



## Playing it Safe in the Sun

### Advice for Getting the Benefits While Avoiding the Harm from Sunlight

The sun sends us heat and light and is beneficial to our health. Ninety percent of our Vitamin D comes from sunlight hitting our skin but too much sun can cause skin cancer. It is important to balance the benefits and risks of exposure to sunshine and use sunscreen correctly.



### 4 Steps to Playing it Safe in the Sun



1. **Avoid Too Much Sun:** Wear protective clothing (shirt, hat, pants, sunglasses) when in the sun for more than 15 minutes; seek shade as much as possible; avoid mid-day sun.
2. **Apply Sunscreen to Exposed Skin:** Apply 15 minutes before sun exposure; apply a generous coat and reapply every 2 hours or more often if getting wet or sweating heavily.
3. **Choose Sunscreen Wisely:** Look at the label. Choose a sunscreen that:
  - Offers broad spectrum (UV-A & UV-B) protection
  - Is rated as SPF 15 or greater
  - Contains zinc oxide as the active ingredient or as a blend with titanium dioxide. These mineral blockers are preferable to chemical absorbers (see next page).
  - Is water resistant
4. **Do Get Some Sun Every Day:** Your body needs a daily dose of Vitamin D from the sun. For most people 15 minutes of sunshine without sunscreen will not damage the skin and will give you enough Vitamin D

## Why Does Sunshine Cause Skin Cancer?

The sun's rays are composed of ultraviolet radiation called UV-A and UV-B. Both UV-A and UV-B radiation can harm the skin. UV-B rays stop at the skin's surface and cause a tan, but can burn the skin if you stay in the sun too long. UV-A rays penetrate more deeply and can damage the elasticity of the skin, leading to wrinkles and premature aging. Both UV-A and UV-B can contribute to cancer by harming the skin's DNA. Further, sunburn damages the skin and is an added risk factor for skin cancer. A sunscreen must filter out both UV-A and UV-B to prevent skin cancer.

## How Does Sunscreen Protect You From Skin Cancer?

There are two basic types of protection afforded by sunscreens: mineral blockers and chemical absorbers. Mineral blockers form a temporary shield or barrier from sunlight, reflecting harmful rays away from the skin. The main blockers used in sunscreen are zinc oxide and titanium dioxide. They are both good at blocking UV-B and thus preventing sunburn. Zinc oxide can also block the UV-A rays and has the broadest spectrum of protection of any single sunscreen ingredient. Titanium dioxide only blocks some of the UV-A rays and so needs to be complemented by the chemical absorbers or zinc oxide.

Chemical absorbers actually transfer the sun's UV energy into their chemical structure, preventing damage to the skin below. Common absorbers in sunscreen are para-aminobenzoic acid (PABA), avobenzone, oxybenzone, cinnamates, and salicylates. Any individual absorber offers only partial protection and has to be combined with other chemical absorbers or mineral blockers to obtain broad spectrum coverage.

## How Do I Choose A Sunscreen?



Read the label for the following features:

- SPF 15 or greater: The SPF (sun protection factor) is an indication of how much extra time you can spend in the sun and not get a sun burn. For example, if it normally takes you 1 hour to get a sunburn, using a SPF 15 sunscreen will prevent a burn for 15 hours. But that is not realistic as the sunscreen will wear off from swimming, sweating and contact with other surfaces. Proper use of a SPF 15 sunscreen is usually sufficient to protect the skin. A higher SPF is not needed and would still need to be reapplied just as often.
- Broad spectrum coverage: It should protect against both UV-A and UV-B.
- Zinc oxide: Broad spectrum coverage is provided by zinc oxide by itself or as a blend with titanium dioxide. These mineral blockers are preferable to the chemical absorbers, particularly oxybenzone, for which health questions have been raised (see next page).
- Water resistant: The label will state how long protection will last in the water.



The choice of sunscreen also involves cost, availability and factors such as how the product looks, feels and smells once applied. The most important thing is that you actually use it.

## **Are There Health Concerns With Wearing Sunscreen All Day?**

Products that are meant to remain on the skin for hours at a time have the potential to release their ingredients across the skin and into the body. Questions have been raised about certain chemical absorbers (e.g. PABA, oxybenzone,) because they have endocrine disrupting (estrogen-like) activity. While this activity is weak, wearing sunscreen all day may lead to enough absorption to raise a concern. This is still an area of uncertainty that requires more research. In the meantime, it is prudent to use products based upon zinc oxide for most of your skin protection. If you find such products difficult to obtain or use, you can still use a product containing chemical absorbers. In this case, the best choice is a product that does not contain oxybenzone.

Vitamin A (retinol) is an ingredient to avoid because it can be absorbed across the skin and be a risk to pregnancy. Therefore, avoid products containing Vitamin A.

Some people have raised concerns about nanotechnology used in modern sunscreens. Zinc and titanium come in nanosized particles to make the sunscreen clear rather than a white paste on the skin. The nanotechnology version of zinc/titanium does not get absorbed across the skin to a great extent and its action on the skin is as protective as old-fashioned zinc paste. Therefore, it is a good choice for sun block protection.

## **Should I Apply Sunscreen To My Infant Or Young child?**

For babies under six months of age, it is best to shelter them from the sun with hats, clothing and shade. If there is sun exposure, use sunscreen sparingly over small areas of exposed skin. Beyond 6 months of age you can use sunscreen normally but avoid the area around the eyes because children may wipe it into their eyes and cause irritation.



If you choose to use a spray sunscreen, be careful not to spray near the face. The chemicals from the sunscreen could be inhaled. Instead spray into your hand and then apply to exposed skin. Be sure to spray an adequate amount for complete skin protection.

## **How Can I Reduce My Exposure To The Sun?**



The best way to reduce exposure to the sun's rays is to avoid them. Stay in the shade as much as possible. If there is no shade available, use a beach umbrella to provide the shade. If you cannot avoid the sun, wear protective clothing such as a shirt, pants, wide-brimmed hat and sunglasses. Be aware of the time of day and try to avoid being in the direct sun at mid-day (between 10 am and 2 pm) when the UV rays are the strongest. Early morning or late afternoon is a better choice. Be aware that people with lighter skin are more at risk of sunburn.

When in direct sun, apply sunscreen liberally (golf ball size) and often to exposed skin. It is recommended that sunscreen be reapplied every two hours or sooner if you have been swimming or sweating heavily.



## **Where Can I Get More Information?**

- Environmental Working Group Sunscreen Report: <http://breakingnews.ewg.org/2012sunscreen>
- U.S. Environmental Protection Agency SunWise Program: <http://www.epa.gov/sunwise>
- U.S. Food and Drug Administration: <http://www.fda.gov/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/UnderstandingOver-the-CounterMedicines/ucm239463.htm>



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