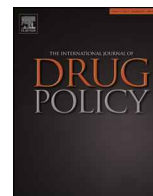




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Research paper

# An in-depth case examination of an exotic dancer's experience of melanotan

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### ABSTRACT

**Background:** Cultural values placed on tanned skin equating with perceived health and attractiveness in the Western world have stimulated the development, sale and use of synthetic tanning agents. These agents are synthetic analogues of the naturally occurring melanocyte-stimulating hormones ( $\alpha$ -MSHs) which stimulate melanogenesis or pigmentation of the skin. There is a lack of research on prevalence of use, user experiences and outcomes, despite evident 'health marketability' and diffusion of use via the Internet.

**Methods:** We present a unique, intensive, holistic and exploratory single case study analysis of an active user's experiences of synthetic tanning product's labelled as melanotan, with rich description of the case's meanings and identities attached to being tanned, motives for use, injecting experiences and practices, sourcing routes, outcomes and future intentions to use.

**Results:** The case, an exotic dancer, had no prior drug injecting experience and did not identify as 'injecting drug user'. Introduction to injecting of synthetic tanning products occurred with peer assistance. She was conscious of safe injecting practices, which were described as not using needles twice, keeping the product refrigerated, disinfecting and rotating injecting sites, and using sterilised water to dissolve the product. She was aware of synthetic tanning products being unlicensed, unregulated and possibly contaminated. She appeared assured in the self-administration of double dosage and self-management of nausea with benzodiazepines and by injecting before sleep. Experiences of synthetic tanning were positive, with reported feelings of enhanced self-confidence and perceived attractiveness grounded in her confidence in the product's effectiveness to achieve a desired darkened skin tone. No long term or chronic negative outcomes were reported. Development of tolerance and awareness of dependence on synthetic tanning agents was described.

**Conclusion:** We discuss her expert account as it relates to the synthetic tanning product outcomes, risk heuristics, sourcing routes and make recommendations for policy.

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### Introduction

Contemporary socio cultural aesthetic ideals have driven the development and sale of novel image enhancement drugs (Mataix, 2012). Factors influencing this novel form of drug consumerism are grounded in distinct cultural values placed on beauty, aesthetic enhancement and wellbeing (Conrad, 2007; Grogan, 2007; Jecker, 2011; Jones et al., 2011). Social pressures to conform to the 'cult of the body beautiful' (Mataix, 2012, 655) stimulate the search for a quick pharmaceutical fix (McVeigh, Evans-Brown & Bellis, 2012). In Western society, values placed on tanned skin and public awareness of risks of ultra violet (UV) exposure (El Ghissassi et al., 2009; Langan, Nie & Rhodes, 2010; Monfrecola, Fabbrocini, Posteraro &

Pini, 2000) have facilitated a consumer shift toward the use of sunless synthetic tanning agents (Evans-Brown, Dawson, Chandler & McVeigh, 2009; Paurobally, Jason, Dezfoulian & Nikkels, 2011; Paurobally, El Hayderi, Richert, Andre & Nikkels, 2013). Availability of such agents on the Internet, in gyms, beauty salons and tanning outlets, and (in some instances) via cosmetic physicians has promoted prevalence (Langan et al., 2010; Mahiques-Santos, 2012), and heightened potential for problematic and dependent use (i.e. 'Tanorexia') (Affleck, 2010; Kaur et al., 2006; Mataix, 2012; Nolan, Taylor, Liguori & Feldman, 2009).

Popular tanning agents are synthetic analogues of the naturally occurring melanocyte-stimulating hormones ( $\alpha$ -MSH) which stimulate melanogenesis, a process responsible for pigmentation of the hair and skin in mammals. The synthetic analogues of  $\alpha$ -MSH have greater potency, improved pharmacokinetics and distinctive selectivity profiles. Melanotan I ('afamelanotide') stimulates tanning by increasing production of eumelanin through interaction with the melanocortin 1 receptor (MC1R) and is currently under phase I and

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II clinical trials for the treatment of photosensitivity disorder and non-melanoma skin cancer. Another synthetic analogue of  $\alpha$ -MSH used for tanning is called melanotan II with additional side effects for sexual stimulation and weight loss (Mataix, 2012; Nelson, Bryan & Aks, 2012; Paurobally et al., 2013). The third available analogue of  $\alpha$ -MSH 'bremelanotide' has been specifically designed for sexual stimulation (Nelson et al., 2012). Synthetic analogues of  $\alpha$ -MSH are not illegal to use, own or import, but domestic sale and supply for use (outside of clinical trials) is banned in the UK and other countries. Products are sold as intranasal spray but are more commonly injected subcutaneously by reconstituting the lyophilized powder (10, 20, 30, 40, 50 and 100 mg) with 2 ml of sterile water (Langan et al., 2010; Paurobally et al., 2011, 2013).

