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Reflection and Debate

Sun protection: a challenge in today's Cuba

Photoprotection; a challenge in Cuba today

Photoprotection; a challenge in Cuba leaf in the day

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SUMMARY

Photoprotection is the process of creating a barrier between the skin and the sun.for protection against harmful solar radiation.The proper use of sun protection not only helps prevent some of the short-term harmful effects on the skin, but also helps prevent other long-term effects, such as premature skin aging, dark spots, and the most feared of all, skin cancer. An increase in solar radiation has been reported, and as a consequence, a significant increase in skin cancer cases in Cuba. Sun protection will allow Cubans to be exposed to the sun for longer periods of time, without burning their skin and mitigating the sun's harmful effects.

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Keywords: Photoprotection; Sunscreens.

ABSTRACT

Photoprotection is the process of creating a barrier between the skin and the sun to protect against harmful solar radiation. The use of proper solar photoprotection helps prevent some of the harmful effects on the skin in the short term. It also helps prevent others in the long term, such as premature aging of the skin, skin spots and the most feared of all, skin cancer. It has been reported an increase in solar radiation and as a result, a significant increase in cases of skin cancer in Cuba. Photoprotection will allow Cubans to be exposed to the sun for a longer period of time without skin burns and mitigate the harmful effects of the sun.

Keywords: Photoprotection; Sunscreen.

SUMMARY

Photoprotection is the process of creating a barrier between the sun and the sun to protect against harmful solar radiation. The use of correct sun protection not only helps to prevent some two harmful effects on skin in the short term, but it also helps to prevent others in the long term, such as early skin aging, skin spots that are most feared by everyone, or skin cancer. An increase in solar radiation has been described and, as a consequence, a significant increase in cases of skin cancer in Cuba. Photoprotection will allow Cubans to stay exposed to the sun for longer, without suffering burns and mitigating the harmful effects of the sun.

Keywords: Photoprotection; Sunscreens.

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Introduction

Non-melanoma skin cancer is more common among fair-skinned people, and its incidence has increased over the past two decades. Although skin cancer can occur anywhere on the body, it is most common on the face, neck, hands, and arms, where exposure to the sun is greatest. Therefore, it is extremely important to use sun protection.UV radiation. Among the factors that determine why people in Cuba receive a high UV radiation level and therefore suffer its consequences are: the archipelago's proximity to the equator, the preference of citizens for enjoying sunbathing on the beaches, associated with the trend of tanning as a symbol of health and beauty, and the lack of tendency to use sunscreen. Photoprotection isthe method used to block the incidence of ultraviolet radiation that penetrates the skin when exposed to the sun. People canProtect from the sun with clothing, sunglasses and/or sunscreen. (1) The skin has adaptation and defense mechanisms to protect itself from this aggression, the effectiveness of which varies according to individuals and is frankly insufficient in those with light phototypes. Therefore, photoprotection strategies have been developed based on reducing sun exposure time, especially during midday hours, as well as covering up with appropriate clothing and hats, wearing glasses and complementing the above with the appropriate application of a broad-spectrum sunscreen with a sun protection factor (SPF) of 15 or higher. Of all these methods, sunscreens are the most widely used by the population and, moreover, those about which there is the most controversy.Considering the impact that UV radiation has on human health, in addition to the economic cost it represents, it is necessary to strengthen the health education provided by health personnel and, to achieve this, it is necessary to focus on training on photoprotection. In the context of primary care, it is the responsibility of the physicians

and nurses who make up the Basic Health Team (BHT) to adopt an integrated and open attitude, with the ability to advise, supervise and closely evaluate skin lesions, in relation to the community where they work and the activities they carry out, achieving attitudes at the individual and family level, which become participation-action, for the good of their own health. (2)The dermatological medical community is aware of the harmful and cumulative effects that solar radiation can have on the skin and therefore considers it a priority to communicate the need for photoprevention, a term that encompasses both photoeducation and photoprotection. In other words, prevention will be achieved by educating the general community and healthcare professionals about the harmful and cumulative effects of solar radiation on the skin and by indicating appropriate photoprotection measures, an area in which the cosmetics and pharmaceutical industries strive daily to achieve greater progress. New developments in the field of photoprotection are frequently announced in both basic and clinical research. We must also recognize the efforts of the pharmaceutical and cosmetic industry to support, accompany, and undertake developments in the search for the "ideal sunscreen." The medical community also plays a primary role in the practice of photoprevention and in disseminating the necessary measures to avoid the unpleasant consequences of sun exposure.

Development

The sun is a source of energy necessary for life. It is essential for the synthesis of vitamin D, which enables the absorption of calcium and maintains strong bones. Furthermore, certain skin conditions improve with sun exposure, which also helps lift our mood. However, at the same time, the sun can cause irreversible damage if adequate protective measures are not taken during exposure. The most dangerous radiation in the electromagnetic solar spectrum that reaches the Earth's surface are ultraviolet B (UVB,

