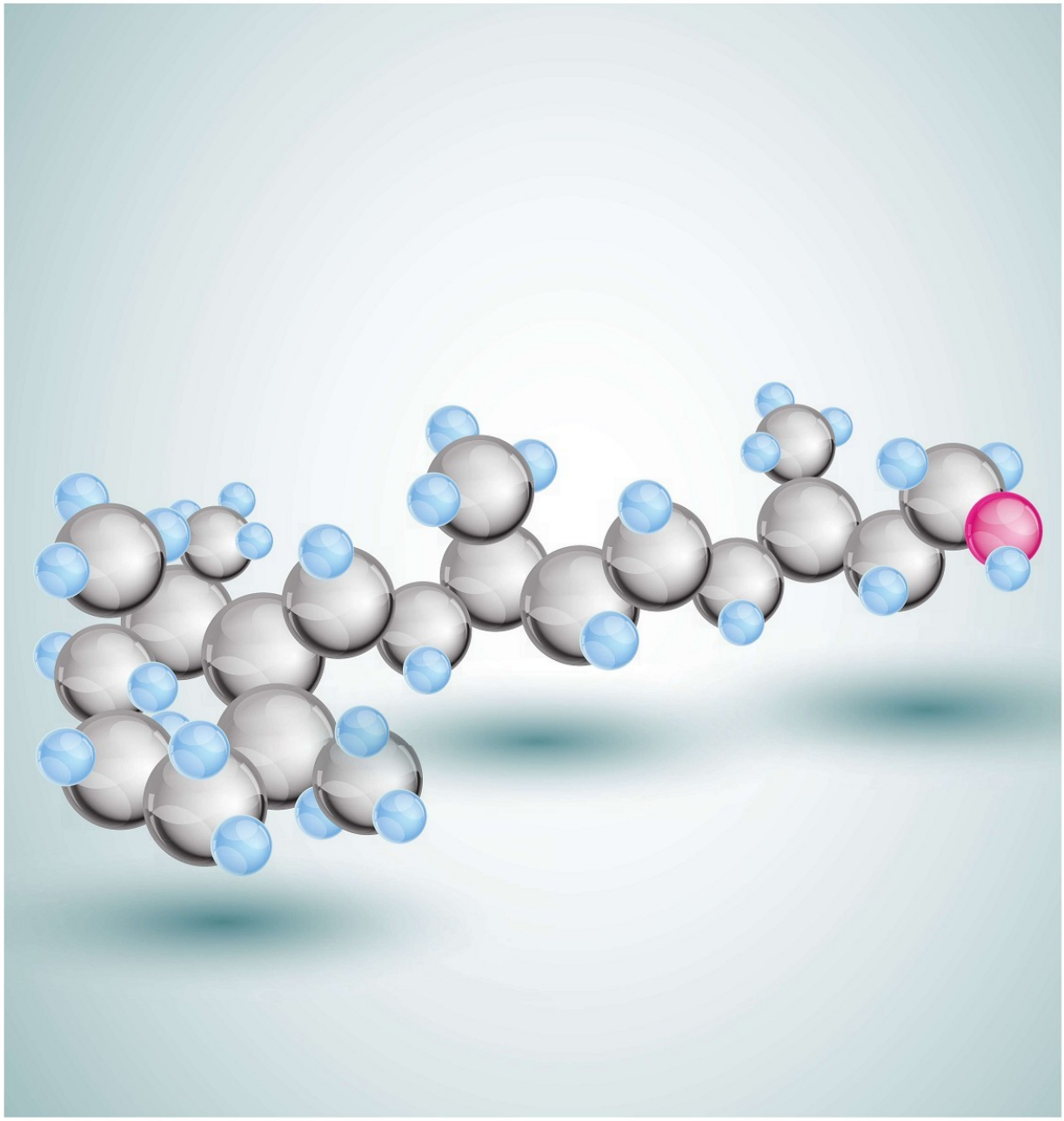
RESOURCES

# Retinol – Just the Facts

by Robert Manzo



In the skin care industry, there is a lot of misinformation circulating about retinol. However, information found in clinical studies, as well as articles in medical and academic journals has debunked some of the sentiments once touted as facts.

### DOES RETINOL INCREASE SKIN TURNOVER?

No. While retinol may increase cell turnover in some cases, the primary action of retinol in skin is to "normalize the keratinization of skin." Simply put, it makes the skin behave normally as it goes through the natural skin cell growth cycle, leading to the final sloughing process. The precise biochemistry of how it normalizes skin has not yet been discovered. Acne improvement is an example of the action of retinol. Improvement of fine lines and wrinkles is another example of the action of retinol.

### ARE ALL RETINOIDS THE SAME?

No. Retinoids, the class of vitamin A ingredients, include the following (not an exhaustive list):

| Ingredient | Other name | Function |
|---|---|---|
| Isotretinoin (prescription) | Accutane/Roaccutane, Generic | It is taken orally for severe acne. |
| Tretinoin (prescription) | Retin A, Renova, Retinoic Acid | It is a topical that is primarily used for anti-aging or acne. |
| Adapalene (recently over-the-counter) | Differin | It is an alternative to tretinoin. |
| Retinol | Non-drug; it converts to retinoic acid on the skin. | It is a topical that is primarily used for anti-aging or acne. |
| Retinal aldehyde | Non-drug; it converts to retinoic acid on the skin. | It is a topical that is primarily used for anti-aging or acne. |

The key is to remember that using isotretinoin or tretinoin requires a prescription to dispense or use. Retinol does not require a prescription. Retinol converts to retinoic acid through an interaction with the skin. The conversation happens over time and is not a 100 percent conversion on skin. This chart presents the ingredients in general and in order of effectiveness and efficacy of use, without mentioning side effects.

