

# How Does Retinol Work on the Skin?

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Retinol is one of the best-known skin care ingredients on the market. An over-the-counter (OTC) version of retinoids, retinol is derived (made from) vitamin A and is primarily used to treat mature-looking skin concerns as well as acne.

That said, retinols are not the same products as prescription [retinoids](#), which are more powerful. However, retinol is still the strongest OTC version available, compared with OTC retinoids such as retinaldehyde and retinyl palmate.

Retinol has many potential skin care benefits, but there are side effects to consider, too.

Curious about whether retinol could be a beneficial addition to your skin care routine? Learn more about this key ingredient below.

## How it works

Retinol is a type of retinoid, which is made from vitamin A. It does not remove dead skin cells, as many other products for mature skin do. Instead, the small molecules that make up retinol go deep beneath the epidermis (outer layer of skin) to your dermis.

Once in this middle layer of skin, retinol helps neutralize free radicals. This helps boost the production of elastin and collagen, which creates a “plumping” effect that can reduce the appearance of:

- fine lines
- [wrinkles](#)
- enlarged pores

While retinol is also sometimes used to help treat acne as well as related scarring, severe acne is usually treated via a prescription retinoid along with other medications that help target inflammation and bacteria.

Finally, retinol has an exfoliating effect on the skin’s surface that can help improve texture and tone.

## What it treats

Retinol is primarily used to treat the following skin conditions:

- fine lines
- wrinkles
- sun spots and other signs of sun damage, sometimes called photoaging
- uneven skin texture
- melasma and other types of hyperpigmentation

To achieve the best results from your retinol-containing skin care product, try using it every day. It may take several weeks until you see significant improvements.

## Side effects

While retinol is approved by the Food and Drug Administration (FDA), this doesn't mean it's free from side effects.

People who use retinols commonly experience dry and irritated skin, especially after using a new product. Other side effects may include:

- redness
- itchiness
- peeling skin

To lessen these side effects, try using your retinol every other night or every third night, and work your way up to using it nightly.

If you continue to experience skin irritation, you may want to talk with a dermatologist. Or better yet, talk with a dermatologist *before* you start using a retinol product to see if it's a good idea for your skin.

[Less than 10 percent](#) of individuals who use retinols may experience more severe side effects, including:

- an acne flare up
- an eczema flare up
- discoloration of the skin
- photosensitivity to UV light
- blistering
- stinging
- swelling

Applying retinol [30 minutes](#) after washing your face may also reduce skin irritation.

Your risk for side effects may be greater if you use more than one retinol-containing product at the same time. Read product labels carefully — especially if you're using a combination of products labeled as “anti-aging” or for acne, which are more likely to contain retinol.

Due to the risk of sun sensitivity, retinols are best applied at night.

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## Cautions

Sun exposure may worsen some of the drying and irritating effects of retinol, according to the [Skin Cancer Foundation](#).

Ironically, sun exposure could put you at risk for some of the same exact effects you're using retinol for, such as age spots and wrinkles. To reduce such risks, wear a mineral-based sunscreen (an [SPF of 15 at least](#)[Trusted Source](#)) whenever you plan to spend long periods outside.

It's [generally recommended](#) that pregnant individuals avoid retinols. Talk with your doctor about retinol if you think you're pregnant or are planning on getting pregnant at some point in the near future.

Using retinol may aggravate eczema and rosacea. Avoid using it if you have an active case of either.

## When to contact a doctor

OTC retinols are available without a prescription, but you might want to consider talking with a dermatologist before using a specific brand. They can help you assess your overall skin condition and recommend the right products based on your individual needs.

Alternatively, if you're not seeing results from common beauty or drug store products, your dermatologist may recommend a prescription retinoid instead.

While prescription formulas are indeed stronger, this also means they carry a higher risk for side effects. Follow your doctor's instructions and wear sunscreen every day.