290-320 nm) and ultraviolet A (UVA, 320-400 nm). These, in turn, are divided into short UVA or II (320-340 nm) and long UVA or I (340-400 nm). UVA radiation constitutes 5% of the Earth's sunlight profile, while UVB only accounts for 0.5%. UVB radiation, being more energetic, causes most photobiological reactions in the epidermis, and only 10% of it passes to the dermis. Unlike the latter, UVA rays are not filtered by glass, suffer little temporal fluctuation, are barely affected by altitude or atmospheric conditions, and 50% penetrate deeply into the skin, reaching the dermis and even affecting circulating blood cells. Of all the harmful effects that solar radiation produces on the skin, photoaging and especially photocarcinogenesis are perhaps the ones currently focusing the most research. Several authors suggest that the signs are evident from the age of 30; this process leads to loss of skin elasticity, wrinkle formation, thickening of the dermis and epidermis, depigmentation, and telangiectasias. Skin cancer is a common human neoplasia worldwide, and its incidence has increased in recent decades. Its main variants include non-melanoma tumors, which account for 90% of cases, and melanoma, which is less common but more malignant. The American Cancer Society states that the annual increase in melanoma is 0.6% among adults over 50 years of age. Various authors indicate that a common problem is the lack of dissemination of information on sun protection (photoprotection), which is evident in a lack of knowledge and appropriate habits among young people. Primary prevention campaigns are more appropriate and effective in this age group, not only because of the special significance of exposure during this period of life, but also because it is considered the right time to achieve changes in attitudes and behaviors. (3) Numerous investigations on photoprotection and photodamage have been conducted in Cuba.In which the lack of knowledge about adequate sun protection is evident, although a significant group of older adults surveyed do protect themselves, this age group being the one that mostly complies with the protection measures. (4)

For this reason, when it comes to sunscreens, it is now considered essential to consider those with a "broad spectrum" of action. This refers to sunscreens with protection in both

the UVB and UVA ranges. Establishing a standard method for determining sun protection factors has been one of the main challenges facing modern cosmetics. Additionally, products with higher factors, such as 40, could be labeled with "SPF 30+" or "SPF 30 plus," as the Food and Drug Administration (FDA) does* (see Table 1).

Table 1.FDA sun protection categories*.

FPS	Protection
From 2 to 12From 12 to 30From 30 and up	MinimumModerateHigh

These are the main sun protection measures that Cuban society must follow; of course, under the guidance of a multidisciplinary team composed of dermatologists, general practitioners, and nursing staff.

- Avoid sun exposure during the central hours of the day.

  The sun's rays are strongest and most damaging between 12 a.m. and 4 p.m. Altitude also increases the sun's danger, as do some types of cloud cover.
- The shadow, your best ally.

  Take shelter from the sun's rays under trees or use an umbrella, although remember that this protection isn't complete, because some types of surfaces—water, sand, snow, grass—reflect solar radiation.
- Protect yourself in the car too.

  When choosing your new car, remember that the most effective windows are gray-tinted laminated windows. For existing cars, you can apply plastic film to the windows or tint them, always in compliance with the law.
- Check the ultraviolet indices (UVI).

Before sun exposure or engaging in outdoor activities, it's a good idea to find out about the intensity of these rays through channels such as the Spanish Meteorological Agency (AEMET): at levels 6 and higher, the risk is high, and extreme sun protection measures should be taken, as well as choosing the appropriate SPF.

- Protect your body with appropriate clothing and wear a hat.

  Dark colors offer more protection than light ones, and some fabrics, such as cotton, viscose, rayon, and linen, offer less protection than others, such as nylon, wool, silk, and polyester. As for a hat, a wide-brimmed one will shade your face and neck, as well as your head.

- Wear sunglasses to avoid eye damage.

  Sunglasses must offer 100% UV protection, and only if they are approved by the European Union can this be guaranteed. Wraparound sunglasses offer the best protection for the eyes and surrounding skin.

- Use a sunscreen appropriate to your phototype and the circumstances of exposure.

  Never apply sunscreen with an SPF lower than 30, and choose products whose packaging specifies protection against all types of solar radiation. Apply it half an hour before sun exposure and reapply it every two hours and after swimming, remembering to dry your skin thoroughly beforehand. Also, choose lip balms that contain sunscreen.

- Educate your children about the need to protect themselves from the sun.

  Children under one year old should never be exposed to direct sunlight, and when they are 2 or 3 years old, their parents should take extreme sun protection measures (clothing, hats, and sunglasses), as well as applying sunscreen specially

formulated for them. Above all, try to make your little ones aware of the risks of radiation by leading by example.

- Don't let your guard down after the summer.

  Sunlight is dangerous year-round, not just in summer. Also, remember to use sunscreen with an SPF of 50 or higher when playing sports.

- Be very careful with tanning salons.

  Artificial tanning using UVA lamps or beds for aesthetic purposes carries a risk of skin cancer, according tothe World Health Organization (WHO).

Conclusions

Preventing sun-induced skin damage in the Cuban population encompasses various actions based on reducing sun exposure. The intervention of healthcare personnel is essential to updating photodamage prevention practices.

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Conflict of interest

The authors declare no conflicts of interest.

Authorship contribution

Conceptualization—Ideas, formulation, or evolution of the overall objectives and goals of the research. Dr. Solem Rodríguez Rosales.

Data Curation - Management Activities for Recording. Dr. Yuduanis Dailín Fonseca Núñez

Formal analysis-Application of computational or other formal techniques to analyze or synthesize study data.Dr. Solem Rodríguez Rosales.

Software programming, software development, software design, implementation of computer code and supporting algorithms, testing of existing code components. Dr. Yuduanis Dailín Fonseca Núñez.

I,Yuduanis Dailín Fonseca Núñez,On behalf of all the co-authors, I declare the veracity of the content of the article: Photoprotection: A Challenge in Today's Cuba.