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**Sunscreen** extracted from an article by the American Academy of Dermatology With marathon season upon us (Langkawi, Singapore, KL, Penang and Ipoh), this article will provide some much needed guidance against an unseen "enemy"

Sunscreen is extremely important in protecting you from the sun's harmful rays. Sun exposure can cause skin damage and has been proven to drastically increase a person's chance of developing skin cancer.

Sunscreen or sunblock can be purchased as a lotion or spray. The type of sunscreen a person wears is dependent on the type of skin they have. The time and amount of sun as a result of the weather conditions will also affect the type of sunscreen needed. Some sunscreens are referred to as able 'broad spectrum' which means that they protect against both **UVA** and **UVB** rays.

Sunscreen or sunblock is labeled with a Sun Protection Factor (**SPF**) number that ranges from 2 to 130 and this number stipulates the level of protection it provides the wearer. Many experts believe that you should always wear sunscreen that has at least SPF of 15. It is very important that you determine what number you need to make sure that you are being adequately protected as in many cases SPF 15 may not be enough.

Lipscreen, sunglasses and hats provide more protection from the devastating effects of the sun. There are also several manufacturers of clothing that have specifically designed clothing that protects from the sun. Case in point is Nike's UV-coated Dri-FIT T-Shirts.

It is wise to purchase waterproof sunscreen and always best to read through and follow the manufacturer's directions. This will also give you a better understanding as to how long it will work and when you should re-apply. There is no doubt that re-applying sunscreen at the proper intervals is crucial.

A bottle or tube of sunblock on average will cost between RM15 to RM45 depending on the size and SPF rating.

## Facts about sunscreen

### 1. Who needs to use sunscreen?

In a word: everyone! The Food and Drug Administration (FDA) and the American Academy of Dermatology recognize six skin categories:

Skin Type	Sun History	Example
I	Always burns easily, never tans, extremely sun sensitive skin	Red-headed, freckles, Irish/Scots/Welsh
II	Always burns easily, tans minimally, very sun sensitive skin	Fair-skinned, fair-haired, blue-eyed, Caucasians
III	Sometimes burns, tans gradually to light brown, sun sensitive skin	Average skin
IV	Burns minimally, always tans to moderate brown, minimally sun sensitive	Mediterranean-type Caucasians
V	Rarely burns, tans well, sun insensitive skin	Middle Eastern, some Hispanics, some African-Americans
VI	Never burns, deeply pigmented, sun insensitive skin	African-Americans



The American Academy of Dermatology suggests that, regardless of skin type, a broad-spectrum sunscreen with an SPF of at least 15 should be used year-round.

## **2. When should sunscreen be used?**

Sunscreens should be used every day if you are going to be in the sun for more than 20 minutes. They can be applied under makeup. There are many cosmetic products available today that contain sunscreens for daily use because sun protection is the principal means of preventing premature aging and skin cancer. Sunscreens used on a regular basis actually allow some repair of damaged skin.

Since sun exposure is responsible for vitamin D production in the skin, individuals who wear sunscreen and are concerned that they are not getting enough vitamin D should take a multivitamin or drink vitamin D fortified milk.

The sun's reflective powers are great – 17 percent on sand and 80 percent on snow. Don't reserve the use of these products only for sunny summer days. Even on a cloudy day, 80 percent of the sun's ultraviolet rays pass through the clouds.

## **3. How much sunscreen should be used, and how often should it be applied?**

Sunscreens should be applied to dry skin 15-30 minutes BEFORE going outdoors. When applying sunscreen, pay particular attention to the face, ears, hands and arms, and coat the skin liberally. One ounce, enough to fill a shot glass, is considered the amount needed to cover the exposed areas of the body properly. Be careful to cover exposed areas completely – a missed spot could mean a patchy, painful sunburn. Don't forget that lips get sunburned too, so apply a lip balm that contains sunscreen, preferably with an SPF of 15 or higher.

Sunscreens should be re-applied every 2 hours or after swimming or perspiring heavily. Even so-called water resistant sunscreens may lose their effectiveness after 80 minutes in the water. Sunscreens rub off as well as wash off, so if you've towel-dried reapply waterproof sunscreen for continued protection. Don't forget that sun exposure occurs all the time, even while you're taking a short walk on a cloudy day.

