

Dr. Perry's NightSkin –Documentation  
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# Privileged & Confidential

As we age, skin becomes rough, mottled with brown pigmentation, thin, dry, and wrinkled. NightSkin has four key ingredients that target all of these problems.

## Retinoic acid

There are a number of vitamin A-type substances that are used in skin creams. These are called retinoids. The most common is retinoic acid – the ingredient in Retin-A®. NightSkin contains .2% retinyl propionate - one of the retinoids – called an ester. It is converted to retinoic acid by enzymes in the skin. The skin needs vitamin A. Without it, it becomes dry and the hair and nails become brittle.

### Retinoic acid

- Decreases visible pore size.
- Increases elastin and hyaluronic acid.
- Hydrates the skin.
- Makes the skin firmer and more elastic.
- Lessens dark circles around the eyes.
- Can repair environmentally damaged skin.
- Causes smoother, less wrinkled, skin.
- Can increase the formation of collagen.
- Can decrease the brown pigmentation in the skin.

Retinoic acid has actually been shown in one study to improve stretch marks.

The over-the-counter retinol type drugs have effects similar to retinoid acid. Other vitamin A drugs like retinyl propionate, retinyl palmitate and retinaldehyde also work even at low concentrations. Retinyl propionate is less irritating than the retinol that is commonly found in over-the-counter skin creams. It has been shown that retinyl esters do not have to be irritating in order to be effective. In fact, retinyl propionate is converted within the skin, first to retinol, then to retinaldehyde, and then to the active form – retinoic acid. All this is done by the enzymes that are already in your skin. It is the retinoic acid that has remarkable properties. And it is retinoic acid that has been the most widely studied retinoid. All of the claims of retinyl propionate are due to its conversion to retinoic acid within the skin..

Retinyl propionate is a storage form of vitamin A that concentrates in the epidermis. Retinoids are lipophilic – that is they are fat soluble and easily penetrate the epidermis. Retinyl propionate renews epidermal cells, filters ultraviolet light, prevents oxidative stress by acting as an antioxidant, and improves skin aging.

Retinoids degrade when exposed to the ultraviolet light of the sun. When stored at temperatures over 100 degrees, they degrade rapidly. Because of this, retinoids and NightSkin should be applied at night.

### Vitamin C

Vitamin C is the main antioxidant in the body. As an antioxidant, vitamin C fights injury to our DNA by neutralizing “free radicals”. In the skin, vitamin C must be delivered in a concentration of 10%, at a pH of 3.5, and in a special form. Without exposure to light, half of the vitamin C disappears after 4 days. This form of vitamin C is called “L-ascorbic acid”. NightSkin has precisely these specifications.

L-ascorbic acid is safe. No pathological effects have been observed when it is placed on the skin. A 10% concentration did not irritate the skin even when placed under a patch for 4 days!

Like Vitamin A, Vitamin C is rapidly destroyed by light. For this reason, it must be constantly replaced in the skin for maximal effect. High levels of vitamin C can be attained only with topical application; 20-40 times higher concentrations are achieved. This provides the skin with a reservoir of this important antioxidant. Once absorbed, the protection will last days or until inactivated by ultraviolet radiation.

As a powerful antioxidant, it decreases dangerous oxygen free radicals.

Vitamin C decreases brown pigmentation in the skin by slowing its formation. It is extremely effective in reducing the appearance of melasma, a resistant type of hyperpigmentation.

Vitamin C promotes collagen synthesis, leading to a thicker, healthier dermis in the skin.

Vitamin C significantly improves sun-induced aging and decreases wrinkles and increases elastin in the skin. These changes are visible clinically and under the microscope.

The combination of both vitamin A and vitamin C reverses skin changes caused by aging and sun damage more than either alone. NightSkin contains both vitamin A and vitamin C.

### **Glycolic Acid**

NightSkin contains 7% glycolic acid. This fruit acid is derived from sugar cane and is one of the alpha-hydroxy-acids (AHAs). It has been studied since 1974. Other naturally occurring AHAs are citric acid from fruit, lactic acid from milk, and malic acid from apples. There are also other AHAs that are made synthetically in laboratories.

Glycolic acid causes shedding of the upper layers of the skin, a process called exfoliation. This smoothes the skin and decreases acne by keeping the pores clean. It improves dry skin, rough skin, and improves wrinkles and sun damaged skin. By exfoliating, the look of superficial brown pigmentation decreases.

The chemical spurs collagen production, calms inflammation and is an antioxidant. Its effects remain for 2-3 weeks after stopping. Sunblock must be applied to the skin during the day if glycolic acid is used, even at night.

### **Glabridin (Licorice Extract)**

Glabridin is one of the main components of licorice extract. Because the most commonly used pigment reducer, hydroquinone, is now considered unsafe for long-term use (and the FDA plans on banning it from nonprescription creams), I searched for an alternative, herbal, pigment reducer. The safety of licorice extract has never been questioned; in fact, licorice is edible as a food. NightSkin contains .1% glabridin.

Glabridin inhibits the formation of melanin, the brown pigment in the skin.

Glabridin is a component of licorice extract and is effective in managing hyperpigmentation.

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