

Protect Yourself Against the Florida Sun

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Recently being asked to discuss Sun exposure and protection on a local radio broadcast had me thinking about how many of my patients do not know about sunscreens and how to protect themselves from the harmful UV rays. I believe that all of my patients should be educated on the basics of Sun exposure and the risk, along with how to choose a good sunscreen.

What is SPF?

First let's start with a definition of SPF since most people do not even know what it means. A sunscreen's SPF number is calculated by comparing the time needed for a person to burn unprotected with how long it takes for that person to burn wearing sunscreen. So a person who turns red after 20 minutes of unprotected sun exposure is theoretically protected 15 times longer if they adequately apply SPF 15. Therefore, they would burn in 300 minutes instead of 20 minutes. Also remember that it says properly applied, because a lot of sunscreens rub off or doesn't stay put, it is advised that one reapplies the sunscreen every two hours or after swimming or sweating. Even if the sunscreen says waterproof – there is no such thing as a waterproof sunscreen, just water resistant.

Proper application of sunscreen is essential.

You should use a liberal amount – estimated at one ounce (shot glass full) and apply the sunscreen 30 minutes before sun exposure. This allows the product to be absorbed and begin its protection before sun exposure. The sunscreen also needs to be reapplied at least every 2 hours regardless of the SPF or waterproofing. With proper application then the full protection from sun exposure is available.

What SPF do I choose?

This depends on where you are going and how long you will be exposed. If you are going to the beach and will be in the water I would use a higher level of protection because the sand, water and snow all reflect and increase the intensity of the UV exposure. Remember that SPF only measures UVB protection. An SPF 30 gives about 96.7% protection rate; SPF 50+ gives about 98% and 100+ gives 99% protection from UVB rays. Most individuals would do fine on a properly used SPF 30. Remember if you use a 100+ but only use half

the amount (1/2 ounce) you get less than half the protection – about only 8-10%. So your best bet is to liberally apply the sunscreen and apply often for the best protection.

What do you look for in a quality sunscreen?

There are so many choices out there these days, but disturbingly there are only a handful of good quality sunscreens available. First make sure the product covers both UVA and UVB coverage. UVA rays are the ones that cause most of the cancers, skin damage, DNA damage, immune system depression and aging process. UVB rays are the ones that mainly cause the sunburn and the one that most sunscreens work to protect us against. *UVA damage is not visible; therefore the damage it causes is often discovered after it is too late to repair.* UVA radiation can even pass thru glass windows! So even in the winter we are exposed to this form of damage. You need to look for a product that has either *zinc oxide, titanium dioxide, Mexoryl SX or Avobenzone* as its primary active ingredient. These are very good at blocking UVA and UVB radiation. Zinc and titanium are physical blockers and mineral based. A lot of people do not like them as they leave that white film on the skin; however, these are the best options for infants and young children. Avobenzone is the weakest UVA blocker but a main one available in the US. Mexoryl SX is very good and available in some higher end and European products. It was recently approved for use in the US but used in Europe for years. Tinosorb S and Tinosorb M are the highest UVA blockers and the best on the market, but are not available in the USA at this time. They are used in many European sunscreens and considered safe.

What do you want to avoid in a sunscreen?

The big items to avoid are Oxybenzone and Retinyl Palmitate. If either of these chemicals is listed in the ingredients of the sunscreen pass on the product. Oxybenzone is absorbed thru the skin in significant amounts and associated with photo allergic reactions. It is also a noted endocrine disrupter such as a reduction of testosterone in men and estrogen issues in women. Oxybenzone has also been linked to gene mutations, cell death, and cardiovascular disease. Retinyl Palmitate, when exposed to UV light, breaks down and produces toxic free radicals that can damage DNA. It is readily absorbed in the skin and is a known reproductive toxicant. More than one animal studies have shown tumor formation at low doses.

Recommended sunscreens (I prefer natural mineral sunscreens)

Use lotions or creams over sprays because the fumes can be inhaled and the application can be uneven.

- Sun Shades Mineral Sunscreen™ – available at the office or Melaleuca

- Burt's Bees™ chemical free sunscreen – available at health stores and online
- Blue lizard™ – available at some stores and online
- Soleo Organics Sunscreen™
- Parsol 1789™
- SolBar™ Brands
- Vanicream™
- Neutrogena™ with helioplex technology
- CVS brand with zinc oxide
- Walgreens brand with zinc oxide

What if you get a Sunburn?

A product that I have recently started using is Sun Shades After Sun™. Sun Shades utilizes algae extract, aloe vera, Melaleuca oil and other botanicals.

Other remedies that help with sunburn recovery:

- Renew™ or other moisturizing lotions to replace the lost moisture to the skin.
- Cool, not cold milk with a clean cloth or gauze to the skin – milk creates a protein film to sooth the discomfort
- NSAID – Advil™ or ibuprofen to decrease pain and inflammation – the chemicals that are released by the body in response to the burn are decreased with the anti-inflammatory
- Regular dose Vitamin E to help decrease the inflammation and damage caused by the sunburn
- For pain control you can soak in a tub of tepid water with one cup of white cider vinegar
- Avoid the sun between the hours of 10am – 4pm
- Wear protective clothing and a hat – avoid scalp burns as the scalp is also susceptible to cancer.

Beta-carotene – acts as both a free-radical quencher and an optical filter (mainly UVA range)

Studies show that doses of up to 180 mg/day have increased the effectiveness of sunscreen – so eat some carrots when in the sun

Lycopene acts as an antioxidant and has the potential to decrease the deleterious effects of UV light on the skin. Studies showed that sun exposure decreased the lycopene in health women by 31-46%, suggesting that lycopene is involved in decreasing the oxidative damage in the skin from sun exposure. The study showed that the volunteers utilizing lycopene in doses of about 40g/d had a 40% reduction in the severity of UV light induced redness. Lycopene is found in the highest levels in tomatoes.

Fish oil is thought to act as an oxidizable buffer, protecting more vital structures from free-radical damage.

Vitamin C and **Vitamin E** have been shown in several studies that topical application protect against the development of sunburn by quenching free radicals formed in response to UV exposure. This must be done before sun exposure as no practical effect was observed when applied immediately after or 30 minutes after UV exposure.

Vitamin A acts as an antioxidant and has the potential to prevent UV induced free radical damage. However, this is in oral form and not topical. Topical vitamin A is readily absorbed in the skin and will cause more damage. Oral Vitamin A in doses up to 25,000 IU is found to be effective.

Vitamin D is imperative as we reduce our absorption and production when we block the UVB rays. Vitamin D is key in our protection against cancers including melanoma.

I believe that we all should protect ourselves and others from the Sun and take the risks of overexposure seriously. As a parent it is essential that I protect my child from the risks, as it only takes 2-3 sunburns during childhood to cause enough damage to increase the risk of skin cancer later in life. The best protection is to avoid the sun during the worst hours and to make sure you apply sunscreen liberally and often. Choose a sunscreen with both UVA and UVB protection.