Of public health concern is that these products are unregulated, untested, potentially adulterated, and sold without prescription (Evans-Brown et al., 2009; Gordon, Forman & Siatkowski, 2006; Knudsen, Kjergaard & Dalhoff, 2012; Langan et al., 2010; Mataix, 2012; McVeigh et al., 2012; Paurobally et al., 2013). Clinuvel Pharmaceuticals (2009) has warned consumers of counterfeit products using the names 'melanotan I and II'. The US Food and Drug Administration, Australian Therapeutic Goods Administration, Danish Medicines Agency, Norwegian Medicines Agency, Swedish Medical Products Agency, UK Medicines and Healthcare products Regulatory Agency, and Irish Medicines Board have all issued warnings against the use of products labelled as melanotan, particularly those which purport to have the same chemical make up as afamelanotide. The Irish Medicines Board (2009) in their press release reported on the presence of microbial contamination in a vial of water sold with melanotan powder. Clinical reports warn of adverse cutaneous outcomes such as overtly darkened skin and freckles, eruptive atypical melanocytic nevi and dysplastic changes in existing nevi (Burian, 2013; Cardones, Rand & Richnik, 2009; Cousen, Colver & Helbling, 2009; Ferrandiz-Pulido, Fernandez-Figueras, Quer & Ferrandiz, 2011; Hueso-Gabriel et al., 2012; Langan, Ramlogan, Jamieson & Rhodes, 2009; Langan et al., 2010; Paurobally et al., 2011; Thestrup-Pedersen & Sondergaard, 2010). Cases of malignant melanomas (Ellis, Kirkham & Seukeran, 2009; Paurobally et al., 2011, 2013) and systemic toxicity with sympathomimetic symptoms, renal dysfunction and rhabdomyolysis are reported (Nelson et al., 2012). Additional side effects include nausea, vomiting, cardiac conditions, fatigue, facial redness, hypertension, blood and skin infections, collapse and sudden death (Dorr et al., 1996, 2004; Wessells, Levine, Hadley, Dorr & Hruby, 2000).

The website 'www.melanotan.org' is a popular resource for users, with forum postings indicating the injecting use of melanotan since 2004 (Evans-Brown, McVeigh, Perkins & Bellis, 2012; Melanotan.org, 2009). An upsurge in NSP uptake of tan injectors has been reported in recent years (Evans-Brown et al., 2009). Despite evidence for low rates of reported needle sharing amongst users of other image enhancing drugs (Larance, Degenhardt, Copeland & Dillon, 2008), public health concerns around injecting of synthetic tanning agents amongst uneducated users remain (Evans-Brown et al., 2009; Knudsen et al., 2012; Langan et al., 2010; Mataix, 2012; McVeigh et al., 2012; Paurobally et al., 2013). Scientific commentaries have underscored the dearth of research on these products (Mahiques-Santos, 2012). At the time of writing, we are not aware of any research on users' experiences of synthetic tanning products.

We present here a unique, intensive, holistic and exploratory single case study analysis (Yin, 1984, 2003) of an active and long term user's experiences of synthetic tanning. A single exploratory and holistic case study with a participant 'who fitted the bill' was deemed appropriate (Greenhalgh, 1997, 157). The case (an exotic and club dancer) was defined as a phenomenon occurring within a bounded context, namely the exotic and club dance space (Miles & Huberman, 1994). There has been very little exploration of the beautification and identity construction of exotic and club dancers,

although we know that beauty and sexuality act as currencies to assist negotiation of hyper feminized and sexualised ideals (Forsyth and Deshotels, 1997; Hutton, 2004). The promotion, popularity and constructive use of image enhancement procedures in the form of slimming and illicit drugs, tanning, hairdressing and cosmetic procedures is common in this context (Bernard et al., 2003; Roach, 2007). This unique exploratory single case study (Yin, 1984, 2003) presents a sharpened understanding and rich description of the case's meanings and identities attached to being tanned, motives for use of synthetic tanning products, injecting experiences and practices, sourcing, outcomes and future intentions to use.

