

Facts and Myths Ultraviolet Light and Sun Protection



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Fact or Myth: Sunscreen prevents skin cancer

1) Fact

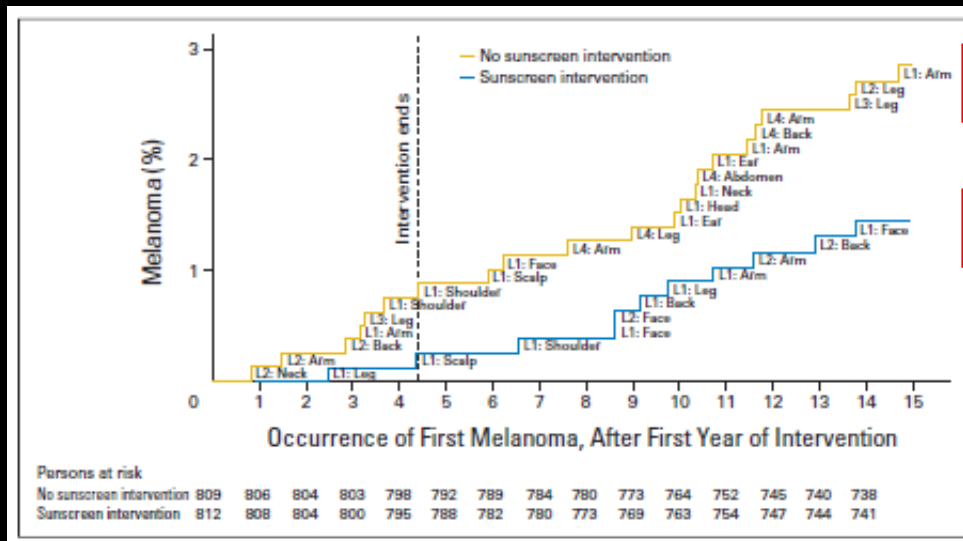
2) Myth



Sunscreen & Melanoma Prevention

Reduced Melanoma After Regular Sunscreen Use: Randomized Trial Follow-Up

Adèle C. Green, Gail M. Williams, Valerie Logan, and Geoffrey M. Strutton



No sunscreen

Sunscreen

~50%
decrease

Regular sunscreen use decreases the risk for squamous cell cancer and melanoma



Fact or Myth: Sun protection after having a melanoma reduces the risk for getting another melanoma

1) Fact

2) Myth



Ambient UV, personal sun exposure and risk of multiple primary melanomas

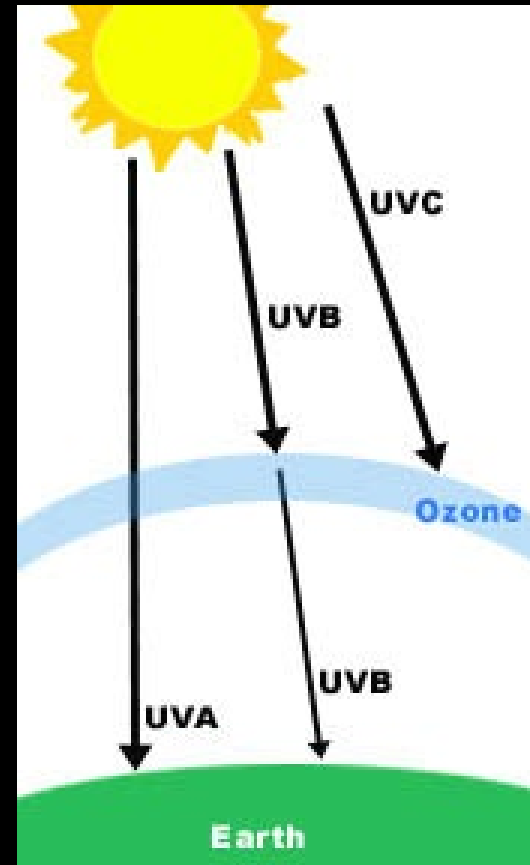
Anne Kricker · Bruce K. Armstrong · Chris Goumas · Melisa Litchfield ·
Colin B. Begg · Amanda J. Hummer · Loraine D. Marrett · Beth Theis ·
Robert C. Millikan · Nancy Thomas · Hoda Anton Culver · Richard P. Gallagher ·
Terence Dwyer · Timothy R. Rebbeck · Peter A. Kanetsky · Klaus Busam ·
Lynn From · Urvi Mujumdar · Roberto Zanetti · Marianne Berwick ·
for the GEM Study Group

- **UV exposure in childhood:** the strongest sun-related risk factor for developing more than 1 melanoma
- **UV exposure in adulthood:** adds to the risk for developing melanoma
 - Recreational sun exposure
 - Beach and waterside activities
 - Vacations in sunnier climate
 - Sunburn



