



SUNLIGHT & SUN-DAMAGED SKIN

ALL SUNLIGHT PERMANENTLY DAMAGES YOUR SKIN

Few people realize that ordinary sun exposure, such as occurs during tanning or outdoor sports, causes permanent skin damage. These changes accumulate over the years so that even mild repeated sun exposure causes visible skin changes. Most of the wrinkling, roughening and freckling that occurs on the face, hands, and arms of light-skinned people is NOT the result of age, but the consequence of sun damage. This is immediately evident if you compare less sun exposed areas such as the buttocks or abdomen to more sun exposed areas like the face, neck, and arms. Natural skin pigment does offer some protection, so the lighter your skin, the more prone it is to sun damage.

EFFECTS OF SUNLIGHT ON YOUR SKIN

We frequently see patients in their 30s and 40s who are distressed because wrinkled and roughened sun damaged skin makes them appear 10 to 15 years older. There is a steep price to be paid for the temporary glamour of a deep sun tan. Moisturizers do not prevent or cure wrinkled skin caused by the sun. A class of medicines called retinoids (Retin A, Renova, Differin) have been shown to partially reverse some of these aging changes, but must be used under the close supervision of your dermatologist. Chemical peels, Botox, and facial fillers also help with sun-induced aging, but are expensive and not covered by insurance.

In addition to the cosmetic changes, a more serious effect of sun damage is skin cancer. Extensive sun exposure is the chief cause of precancerous lesions (**actinic keratoses**) and skin cancers (**basal cell carcinoma, squamous cell carcinoma, and melanoma**). As would be expected, precancerous and cancerous lesions of the skin is almost always found on sun exposed areas such as the face, neck, shoulders, arms, and legs.

The basic principle of treatment of actinic keratoses, premalignant areas of sun damage, is destruction with liquid nitrogen or chemical chemotherapeutics. **Liquid nitrogen** is air that has been cooled to 320 degrees below zero. When applied to the skin, liquid nitrogen causes a superficial frostbite. There will be a few minutes of stinging and itching, but is generally well tolerated. The treatment causes shedding of the sun damaged skin which is replaced by healthy cells from deeper layers of the skin. One to two days after treatment, a scab or blister will form and fall off in one to two weeks leaving a small pink or white area of healthy new skin. It may take time for the spot to return to normal skin color and blend in with surrounding skin.

When actinic keratoses are particularly deep, surgical removal may be necessary. Sometimes it is difficult to determine from appearance exactly what type of growth is present and whether the actinic keratosis has already progressed into a skin cancer. Surgical removal allows for microscopic evaluation (biopsy) of the tissue. Healing after removal takes about two to three weeks and the final appearance is usually very good.

When skin cancers arise, they are often curable by office procedures. Early diagnosis greatly increases the cure rate and lessens the degree of scarring. However, it is preferable to prevent them through sun protection and regular follow up with your dermatologist.

PREVENTION

Sun damage is permanent! Once sun damage has progressed to the point where actinic keratoses develop, new keratoses will appear even without further sun exposure. Nevertheless, it is important to avoid further sun damage in order to minimize future development of keratoses, wrinkling, and skin cancer. This can be accomplished best by avoiding repeated prolonged exposure to direct sunlight, wearing protective clothing, staying out of the sun from 10AM to 2PM, and applying sun blocking lotion on exposed areas such as the face, neck, and backs of the hands daily before going outdoors.

All sun protection products are labeled as to the degree of protection against the damaging rays of the sun. Higher SPF numbers mean higher protection. We recommend using a sunscreen with SPF 30 or higher. For best results, sun blocks should be applied 30 minutes prior to sun exposure and reapplied every 2 hours or after such activities as swimming or heavy sweating. Protective clothing and broad-brimmed hats are very useful to protect yourself from sun damage. Sun blocks and protective clothing should be used year round for the best anti-aging effects. Even during a Michigan winter, lower energy sunlight is still enough to promote wrinkles and aging. A moisturizer with sunscreen should be applied daily throughout the year.

There are really no bad brands of sunscreen as long as you use them regularly and they have sufficient protection value. We recommend sunscreen labeled “broad spectrum,” which blocks both UVA and UVB light. Some of the best brands include:

Neutrogena with Helioplex
Solbar
Shade

Aveeno
Oil of Olay
Presun

Ombrelle
Anthelios
Cetaphil

ARE TANNING BOOTHS SAFE?

There is no such thing as a safe tan. Sunburn-causing light sources (UVB) are rarely found in tanning parlors because of the increased risk of skin cancer. Because tanning booths use primarily UVA radiation, getting a “base tan” at a tanning booth before a vacation to a sunny destination will NOT prevent sunburn from the sun’s UVB rays. Tanning booth lights are long wavelength, deeply penetrating UVA. The effects of UVA radiation may include:

- Damage to the unprotected lens of the eye resulting in cataract formation
- Worsening of existing skin damage caused by UVB radiation, promoting cancerous growths
- Adverse reactions to ingredients in some medicines, cosmetics, soaps, or birth control pills
- Aggravation of light sensitive skin disorders such as cold sores and lupus
- Changes in the blood vessels in the skin causing permanently reddened skin
- Suppression of the body’s immune system
- Promotion of dry, leathery, thickened skin
- All tanning bed use is linked to skin cancer formation

A tan is a warning sign that the skin has been damaged by ultraviolet light. If you desire the cosmetic appearance of a tan, self tanners and bronzers or spray tanning are the only safe options.