### The single case study method

Ethical approval for the study was granted at Waterford Institute of Technology, Ireland. The study adhered to recommended methodologies for single case studies (Baxter & Jack, 2008; Flyvbjerg, 2006; Greenhalgh, 1997; Thomas, 2011; Yin, 1984, 2003). It was defined as 'an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used' (Yin, 1984, 23). The chosen methodology enabled close collaboration between the researchers and the case herself so that she could to tell her story, iterate her views on synthetic tanning, and allow us understand her actions (Baxter & Jack, 2008; Lather, 1992). The case was recruited via an existing network of club drug users known to the researchers (Van Hout & Brennan, 2011a, 2011b, 2012).

Interview targets were developed following our careful systematic review of existing literature on synthetic tanning (Brennan, Van Hout & Wells, 2013), and consultation with media reports at the time. Key areas of interest were; motives for use, meanings attached to tanning, sourcing, patterns of use, injecting behaviours, perceptions of risk, health and dependence concerns, outcomes, interplay with the case's profession as exotic dancer, perceptions of personal health and image enhancement, and future intentions of use. The case was provided with information outlining the research aims, and was informed that her experiences would be documented and subsequently available in the public domain as a journal paper. She received €50 phone credit for her participation and was advised of permission to withdraw if desired from the interview. Informed verbal and written consent was obtained prior to the audio recorded interview which took place at a private house. The interview was conducted in an open-ended, unordered 'conversational' style and lasted 90 min.

The interview was transcribed within one day with the resultant narratives presented as a single case study sequence of events in the form of a 'heroine's journey' (Flyvbjerg, 2006) in navigating her experience of synthetic tanning. We recognise that the single case study approach may be compromised by lack of rigor, validity and comparability, and that the analysis of the single case study narratives runs the risk of potential 'narrative fallacy', in terms of over simplification of data and our (potentially) preconceived notions of synthetic tanning as researchers (Flyvbjerg, 2006). However, our efforts to counteract this centred on inter-rater briefing sessions between researchers where we strove to reduce bias and ensure verification by (re)checking for validity and reliability within the collection, analysis and subsequent presentation of resultant navigation themes. We employed a focused narrative analysis by consistently exploring, converging, comparing and confirming the data within the scope of the interview guide (Baxter & Jack, 2008; Darke et al., 1998; Knafel & Breitmayer, 1989; Miles & Huberman, 1994; Russell, Gregory, Ploeg, DiCenso & Guyatt, 2005; Yin, 2003) and the systematic review (Brennan et al., 2013). In this

way, we strove to improve credibility and merits of this single case study, and the subsequent final deconstruction and reconstruction of the case's phenomena.

## Results

The case was an Irish female exotic and club dancer aged 24 years, with an existing repertoire of recreational club drug use. She did not consume alcohol or any illicit drugs whilst performing, as intoxication would affect her dance routine and ability to engage with customers.

'At the moment I am using ketamine and acid and 2CB which is a new hallucinogen on the scene, I also smoke weed when partying. I used to take E's and coke a lot in my younger days, however I don't bother with those any more. I like to be really out of it. I never ever drink or use drugs when dancing it doesn't work!'

She described an awareness of two distinct identities, namely the exotic and club dancer and the other during the day.

'I am far more outgoing in work than day to day, you have to be able to approach men and chat to them, giving the appearance of confidence and that you are enjoying yourself and having a good time. You need to be friendly and approachable . . . so they want to spend time with you. In day to day life, I am quite shy and reserved in that I would never be the loudest at the party. I am a normal girl who likes to laugh and joke, but when I am working I am sexy and feminine and glamorous.'

### Sourcing of synthetic tanning products

The case described hearing about synthetic tanning products on a news documentary on television. Her initial negative reaction was grounded in fear of injecting.

'I thought it was madness, like I thought I would never do that.'

