

Sunbeds, dihydroxyacetone (DHA) fake tan, and MelanoTan injections: A history of ‘safe’ tanning technologies

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By the early 1990s, many oncologists, epidemiologists, and dermatologists were alarmed by the sharp rise in malignant melanoma skin cancer rates since World War II in fair-skinned populations across Europe, the United States, Canada, and Australia.¹ In response, the Department of Health in Britain published *The Health of the Nation* (1992), which included a target to stop the year-by-year rise of skin cancers by 2005. The government report was largely concerned with the depleting ozone layer and other cancer-causing ‘green issues’.² Yet health experts and the media focused on sunbeds because people still used them despite their well-known carcinogenic effects. Also, sunbed use was considered a preventable cause of skin cancer, unlike general sun exposure or broader environmental factors.³ Therefore, medical authorities – mainly cancer specialists and dermatologists – assumed their discouragement of sunbeds could reduce skin cancer rates.

However, the British government, medical experts, and the media struggled to weaken the sunbed industry’s commercial power or remove sunbed technologies from households and commercial spaces.⁴ Throughout the twentieth century, most Westerners associated tanned white skin with health, wealth, and athleticism, and paleness with sickness and poverty.⁵ As one dermatologist explained, sunbeds therefore signified ‘health by association’ within these populations.⁶ Several preceding medical technologies had also reinforced the positive associations of a sunbed tan. As scholars Tania Woloshyn and Simon Carter have noted, ultraviolet (UV) lamps were invented as a medical technology in the 1890s to prevent or cure infections and diseases, such as rickets and tuberculosis. Throughout the following century, ‘fitness-enhancing’ and

'beautifying' variations of UV devices were then sold as a cure for skin conditions, including acne, psoriasis, and eczema, and mental health issues, such as seasonal affective disorder and depression.⁷ In 1978, the modern sunbed arrived in Britain, and by the early 1980s, a boom in the interlinked health club and sunbed industry strengthened White people's obsession to develop strong, 'healthy', and tanned physiques.⁸ Though sunbeds were not introduced as 'medical' technologies', some general practitioners on occasion prescribed them for skin conditions, and providers claimed that sunbeds were safer than sunbathing outdoors.⁹

After the mid-1980s, however, concerns about sunbeds overshadowed claims of their virtue. In the mainstream media, most presses removed sunbed advertisements from their pages.¹⁰ Nonetheless, sunbed companies continued spreading their own promotional material, using the same misleading yet long-established claims that sunbeds were safe.¹¹ Medical studies, media coverage, and even government campaigns did not lessen UV consumption either.¹² Most people continued to use sunbeds, albeit discreetly, to avoid shame.¹³ In Britain, most White people still desired tanned skin, and although sunbed technologies were no longer novel or fashionable, they proved an effective way for sun-starved people to develop an all-year tan. In the early 1990s, skincare providers and scientific research institutions soon realized they could exploit this consumer demand by providing advanced 'UV-free' tanning technologies.¹⁴ More importantly, they could use the ongoing UV-induced skin cancer concerns to seek both medical and media endorsement. By the early 1990s, all media coverage on UV-free tanning technologies emerged in the spaces where sunbeds had once featured.

This chapter focuses on two of these 'UV-free' tanning technologies: first, the updated formulas of dihydroxyacetone (DHA) tanning – through lotions, creams, mousses, and sprays – and then the entirely novel invention of MelanoTan injections.¹⁵ To expose ongoing issues with DHA serums since their mid-1950s discovery, I examine consumer reviews from the *Financial Times* newspaper, and the *Which?*, *The Druggist and Chemist*, *She*, and *Cosmopolitan* magazines. The DHA serums of the 1990s were apparently improved versions of past products; the new products could be applied at home and, for the first time, by tanning specialists in beauty salons. Scientists also began to develop other

tanning methods funded by their research institutions. Reportedly, MelanoTan was an attempt to create a medical technology that both darkened skin and protected people from skin cancer. In this chapter, I will interchange the terms 'fake tan', 'self-tanning', and 'alternative tanning' when discussing UV-free technologies, and do so neutrally. In the twentieth century, the British media and public used the term 'fake' to derogatorily describe a tan that had not developed from UV exposure – even though other journalists were trying to promote UV-free products.