## **4. What type of sunscreen should I use, and what ingredients should I look for?**

There are so many types of sunscreen that selecting the right one can be quite confusing.

Sunscreens are available in many forms including ointments, creams, gels, lotions and wax sticks (eg [Bodyglide](#)). The type of sunscreen you choose is a matter of personal choice. Ideally, sunscreens should be water resistant, so they cannot be easily removed by sweating or swimming, and should have an SPF of 15 or higher that provides broad-spectrum coverage against all ultraviolet light wavelengths.

Ingredients which provide broad-spectrum protection include benzophenones (oxybenzone), cinnamates (octylmethyl cinnamate and cinoxate), sulisobenzene, salicylates, titanium dioxide, zinc oxide, and avobenzone (Parsol 1789).

## **5. Can I use the sunscreen I bought last summer, or do I need to purchase a new bottle each year? Does it lose strength?**

Unless indicated by an expiration date, the FDA requires that all sunscreens be stable and at their original strength for at least three years.

While you can use the sunscreen that you bought last summer, keep in mind that if you are using the appropriate amount, a bottle of sunscreen should not last you very long. Approximately one ounce of sunscreen, enough to fill a shot glass, is considered the amount needed to cover the exposed areas of the body properly.

## **6. What is the difference between UVA and UVB light wavelengths and will a sunscreen protect me from both?**

Sunlight consists of two types of harmful rays – UVA rays and UVB rays. The UVB rays are the sun's burning rays (which are blocked by window glass) and are the primary cause of sunburn and skin cancer. UVA rays (which pass through window glass) penetrate deeper into the dermis, or base layer of the skin. They also contribute to sunburns and skin cancer. Both UVA and UVB rays can cause suppression of the immune system which helps to protect you against the development and spread of skin cancer.

Since PABA and PABA esters only protect against UVB light, check for a broad-spectrum sunscreen that also screens UVA rays. Ingredients like benzophenones, oxybenzone, sulisobenzene, titanium dioxide, zinc oxide, and avobenzone (Parsol 1789), extend the coverage beyond the UVB range and into the UVA range, helping to make sunscreens broad-spectrum.

Certain more expensive sunscreens assures equal protection against UVA and UVB, in which case the packaging, for

example, may have "UVA=SPF60 / UVB=SPF60" printed on it.

### **7. What is an SPF?**

SPF stands for Sun Protection Factor. Sunscreens are rated or classified by the strength of their SPF. The SPF numbers on the packaging can range from as low as 2 to greater than 50. These numbers refer to the product's ability to screen or block out the sun's burning rays.

The sunscreen SPF rating is calculated by comparing the amount of time needed to produce a sunburn on sunscreen protected skin to the amount of time needed to cause a sunburn on unprotected skin. For example, if a sunscreen is rated SPF 2 and a fair-skinned person who would normally turn red after ten minutes of exposure in the sun uses it, it would take twenty minutes of exposure for the skin to turn red. A sunscreen with an SPF of 15 would allow that person to multiply that initial burning time by 15, which means it would take 15 times longer to burn, or 150 minutes.

Dermatologists strongly recommend using a broad-spectrum sunscreen with an SPF of 15 or greater year-round for all skin types.

### **8. Does SPF 30 have twice as much sun protection as SPF 15?**

SPF protection does not actually increase proportionately with a designated SPF number. In higher SPFs, such as an SPF of 30, 97 percent of sunburning rays are absorbed, while an SPF of 15 indicates 93 percent absorption and an SPF of 2 equals 50 percent absorption.

**Research Note:** Research suggests that high SPF sunscreens are an appropriate choice for very sun sensitive individuals (skin types I and II). One study determined that skin protected by an SPF 15 sunscreen and then exposed to 15 times the minimum dose of sunlight normally required to cause redness produced 2.5 times the number of sunburn cells seen in SPF 30 protected skin with the same dose of sunlight. These results suggest that prevention of redness does not necessarily mean prevention of all sun-induced damage. More research is currently underway on the protective effects of sunscreens on different skin types. *Journal of the American Academy of Dermatology*, 1990, 22 (3): 449-452; Kaidbey, K.H.

