

Here comes the sun A deeper look

Everyone knows that excessive exposure to the sun is dangerous but communicating too much about the harmful effects of sunlight can make us forget about its positive effects and that lack of sunlight can be unsafe too. Humankind can not live without sunlight!

To better understand the effects of sunlight on our skin and body, we first need to know what the sunlight is: Sunlight, in the broad sense, is the amount of energy/light or rays that the sun radiates. Part of that light consists of 3 types of invisible ultraviolet (UV) rays: UVC, UVA and UVB.

On Earth, sunlight is filtered through the ozone layer present in the atmosphere that filters almost 99% of the sun's high frequency ultraviolet light, cut and reducing the amount of UV light that we are exposed to.

The level of UV light today is higher than it was 50 or 100 years ago. This is due to a reduction of ozone in the earth's atmosphere or the so called Ozone Hole. Other influencing factors include elevation, latitude, and cloud cover.

Ultraviolet light is stronger as elevation increases. The thinner atmosphere at higher altitudes cannot filter UV as effectively as it can at sea level.

The rays of the sun are also strongest near the equator, but nowadays, even in Antarctica, Chile, and New Zealand, the UV level is much higher than normal, especially in the springtime due to the ozone hole in the southern hemisphere.

One factor that actually reduces UV is cloud cover. Locations with climates and micro-climates with regular cloud cover may have a 50% lower level of UV light. So let us look at the positive effects of the sun on us now, and how we can avoid its harmful effects.

The most valuable positive effect of sunlight is that it is the main contributor to help our bodies produce vitamin D.

The sunlight helps your body convert a form of cholesterol that is present in your skin into vitamin D. This results in lower blood cholesterol levels. It also helps your body to fix calcium at the bones level. The Vitamin D only occurs naturally in a small range of foods, for this reason, even the healthiest diet program can not cover your daily needs of vitamin D. Your

body's daily need of vitamin D is equal to the quantity of vitamin D present in 30 liters of milk.

One week of sun exposure during your holiday can help your body to increase its level of Vitamin D by 10 times.

Getting regular exposure to sunlight will help you protect your skin in the long run. This is because your body will build up a natural resistance to the harmful effects of ultraviolet light. If you allow your skin to get moderately tanned, it will be more resistant to infections and sunburns than if your skin is not tanned.

The ultraviolet rays in sunshine act as a natural antiseptic. These rays can kill viruses, bacteria, molds, yeasts, fungi, and mites in air, water, and on different surfaces including your skin.

Getting some sun tends to help clear up different skin diseases such as acne, boils, athlete's foot, diaper rash, psoriasis, and eczema.

Another great benefit of sunlight is that it stimulates your appetite and improves your digestion, elimination, and metabolism.

Getting your daily dose of sunshine will enhance your immune system. It increases the number of white blood cells in your blood.

Sunshine encourages healthy circulation. It also stimulates the production of more red blood cells, which increases the amount of oxygen in your blood.

Sunlight will also soothe your nerves and boost your mood leaving you with a renewed sense of well-being. It increases the production of endorphins and serotonin in your brain, which will definitely leave you feeling much better.

Getting enough sunlight during the day can help you sleep better at night. If you are exposed to natural light during the day, it will increase your melatonin output at night. Melatonin is a natural hormone made by our bodies. It enhances sleep and slows down the aging process.

Sunlight helps to balance out your hormones.

Sunlight improves the function of your liver and helps it to break down toxins and wastes that could lead to cancer and other diseases.

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Other benefits of sunlight include the life-giving energy it gives to your organs and the way it helps to strengthen and vitalize your body.

On the other end, the effects of the sunlight can be harmful if we do not protect ourselves properly.

UVB rays are the most dangerous, but fortunately, these rays are blocked by the ozone layer and don't reach the earth.

UVA rays are able to penetrate much deeper into the surface of the skin, damaging the cells beneath, thus they are considered the chief culprit behind wrinkling, leathening, and other aspects of photo aging (premature aging of the skin). They penetrate deeply but they do not cause sunburn.

UVB rays are more powerful than UVA and are considered the main cause of basal and squamous cell carcinomas (skin cancer) as well as a significant cause of melanoma. However, recent studies made at the French Molecular Genetics Laboratory, show that UVA can also be responsible for cellular damage linked to skin cancer.

Sun exposures

Here is the length of time the skin can be exposed to tropical sun (UV index 8+) without any sun protection or with the wrong sun protection before cellular damage occurs:

Light / Fair skin
5 min before cellular damage.
(becomes 120 minutes with the right sun protection)

Light intermediate and dark skin
8 minutes before cellular damage.
(becomes 200 minutes with the right sun protection)

The best protection is a tanned skin.