By historicizing these two very different self-tanning technologies, this chapter demonstrates how fake tan industries both responded to and sought to profit from skin cancer anxieties concerning mainly White people in Britain. As print press coverage and medical journals show, such industries and the media introduced these technologies as an entirely 'safe' alternative to sunbeds. However, I argue that the UV-free tanning industries counterintuitively promoted sunbathing and sunbed use and revived overall tanning culture;¹⁶ they tried to poach the sunbed industry's original client base and attract new consumers with no previous tanning interest. Moreover, the visual and rhetorical strategies employed by the industries revealed the extent to which stakeholders both praised the 'natural'- and ridiculed the 'fake'-looking tan. As beauty editors and consumer critiques explained in the print press, DHA serums, unlike sunbeds, were still in the early stages of product development and thus did not have a favourable reputation for providing a fail-safe 'natural'-looking tan.¹⁷ Finally, the threat posed by alternative tanning products also inspired sunbed franchises to improve their technology, with all industries downplaying the dangers and amplifying health claims to sell their products. As such, the attempts to reduce skin cancer rates through the invention of 'safe' technologies instead likely revived UV tanning in both practice and appeal.

Some historians may argue that a study on tanning products does not belong in the history of technology or medicine; however, a 'technology' is the reciprocated application of knowledge to develop an 'innovative invention' – or, as historian David Edgerton prefers, simply a 'new thing' – which, in this chapter, consists of two consumer products that can change a person's skin colour without UV exposure and therefore affect many people's lives and health.¹⁸ As this chapter illustrates, the health and beauty industry, medical

experts, the media, and everyday people worldwide have deemed tanning technologies, like others, ‘necessary’, ‘revolutionary’, and ‘successful’ at certain points in time.¹⁹ Therefore, their history must be critically assessed. Equally, these technologies speak to the varied categorization of the patient consumer.²⁰ Although the chapter in some senses focuses on beauty consumers, some people were ‘health’ consumers and patients who self-prescribed sunbed ‘treatments’ for self-diagnosed skin conditions and mental health issues. Others consumed tanning technologies operated or administered by ‘healthcare’ providers within ‘well-being’ spaces. Moreover, alternative tanning technologies were either invented or marketed as an option for patients with pigment-based skin issues who were more susceptible to skin cancer. And, finally, some sunbed and MelanoTan consumers eventually became patients because of the harmful effects of these technologies.

In addition to broadening our view of patient consumers and medical technologies, a focus on new tanning technologies of the 1990s will contribute to historiographies on harmful health and beauty technologies and how such technologies – often invented to reduce ‘risk’ – can instead create new kinds of health issues.²¹ Scholars such as Virginia Berridge and Penny Starns, for example, show how innovations, such as the low-tar cigarettes of the 1970s and the medicalized e-cigarettes of the new millennium, were initially introduced as ‘safer cigarettes’. Yet these ‘healthier alternatives’ were eventually proved to be comparably carcinogenic, or product failure led to insufficient consumer demand. Subsequently, consumers went back to their former ways of smoking, while younger generations had new nicotine addictions to satisfy.²² Like the history of UV and UV-free tanning industries, none of these ‘advanced’ technologies truly encouraged cessation, which would have been the safest but a profitless solution. As such, this chapter also demonstrates how commercial industries have increasingly taken the lead to ‘resolve’ – and often capitalize from – public health concerns.²³ Moreover, as the *Daily Mail* sources will show, the sunbed industry deployed similar advertising tactics to the cigarette industry.²⁴ Indeed, the mass media was more than a means for circulating the interests of industry, medical, and other non-media groups; journalists also actively promoted and were excited about new technologies. They wanted to both trial new products for

themselves and use their reviews of 'revolutionary' products to attract new readers.

