

Fashion in the Sun: Maximizing your Protection

Many are not aware that the sun's ultraviolet radiation can, to varying degrees, penetrate glass and clothing. Over time, particularly in high risk individuals such as those with a past history of melanoma or pre-existing sun damage, the attacks on the skin by these rays can add up, leading to problems such as skin cancer.

Total sun avoidance is not practical and sunscreens cannot keep all UV rays from reaching the skin. Clothing represents a very important barrier against damaging rays. Indeed tan lines alone show how significant the protection from clothing can be- but all clothes do not protect the skin equally. The average cotton T shirt offers a sun protection factor (SPF) of only about 5.

Most are aware of the SPF system for rating protection provided by sunscreens. Under ideal circumstances, someone using an SPF 15 can be exposed to the sun 15 times longer without sustaining a sunburn than if he or she were not using any sunscreen. Wearing sunscreen under clothing as well as on exposed skin might offer extra protection during lengthy sun exposure. However, the combination of clothes and moist skin can be messy and uncomfortable so few are likely to go to these lengths. Therefore, an alternative approach for high risk individuals may be to maximize the protection factor of their clothing.

The American Society for Testing and Materials has conducted extensive evaluations of the protective capacity of clothing and has provided a rating system that is appearing in an increasing variety of garments. This rating, the ultraviolet protective factor (UPF), is the fabric equivalent of the SPF. A UPF of 50 associated with a garment means that it permits 1/50th of the ultraviolet radiation to which it is exposed to penetrate its fibers. A UPF range of 15-24 is considered to offer good protection; 25-39 offers very good protection; and 40+ offers excellent protection.

UPF labels are available mostly on specially marked, brand name sun protective clothing. There are characteristics however, that you can look for in everyday clothing to increase the UPF factor: color, density, thickness, and fiber content. Darker colors and certain bright colors absorb more radiation while whites and pastels absorb less, letting more UV reach the skin. The tighter the weave or knit of a garment, the less porous the material thereby reducing UVR exposure and increasing the clothing's UPF. Thicker fabric can decrease the amount of UVR reaching the skin.

The combination of these fabric features determines the UPF of a garment. For example, a pair of dark, denim jeans may have a high UPF despite its cotton content thanks to its tight weave and UVR absorbing indigo dye. A long sleeve dark denim shirt is estimated

to have a UPF of 1700! Unfortunately, on a hot summer day, a dark denim shirt may not be the first garment one would reach for!

There are ways of enhancing the protective capacity of the clothes you already own. Detergents and additives that contain special UV absorbers (Rit Whitener and Brightener, SunGuard) can but used to augment the UPF level of many fabrics. Although cotton clothing typical offers a low UPF, dyeing these clothes or washing them with whitening and brightening detergents that deposit UV absorbers on fabrics can result in clothing with a higher SPF and better photoprotection. Rit SunGuard used on a typical cotton shirt can raise its UPF from 5 to 30. The extra protection can last for as many as 20 washings.

Sun protective specialty clothing, made of special fabrics specially created to prevent UV rays from reaching the skin is another alternative method of maximizing the UPF. There are multiple companies that carry sun protective clothing and related products:

www.3M.com
www.climaguardsfp.com
www.columbia.com
www.coolibar.com
www.panaromafilm.com
www.spfstore.com
www.sunbrella.com
www.sunbusterkids.com
www.sunguardsunprotection.com
www.Tilley.com

Finally, there are two additional points to maximize protection from damaging UVR: sunglasses and window films. Sunglasses do more than make a fashion statement. The American National Standards Institute that provides guidelines for eyewear recommends sunglasses that block 99 percent of UVB and 95 % of UVA. In general, photochromic lenses which darken on exposure to sunlight are the best in terms of UV protection. Polar lenses protect against glare, but not against UV. Finally, it is important to realize that although windows block out most of the UVB rays, they do not protect against UVA. Applying special UVA absorbing film to windows may solve this problem. Two brands, Vista and 3m Stotchtint are highly recommended if you are considering this. Interestingly, new cars sold in the US after 2005 are all required to provide UV protection equivalent to a SPF 7 against UVB as well as substantial protection against UVA. Obtaining a more UV protective windshield will cost more, but the added expense may be worth it if you spend a lot of time in the car.

Conclusions:

Sun avoidance is not always possible. Certainly seeking the shade is highly advisable particularly during the hours of 10 AM to 4 PM. The use of broad spectrum sunscreens with UVA protective ingredients is a necessity. Using UV protective clothing, sunglasses

and UV protection in the car and home are all additional ways of minimizing risk and maximizing your protection.