



For those of us who spend extended periods of time off-shore, protecting ourselves from the sun's harmful rays is no laughing matter. **1 in 5 people will get skin cancer in their lifetime (1 in 3 Caucasians) and spending time on the water only increases the amount of UV radiation we expose ourselves too.** Water can increase the potency of the sun's UV radiation by as much as 50%. Here at Watermans: Applied Science we feel it is important to educate oneself on sun damage and the issues and influences associated with skin cancer, advanced aging, and other complications associated with sun exposure. Please keep reading for more useful information on skin cancer and effective protection techniques.

*Don't live life in the shadows.* **WATERMANS®**

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## The Skin

The skin is the largest organ in the human body, serving as a protective barrier between the body's internal environment and the outside world. It controls our temperature and protects us from environmental influences, but its ability to protect itself against the harmful effects of the sun's UV radiation is limited.

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## Skin Cancer

Skin cancer is the most common form of cancer in the United States. More than 1 million skin cancers are diagnosed annually. Squamous cell carcinoma is the second most common form of skin cancer. More than 250,000 cases are diagnosed each year, resulting in approximately 2,500 deaths each year. One in 5 Americans and one in 3 Caucasians will develop skin cancer in the course of a lifetime. More than 90 percent of all skin cancers are caused by sun exposure. A person's risk for skin cancer doubles if he or she has had five or more sunburns.

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## UVA/UVB Radiation

What is radiation? The sun gives off ultraviolet radiation that is divided into categories based on the Wavelength.

UVC - 100 to 290 nm (does not penetrate the earth's atmosphere)

UVB - 290 to 320 nm

UVA - 320 to 400 nm

**UVA** - UVA was once thought to have a minor effect on skin damage, but now studies are showing that UVA is a major contributor to skin damage. UVA is a high-energy wave that penetrates deeper into the skin to do its damage. The intensity of UVA radiation is more constant than UVB without the variations during the day and throughout the year. UVA is not filtered by glass. UV-A can be further subdivided into UV-A I, or far UV-A (340-400 nm), and UV-A II, or near UV-A (320-340 nm).

**UVB** - UVB affects the outer layer of skin, the epidermis, and is the primary agent responsible for sunburns. It is the most intense between the hours of 10:00 am and 2:00 pm when the sunlight is brightest. It is more intense in the summer months accounting for 70% of a person's yearly UVB dose. UVB does not penetrate glass.

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## Skin Types

Everyone has a different skin complexion genetically determined largely by melanin content. To simplify the huge variation in the different types of skin, all people are categorized into one of six Skin Types (based on the Fitzpatrick Phototype Scale). Depending on your skin type, you have more or less natural Sun protection and susceptibility to sun-induced skin damage. People with lighter hair and fairer skin (therefore with a lower Skin Type value), are more at risk of developing both Basal Cell Carcinoma and coetaneous Malignant Melanoma (Elmets et al, 2001). Knowledge of your Skin Type is vital in determining your safe period of sun exposure calculated with the UV Index for that day. It is also required to calculate how your safe period of sun exposure is extended with the applicable SPF (Sun Protection Factor) of the sunscreen that you are using. Below is a list to help identify your skin type and aid in determining your sunscreen needs.

**Type # 1** - Ivory white, no tanning ability, always burns easily.

**Type # 2** - White, minimal to weak tanning ability, high inclination to sunburn.

**Type # 3** - White, low tanning ability, moderate inclination to sunburn.

**Type # 4** - Beige-Olive, lightly tanned, moderate tanning ability, very low inclination to sunburn.

**Type # 5** - Moderate brown or tanned, sun insensitive skin, very low inclination to sunburn.

**Type # 6** - Dark brown or black, sun insensitive skin, never burns.

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## Sunscreen is not a one-size-fits all product

The FDA, CDC, and Skin Cancer Foundation recommend choosing a sunscreen based on your specific needs. You should not be using a higher SPF sunscreen than you need to, because the concentration of chemicals relative to the protection they afford is much higher in products with a higher SPF rating.

## Inorganic vs. Organic sunscreen

Watermans: Applied Science follows the recommendation of the CDC, FDA, and Skin Cancer Foundation and uses a mix of organic and inorganic sunscreens. The organic sunscreens are commonly known as “chemical.” These agents protect against UV by absorbing the energy from UV rays. Inorganic sunscreens, such as metal oxides or particulate UV filters, are often termed “physical” or “mineral.” The metal oxides, namely titanium dioxide and zinc oxide, are insoluble particles, which absorb and reflect UV. The differences between these active ingredients are primarily based on their solubility, with organic UV filters existing in solution and physical ones being suspended or insoluble. The effectiveness of physical/mineral sunscreen agents depends on their presence on the outer layer of the skin and the effectiveness of the organic sunscreens is dependent on the skin's ability to absorb the sunscreen agent. For this reason it is important to find a good mix of both physical and organic sunscreen agents in order to ensure consistent broad-spectrum protection.

**For your protection, Watermans always defers to the recommendation of the Skin Cancer Foundation, the CDC and the FDA when choosing active ingredients.**

*"In all cases we recommend a broad-spectrum sunscreen offering protection against both UVA and UVB rays... (Such sunscreens) combine several different active chemical sunscreen ingredients in order to provide broad-spectrum protection. Usually, at least three active ingredients are called for. These generally include PABA derivatives, salicylates, and/or cinnamates (octylmethoxycinnamate and cinoxate) for UVB absorption; benzophenones (such as oxybenzone and sulisobenzone) for shorter-wavelength UVA protection; and avobenzone (Parsol 1789), ecamsule (Mexoryl), titanium dioxide, or zinc oxide for the remaining UVA spectrum."*

### -Skin Cancer Foundation

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#### Active ingredients

At Watermans, our goal is to provide the most effective sun protection available. Below is a list of all active ingredients found in the Watermans Lotion, Face Sticks, and Lip Balm.

#### Lotion

Zinc Oxide -Mineral/Physical (UVA/UVB)  
Octinoxate -Organic/Chemical (UVB)  
Oxybenzone – Organic/Chemical (UVA) SPF 55 Sun Cream only  
Octocrylene – Organic/Chemical (UVB)

#### Face Stick

Titanium Dioxide – Mineral/Physical (UVA/UVB)  
Octinoxate – Organic/Chemical (UVB)

#### Lip Balm

Avobenzone – Organic/Chemical (UVA)  
Octinoxate – Organic/Chemical (UVB)  
Octisalate – Organic/Chemical (UVB)  
Octocrylene – Organic/Chemical (UVB)  
Oxybenzone – Organic/Chemical (UVA)

**\*All quantities and ingredients have been approved by the FDA for OTC use.**

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#### Micronized Mineral protection

We use micronized zinc oxide and titanium dioxide to provide the ultimate in UV protection without leaving the wearer looking pasty. Recent improvements in Micronized oxides have allowed for the production of a micronized zinc or titanium oxide that retains 100% of its' effectiveness and can be rubbed in clear.

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#### Prevention Tips

- Seek the shade, especially between 10 A.M. and 4 P.M.
- Do not burn.
- Avoid tanning and UV tanning booths.
- Use a sunscreen with an SPF of 15 or higher every day.
- Apply 1 ounce (2 tablespoons) of sunscreen to your entire body 30 minutes before going outside.
- Reapply every two hours.
- Whenever possible, cover up with clothing, including a broad-brimmed hat and UV-blocking sunglasses.
- Keep newborns out of the sun. Sunscreens should be used on babies over the age of six months.
- Examine your skin head-to-toe every month.
- See your physician every year for a professional skin exam.

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