Finally, the history of tanning, alternative tanning products, and skin cancer in this period echoes other cancer and public health histories, supporting that developed countries primarily focused on cancer prevention technologies for White people.²⁵ Fake tan products and sunbeds also catered to the same market in a mainstream beauty culture that largely presumed Whiteness. This chapter will focus on this beauty culture and target audience in the second half of the twentieth century, with a particular focus on the 1990s. Although it is beyond the chapter's scope, it is worth noting that young White women and men were not the only avid tanning consumers after the twentieth century. People of all genders, sexualities, socioeconomic backgrounds, and now most ethnicities and races have become tanning consumers in Britain. Nowadays, with growing tanning companies, cultures, and influencers, increasing numbers of Brown and Black people are told that darkening their skin will make them 'flawless', 'healthier', look more athletic and slimmer, and, therefore, 'happier' – even if it could one day lead to cancer.²⁶

The invention and evolution of DHA 'sun-less' serums

In the mid-1950s, the American scientist Eva Wittgenstein accidentally discovered that the chemical DHA – a white crystalline powder – could artificially tan skin. Working at the Children's Hospital at the University of Cincinnati, Ohio, Wittgenstein was trying to find a treatment for children suffering from a rare metabolic disorder. The children's bodies could not store glycogen, a vital carbohydrate for the body, and DHA was a carbohydrate produced in animals and plants such as sugar cane. In an experiment, Wittgenstein orally administered DHA to children, which caused some to vomit. The experiment had failed, but a few hours later, their skin turned brown where the DHA had fallen. The DHA (a carbohydrate) reacted with the top layer of skin (mostly protein), causing the 'Maillard' reaction. Wittgenstein subsequently tested an aqueous solution of DHA on her own skin, which also turned brown.²⁷

In Britain, growing numbers of people sought to tan their skin, a development that was later boosted by the discovery of DHA. Cheap holiday packages to warmer climates, which included air travel, emerged in 1955. From the 1960s onwards, the holiday industry grew over time as travel to Spain and Italy became cheaper than staying in Britain.²⁸ The subsequent growth in tanning consumerism was particularly noticeable in renowned women's and men's fashion magazines, such as Britain's *Vogue* and the *Gentlemen's Quarterly* (*GQ*). In the 1950s the front covers of *GQ* already featured rugged, middle-aged, extremely tanned, and adventurous-looking White men. By comparison, White women on the front covers of *GQ* and *Vogue* only became bronzed from 1961 onwards – previously, they were all 'ivory' white.²⁹

Only the previous year, however, in the summer of 1960, new DHA 'Night Tan' serums had reached people in Britain through extensive national advertising. In the spring of that year, Ellanby Laboratories, a subsidiary of Lewis and Burrows based in London, was apparently the first to launch their new 'Night Tan' clear solution for women.³⁰ The United Kingdom-originating 'He-Tan' for men appeared in trade magazines that same spring. By the summer, Rolls Razor, also in London, released the still famous 'Man-Tan'. Both 'He-Tan' and 'Man-Tan' were advertised as an aftershave lotion and an indoor tanning cream.³¹ The Consumers' Association wanted to publish consumer tests on 'Night Tan' and 'He-Tan' by the end of summer; however, the flood of new DHA serums that season meant they had to start again. The Consumer Association's magazine, *Which?*, published the final report in December 1960. The magazine also refocused on the 'Tanfastic' brand because their cream applied a more even colour when compared to the clear liquid solutions on the market.³²

As explained in the report, the Consumer Association found that users and the cosmetic industry were still 'not completely satisfied' with even Tanfastic's results.³³ In particular, the 'stain' of a tan was supposed to develop within twenty-four hours; yet the cream did not produce both an all-over and all-even 'natural' tan on half of the participants. One-third perceived the shade as either 'yellowish' or 'orange or red'. Roughly half found the results streaky and patchy, and some had allergic reactions to the DHA or other ingredients, including the added perfume. Others found that the

results faded quickly, and the serums stained their clothes, bed-clothes, hair, and beards.³⁴ Within a few weeks, the more widespread *Druggist and Chemist*, a British weekly print magazine for community pharmacists and pharmacy staff, published *Which?*'s disappointing findings.³⁵

