

Sun tanning essay



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Sun tanning describes a darkening of the skin (especially of fair-skinned individuals) in a natural physiological response stimulated by exposure to ultraviolet (UV) radiation from sunshine or from artificial sources such as a tanning bed. With excessive exposure to ultraviolet, a sunburn can develop.

Cause and effect Two different mechanisms contribute to the UV-induced darkening of the skin. Firstly the UVA-radiation generates oxidative stress which in turn oxidises pre-existing melanin. This leads to rapid darkening of already existing melanin. The second mechanism is the increased production of melanin (melanogenesis).

[1] It is a reaction of the body to photodamage from UVB. [2] This melanogenesis is triggered by the same DNA damage that causes sunburn. Melanogenesis leads to delayed tanning. It first becomes visible about 72 hours after exposure. [1] The tan that is created by an increased melanogenesis lasts much longer than the one that is caused by oxidation of existing melanin.

Darkening of the skin is caused by an increased release of the pigment melanin into the skin's cells after exposure to ultraviolet radiation. Melanin is produced by cells called melanocytes and protects the body from direct and indirect DNA damage absorbing an excess of solar radiation, which can be harmful. Depending on genetics, some people can darken quickly and deeply whereas others do not darken much at all. The ultraviolet frequencies responsible for tanning are often divided into the UVA (315 to 400nm wavelength) and UVB (280 to 315nm wavelength) ranges.

UVB triggers the formation of CPD-DNA damage (direct DNA damage) which in turn induces an increased melanin production[2] is more likely to cause a sunburn than UVA as a result of overexposure. The mechanism for sunburn and increased melanogenesis is identical. [3] Both are caused by the direct DNA damage (formation of CPDs) reduced by virtually all sunscreens in accordance with their SPF is thought to cause the formation of moles and some types of skin cancer (but not melanoma) causes skin aging (but at a far slower rate than UVA.) produces Vitamin D in human skin UVA causes release of preexisting melanin from the melanocytes causes the melanin to combine with oxygen (oxidize), which creates the actual tan color in the skin seems to cause cancer less than UVB, but causes melanoma, a far more dangerous type of skin cancer than other types is blocked less than UVB by many sunscreens but is blocked to some degree by clothing is present more uniformly throughout the day, and throughout the seasons than UVB [edit] Health benefits The skin produces vitamin D in response to sun exposure (in particular, UVB waves in the 285nm to 287nm range), which can be a health benefit for those with vitamin D deficiency. In 2002, Dr. William B.

Grant published an article claiming that 23, 800 premature deaths occur in the US annually from cancer due to insufficient UVB exposures (apparently via vitamin D deficiency). [4] This is higher than 8, 800 deaths occurred from melanoma or squamous cell carcinoma. This does not mean that sun tanning is categorically safe or beneficial. Spending several minutes in the sun is long enough to obtain your daily dose of vitamin D.

Another research[5][6] estimates that 50, 000–63, 000 individuals in the United States and 19, 000 – 25, 000 in the UK die prematurely from cancer

annually due to insufficient vitamin D. Another effect of vitamin D deficiency is osteomalacia, which can result in bone pain, difficulty in weight bearing and sometimes fractures. This work has been updated in Grant et al. 2005[7] and Grant and Garland, 2006[8] In addition, it was reported that in Spain, risk of non-melanoma skin cancer is balanced by reduced risk of 16 types of cancer [Grant, 2006][9] According to research conducted in 2007 by Cozen, Gauderman, Islam, and Mack [10] [11], sun exposure during childhood prevents multiple sclerosis later in life. Ultraviolet radiation has other medical applications, in the treatment of skin conditions such as psoriasis and vitiligo.

Sunshine is informally used as a short term way to treat or hide acne, but research shows that in the long term, acne worsens with sunlight exposure and safer treatments now exist (see phototherapy). [edit] Cultural history Throughout history, tanning has seen several fluctuations in popularity. In ancient times the sun played a central religious role in Egyptian, Greek, and Peruvian culture. For Egyptians “ Ra” was the sun god, the Greeks had “ Apollo,” and “ Helios” and the Peruvian ruler was believed to be the sun incarnate.

With the introduction of the class system in societies throughout the world, religious beliefs connected to the sun gave way to social distinctions between those of tanned complexion and those without. This class system often separated those deemed to be high class and those who were not. This distinction was physically manifested in the color of one’s skin. Those who often spent long hours in the sun with their laborious jobs were often grouped together as lower class. A sociology professor at Trent University, <https://assignbuster.com/sun-tanning-essay/>

Stephen Katz, sums up this point with his quote, “ Tans were labor tans, and not leisure tans like they are today” [12].