If you are not seeing the desired cosmetic results after trying retinol, there are many other options to discuss with a dermatologist, such as:

- [alpha-hydroxy acids](#), such as glycolic and citric acids for anti-aging
- [beta-hydroxy acids](#) (salicylic acid) to help improve skin texture and acne

- [chemical peels](#) to help shed the outer layer of skin for improved tone and texture
- [dermabrasion](#), which may also help texture and tone
- [fillers](#) for fine lines and wrinkles
- [laser treatments](#) for unwanted red and brown pigment (broken capillaries) or scarring

## Frequently asked questions

### How long does it take to see results from retinol?

For most OTC retinols, it may take a few weeks of continued use to see results. According to a [2015 study Trusted Source](#), a “significant reduction” in wrinkles was seen in participants who used a retinol for 12 weeks.

A more recent [study from 2019](#) found that wrinkles around the eyes and on the neck improved in individuals who used retinol for 8 weeks.

### What are the benefits of using retinol?

Using retinol may help:

- [treat mild acne](#)
- [reduce some photodamage](#) your skin has experienced from time out in the sun
- [reduce signs of aging Trusted Source](#), such as wrinkles around the eyes
- improve skin’s overall appearance

### Can you put moisturizer over retinol?

Yes, you can. If you’re using a retinol product, your nightly routine should look something like this, according to the [American Academy of Dermatology](#):

1. Wash your face.
2. Dry your face.
3. Apply retinol.
4. Wait a few minutes, then apply moisturizer.

### Can retinol ruin your skin?

Most OTC retinol products are safe to use as directed, but there are some common side effects that can cause irritation in the short term. These side effects include:

- dry skin
- peeling
- sensitivity to the sun
- an allergic reaction (rare)

To reduce the risk of irritation or allergic reaction, talk with a dermatologist about the specific OTC retinol brand you're considering. They may have good insight.

It's also a good idea to do a "use test." This is when you put a small amount of the product on your inner forearm for several days to make sure you don't have a reaction prior to applying it all over your face

## **The bottom line**

Retinoids are known for having positive effects on both aging and acne-prone skin.

Retinol is the most accessible form of retinoids, as well as the best choice for most people's skin. However, it can take a few months of constant use before you see results.

Consider contacting a dermatologist before buying a specific retinol product. They may have good insights, especially if they are familiar with your skin.

Last medically reviewed on January 4, 2022

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Medically reviewed by Clare Wightman MS, PAC, [Dermatology](#), Medical Research — By Kristeen Cherney — Updated on January 4, 2022

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# What's the Difference Between Retinol and Tretinoin?

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Everyone's skin is different, but no one's skin is immune to the effects of [sunlight](#), [stress](#), and [natural aging](#). To treat these effects, you might decide to use retinoids.

Retinoids are chemical compounds related to vitamin A.

Retinol and tretinoin are both examples of retinoids. Tretinoin can also be called all-trans retinoic acid (ATRA). It's sold under many brand names, including Retin-A.

With so many similar-sounding names, it's easy to get these retinoids confused. While retinol and tretinoin are alike, they're not quite the same.

Let's take a look at the differences between these two retinoids.

## Retinol vs. tretinoin strength

When it comes to treating your skin, the biggest difference between these two compounds is their strength.

Retinol is a vital nutrient. It's fat-soluble, which means it can stay in your body for a long time. According to [2021 research Trusted Source](#), your liver can take this stored retinol and convert it into tretinoin. Your body will use the tretinoin for a variety of biological functions.

For the purposes of skin care, tretinoin can be thought of as a more concentrated version of retinol. This means that tretinoin is stronger than retinol.

This difference in strength can help guide your decision-making when it comes to choosing a skin care product.

## Prescription vs. over-the-counter

[Retinol](#) is found in a wide variety of skin care products available over-the-counter (OTC). You can find products containing retinol at most major drugstores and in the personal care section of many grocery stores.

Some of these products may list the retinol content as a percentage. However, this is not required by the [Food and Drug Administration \(FDA\) Trusted Source](#), so not all products will provide this information. It's generally best to start with a lower concentration of retinol and make only small, gradual increases as needed.

Because tretinoin is stronger than retinol, it's available only by prescription.

Whether you want to try retinol or tretinoin, a conversation with a [dermatologist](#) may help you to decide the best treatment plan for you.