Nonetheless, the combined print press advertising expenditure of £140,000 across all DHA providers that year – mainly in the summer – still led to the industry's first, yet short-lived, 'DHA boom'. When first released during Britain's 'sunless' summer, people were compelled to seek fake tan preparations.³⁶ Yet the combination of poor user experience, negative press, and then the winter season led to a loss in consumer interest and sales at the end of the year. Subsequently, in 1961, sales were only 50 per cent of the previous year as DHA tanning was too expensive for its now well-known 'unsatisfactory' results. In Britain, most DHA tanning industries soon disappeared from lack of demand, but Ellanby's 'Night-Tan' and Ambre Solaire's 'Golden', 'Man-Tan', and 'Tanfastic' just about survived, and the DHA industry stabilized at £400,000 per year.³⁷ This short-lived DHA boom in 1960, and the surviving companies throughout the 1960s, eventually led to DHA becoming a much cheaper 'basic' cosmetic ingredient for a future of self-tanning.

At the beginning of the 1970s, companies claimed they had resolved their 'teething problems' through new and improved DHA products, which further propelled the industry.³⁸ For example, 'Tanfastic' introduced 'Tanfastic Extra' to their DHA range, which 'kept you browner, [for] longer'.³⁹ Technological developments also meant that consumers could spread the mixtures on to their skin more easily through a broader range of mousse aerosols, tubed creams, bottled lotions, and 'unbreakable' polythene 'squeeze' packs. The novelty and promise of these innovations increased the value of the DHA tanning market to roughly £600,000 by 1971.⁴⁰ While consumer testing had long been underway, the American Food & Drugs Administration (FDA) only added DHA to their list of permanently approved cosmetic ingredients, deeming the external application as safe in 1973.⁴¹ Still, by the mid-1970s, consumers were still complaining about the 'fallibility' and subsequent 'tiger stripes' of even these newly improved formulas.⁴² Nonetheless, medical experts still endorsed DHA tanning and even

advised vitiligo patients to use DHA products to help cope with skin depigmentation.⁴³

During the 1970s and 1980s, the producers of new ‘Duo’ serums also instructed users to apply self-tans before, during, and after holidays as a protector against UV rays.⁴⁴ Erroneously, these advertisements taught people that DHA serums offered strong UV protection. Consequently, when panics about sunbeds and skin cancer arrived, companies confidently asserted deep-rooted claims of UV protection to advance the second ‘boom’ of DHA tanning.

The DHA tanning technologies of the 1990s

In 1991 the *Daily Mail* was one of the first newspapers to nationally introduce in-depth articles on ‘new’ and ‘improved’ DHA serums in Britain. Throughout the decade, the newspaper – especially on its ‘Femail’ pages – published the largest volume of both tanning articles and advertisements compared to any other British newspaper. In 1992 alone, when these tanning articles featured, roughly 1.7 million *Daily Mail* papers circulated per year in Britain.⁴⁵ As the largest circulated tabloid other than the *Sun*, it targeted working- and middle-class men and women.⁴⁶ Although it had one of the largest female readerships of any other newspaper,⁴⁷ its ‘Femail’ section both catered for and was regularly read by men.⁴⁸ The *Daily Mail* was the most up to date with tanning technologies and was one of the most accessible and widely read sources of tanning information for consumers.

The *Daily Mail* articles on tanning technologies were also very comprehensive. Typically, reporters conducted interviews with tanning specialists and scientists and shared their ‘expert’ knowledge with the public. As ‘consumers’ themselves, style and beauty editors also provided their own tanning product critiques. Collectively, these medical and consumer experts wanted to evoke sunbed anxieties – and reduce consumption – through their personal support of DHA serums and other future tanning technologies.