Women even went as far as to put lead based cosmetics on their skin to artificially augment their appearance [13]. However, these cosmetics slowly caused their death through lead poisoning. Achieving this light skinned appearance was brought about in many other ways, including the use of arsenic to whiten skin, on to more modern methods such as full length clothes, powders, and parasols. This fair-skinned trend continued up until the end of the Victorian era.

Niels Finsen was awarded the Nobel Prize in medicine in 1903 for his “ Finsen Light Therapy” [14]. This therapy was to cure infectious diseases such as lupus vulgaris and rickets disease. Vitamin D deficiency was found to be a cause of rickets disease, and exposure to the sun would allow Vitamin D to be produced in a person. Therefore, sun exposure was a remedy to curing several diseases, especially rickets. Shortly thereafter, in the 1920’s, Coco Chanel accidentally got burnt while visiting the French Riviera.

Her fans apparently liked the look and started to adopt darker skin tones themselves. Tanned skin became a trend partly because of Coco’s status and the longing for her lifestyle by other members of society. In addition, Parisians fell in love with Josephine Baker, a “ caramel-skinned” singer in Paris. Those who liked and idolized her wanted darker skin so they could be more like her. These two French women were two trendsetters of the transformation of tanned skin being viewed as fashionable, healthy, and

luxurious [15]. In the 1940's, women's magazines started using advertisements that encouraged sun bathing.

At this time, tanning oil and bathing suits that left little to the imagination were coming out. The bikini made its appearance in 1946. Louis Reard was the French designer who introduced the bikini. In the 1950's, an ever-growing trend was to use baby oil as a method to tan more quickly.

The first self-tanner came about in the same decade and was known as "Man-Tan," and often led to undesirable orange skin [13]. Coppertone, in 1953, brought out the little blond girl and her cocker spaniel tugging on her bathing suit bottoms on the cover of their sunscreen bottles; this is still the same advertisement they use today on their bottles of sunscreen. In the latter part of the 50's, silver metallic UV reflectors were common to enhance one's tan. The "1960's reveled in the sand-and-surf ethos epitomized by the Beach Boys" [12]. Their superstar status helped to promote tanned skin as desirable. In 1971, Mattel introduced Malibu Barbie, "the ultimate beach bunny," [15] with tanned skin, sunglasses, and her very own bottle of sun tanning lotion.

The same decade, specifically 1978, gave rise to tanning beds and sunscreen with SPF 15. Today there is an estimated 50, 000 outlets for tanning, whereas in the 90's there were only around 10, 000. The tanning business is a five-billion dollar industry. [12].

In some other parts of the world, fair skin remains the standard of beauty. The geisha of Japan were renowned for their brilliant white painted faces, and the appeal of the bihaku (?? bihaku?), or "beautiful white", ideal leads

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many Japanese women to avoid any form of tanning[16]. There are exceptions to this, of course, with Japanese fashion trends such as ganguro emphasizing almost black skin. The color white is associated with purity and divinity in many Eastern religions. In post-colonial Africa and India, dark skin is heavily associated with a lower class status, and some people resort to skin bleaching to achieve a skin color they view as more socially acceptable.

[citation needed] [edit] Sociological perspective [edit] Separation of social classes Tanning has seen a marked increase in popularity in recent years. One evidence of this trend has been seen in the growth of skin cancer, outdoor tanning, and tanning salons. The reason for this increase is because of society's evolving definition of the significance of a tan. The rise and fall in popularity of tanning has less to do with the color of one's skin and more to do with the means by which the tan was obtained.

When the sun was worshiped tanning was popular, but in later years when a tan was associated with the lower class lifestyle it was no longer desirable. Tanning again became popular when low class jobs moved indoors and the upper classes had more leisure time to spend outdoors. Still today, having a tan is a sign of status and is associated with being a member of the upper classes[citation needed]. Having darker skin is not the only desirable product of tanning, but it is also to show that one is wealthy enough to be able to spend time working on their tan [14].

[edit] Society's concept of image Today, tanning is a sign of being healthy, even if that may not be accurate. According to several studies, both men and women view a tanned body as more healthy than a pale body [17], even

though tanning sometimes leads to an unhealthy body by way of skin cancer, blistered or burnt skin, freckles, and wrinkles, among others. This represents the conflict between one's health and the social values of being physically attractive. Often, people do not tan because of how they are going to view their body, but more so how others are going to view it. Some people prefer to appear healthy and conform to society's expectations, rather than curtail risk by avoiding sun damage [18]. The image one conveys through having bronzed skin is largely responsible for the ever-growing trend of tanning today [18].