### **9. Does the SPF tell how well a sunscreen protects against UVA or UVB rays?**

The SPF number on sunscreens only reflects the product's screening ability for UVB rays. At present, there is no FDA-approved rating system that identifies UVA protection. Scientists are working to create a standardized testing system to measure UVA protection.

### **10. What is the difference between a sunscreen and a sunblock?**

Since sunscreens can now either chemically absorb UV rays, or absorb and deflect them, the term sunblock is no longer used. It's important to find a sunscreen that offers both UVA and UVB protection and includes ingredients such as benzophenones, oxybenzone, sulisobenzene, titanium dioxide, zinc oxide, and avobenzone (Parsol 1789).

### **11. Is sunscreen application all I need to do to protect myself from the sun?**

Because overexposure to ultraviolet light is the primary cause of melanoma, dermatologists recommend the following precautions:

- Avoid "peak" sunlight hours -- **10 a.m. until 4 p.m.** -- when the sun's rays are the strongest.
- Seek shade whenever possible. Remember "No shadow...seek the shade!" If your shadow is shorter than you are, the damaging rays of the sun are at their strongest and you're likely to sunburn.
- Apply a broad spectrum sunscreen with a Sun Protection Factor (SPF) 15 or higher, apply 20 minutes before going outdoors and reapply every two hours, especially when playing, gardening, swimming or doing any other outdoor activities. Sunscreens should not be used to increase the time spent in intense sunlight or instead of protective clothing.
- Wear protective clothing, including a wide-brimmed hat, sunglasses and long-sleeved shirt and pants during prolonged periods of sun exposure.

A number of studies have confirmed that repeated sunburns substantially increase the risk for melanoma. This is especially true for childhood sunburns because there is more time and opportunity for subsequent sun damage to lead to melanoma.

### **12. Is there a safe way to tan?**

There is no safe way to tan. A suntan is the skin's response to an injury. Tanning occurs when the sun's ultraviolet rays penetrate the skin's inner layer, causing the skin to produce more melanin as a response to the injury. Chronic exposure to the sun results in a change in the skin's texture causing wrinkling and age spots. Thus, tanning to improve appearance is ultimately self-defeating.

Every time you tan, you accumulate damage to the skin. This damage, in addition to accelerating the aging process, also increases your risk for all types of skin cancer, including melanoma.

### **13. Are tanning booths a safer way to tan?**

In spite of claims that tanning booths offer "safe" tanning, artificial radiation carries all the risks of natural sunlight. Tanning booths emit UVA radiation, which poses both short and long-term risks to the skin, including cataracts (eye damage), sunburns, skin cancer and premature aging. In addition, there can be damage to the body's immune system and reactions to certain fragrances, lotions, moisturizers and medications.

Many tanning salons are unregulated, allowing customers (specially those whose skin is incapable of tanning) access to tanning beds without supervision or eye protection. The American Academy of Dermatology supports local and/or statewide tanning parlor legislation. This legislation usually requires that warning signs be prominently displayed in tanning salons and list the hazards of such exposure, among other possible regulatory provisions.

### **14. How do I treat a sunburn?**

In case you forget to cover up and apply sunscreen, the resulting sunburn can be painful as well as dangerous. There are several types of burns and burn treatments. Remember that you may not immediately see the effects of overexposure to the sun. It may take up to 24 hours before the full damage is visible.

The two most common are first-degree burns and second degree burns.

First-degree sunburns cause redness and will heal, possibly with some peeling, within a few days. These can be painful and are best treated with cool baths and bland moisturizers or over-the-counter hydrocortisone creams. Avoid the use of "-caine" products (such as benzocaine), which may cause sensitivity to a broad range of important chemicals. Aspirin taken orally may lessen early development of sunburn.

Second degree sunburns blister and can be considered a medical emergency if a large area is affected. When a burn is severe, accompanied by a headache, chills or a fever, seek medical help right away. Be sure to protect your skin from the sun while it heals and thereafter. Most studies have found an association between sunburn and enhanced risk for melanoma, particularly if you suffered severe childhood or adolescent sunburn since there is more time for melanoma to develop over your lifetime.

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