



Jeff Donovan MD PhD FRCPC

Dermatologist, specializing in hair loss

RE: ADVICE FROM DR DONOVAN FOR “NANO FREE” TITANIUM DIOXIDE & ZINC OXIDE PRODUCTS FOR PATIENTS WITH FFA

There is only a very limited amount of evidence right now to support that sunscreen use contributes in some way to the development of frontal fibrosing alopecia (FFA). The exact mechanism still has to be determined but my recommendations at present is that patients with FFA consider avoiding cosmetic products with titanium dioxide “*nano particles*” and organic filters until we get better evidence one way or another. Avoidance of zinc oxide nanoparticles might make sense too - although granted there is less evidence for this. It’s important for our patients to be aware that we can’t say for sure if this is actually the right way to proceed.

I encourage patients for now to look for sunscreens that:

- 1) do not contain “nanoparticles” of either zinc or titanium dioxide and
- 2) do not contain organic filter ingredients such as avobenzone, homosalate, octinoxate, octisalate, octocrylene, and oxybenzone.

My preference is for patients to consider sunscreens with only zinc oxide (or a sunscreen with zinc oxide plus a “non nano” particle containing titanium dioxide).

The following is a list of zinc oxide containing sunscreen. Zinc oxide has broad UVA UVB (and UVC) protection although may not protect as well as titanium dioxide in the UVB range. Zinc oxide however, is much better than titanium dioxide in blocking UVA rays. Consumers have a choice of zinc oxide based sunscreens derived from nanoparticles or zinc oxide sunscreens derived from standard sized zinc oxide (non-nano). We don’t really know which is better or truly if there is any difference. There is some research to suggest a possible benefit from non-nano containing zinc oxide. Consumers looking for non-nano containing zinc oxide products that do not contain organic sunscreen filters may consider the following list.

Zinc oxide containing sunscreens without use of Nanoparticles (non-Nano); No organic filters

Product	Zinc oxide concentration	Where to buy
Badger Company, Natural Mineral Sunscreen Cream, SPF 30	14 to 18.75 %	Amazon, Badgerbalm.com
Raw Elements Eco Formula SPF 30	23 %	Amazon
Loving Naturals Clear Sunscreen	24.7 %	Lovingnaturals.com, Amazon
Elemental Herbs All Good Kids	22.5 %	Elementalherbs.com, Amazon
Babo Botanicals Clear Zinc	22.5 %	Babobotanicals.com, Amazon
Beautycounter Protect All Over Sunscreen	19 %	Beautycounter.com

Titanium dioxide is the second inorganic (“mineral”) sunscreen ingredient. Just like zinc oxide, there are nanoparticle (so called TiO₂-NP) and non-nanoparticle based titanium dioxide products for consumers to select from. We really don’t know (yet) if titanium dioxide based nanoparticles cause any issues or not. They have been on the market for about 15 years. We don’t have any good reason to believe one is truly better than another although there is some theory that smaller nano particles could possibly be more likely to be trapped in hair follicles and incite various immune reactions. That is still speculative.

For those who want to use both a zinc oxide and titanium dioxide containing sunscreen that lacks nano-particles, the following is a very good list to consider.

Zinc oxide and Titanium dioxide containing sunscreens without use of Nanoparticles (non-Nano); No organic filters

Product	Zinc oxide concentration	Titanium dioxide concentration	Where to buy
Green Beaver Adult Natural Mineral Sunscreen Lotion	8 %	8 %	Greenbeaver.com, Amazon
Dolphin Organics	23 %	6 %	Dolphinorganics.com, Amazon
True Natural Broad Spectrum SPF 30 Baby and Family	6 %	6 %	Truenatural.com, Amazon
Hang Ten	3.7 %	5.6 %	Amazon
Mexitan Tropical Sands Mineral Sunscreens	22.5 %	5 %	Mexitan.com Amazon

ARTICLE OF INTEREST

I encourage patients to review the discussion available at:
<https://donovanmedical.com/hair-blog/ffa-tio2>