to sunscreen or not

FAQs

Are sunscreens safe?

Sunscreens are one of the most studied and tested of all cosmetic products and there is a legal requirement that all cosmetics in the UK and Europe must undergo a very strict safety assessment by a qualified independent safety assessor. The assessment covers the safety of the finished product as well as all of the individual ingredients, how and where the product is to be used, by whom and how often. The regulatory framework for sunscreens in developed countries is actually very stringent as consumer safety is a priority.

The use of sunscreen has decades of data that proves it prevents sunburn and reduces the risk of developing skin cancer. Many studies that cite potential concerns with sunscreen agents have been misrepresented with extrapolations that are almost always impossible to replicate in humans. Cancer Research Charities and the medical fraternity believe the public health risks of developing life threatening skin cancers when unprotected, far outweigh any potential risk of using a sunscreen, when they are used according to current topical recommendations. They continue to recommend the use of sunscreens as part of safe sun behaviour.

Do sunscreen chemicals disrupt hormones?

'Endocrine disruptor' is the term given to certain chemicals which allegedly act as, or interfere with, human hormones in the body and lead to harmful effects. Certain ingredients used in cosmetics and personal care products have been claimed to be 'endocrine disruptors' because they have the potential to mimic the hormone oestrogen. The UV filter benzophenone-3 (oxybenzone), which has been accused of being an endocrine disruptor, is 1.5 million times less potent in its oestrogenic effect than ethinyloestradiol which is used in oral contraceptives. Looking at this in another way, if aspirin were 1.5 million times lower in potency, you would need to consume more than thirteen times your body weight of pure aspirin at one time just to cure a headache. Clearly, that is not possible. In exactly the same way, it is not possible to be exposed to sufficient of these so-called endocrine disruptors to have any disrupting effect; they are simply too weak.

Many so-called 'endocrine disruptors' (actually endocrine mimics) are abundant in nature. We ingest them in the food we eat in concentrations many million times greater than in cosmetics and personal care products. Endocrine mimics include phytoestrogens – oestrogen-like compounds found in plants. We eat these in foods such as cabbage, soya beans and sprouts. No adverse health effects have been associated with these dietary exposures.

The 2001 study that suggests potential hormone disruption from oxybenzone was reviewed in 2011 by researchers who concluded the levels of oxybenzone exposure could never be achieved through normal topical use of sunscreens. In fact, to absorb the same level as those achieved through ingestion in the study, an average woman would need to apply daily sunscreen to hands, arms, face and neck for 277 years! And even if it was possible to achieve this level, the hormone disruption potential is extremely low – the levels would be 1.5 million times weaker than an average contraceptive pill.

Do sunscreens cause cancer?

The 2006 study done on test skin in the laboratory proposed that under certain conditions UV absorbing ingredient *could* release free radicals (not that they did) *potentially* causing damage to cells and in *theory* lead to cancer. The authors of the study actually noted that applying sunscreen at regular intervals during sun exposure (like we are advised to) would avoid the free radical scenario entirely.

Decades of positive protection data do not support the notion that sunscreens cause cancer, although some studies have emerged on sunscreen users potentially spending longer in the sun due to the sense of security that sunscreens may provide. This could increase skin cancer rates if general sun safe behaviour is altered and exposure extended. Sun safe behaviour should not only include use of sunscreens, wearing clothing, hats and sunglasses or avoiding direct exposure at peak daylight hours, are also important considerations.

Should I avoid sunscreens to protect the environment?

Experiments that expose corals to sunscreen chemicals typically use far higher concentrations than have ever been found on an actual reef. Marine scientists believe that global climate change, ocean acidification, and unsustainable fishing are the primary causes of coral reef bleaching (essentially a stress response that puts the coral at risk of dying). The most severe bleaching has occurred in remote areas where water temperatures were hottest for longest during key climatic events. These areas do not see any human activity. Damage in areas of bathing and swimming can also be attributed to standing on corals or knocking them.

Like most reefs throughout the tropics and subtropics, coral reefs in Hawaii and Palau have experienced severe bleaching multiple times during recent, unusually hot summers resulting in extensive loss of corals. The study of single water samples of sea water at 6 locations in Hawaii all had undetectable amounts on sunscreen. The measurements taken in the US Virgin Islands showed some concentration in 4 of 10 locations measured, although there was no control to measure for contamination or to confirm the result.

Whilst it is essential that we continue to research the impacts that could contribute to our environmental challenges, there is currently no direct evidence to demonstrate that bleaching due to global heating is exacerbated by sunscreens or that recovery from thermal bleaching is impaired by sunscreens.

What is the difference between chemical and physical sunscreens?

Chemical sunscreens absorb UV radiation, convert the light energy into heat which dissipate. Common chemical sunscreens include octocrylene, octinoxate, oxybenzone and avobenzone. Physical sunscreens are mineral based and reflect light away from the skin. Titanium dioxide and zinc oxide are physical sunscreens.

What is a broad spectrum sunscreen?

A broad spectrum sunscreen provides more than simply SPF protection from UVB radiation which causes burning and skin cancer. These formulas also provide protection from UVA which contributes to ageing and skin cancer.

How much protection do sunscreens provide?

SPF15 blocks 93% of UVB

SPF30 blocks 96% of UVB

SPF50 blocks 98% of UVB

Will using sunscreen prevent Vitamin D production?

No. Since sunscreens cannot block 100% of UV, Vitamin D production can be achieved even whilst wearing sunscreen. Studies have shown that with a small amount of incidental exposure during daylight hours, such as walking to the car or hanging out the washing, skin can produce sufficient levels of Vitamin D.

You should always apply sunscreens 30 minutes prior to exposure, even if you intend to boost your Vitamin D.

How much sunscreen should I apply?

The application to achieve the full SPF on your product is

- 30ml (approximately a shot glass full) for a full body
- 5ml (one teaspoon) for face, neck and chest.

Apply 30 minutes prior to exposure and reapply every 2 hours or after swimming.

For everyday use with minimal or no direct exposure a single application is sufficient. To achieve full SPF values apply moisturisers generously and layer with SPF primers and SPF foundations to achieve adequate product volumes.