[edit] Instant gratification and ease of accessibility Another reason tanning has been adopted so readily is because the social benefits of tanning are often immediate, while the risky side effects are delayed and sometimes never experienced. Also, the easy accessibility of obtaining a tan leads to people continuing the habit. With tanning salons open year-round, it is possible to maintain a tan all year long [19]. [edit] Dressing for sun tanning Some people choose to sun tan without clothes to maximize tanning coverage, maximizing health benefits of sun exposure, increasing the sensory experience and reducing or eliminating tan lines caused by the contrast of exposed and unexposed tanned skin. While some are content to simply sun tan in the privacy of their own private property, some governmental agencies have responded to more demand for clothing-optional sun tanning in public spaces. As an example, Englischer Garten in urban Munich has meadows where nude sun tanning is the norm.

In Denmark, clothing-optional sun tanning is the default dress code on all beaches, with the exception of two. [20] In other areas of the world, clothing-

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free sun tanning could be met with citation or fines. Clothing-optional beaches (also known as naturist, nude or nudist beaches) and other areas where quiet use or traditional use is tolerated, generally allow for such opportunities without fear of legal harassment or penalty. Even more beaches allow topfree tanning for women.

Some describe beaches where nudity or topfree tanning is tolerated to be “more European.” [21] Geographic areas in the US with warm to tropical climates with extensive beach fronts often cater to such tourist opportunities, e. g. Haulover Beach, Gunnison Beach, Black’s Beach and Baker Beach. [edit] Preventing overexposure To avoid sunburn or excessive exposure, staying out of direct sunlight is the primary defense. If long sun exposure cannot be avoided or is desired one may use sunscreen or various over-the-counter creams to reduce sun exposure.

The SPF (Sun Protection Factor) number on a sunscreen product shows its rated effectiveness. Products with a higher SPF number are those designed to provide more defense for the skin against the effects of solar radiation. However in 1998, the Annual Meeting of the American Association for the Advancement of Science reported that some sunscreens advertising UVA and UVB protection do not provide adequate safety from UVA radiation and could give sun tanners a false sense of protection. Tanning oils or creams, when applied, are usually thicker on some parts of skin than on others. This causes some parts of skin to get more UVA and UVB than others and thus get sunburns. For this reason, improper application of tanning oils or creams may increase the occurrence of skin cancer and other skin diseases.

[citation needed] For those who choose to tan, some dermatologists recommend the following preventative measures: Make sure the sunscreen blocks both UVA and UVB rays. These types of sunscreens, called broad-spectrum sunscreens, contain more active ingredients. Ideally a sunscreen should also be hypoallergenic and noncomedogenic so it doesn't cause a rash or clog the pores, which can cause acne. Sunscreen needs to be applied thickly enough to make a difference.

People often do not put on enough sunscreen to get the full SPF protection. In case of uncertainty about how much product to use, or discomfort with the amount applied, switching to a sunscreen with a higher SPF may help. Research has shown that the best protection is achieved by application 15 to 30 minutes before exposure, followed by one reapplication 15 to 30 minutes after the sun exposure begins. Further reapplication is only necessary after activities such as swimming, sweating, and rubbing.

[22] The rays of the sun are strongest between 10 a. m. and 4 p. m (see [http://www.epa.](http://www.epa.gov/sunwise/actionsteps.tml)

[gov/sunwise/actionsteps.tml](http://www.epa.gov/sunwise/actionsteps.tml)), so frequent shade breaks are recommended during these hours. Sun rays are stronger at higher elevations (mountains) and lower latitudes (near the equator). One way to deal with time zones, daylight saving time (summer time) and latitude is to check shadow length. If a person's shadow is shorter than their actual height, the risk of sunburn is much higher. Wear a hat with a brim and anti-UV sunglasses which can provide almost 100% protection against ultraviolet radiation entering the eyes.

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Be aware that reflective surfaces like snow and water can greatly increase the amount of UV radiation to which the skin is exposed. The American Academy of Dermatology recommends the use of sunscreens, wearing sun protective clothing and avoiding the sun altogether. [edit] Tanning and sunscreen In his book: “ Physician’s guide to sunscreens” Nicholas J. Lowe pointed out, that one of the reasons for customers to reject sunscreen use is the reduction of tanning that is associated with good sunscreen protection. (chapter 7 page 81)[23] He then reports about several tanning activators.

The specific substances which he writes about are different forms of Psoralen. These substances were known to be photocarcinogenic since 1979. 24][25][26] Despite the obvious photocarcinogenic effects the authorities disallowed Psoralen only in July 1996. [27] [edit] Articles Grant, William B. (2002).

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