

Retinoids

Retinoids are a group of medications related to vitamin A.

Tretinoin (retinoic acid) is a vitamin A derived cream that was developed three decades ago, initially for the treatment of acne. Now, however, several important derivatives of vitamin A are used by dermatologists. These include isotretinoin and acitretin. It was found that these drugs affect cell differentiation. This means that cells that have become undifferentiated or disorganised can be reorganised again.

How do they work?

It has been found that tretinoin has some remarkable effects on the structure of skin:

It increases blood flow and new blood vessel formation

Cell differentiation is improved. This means that the epidermis (top layer of skin) is rebuilt because the cells become uniform and well-ordered again. Consequently the epidermis thickens up once more.

Dermal re-structuring occurs with increased production of new collagen just beneath the epidermis. The number of small fibrils that anchor the dermis (deep layer of skin) is doubled after only four months of treatment with tretinoin.

The number of pigment-producing cells is also reduced, with clearing of mottled skin discolouration. Eventually the uneven, dry patches disappear because of the gradual exfoliation of the surface resulting in smoother skin.

Topical retinoids

Many brand-name creams containing retinoids, such as retinaldehyde, may be obtained over-the-counter at pharmacies and supermarkets. However, only the more potent topical retinoids such as tretinoin, isotretinoin, alitretinoin, tazarotene, bexarotene and adapalene are absorbed and are active, and consequently are only available on prescription.

What are topical retinoids used for?

Topical retinoids are most commonly used for acne and psoriasis. They are also useful for photoageing, fine lines and wrinkles and some forms of skin cancer.

Scarring may be improved because of their ability to promote new collagen formation and so improve the appearance of hypertrophic scars.

Other skin diseases characterised by thick or scaly skin are also improved. This includes keratosis pilaris, acanthosis nigricans, lichen planus and granular parakeratosis.

What are the potential side effects of using topical retinoids?

Skin Irritation

Topical retinoids may irritate the skin particularly when first used. This may include skin peeling and stinging.

Excess use results in redness, swelling, peeling or blistering.

Topical retinoids may cause or aggravate eczema, particularly atopic dermatitis.

Irritation may also be aggravated by exposure to wind, cold, sunlight or use of soaps, cleansers, astringents, exfoliants and certain cosmetics.

Photosensitivity

Topical retinoids may increase the chance of sunburn. It is important to wear sunscreen during the day and preferably apply the retinoid only at night.

Pregnancy

Retinoids taken orally have caused birth deformities. It is recommended that topical retinoids are not used during pregnancy or whilst breastfeeding.

Oral retinoids

These include isotretinoin, which is used for the treatment of cystic acne, and acitretin, which is used for psoriasis.