A short history of sunscreen, from basting like a chook to preventing skin cancer

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Australians have used commercial creams, lotions or gels to manage our skin's sun exposure for nearly a century.

But why we do it, the preparations themselves, and whether they work, has changed over time.

In this short history of sunscreen in Australia, we look at how we've slathered, slopped and spritzed our skin for sometimes surprising reasons.

At first, suncreams helped you 'tan with ease'

Sunscreens have been available in Australia since the 30s. Chemist Milton Blake made one of the first.

He used a kerosene heater to cook batches of "sunburn vanishing cream", scented with French perfume.

His backyard business became H.A. Milton (Hamilton) Laboratories, which still makes sunscreens today.

Hamilton's first cream claimed you could " Sunbathe in Comfort and TAN with ease". According to modern standards, it would have had an SPF (or sun protection factor) of 2.

The mirage of 'safe tanning'

A tan was considered a "modern complexion" and for most of the 20th century, you might put something on your skin to help gain one. That's when "safe tanning" (without burning) was thought possible.

Sunburn was known to be caused by the UVB component of ultraviolet (UV) light. UVA, however, was thought not to be involved in burning; it was just thought to darken the skin pigment melanin. So, medical authorities advised that by using a sunscreen that filtered out UVB, you

could "safely tan" without burning.

But that was wrong.

From the 70s, medical research suggested UVA penetrated damagingly deep into the skin, causing aging effects such as sunspots and wrinkles. And both UVA and UVB could cause skin cancer.

Sunscreens from the 80s sought to be "broad spectrum"—they filtered both UVB and UVA.

Researchers consequently recommended sunscreens for all skin tones, including for preventing sun damage in people with dark skin.

Delaying burning … or encouraging it?

Up to the 80s, sun preparations ranged from something that claimed to delay burning, to preparations that actively encouraged it to get that desirable tan—think, baby oil or coconut oil. Sun-worshippers even raided the kitchen cabinet, slicking olive oil on their skin.

One manufacturer's "sun lotion" might effectively filter UVB; another's merely basted you like a roast chicken.

Since labeling laws before the 80s didn't require manufacturers to list the ingredients, it was often hard for consumers to tell which was which.

At last, SPF arrives to guide consumers

In the 70s, two Queensland researchers, Gordon Groves and Don Robertson, developed tests for sunscreens—sometimes experimenting on students or colleagues. They printed their ranking in the newspaper,

which the public could use to choose a product.

An Australian sunscreen manufacturer then asked the federal health department to regulate the industry. The company wanted standard definitions to market their products, backed up by consistent lab testing methods.

In 1986, after years of consultation with manufacturers, researchers and consumers, Australian Standard AS2604 gave a specified a testing method, based on the Queensland researchers' work. We also had a way of expressing how well sunscreens worked—the sun protection factor or SPF.

This is the ratio of how long it takes a fair-skinned person to burn using the product compared with how long it takes to burn without it. So a cream that protects the skin sufficiently so it takes 40 minutes to burn instead of 20 minutes has an SPF of 2.

Manufacturers liked SPF because businesses that invested in clever chemistry could distinguish themselves in marketing. Consumers liked SPF because it was easy to understand—the higher the number, the better the protection.

Australians, encouraged from 1981 by the Slip! Slop! Slap! nationwide skin cancer campaign, could now "slop" on a sunscreen knowing the degree of protection it offered.

How about skin cancer?

It wasn't until 1999 that research proved that using sunscreen prevents skin cancer. Again, we have Queensland to thank, specifically the residents of Nambour. They took part in a trial for nearly five years, carried out by a research team led by Adele Green of the Queensland

Institute of Medical Research. Using sunscreen daily over that time reduced rates of squamous cell carcinoma (a common form of skin cancer) by about 60%.

Follow-up studies in 2011 and 2013 showed regular sunscreen use almost halved the rate of melanoma and slowed skin aging. But there was no impact on rates of basal cell carcinoma, another common skin cancer.

By then, researchers had shown sunscreen stopped sunburn, and stopping sunburn would prevent at least some types of skin cancer.

What's in sunscreen today?

An effective sunscreen uses one or more active ingredients in a cream, lotion or gel. The active ingredient either works:

- "chemically" by absorbing UV and converting it to heat. Examples include PABA (para-aminobenzoic acid) and benzyl salicylate, or
- "physically" by blocking the UV, such as zinc oxide or titanium dioxide.

Physical blockers at first had limited cosmetic appeal because they were opaque pastes. (Think cricketers with zinc smeared on their noses.)

With microfine particle technology from the 90s, sunscreen manufacturers could then use a combination of chemical absorbers and physical blockers to achieve high degrees of sun protection in a cosmetically acceptable formulation.

Where now?

Australians have embraced sunscreen, but they still don't apply enough or reapply often enough.

Although some people are concerned sunscreen will block the skin's ability to make vitamin D this is unlikely. That's because even SPF50 sunscreen doesn't filter out all UVB.

There's also concern about the active ingredients in sunscreen getting into the environment and whether their absorption by our bodies is a problem.

Sunscreens have evolved from something that at best offered mild protection to effective, easy-to-use products that stave off the harmful effects of UV. They've evolved from something only people with fair skin used to a product for anyone.

Remember, slopping on sunscreen is just one part of sun protection. Don't forget to also slip (protective clothing), slap (hat), seek (shade) and slide (sunglasses).

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