However, she observed an attraction to further investigation of synthetic tanning. Information was sourced online (including [www.melanotan.org](http://www.melanotan.org)) and through information booklets she requested via the post. She initially sourced the products through another user who offered to inject her. Products were described as having different brand names 'Melanotan II', 'Magic Skin Solutions' and 'Liquid Sun', with labelling promoting the product's ability to reduce UVR exposure, stimulate weight loss and heighten sex drive. Web purchasing was described as problematic when sourcing from the UK, as her credit cards were declined. She had experience of purchasing online from the US, but was dissatisfied with the product as it arrived without needles or sterile water. At present she was sourcing via a local network of dancers and bodybuilders in the city.

### Bodywork

The case described the importance of 'being tanned' for her personal and work self-image. 'Being tanned' was defined as looking more attractive, appearing toned and feeling confident. The case described her self-image when 'untanned' as being 'red haired, pale and freckly' with 'horrible white skin'. Dark skin contributed to enhanced self-confidence and perceived attractiveness. Synthetic tanning was part of her repertoire of body enhancement practices adopted during her career as dancer. She reflected on her control of her body with strict diet, exercise and tanning, and had invested considerably in her outer appearance.

'Not sure what I spend each month. . . but €3500 for my breast implants, which will need to be replaced after a number of years

at a similar cost. €200 for my eyebrows which I had tattooed. €250 for my lips which I had collagen injected into, I will get this done twice a year or more. €150 for my hair extensions every two months. €50 on melanotan per month. I don't pay for sunbeds as I have my own, which cost €800. I spend around €60-100 a week on makeup, false eyelashes, nails and various cosmetics.'

She reported using products labelled as melanotan II on a regular monthly basis for two years and had no experience of melanotan I. She did not hide her use from peers, and recommended it to anyone who complimented her tan. To her knowledge no one started using melanotan upon her recommendations.

'Most girls say they are mad to try but don't end up actually doing it, probably because they are too nervous.'

Per course the product was described as costing; '€50 for needles, sterilised water, melanotan and postage'. Products were used solely for tanning purposes (and not for slimming or sexual stimulation), with the resulting melanogenesis boosted by use of tanning beds 2–3 times per week. The avoidance of burning when using melanotan was described as a motivating factor, as well as the convenience of not needing to use spray tan to achieve a tanned look.

'By using melanotan, I can be out in the sun and not have to worry about burning. I can go to work in Ibiza without bringing loads of tan or having it on me in the sun and I can enjoy myself more.'

Melanotan II was observed as the ideal tanning product for her profession as dancer, as it ensured a 'streak free' tan.

'Fake tan can run when sweating. . . if you sweat when dancing or you could be using oil or ice as part of the act, which would destroy fake tan. So a real tan is best, plus obviously your body looks better, more toned, slimmer and generally more attractive when tanned. A real tan looks a lot different than fake tan!'

She remarked that her income had not increased as a result of her synthetic tanning.

'I am dancing for three years, one year without melanotan and two with. I am making the same money I think. If I am making any more, I would put that down to being more experienced and confident in my body.'

The case described preoccupation with her appearance as also being grounded in the aesthetics of club dance culture.

'It's important to me to look funky and attractive. There mightn't be much material so it looks better with a tan. Whereas day to day during the week I wouldn't mind so much if people saw me without make-up.'

### Melanotan outcomes

She described her use of melanotan II products as significantly improving her personal happiness, wellbeing, self-esteem and confidence. She did not view it as counteracting the come-down effects of illicit party drug use or having an anti-depressant effect. Negative side effects were confined to nausea when injecting, which appeared to increase over time and in correspondence with her reported double dosing. Other side effects included hot and cold flushes, drowsiness and persistent yawning. No long term

or chronic negative outcomes were observed. She had not experienced any growths, lesions and pigmentation abnormalities, but observed a 'patchy effect' on her stomach and back. Comments were made around sexual stimulation despite feelings of nausea. No reports of sexual risk taking were made, with the case preferring a monogamous relationship.

'It definitely does have an effect on sex drive, it is like a form of female Viagra. Even though you feel sick at the same time, you would still be horny. I don't know of any people that are using it for the increased sex drive. They are using it for tanning.'

She described herself as building a tolerance to the product, and reflected an awareness of her dependence on synthetic tanning injections and UV tanning beds.

'Yes I would describe myself as addicted. It's changed things for me in a good way. I try to limit my use of it. I couldn't be without it. I will continue to use melanotan far into the future. Contracting cancer or loads of people around me dying from it, would be the only way I'd stop.'