It is well known retinol can cause irritation, peeling, and swelling of the skin at higher levels. The skin can tolerate a maximum of 0.4 percent without having such an adverse effect. Be careful in reading product labels. Sometimes the product label will have an arbitrary number on it, which does not correspond with the actual concentration in the bottle. Since it is not required to put the concentration on the label for retinol, skin care professionals will not know the precise concentration.

If professionals have a product that has a controlled-release profile of retinol, they will be able to apply more retinol on skin over time due to the release profile of the retinol. This method is always preferred since professionals want to get the highest concentration they can without the irritation.

### DOES RETINOL ALWAYS WORK?

Retinol works part of the time. Professionals should be careful of product occlusion, which happens when a product is used and leaves behind an occlusive film. Professionals can see with

the images above that the face on the left shows no occlusion under a special ultraviolet image, but when the skin surface is washed with an occlusive cleanser the face becomes dramatically occluded. If professionals use a cleanser that has ingredients like cetyl alcohol, cetearyl alcohol, or other waxes like these ingredients, retinol will not work since it is not penetrating the skin's surface. This guideline goes for any active ingredient.

Read labels carefully, especially cleanser labels. The rule of thumb is that if professionals hold the cleanser up to the light and can see through it, then it has no occlusive in it. If it is milky or pearlescent, there is a high probability it will occlude.

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### CAN RETINOL DRY SKIN AND LEAVE IT FEELING ROUGH?

Yes. A complete product regimen is very important when using retinol. As retinol interacts with the skin, it consumes water as a byproduct of the reaction. It is critical to not only keep the stratum corneum hydrated, but also the mid-epidermal and upper-dermal regions of the skin. Hydration can be accomplished by ensuring that the spa's moisturizers have at least a combination of glycerin, hyaluronic acid, and dimethicone. This combination will yield the best results and keep the skin from becoming more inflamed.

There are a number of very good anti-inflammatory products on the market that work by several different methods to keep inflammation managed. Using these products in conjunction with a retinoid is a very good approach.

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### SHOULD CLIENTS USE A RETINOL OR VITAMIN A DERIVATIVE DAILY?

No. There is a fair amount of evidence in the market through consumer's experience that supports the notion that long-term chronic use of a retinoid can actually make wrinkles and sagging worse in skin. This idea can be seen in some clinical research, along with internal research that shows that the regular use of retinoids over the course of 12-to-18 months actually thins dermal tissue. Studies confirming these findings are underway. However, it is always a good practice with retinoids to leave a client on these products for nine months and let the skin rest for three months. Following this practice will serve clients well long-term.

### CAN RETINOL BE USED, EVEN IF A CLIENT HAS ROSACEA?

No. Be careful of any inflammatory disease that may be present when using vitamin-A derivatives, including retinol. Unless the client's rosacea is well-controlled and the client has a history of tolerance to retinol, it should not be used. Lupus and other immune-based diseases should be handled in a similar way.

Acne is an inflammatory disease and considerations needs to be addressed in this regard as well. When introducing a retinoid into an acne regimen, be mindful of the other ingredients in the regimen. Typically, the following ingredients are used in an acne regimen: benzoyl peroxide, salicylic acid, glycolic acid, retinoids, sulfur, antibiotics, and birth control.

If the skin care professional is going to use a retinoid, they should use a lower concentration of benzoyl peroxide. This concept can be reversed if the professional identifies the root cause of the acne precisely. Salicylic acid works fairly well at one percent as an anti-inflammatory. At two percent and higher, it can dry the skin, which, in this case, means that it suppresses oil on the skin, giving the impression of dryness. Use a sebum supplement, like capric/caprylic triglyceride, to keep the skin supple and without the dry feeling.

Start with either a low-dose retinoid or with directions that provide a low frequency of use (once daily) and then make the doses more frequent as the tolerance improves. When using a topical antibiotic, be careful of skin occlusion. Put the active ingredients on first.

Use an unbuffered glycolic acid cleanser to wash the face twice daily. This action provides two benefits. The first is gentle exfoliation daily and the reduction of the pH of the skin. The second benefit is that the lower skin pH will slow bacterial presence on the skin and potentially reduce redness in that way.

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*Robert Manzo's patented and proprietary cosmetic chemistry and product formulations are the result of over 25 years in the skin care development profession. He has conducted clinical research and developed specialized skin care products and techniques in Europe, the US, South America, and Asia, affording him an expansive knowledge base to achieve personalized solutions for Skinprint's clients. He has published articles on skin chemistry and the role of anti-bacterial and anti-inflammatory ingredients on skin, and is a standing member of the Society of Cosmetic Chemists and the American Chemical Society. skinprint.com*