



Caring For Your Skin



Spring-Summer 2019

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Welcome to the latest issue of the **Caring For Your Skin** Newsletter. In this issue, I address:

- 1) Finding a good vitamin C serum in the current marketplace
- 2) Update on sunscreens and sun-blocks – What products provide the best protection?
- 3) Our Xeomin versus Dysport study: The results are in.
- 4) Updated information on Lyme Disease & Tick Bites in Vermont

Litigation in the Vitamin C Serum Marketplace



In last year's Spring-Summer newsletter I discussed my recommendations for maintaining and improving the appearance of facial skin with topical skin care products.

(<http://www.rutlandskin.com/Newsletter-Summer 2018.pdf>) I strongly recommended daily use of a vitamin C serum in addition to sun protective measures, moisturizers, and the use of tretinoin cream. I am a strong proponent of vitamin C serums. However, it is important to know that most vitamin C products available have the wrong ingredients and (or) level of acidity (pH) for maximal effectiveness.

The original formulas for vitamin C products that were developed over years of scientific study by dermatologist Dr. Sheldon Pinnell at Duke University, are under patent protection until 2027. <https://www.skinceuticals.com/drpinell> They are sold by SkinCeuticals, a division of L'Oreal. They are very expensive, around \$170 for a small one ounce bottle. A number of companies have been selling products with similar formulations at a lower cost, including Cosmetic Skin Solutions, the brand that I had previously recommended.

Last year L'Oreal brought a law suit against a company selling a knock-off version of one of their vitamin C formulas. <http://www.thefashionlaw.com/home/loreal-is-suing-drunk-elephant-for-patent-infringement-over-its-buzzy-vitamin-c-serum> Since then other companies, like Cosmetic Skin Solutions, have removed their products that might infringe upon SkinCeutical's patents.

So what choices do patients now have for the best formulations of topical vitamin C serums? If cost isn't a problem, you can buy a product from SkinCeuticals <https://www.skinceuticals.com/skin-care/serums/vitamin-c-serum>. However, if those prices are

a bit steep for your budget you have several other choices. You can scour the cosmetic marketplace for other knock-off versions. On a brief Amazon.com search I found several products with a comparable ingredient list and acidity level. If genuine, these other knock-off products may not last as these companies may also be liable to patent infringement. You can choose an alternative formula that has less scientific evidence of effectiveness. For example, Cosmetic Skin Solutions has discontinued its SkinCeutical knock-off versions of vitamin C and has replaced them with formulas that have substituted the antioxidants asiatic acid and glutathione for the antioxidant ferulic acid. This company sells ferulic acid separately that can also be applied along with one of their vitamin C serums.

<https://www.cosmeticskinsolutions.com/serums/>

With this shake-up in the vitamin C serum marketplace you might ask whether using a vitamin C serum is worthwhile. I strongly believe it is, along with other sun-protective measures, as do other dermatologist <https://www.refinery29.com/en-us/skinceuticals-c-e-ferulic-serum> The sooner you start using one, the better, to protect your skin from natural and environmental aging factors.

For more on vitamin C serums and other measures to protect and improve the appearance of facial skin see <http://www.rutlandskin.com/Newsletter-Summer 2018.pdf>

Update on Sunscreens & Sunblocks

UV exposure is thought to be one of the most important factors causing skin cancer and may be responsible for up to 80% of visible aging changes in Caucasians, as shown in one study on Caucasian women <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3790843/>.



Almost every day I get asked for recommendations on what sunscreen or sun-block to use. A sunscreen is a chemical that absorbs damaging ultraviolet sunlight to lessen skin damage that leads to aging skin and skin cancers, including melanoma. A sun-block is a material that physically shields the skin from damaging sunlight such as mineral sun-blocks like zinc oxide. Nowadays many use the terms sunscreen and sun-block interchangeably. Sun-blocks are also referred to as physical sunscreens, and the others as chemical sunscreens. Many products have a mixture of both physical and chemical sunscreen agents.

To get optimal protection you need products that protect your skin from both harmful ultraviolet A and B (UVA & UVB) rays. No one single product provides maximal protection from both, so many sun protective products contain mixtures of several sunscreen chemicals and (or) mineral sun-blocks.