## When they're used

Both retinol and tretinoin are commonly used as topical treatments for a variety of skin conditions, according to [experts](#). These include:

- [acne](#)
- [melasma](#)
- [solar comedones](#)
- [liver spots](#)
- [sun spots](#)
- [fine wrinkles](#)

Under the direction of a doctor, people sometimes use prescription tretinoin to treat other skin conditions, [2021 research Trusted Source](#) says. Tretinoin can take the form of a cream applied to the skin or an oral tablet.

OTC retinol might not be an adequate substitute in these cases.

Consult with a doctor before using retinoids to treat conditions like:

- [basal cell carcinoma](#)
- [squamous cell carcinoma](#)
- [acute promyelocytic leukemia \(APL\)](#)
- keratosis follicularis (Darier disease)
- [psoriasis](#)

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## Benefits of tretinoin and retinol

Because they are so similar, retinol and tretinoin share many of the same benefits. These include:

- **Acne treatment.** A [2017 review Trusted Source](#) suggested that topical retinoids are highly effective in treating acne. Retinol and tretinoin are both used extensively for this purpose.
- **Pro-aging support.** Retinoids have been used [since the 1970s](#) to even out skin tone and reduce fine wrinkles. This is a very common and well researched use for these compounds.
- **Collagen production.** A [2016 study Trusted Source](#) confirmed that treatments of both retinol and tretinoin increased [collagen](#) production. This leads to many health benefits, such as improved skin elasticity.

While retinol and tretinoin both have similar benefits, tretinoin tends to work faster and the effects are greater.

## Risks and side effects

Retinoids are not without risks. In this case, too, there's overlap between retinol and tretinoin.

Risks may include:

- **Irritation.** Retinoid creams can irritate the application site, especially after you first start using them or at higher concentrations. Use caution when applying retinoid cream around your eyes and mouth.
- **Hyperpigmentation.** This is a term for patches of dark skin marks. People with dark skin are especially likely to have this reaction to retinoids, according to the [American Academy of Dermatology](#).
- **Photosensitivity.** Avoid exposure to the sun when using retinoid creams, even if you're only applying them at night. According to a [2021 review Trusted Source](#), retinoids increase your risk of sunburn.
- **Pregnancy risks.** Speak with a doctor about using retinoid creams if you're pregnant or might become pregnant.

While tretinoin can have more significant benefits than retinol, it also tends to cause more pronounced side effects.

## Choosing a retinoid

Choosing the right retinoid treatment for you will depend on your skin type, risk factors, and the desired outcome. A dermatologist can help you make an informed decision that works for your unique set of circumstances.

### Who should try retinol?

For most people, retinol is going to be the best first choice for retinoid treatments.

Because retinol has a lower concentration, the irritation it causes will likely be less severe. If you're just starting a new regimen, you can apply retinol cream every other day at first, so your skin has more time to adjust to the treatment.

If you're not seeing the desired effects after 2 to 3 months, you can always try switching to a higher percentage retinol cream. These are OTC medications, so you can switch to a lower or higher concentration as you see fit.

Be on the lookout for adverse reactions whenever you change your retinol treatment.

### **Who should try tretinoin?**

If you've tried retinol and haven't gotten the results you're after, you might think about switching to tretinoin. The higher concentration of tretinoin tends to make its side effects more pronounced than retinol, so you may want to take that into consideration before making a decision.

Tretinoin is available by prescription only, so you will need to speak with a doctor before you can purchase it. Be sure to tell them what, if any, retinol treatments you may have already tried. Prescription tretinoin can be adjusted to your individual needs.

## **Takeaway**

Retinol and tretinoin are both retinoids, which means they are compounds that come from vitamin A. They're both commonly used in topical creams to treat a number of skin conditions.

Though they're similar, tretinoin is more concentrated than retinol. For this reason, tretinoin acts faster and has more dramatic results — but its side effects can be more severe, too.

Retinol is available OTC, but tretinoin requires a prescription. If you're thinking about using one of these treatments, it can be helpful to discuss it with a doctor first, especially a dermatologist.

Whichever treatment you choose, be sure to follow the recommended usage guidelines and be aware of the potential side effects. If you have a reaction that you're not sure about, it's always best to consult with a healthcare professional.