The first *Daily Mail* article on DHA, for example, began with their beauty editor’s personal anecdote of her first DHA self-tan experience back in 1981, when she was fifteen years old; Newby Hand’s skin had turned a ‘patchy, pale yellow’ three hours after

applying the cream. The following morning, she was 'orange'. Hers was such an unwelcome experience that she avoided fake tan for the following decade. In 1991, however, she became aware of the 'hazardous effect of even short-term sunbathing', which encouraged her to finally trial a few 'dramatically' improved and 'totally safe' fake tans; these included 'Clarins Self Tanning Sun Wrinkle Control Cream (75ml)' for her face and 'Clarins Self Tanning Milk (125ml)' for her body.⁴⁹

Clarins, a French luxury company, was at the forefront of several renowned companies that had newly developed their DHA serums to help discourage UV tanning. In the United States, the president of the Skin Cancer Foundation (a dermatologist, Penny Robins) and the vice-president of research and development for sun pharmaceuticals (Chris Vaughan) strongly endorsed the improved formulas of DHA self-tanners as the only suitable way to tan, and Clarins was, again, the first self-tan to be recommended.⁵⁰ Clarins sold DHA serums nationwide in Britain – along with their other skincare, cosmetic, and perfume products – through high-end department stores and salon counters. Clarins had launched this self-tanning face cream and updated 'milk' preparation (both for £9.75) the previous year, in January 1990. This original retail price was high for such a small amount and increased quite quickly for the first few years, suggesting commercial success.⁵¹ Before Hands trialled these products, she interviewed a skin beauty specialist employed by Clarins. The specialist explained how the serum functioned, emphasizing its 'harmless[ness]' because it only stained the top two to three 'superficial' layers of skin for a few days.⁵²

Next, the reporter interviewed a technical development advisor employed by L'Oréal. L'Oréal, another French company, is still one of the largest international cosmetics, skincare, sun protection, make-up, and perfume providers. L'Oréal's advisor explained why their new tanning serums were superior to their 1980s predecessors. The developers had now 'stabilised' the DHA and added 'good quality moisturisers'. This apparently stopped skin from turning 'yellow' and made their self-tan 'easier to apply'. Both companies had also masked DHA's ill-reputed 'metallic' smell with different perfumes.⁵³

Hands and the tanning 'experts' explained how DHA serums were a safe alternative to sunbeds. Yet the final paragraph of Hands'

article weakened the power of this message. Hands advised ‘natural’ tanning before applying a serum to achieve the top result. She concluded that DHA products ‘work[ed] best when used over an existing (real) tan, no matter how light’.⁵⁴ She did, however, instruct readers to use high sun protection and limit their sun exposure hours. Moreover, the image chosen for this article featured a White woman on a sandy beach, dressed in a black and white swimsuit to emphasize her tan. The model smiled with her face tilted upwards, lit by the sun.⁵⁵ In the 1990s these types of images were featured in every newspaper article warning against UV tanning. Clearly, anti-UV rhetoric did not preclude the constant visual glorification of the sun or the happiness that came from achieving a ‘healthy’ tan.⁵⁶

In 1992 the British public apparently spent £3.6 million on ‘self-tanning’ products alone. The following year, self-tanning became the ‘fastest growing sector in the sun care market’.⁵⁷ To capitalize further, the application of DHA serums shifted in part from domestic spaces to beauty salons, and applicators were now skilled beauty experts who had undergone rigorous training.⁵⁸ One of these experts, a Decléor beauty therapist and beauty salon owner, was interviewed in 1993, again for the *Daily Mail*. Her clients used her DHA tanning services because they wanted the ‘psychological and aesthetic benefits of a light tan’ without the damage from UV exposure.⁵⁹ In the same article, the reporter interviewed a spokeswoman for Ambre Solaire, the sun care strand of Garnier. Both Decléor and Garnier were skincare brands owned by the French cosmetics company L’Oréal. The spokesperson boasted that Ambre Solaire now provided three more shades to match better the ‘natural tan’ of different skin types. The reporter, Katie Hayward, underwent this ‘Decléor self-tanning treatment’ herself to explain the long process to her readers. She had to undergo a thorough, twenty-five-minute full-body exfoliation to avoid ‘blotchy’ results. After a shower, the first tanning application took thirty minutes. After five hours, Hayward had to return to the salon for another full-body application. Hayward’s fake tan lasted for over a week, but it cost a total of £63, whereas one sunbed session cost a maximum of £4. As such, this alternative tanning was clearly not accessible to all or even most people in Britain.⁶⁰