Zinc oxide is currently the best single sun protective agent, other than protective clothing, for the following reasons:

- 1) It provides reasonably good protection from UVA & UVB.
- 2) It provides longer-lasting protection than some chemical sunscreens, provided it doesn't get washed or rubbed off your skin. For best protection it is still recommended to repeat the applications every two hours, sooner if swimming or perspiring.
- 3) It appears relatively safe for humans and the environment, compared to some of the chemical sunscreens, like oxybenzone that may cause skin rashes, hormonal disruptive effects and have negative effects on the environment like damaging coral reefs.

Titanium dioxide is another common mineral sun-block that is also safe, but it doesn't provide adequate protection from UVA rays unless combined with zinc oxide or chemical sunscreens.

The downside of the mineral sun-blocks is that they may leave a whitish color to the skin that people do not like, particularly for facial skin protection. Some products like Elta MD and Cotz have mineral sunscreens with a brown tint added to mask the white color. Women find that they work well as a makeup and sun-block all-in-one. Grinding the mineral products up into smaller sized particles (known as micro-sized or nano-sized) is another way to lessen the white color (e.g., Elta MD UV clear), but the micro-sized particles may weaken the UVA protection to some degree. Coppertone Pure & Simple is an affordable sun-block with an SPF of 50 yet doesn't cause as much skin whitening as some zinc oxide sun-blocks, after rubbed in well.



There is little evidence that the mineral sun blocks are harmful to humans, although there is some concern that inhalation into the lungs of spray on sun-block may be harmful. There has also been some controversy about the absorption through the skin of the nano-sized formulations, though this appears to be of little risk.

<https://www.ewg.org/sunscreen/report/nanoparticles-in-sunscreen/>

A sun-block with 20% zinc oxide would be sufficient for most everyday applications. A lower concentration of zinc in combination with titanium dioxide or chemical sunscreens can also work. For low cost, safe and effective sun-blocks read this link

<https://www.marketwatch.com/story/this-is-one-of-the-safest-sunscreens-you-can-buy-right-now-and-it-only-costs-9-2019-05-22?mod=personal-finance>

Draw-backs of chemical sunscreens

- 1) greater risk of absorbing through your skin and possibly causing hormonal disruptive effects, and being into the milk of breast-feeding women
- 2) some are more likely to cause an allergic reaction
- 3) may be harmful to the environment, like coral reefs
- 4) the effectiveness of some breaks down more quickly and so they need to be reapply more often to maintain sun protection (<http://www.skinacea.com/sunscreen/sunscreen-stability.html#.XNhjuo5KhhE>)

Despite these drawbacks, on recent testing, Consumer Reports found that chemical sunscreens provided better sun-protection than mineral sun-blocks. However, the highest rated sunscreens all contained oxybenzone, and the safety of this chemical has not been fully determined. <https://www.webmd.com/melanoma-skin-cancer/news/20190430/consumer-reports-names-top-sunscreens-for-2019>

For more information on sunscreen chemicals you might want to avoid read the following two linked articles.

<https://www.ewg.org/sunscreen/report/the-trouble-with-sunscreen-chemicals/>
<https://www.healthline.com/health/sunscreen-vs-sunblock#sunscreen-or-sunblock>

Europe has several sunscreens that provide better long-lasting UVA protection than what we currently have available in the US, that pose less of a potential health risk. Hopefully the FDA will approve some of them in the near future so that we might benefit from better UVA protection.

Read about 5 common sunscreen mistakes that people make at

<https://www.aad.org/public/skin-hair-nails/skin-care/sunscreen/common-sunscreen-mistakes>



I also highly recommend sun protective clothing including swim clothes that can be found at department stores, Dick's Sporting Goods, www.Amazon.com and www.Coolibar.com. The protective clothing lessens the risk of side effects from the chemical sunscreens, saves time and in the long term is less costly than repeated applications of large amounts of sunscreen and sun-block. And don't forget to wear UV-protective sun glasses to help protect against cataracts.

The bottom line: Zinc oxide containing sun-blocks are currently one of the best options, and may be safer than some of the chemical containing sunscreens, particularly those that contain oxybenzone. Tinted versions work well for women (e.g., eltaMD UV Physical SPF 41). Micro-sized zinc oxide products with a chemical blocker (e.g., eltaMD UV clear SPF 46)

<https://eltamd.com/product/uv-clear-broad-spectrum-spf-46/> or Coppertone Pure & Simple are recommended for men who want to avoid the white look. Coppertone Pure & Simple is also water resistant up to 80 minutes and is suitable for time at the beach or pool <https://amzn.to/2Qhl4ly> For swimming I also recommend TruKids Sunny Days Sport SPF30+ zinc oxide lotion. It adheres to the skin well even when exposed to water, but looks very white. <https://www.trukid.com/products/trukid-sunny-days-sport-spf30-water-resistant-lotion-3-5-oz>

If you don't like the mineral containing sunscreens, find a broad-spectrum sunscreen that you like with an SPF of 30 or higher, preferably without oxybenzone, and use it daily. By using it regularly you will lower your risk of getting a skin cancer and keep your skin looking healthier. We will have more and better options once the FDA approves some of the sunscreens currently available in Europe.