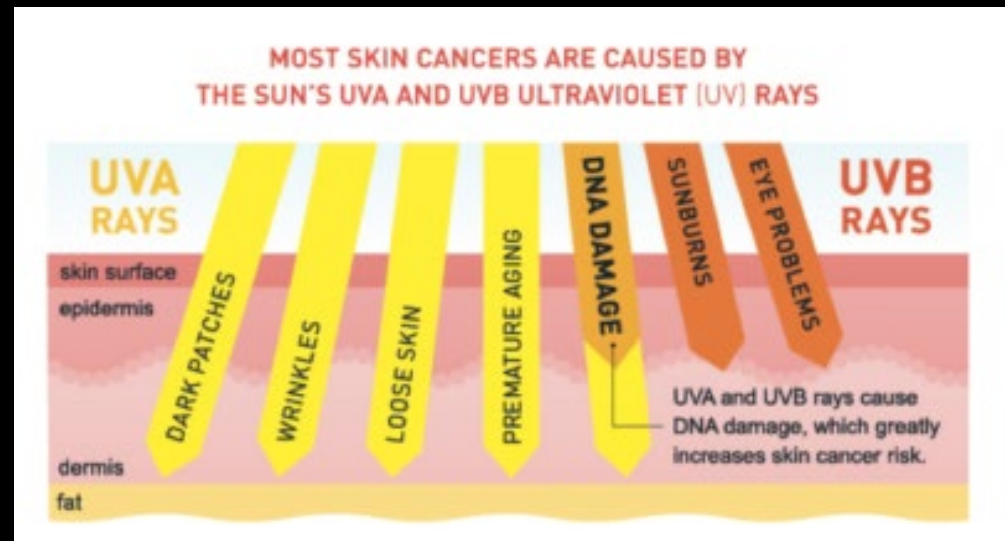
Fundamentals: Ultraviolet light

- The sun emits ultraviolet (UV) light
 - UVA
 - UVB
 - UVC (absorbed by the ozone in the earth's atmosphere)



Fundamentals: Ultraviolet light

- Short-term effects
 - Sunburn
 - Tanning
- Long-term effects
 - Premature aging
 - Dark spots
 - Wrinkles
 - Loose skin
 - Increased risk of skin cancer



Test your knowledge!

**PROTECTING YOUR SKIN
FROM THE SUN**



Which is the most effective way to protect your skin from the sun?

- 1) Avoiding sun exposure
- 2) Sun-protective clothing
- 3) Sunscreen



Sun Avoidance

UVB intensity peaks from
10am to 2pm

UVA is relatively constant
throughout the day





**Avoid
Peak Hours**

6 AM

10 AM

2 PM

8 PM



Which is the most effective way to protect your skin from the sun?

1) Avoiding sun exposure

→ 2) Sun-protective clothing

3) Sunscreen



Sun-protective clothing with UPF (ultraviolet protection factor)

SUMMERSKIN PROTECTION

An average T-shirt with a UPF of 5, lets 20% of the sun's harmful UV rays pass through the garment. With SummerSkin, we block up to 98% of the sun's harmful UV rays.

AVERAGE T-SHIRT
20%
UV Ray Passthrough

SUMMERSKIN FABRICS
98%+
Sun Protection



<https://yoursummerskin.com/pages/about-upf-clothing>

Benefits of sun-protective clothing

- Once garment is on, it starts working immediately
- Won't wear off throughout the day
- Not messy, oily or greasy
- Non-allergenic
- Potential cost savings: garments last many seasons
- Created for Leisure and Sporting activities
- Fashionable and trendy



How to guarantee adequate sun protection for a young sportsperson

Sara Ghazi, Céline Couteau, Laurence J. M. Coiffard

Conclusions: Depending on the type of clothing, the level of sun protection will vary greatly, with UPF values ranging from 30 for a T-shirt to 300 for a club shirt.

This type of protection is higher than that obtained by sun creams and does not change over time.



Which is the most effective way to protect your skin from the sun?

- 1) Avoiding sun exposure
- 2) Sun-protective clothing
- 3) Sunscreen





Sunscreen labeling

Sunscreen Labeling According to 2011 Final Rule

If used as directed with other sun protection measures, this product reduces the risk of skin cancer and early skin aging, as well as helps prevent sunburn.

Only products labeled with both "Broad Spectrum" AND SPF15 or higher have been shown to provide all these benefits.



FDA

Broad-spectrum = Provides protection against both UVA + UVB

Only broad-spectrum sunscreens with SPF 15+ can claim to reduce the risk of skin cancer and early skin aging.

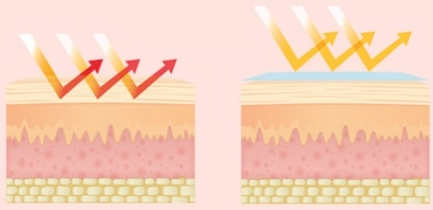
Water resistant: must specify if provides protection for 40 or 80 minutes



Sunscreen Types

Sun Protection

CHEMICAL VS. MINERAL SUNSCREEN



CHEMICAL SUNSCREENS

Chemical Actives
Organic, carbon-based compounds

Absorb Sunlight
Absorb UV rays and convert them to heat, which is then released by the skin

Penetrate Skin
Are absorbed by the skin

MINERAL SUNSCREENS

Mineral Actives
Zinc oxide and/or titanium dioxide

Block Sunlight
Create a barrier that blocks and reflects UV rays before they reach the skin's surface

Physical Barrier
Sit on top of the skin's surface

É

- Chemical sunscreen
 - More cosmetically elegant
- Mineral sunscreen
 - More environmentally friendly

People apply about 25% to 50% of the amount of sunscreen used in testing to determine SPF ratings

How Much Sunscreen Do You Need?