All DHA tanning coverage also slandered pale white complexions in the 1990s. Even though the media warned people about

the ageing and skin cancer effects of sunbeds and sunbathing, people were instructed on how to avoid 'pallid' skin before and after sunbathing holidays.⁶¹ *She*, *Company*, *Vogue*, and *Marie Claire* strongly endorsed DHA serums as a safe alternative to sunbeds.⁶² But soon, most reviews by both reporters and everyday consumers explained how these 'improved' mixtures were still not quite right. Their skin turned yellow, orange, blotchy, patchy, streaky, uneven, or the shade was 'too light' or 'too dark'; the textures were sticky, runny, or greasy, and, finally, the results washed off easily or were too expensive.⁶³ Some people even criticized the relentless pursuit of trying to find a 'natural'-looking fake tan more generally,⁶⁴ and focus groups still reported the stench of serums.⁶⁵ As self-tan producers and journalists reported, this alone drove people back to sunbed tanning even though they had fallen out of fashion by the late 1980s.⁶⁶ One man even asserted that sunbeds remained the most 'acceptable' and 'popular' tanning method for men, whereas the external application of a cosmetic product was often deemed 'unacceptable' as it was feminized.⁶⁷ Moreover, following *Baywatch* (1989 to 1999), even smaller swimwear and sportswear became fashionable, and the additional skin exposure encouraged full-body 'natural' tans. Viewers were mesmerized by Pamela Anderson's permanently bronzed skin on *Baywatch*, but without the Californian sun to develop it, they sought other failsafe – sunbed – means in colder Britain.⁶⁸

Forecasting the future of 'medical' tanning injections

In 1993 another anti-sunbed, yet ironically pro-tanning, reporter from the *Daily Mail*, Louise Atkinson, published some of the first detailed articles on tanning injections. The government and medical organizations demanded this research following concerns with the depleting ozone layer, the improvements in UV damage detection technology, the rising prevalence of skin cancer in some countries like Australia – where melanoma had overtaken bowel cancer as the most common cancer – and, finally, the observed resilience of tanning culture among White people in Britain. Yet again, the media, the commercial industries, and even the scientific researchers themselves counterintuitively idolized bronzed white skin in all

their MelanoTan discussions; they believed people would continue to desire tanned skin in the future. As such, in laboratories around the world ‘scientists [began] working on more complicated and infinitely more effective routes to [achieve] that elusive perfect fake tan’. Atkinson asserted that these ‘safe and realistic instant tan’ injections would soon become a ‘dream come true’ for the ‘typical pasty-white English rose’.⁶⁹

In the first half of her newspaper article, Atkinson explained how scientists at the University of Arizona were conducting ‘radical research’ by testing a ‘melanocyte stimulating hormone’ on animals. Scientists had created a synthetic version of this hormone, called MelanoTan, which they tested on pale-skinned men. After ten days of daily injections, the men developed a tan on their heads and shoulders. According to the scientists, the purpose of the research was to create an artificially induced tan to ‘protect vulnerable, fair skin[ned]’ people against the risk of skin cancer. The inventor, endocrinologist Professor Mac Hadley, explained how MelanoTan functioned by ‘closely mimicking the body’s natural tanning process, tricking the pigment cells into behaving as they do in the sun’.⁷⁰ Professor Mac Hadley started this research on melanocytes (a melanin-forming cell, mainly in the skin), alpha-melanocyte-stimulating hormones (A-MSH) (a hormone that reduces food intake and energy expenditure), pigmentation, and melanoma cancer in the 1980s.⁷¹ When Atkinson was writing this article, these scientists were adhering to the FDA guidelines by slowly increasing MelanoTan’s concentration to darken their test subjects more evenly. If MelanoTan were successful, Hadley stated that it would medically treat pigment-based skin problems, such as ‘hypersensitivity, albinism, and vitiligo’.⁷² Hadley predicted that within three years, MelanoTan would be on the market, at first through prescriptions to people in Britain who were most susceptible to sunburn and skin cancer. Atkinson’s interview with Hadley suggested that the purpose of MelanoTan was explicitly ‘preventative’ and ‘medical’ in nature.