I also recommend putting a vitamin C serum on your face in the morning, and after it dries cover it with a sun-block for better protection against skin cancer and skin aging. The vitamin C serums help protect your skin from the damage caused by the UV light that gets through your sunscreen or sun-block, as well as quenching damaging free-radicals that occur with the skin's natural metabolism.

And remember to cover your skin with tightly woven fabric and wear wide-brim hats to minimize the sun damage, and so that you do not have to cover large areas of skin to help minimize absorption of some of the chemicals in sunscreens, when applied to larger areas.

Crow's Feet Faceoff – Dysport versus Xeomin **The results are in.**



In the US there are currently three approved forms of botulinum neuromodulators that are FDA approved for treating wrinkles: Botox®, Dysport® and Xeomin®. A few years ago we introduced Xeomin in our practice and a number of patients did not feel that it lasted as long, so we stopped using it. Dr. McCauliffe spoke to a Xeomin representative about this and he informed us that they have learned that Xeomin needs to be prepared differently than Botox and Dysport before injection for maximal effectiveness. To verify that this is the case Dr. McCauliffe tested Xeomin against Dysport. Dr. McCauliffe chose to compare Xeomin to Dysport rather than Botox, as a previous study revealed that Dysport appears to last longer in the crow's feet area compared to Botox <https://abcnews.go.com/Health/botox-dysport-face-off-crows-feet/story?id=13888299>

Additionally, the vast majority of Dr. McCauliffe's patients choose to use Dysport rather than Botox.

We had 15 participants, 13 female and 2 male. One crow's feet area randomly received Dysport and the other Xeomin, with the participants and Dr. McCauliffe not knowing which product was used on each side. We had each test subject come in for photos before treatment

and at 2, 3 and 4 months after treatment. Four of the patients came in for the all 4 photo sets, three for three sets, three for two sets and five did not follow-up for any photos within the four month test period. We were thus limited to examining the seven patients with three and four sets of photos. Through careful examination of the seven patient photo sets Dr. McCauliffe was unable to find any meaningful difference in the effects of Xeomin compared to Dysport. **We conclude that they work similarly and that our previous experience that Xeomin did not last as long may have been the result of the manufacturing process of Xeomin bottles that requires an extra step in preparation before injection.**

Currently the cost of Xeomin is similar to Dysport so there is no real advantage to switching to Xeomin. We expect that the cost of Botox, Dysport and Xeomin might be adjusted downward with the upcoming FDA approval of at least two new botulinum products within the next one to two years. The effect of one of these products is claimed to last two months longer than the three products currently available. Let's hope so!

Update Lyme Disease and Tick Bites

Female Blacklegged Tick (Ixodes scapularis) Deer tick
Size comparison once feeding



We have recently updated our **Lyme Disease & Tick Bites** hand out (<http://rutlandskin.com/Lyme%20Disease%20&%20Tick%20Bites.pdf>). We now include a website link that provides information to help you identify whether or not the tick that has bitten you is a deer tick (https://tickencounter.org/tick_testing). The link also provides an address where you can mail ticks to be tested for infectious agents. We recommend that when you remove an attached tick from your skin, save it in a small zip-lock sandwich bag. Then if you get ill within 30 days of getting the tick bite, see your primary care provider promptly and if your doctor is having difficulty determining the cause of your illness, the tick can be mailed to a lab for testing to determine if it has any infectious agents that may be causing your illness. The hand out also has information on ways to avoid getting a tick bite, and the signs and symptoms of Lyme disease.

In closing, I hope you found items of interest in this issue of the **Caring For Your Skin** Newsletter. If you are not on the e-mailing list and would like to receive future newsletters via e-mail, or would like to have a particular topic covered in a future newsletter, e-mail your request to C4YSkin@gmail.com



Have an enjoyable summer and, as always, remember to use sun protective measures daily.
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