

The Shady Side of Sunscreen

It was a sunny day in 1938 when Swiss chemistry student Franz Greiter set out to summit Mount Piz Buin on the Swiss-Austrian border. Upon returning from his trek, Mr. Greiter experienced an unfortunate but non-life-threatening radiation burn commonly known today as—you guessed it—a sunburn. Luckily for those of us who enjoy San Luis Obispo's year-round sun, Mr. Greiter set out to invent a solution to help future generations avoid the same fate.

Fast-forward to 1946 and Mr. Greiter's Gletscher Crème (or as we Americans call it, Glacier Cream) hit the shelves under the appropriately named brand, Piz Buin—right on time for the unveiling of the bikini in the same year. The brand, which still sells its signature cream today, brought ultraviolet A and ultraviolet B filters to the budding sunscreen market in the 1970s. Around this time, the Food and Drug Administration

introduced SPF testing and labeling regulations in the United States.

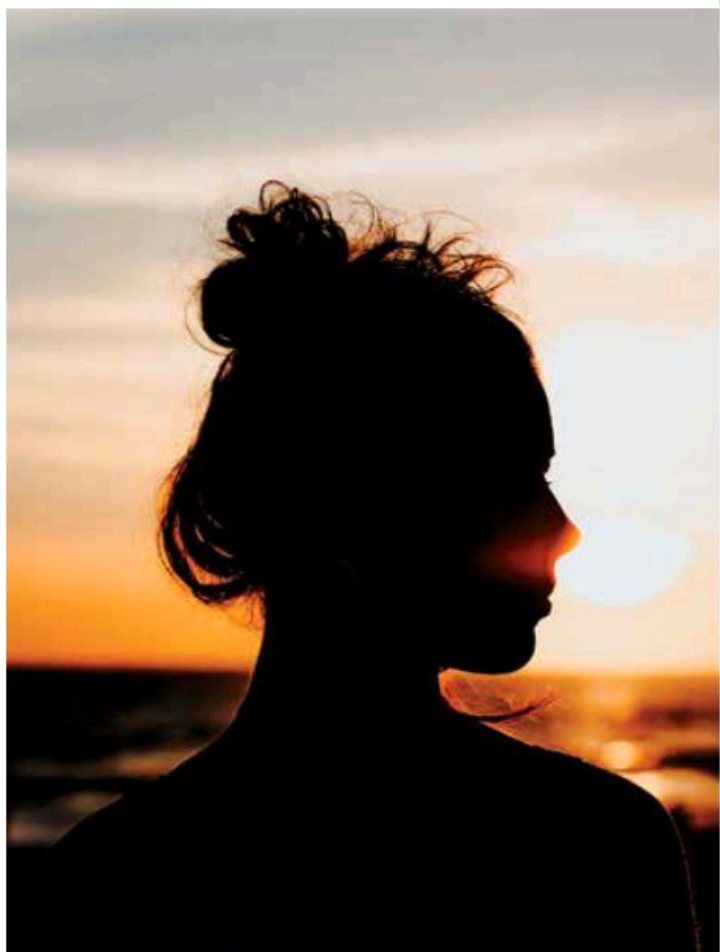
While SPF-conscious consumers today are buying and applying more sunscreen than ever before, industry testing and regulations have made few changes since the '70s. Despite the occasional and unsolicited headline warning us that "Your Sunscreen Might be Poisoning You," we continue to lather up without hesitation. However, a recent study conducted by the FDA and published in *JAMA Dermatology* suggests those once outlandish suspicions may actually come with warrant. Naturally, we did some investigative research of our own. Here's what we discovered... >>

“Don’t Forget to Put on Sunscreen”

We grew up hearing it over and over again from our parents, our doctors, and celebrity dermatologists on TV. After all, a good dousing a day keeps the unsightly pigmentation, premature aging, and skin cancer away—or does it? In spite of our healthy relationship with sunscreen, the number of invasive melanoma cases diagnosed annually increased by 54 percent between 2009 and 2019—with a vast majority tying directly back to sun exposure. Is it possible that SPF gives us a false sense of security under the sun? The verdict is still out.

Soaking It All In

While skin cancer rates continue to rise, the recent FDA study published in *JAMA* raised new concerns about how four of the most common sun-shielding molecules behave after application. Contrary to what sunscreen manufacturers have been saying for decades, UV-blocking chemicals do, in fact, seep through our skin and into our bloodstream—and fast. Within just a few hours of lathering, the photoprotective chemicals in question—avobenzone, oxybenzone, octocrylene, and ecamsule—tested at bloodstream concentrations above the FDA’s maximum toxicology limit in all 24 participants. But wait—before you swear off sunscreen—the FDA says there is no evidence that these chemicals are causing harm. However, the results were enough to prompt further safety testing. A good rule of thumb? If you can’t eat it, don’t put it on your skin.



Stuck in the ‘90s

In the U.S., the FDA regulates sunscreens as over-the-counter medicines, which are bound by stricter standards than cosmetics. The European Union and most other countries, on the other hand, categorize sunscreen as a cosmetic. As a result, U.S. companies stopped adding new molecules to the lineup in the ‘90s due to complicated and costly FDA approval processes. Meanwhile, Europe continued buffering their photoprotective potions with new and advanced filters, offering better protection against UVA and UVB. Here’s a not-so-fun fact: nearly half of U.S. sunscreens fail to meet basic European standards for protection against UVA.

Photoprotective Chemicals: What Are They?

To survive in proximity to a giant sphere of extremely hot plasma—the sun—our bodies use a biochemical process called photoprotection. Without going into lengthy scientific details, we know that DNA and melanin work as natural UV filters, converting threatening photons from the sun into benign amounts of heat before they can wreak havoc. When we apply a fresh sheath of sunscreen, we double-down on our natural radiation shield with the help of UV-absorbing chemicals, such as avobenzone and oxybenzone. As these compounds soak up UV radiation, the sunscreen breaks down and releases heat—warding off sunburn as long as we reapply every couple of hours. >>

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What the FDA?

Is the FDA to blame for the continual rise of melanoma in America? While the well-intentioned agency aims to protect sunbathers from absorbing potentially-harmful chemicals, stricter regulations have also created an innovation stalemate. The FDA is now requesting more data about bloodstream absorption from sunscreen manufacturers. If ingredients exceed the maximum toxicological threshold, more tests must be conducted to assess cancer risk and harm to the reproductive and endocrine systems. The hope of these new testing requirements is to give new ingredients a chance against those dating back to the '90s. However, in the immediate future, Americans will likely see a shrinking selection in the sunscreen aisle. While the risks of sunscreen absorption are currently unknown, we know for a fact that exposure to UV radiation causes skin cancer. The FDA stands by its recommendation to cover up and spray or rub on a minimum of SPF 15 before hitting the great outdoors.

REMINDER

We are merely unlicensed scientific speculators here at *SLO LIFE Magazine*. But one thing we know for sure: you can never go wrong plunking down under a big shady umbrella with a glass of Edna Valley Rosé. **SLO LIFE**