Yet, not everyone was so optimistic about the prospect of tanning injections. The second half of Atkinson’s article shared the opinion of a MelanoTan sceptic, Professor Patrick Riley, an expert on pigmentation at University College London.⁷³ Riley started his research career in the 1960s, researching the effect of different

environmental factors on the formation of cancer. Like Hadley, he spent much of his career researching melanocytes and melanoma.⁷⁴ Sceptical of MelanoTan, Riley argued that too many other factors affected pigmentation, such as skin thickening, keratin levels, and the nervous system, which collectively influenced the skin's protection properties. He argued that the value of MelanoTan was 'purely cosmetic', not medical, illustrating the constant difficulties in separating the medical, commercial, and aesthetic 'purposes' of tanning technologies. Nonetheless, Atkinson concluded that tanning injections would reach the British market and help overcome the 'undisputed hazards' of sun exposure and sunbeds.⁷⁵ Yet again, positioned between the headings 'Good Health' and 'Tomorrow's Tan', another accompanying photograph counterintuitively captured a swimwear model enjoying the sunrays.⁷⁶

In newspaper articles, even if the objectives and science behind the new technologies were misinterpreted or disingenuous, print press coverage both reflected and reinforced the importance of tanning culture for medical authorities, scientists, the media, and everyday people in Britain. These stakeholders would rather fund, create, publicize, and demand technologies that enabled 'safer' tanning than abandon the relentless pursuit of maintaining a bronzed complexion. Several reporters, like Atkinson, promoted that these future technologies would offer skin cancer prevention and, in turn, alleviate the public health pressures weighing on people in Britain. In other words, the articles asserted that people would not have to give up suntanning in the future.

During the late 1990s, Professor Hadley began MelanoTan injection trials, in part funded by the Australian government. The side effects from the clinical trials demonstrated the impracticability of MelanoTan. In the trials, people experienced loss of appetite, drowsiness, nausea, vomiting, and erectile complications for men. Scientists were still researching MelanoTan in 2004, aiming to launch the product by 2006.⁷⁷ However, by the mid-2000s, MelanoTan injections were illegally sold through the internet, as well as in some tanning salons and bodybuilding gyms in Europe, Australia, and the United States.⁷⁸ The clinical trials revealed that MelanoTan should not be used, even when medically monitored by experts. From 2007 onwards, international health agencies and the Medicine and Healthcare Products Regulatory Agency (MHRA)

in Britain started warning against its use. The added risk of needle cross-contamination was another major concern.⁷⁹ To this day, MelanoTan remains a growing health issue. Consumers now ironically combine MelanoTan with the very technology it was supposed to replace – that is, sunbeds – in the pursuit of an even darker ‘natural’ tan.⁸⁰

Conclusion

Although fake tanning denigrated the sunbed industry somewhat, and concerns with sunbed-induced skin cancer rose, these alternative tanning industries, the media, and scientists collectively revived the appeal of sunbeds and overall UV exposure by the end of the twentieth century. In all print press coverage and on everyday television, visuals of glamorous models suntanning on beaches undermined any accompanying UV warnings. Moreover, the print press told people that DHA serums, alongside other 1990s tanning technologies,⁸¹ functioned better before or after UV exposure. As earlier versions of DHA serums included a ‘satisfactory’ Sun Protection Factor (SPF), people were also under the false impression that their skin was protected from UV radiation once artificially bronzed. Throughout all media coverage, people were also shamed for having pale white skin, and told that ‘natural’ tans were superior to all ‘fake’ tans. All non-UV tans were described as ‘fake’ – even if people could not differentiate. In reaction, people would develop entirely new sunbed habits or gravitate back to sunbeds if they had an unfortunate ‘fake’ tan experience.⁸²

