejuvenation.

Bleaching the skin

In the specialized cells in the dermis called melanocytes, the chemical tyrosine is converted to DOPA, which is then coupled with proteins to produce melanin, the pigment responsible for skin color. This melanin is stored in granules called melanosomes, then released into the basal cells of the epidermis. Differences in color are attributable to the varying amounts and distribution of pigment within these cells.

Hydroquinone, a very effective bleaching agent, works by blocking the enzyme tyrosinase and prevents formation of any more new melanin. Simultaneous Retin-A usage actually potentiates the action of hydroquinone. However, the overall bleaching effect of hydroquinone is not immediately visible because the agent acts only on the formation of *new* melanin.

Other bleaching products are available and can work in synergy with Hydroquinone because they have a different mechanism of action. Kojic acid and azuleic acid are two examples and there are others.

Glycolic acids are fruit acid derivatives that remove some of the loose upper dead cell layers, allowing for better penetration of the more active products. These fruit acids, found to be safe in low concentrations, are frequently added to many cosmetic products.

The Retin-A program

The goal is a careful combination of these three products; Retin-A, hydroquinone, and glycolics in a very specific physician-supervised program. The program can improve pigmentation and offers patients one of the best safe and predictable options when faced with annoying skin color disorders.