It takes an ounce to adequately cover your body head to toe when you're in a bathing suit. That's the amount in the palm on the right. Most people use half that amount (left)—and half the sunscreen means half the SPF protection.



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Sunscreen Tips

- Use a sunscreen with the highest SPF that you 'like using' *every day!*
- Apply sunscreen 15-30 minutes before you go outside
- **Apply liberally!**
 - At least 1 teaspoon per body part
- **Reapply** at least every 2 hours
- Reapply after swimming and sweating



Sunscreen Products

The image is a screenshot of the Consumer Reports website. At the top left is the 'CR Consumer Reports' logo. To its right are navigation links: 'Product Reviews', 'News', 'Take Action', and 'About Us'. Further right is a search icon, a 'Sign In' link, a green 'Become a Member' button, and a 'Donate' link. Below the navigation bar is a breadcrumb trail: 'Health / Sunscreens / Sunscreen Buying Guide'. The main heading 'Sunscreens' is on the left, with sub-links 'Overview', 'Ratings & Reliability', 'Recommended', and 'Buying Guide' (which is underlined) on the right. The central image shows a person's arms being sprayed with sunscreen, with a dark overlay containing the text 'Sunscreen Buying Guide' and 'The ABCs of SPF'. A 'Feedback' button is in the bottom left corner.

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Health / Sunscreens / Sunscreen Buying Guide

Sunscreens

Overview | Ratings & Reliability | Recommended | Buying Guide

Sunscreen Buying Guide

The ABCs of SPF

Feedback



Sunscreen Lotions: Top-Rated by Consumer Reports

- La Roche-Posay Anthelios 60 Melt-In Sunscreen Milk (\$27)
- Equate Sport Lotion SPF 50 (\$12)
- Pure Sun Defense Disney Frozen Lotion SPF 50 (\$6)
- Coppertone WaterBabies Lotion SPF 50 (\$12)
- Equate Ultra Protection Lotion SPF 50 (\$10)



Sunscreen Sprays: Top-Rated by Consumer Reports

- Trader Joe's Spray SPF 50+ (\$6)
- Banana Boat SunComfort Clear UltraMist Spray SPF 50+ (\$10)
- Equate Sport Continuous Spray SPF 30 (\$4.98)



Note: Use spray sunscreens carefully. The FDA is investigating potential risks associated with inhaling spray sunscreens, so use caution in children and avoid spraying directly on face.



Fact or Myth: Rigorous sun protection
can cause vitamin D deficiency.

- 1) Fact
- 2) Myth



Sunscreen photoprotection and vitamin D status*

T. Passeron ^{1,2} R. Bouillon ³ V. Callender,⁴ T. Cestari ⁵ T.L. Diepgen,⁶ A.C. Green ^{7,8} J.C. van der Pols ⁹ B.A. Bernard,¹⁰ F. Ly ¹¹ F. Bernerd ¹² L. Marrot ¹² M. Nielsen,¹⁰ M. Verschoore,¹⁰ N.G. Jablonski ¹³ and A.R. Young ¹⁴

Conclusions Sunscreen use for daily and recreational photoprotection does not compromise vitamin D synthesis, even when applied under optimal conditions.

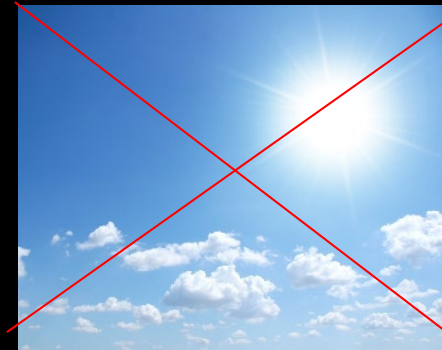
Sun protective behaviors and vitamin D levels in the US population: NHANES 2003–2006

Eleni Linos · Elizabeth Keiser · Matthew Kanzler ·
Kristin L. Sainani · Wayne Lee · Eric Vittinghoff ·
Mary-Margaret Chren · Jean Y. Tang

Conclusion: White individuals who protect themselves from the sun by seeking shade or wearing long sleeves may have lower 25(OH)D levels and be at risk for vitamin D deficiency. Frequent sunscreen use does not appear to be linked to vitamin D deficiency in this population.



Vitamin D Sources



Protect your skin!

Sun avoidance is the most effective way to protect your skin from the sun.

- Avoid peak hours 10AM-2PM

Sun-protective clothing provides immediate and long-lasting protection.

Sunscreens are an important component of sun protection.

- SPF 30+, broad-spectrum, water-resistant
- The best sunscreen is the one you will use!



Sunscreen is the most effective anti-aging product you can put on your skin



What can you do to protect yourself from the sun?

Protect yourself in 5 ways

Slip Slop Slap Seek Slide



Sun protection at any age is important



- Thank you!