At the same time, the sunbed industry was developing a more resilient, low-risk, and quick-spreading franchising approach to thwart this new alternative tanning competition. By 1994, The Tanning Shop became one of the largest national chains in Britain, placing sunbed salons in league with the ubiquitous McDonalds fast food restaurants; sunbeds were cheap, abundant, and accessible for everyone in Britain.⁸³ The Tanning Shop had also developed technologically improved and purportedly ‘safer’ vertical ‘Hex Honeytan’ sunbeds to replace their old horizontal machines. The advertisements for these new models were strategically placed underneath those for DHA tanning salons.

The Tanning Shop also promoted their stress-free sunbed sessions; a session now only took six minutes (and cost £4) instead of thirty–sixty minutes. This contrasted with the expensive Decléor self-tanning treatment mentioned above, which took seven hours from start to finish.⁸⁴ Nonetheless, some people combined both UV-free and UV tanning to develop quicker, 'deeper', and longer-lasting tans.⁸⁵ Moreover, sunbed providers continued to advertise the 'health benefits' of using their products, including them being a source of vitamin D, and treatment for both skin conditions and depression. Like the selling of cigarettes to women in twentieth-century Britain, most tanning advertisements sold a lifestyle of happiness, youth, vitality, and enhanced sexuality to White viewers if they developed their own 'natural' tans.⁸⁶ By 1999, the *Health Education Authority* and *The Times* worryingly estimated that approximately three million people in Britain continued using sunbeds every year.⁸⁷ Later, in the mid-2000s, the illegal sale of MelanoTan online and in gyms and tanning salons encouraged the consumption of these products in combination with sunbeds, and likely initiated another revival of tanning culture. The Tanning Shop, for instance, is still a successful franchise to this day.

Collectively, both DHA and MelanoTan technologies perpetuated tanning culture and inadvertently prompted the suntanning public to consider combining both products with sunbed use and sunbathing. One of the apparent objectives – to invent technologies to reduce UV-induced skin cancer – had clearly failed, and instead it helped grow people's obsession with tanning in Britain. Meanwhile, the other objective – to capitalize on skin 'darkening' desires – expanded to people of all genders, sexualities, ages, classes, and most ethnicities and races, as a wider array of people started using these tanning technologies by the early twenty-first century in Britain. Although fake tan products and advertisements initially catered to a mainstream beauty culture that prioritized Whiteness, tanning companies and culture ultimately aimed to boost sales and gain followers. The number of tanning technologies and patient consumers continues to grow into the twenty-first century, further entangled in the complicated histories of ethnicity and particularly Black beauty politics in Britain.⁸⁸ As Nina Jablonski – an anthropologist of human skin colour – predicted just ten years ago, 'methods of changing skin color, whether permanently or semi-permanently,

will become [even] more varied and sophisticated'.⁸⁹ Though the future is unclear, the advertising of technologies that promise to achieve these goals will no doubt include medicalized health claims. Like past tanning technologies, they will also pose new health risks to younger generations and, therefore, an ever-expanding range of patient consumers.

Notes

- 1 G. Severi, G.G. Giles, C. Robertson, P. Boyle, and P. Autier, 'Mortality from Cutaneous Melanoma: Evidence for Contrasting Trends between Populations.' *British Journal of Cancer* 82, no. 11 (2000): 1887–91.
- 2 Department of Health. *The Health of the Nation – A Strategy for Health in England* (London: Her Majesty's Stationery Office, 1992); David J. Hunter, Naomi Fulop, and Morton Warner, *From 'Health of the Nation' to 'Our Healthier Nation'* (Copenhagen: World Health Organization, Regional Office for Europe, Policy Learning Curve Series, no. 2, August 2000), p. 3.
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