Brown and black skin
12 minutes before cellular damage.
(becomes 300 minutes with the right protection)

To learn more about the basics when it comes to a sun care product, and what are the do's and don'ts when one wants to sunbathe, let's ask Monica Samuiza, Manager of Sun Spa Esthederm. (Sun Spa Esthederm is a service provider that offers tailored sun care programs for tourists during their holidays in the tropics).

Is it better to get tanned or to get protected?

Actually, the best protection is a tanned skin as the skin has all the inner resources to defend itself against the harmful effects of the sun, but getting tanned must be done safely.

So what are the points to consider when choosing a sun lotion?

There are 3 main points:

- 1) Your skin sensitivity (how your skin reacts to the sun).
- 2) How strong the sunlight is or the UV index (international UV index categories are: low (0-2), moderate (3-5), high (6-7), very high (8-10), extreme (11 and over).
- 3) Protection given by the sun products (against UVA, UVB or both)

Because different skins react differently to the sunlight, one should know their skin type before selecting a sun lotion.

For instance, if we apply a sun lotion for normal skin (skin that always tans and rarely burns) and on a person that has a sensitive skin (skin that easily burns) that person will most likely burn if sunbathe.

In the tropics, the sunlight is very strong with an UV index factor above 8 so you should select a sun cream that is specifically adapted to this kind of sunlight intensity.

Besides, you should make sure that your sun lotion has a broad spectrum protection which means protection against UVA and UVB rays to guard your skin from the surface to the deep tissues. Most of the sun lotions found in the market only provide UVB protection.

What about the SPF and what it is exactly?

The SPF (Sun Protection Factor) rating system was established by the American FDA (Food and drugs administration) decades ago.

It is a laboratory measure of the effectiveness of a sunscreen — the higher the SPF, the more protection a sunscreen offers against the UVB or radiation that causes sunburn.

Unfortunately, the SPF factor is not enough information for safe tanning today as it doesn't include UVA. It does not consider skin sensitivity or the different indexes of sun radiation.

The SPF is determined experimentally indoors and is based on the time a person with pale skin can remain in the sun without getting red and tender. In the lab, the subjects are exposed to a light spectrum meant to mimic noontime sun of the northern hemisphere.

Besides, SPF is tested and rated in the laboratory as 2mg/cm2 of sun cream applied to the skin, but studies suggest that in reality people only apply 0.5mg/cm2 or less, that's only 20-25% of the amount used to determine the SPF value written on the label.

And on top of that, the European FDA has its own SPF rating system which is different from the one in the USA. American SPF numbers are double the SPF numbers on European products. An American SPF 20 is the same as SPF 10 in Europe. So beyond the SPF number, we should try to learn a little more about sun lotions and what UVA and UVB rays do.

And when it comes to a sun block, what are your recommendations?

I would recommend choosing a sun block that has a mineral filter instead of chemical filters. Chemical filters which absorb the UV rays are typically absorbed by the skin and are thought to be metabolized by the body, sometimes causing allergic reactions in some individuals.

Mineral filters (also called physical filter(s) which reflect the UV rays. lie on top of the surface of the skin and are not absorbed by it or metabolized by the body, therefore much more effective when it comes to block the sun. Mineral filters optimize skin tolerance and are recommended for children and for anyone who presents allergic reactions to chemical filters.

Can you give us some tips for holiday makers who want to spend time in the sun?

If you have the right sun care product, according to your skin sensitivity and the sun radiation index, then here are a few things you should try to remember:

- Always apply your sun products 20 min before exposure and reapply every 2 hours or after swimming.
- Prepare your skin before sun exposure. Get a gentle face and body scrub before sun exposure. This will help you get rid of a layer of dead cells and your skin will be more receptive to the benefits of the sun and the sun products you use.
- Make sure that your skin is clean and well hydrated everyday before you apply a sun cream and an after sun lotion.
- After sun care: Remove all the sun screen from your skin before applying the after sun. To let your skin profit from the positive effects of the sun, don't forget to cool down, stimulate and energize it with good after sun cares and skin cares at the end of the day.
- Give your skin a treat: Quality sun products may be costly because of the ingredients and the testing needed.

A quality sun product will not only help you protect your skin, but will give you the results you earnestly desire. So don't be afraid of spending time and money in choosing the right sun lotion for you.

If you have any questions regarding this subject, Monica Samuiza can be contacted by email at monica@sunspa-esthederm.com.

As a conclusion, just remember that your skin is your body's largest organ and it is in direct contact with the external environment. Look after your skin, it's not like you can go shopping for a new one. ■

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