She had described instances of frustration when sourcing via the internet and local networks of users proved difficult. When questioned as to what she would do if melanotan products disappeared, she commented;

'Without it I don't know how I'd tan, I'd keep on the sunbed but probably start to burn once it [melanotan] wore off, and go back wearing fake tan which I would hate. If someone told me there was none, I would freak out.'

### *Injecting of melanotan II*

The case had no prior drug injecting experience or intentions to inject illicit drugs.

'It is bad enough to inject the melanotan, I cannot ever imagine injecting into a vein or anything like that. I wouldn't have the nerve or the stomach. I don't see myself as a deviant drug user. I am a recreational drug user like a lot of people, most people actually.'

She did not report attempting to source the nasal spray version of melanotan. She was concerned about injecting the product, and in early stages asked her initial source to inject her at his house. She did not report sharing the injection. The transition to self-inject occurred when this acquaintance was unavailable. Injections were administered into the stomach area, and the case described her injecting site as confined to one side so that she could inject with the same hand each time.

'I was terrified. I am afraid of injections anyway. It took ages for me to get the courage and I got somebody else to do it for me. Then after that I just didn't have anyone there to do it for me so I just had to get brave and do it myself. You find a piece of fat on your stomach, pull it out a little bit and inject the injection down into it, as if you are holding a pencil to write. I am still using the same place to inject, obviously not exactly the same spot but around there.'

Her neutralisation of injecting risks were grounded in safe injecting practices, which were described as not using needles twice, keeping the product refrigerated, disinfecting and rotating injecting sites and use of sterilised water. Used syringes were

disposed of at her local pharmacy needle exchange. She never asked for clean needles because they 'probably wouldn't give them', and she did not wish to engage with pharmacy staff into a discussion around her injecting of tanning agents.

### *Management of synthetic tanning*

Synthetic tanning products were viewed by the case as safe to use, despite her awareness of risks relating to lack of regulation and potential for contamination.

'I trust that everything will be fine with it. You don't know what's in anything anymore.'

She made no attempt to hide her synthetic tanning from primary health care professionals, and appeared conscientious about her health, fitness and nutritional status, despite her weekend drug taking. She was not concerned about potential health consequences and monitored the development of moles and freckles herself.

'I am quite healthy and I look after myself in a lot of ways through healthy diet, good hygiene and regular medical checks. If I am using drugs at weekends, I will always follow that with healthy eating, sleep etc. I would say that my tan makes me feel more confident than healthy.'

Synthetic tanning injections were administered periodically and within the shortest timeframe possible by double dosing (5 days injecting instead of 10 days) in order to boost skin darkening, and reduce sickness. If needed, she would leave an injecting free day during the dosing period. She described this as a practice that 'novice users' may not be capable of engaging in and admitted her tolerance for the product was probably higher than most due to long term use. She described use of benzodiazepines to 'knock herself out' and escape the sickness with injection prior to sleeping.

'Other people online had done this to help the sickness, so I said I would try that and it works for me. I'll do a course and then maybe give it a month or two and do another course, and if I feel then my tan is up, I'll leave it then until it starts to fade a bit so that I'm not overdoing them. I probably use them once every three to four months.'

### **Discussion**

Body ideals are constructed through history, science, medicine and consumer values (Urla & Swedlund, 1995). Cultural values, particularly in the Western world placed on tanning have certainly influenced attitudes toward synthetic tanning products (Kanayama, Hudson & Pope, 2012). We speculate whether synthetic tanning agents will potentially displace from subcultural user groups, and become intertwined with the mainstream cultures of daily life (Ettorre, 2004; Ruggerio, 1999). Those with excessive appetites for achieving the bronzed ideal will be easily recognisable, as are other types of illegal and performance enhancing drug users. According to Ettorre (2004, 331) 'drug using bodies on the fringe of society learn to adapt their drug behaviour to their everyday lives.' Given the absence of qualitative research on user experiences of synthetic tanning products to date, this single case study provides a unique and informative insight into the case's 'expert' account of experiences of synthetic tanning. We recognise that the findings are confined to the experiences of the case herself, and within the context of exotic dance and clubbing (Baxter & Jack, 2008; Greenhalgh, 1997; Yin, 2003). We also note that the case's values attached to tanning are premised on the consumption of women's

bodies in hegemonic male fantasy and ascribe to ideal stereotypical pop culture body standards (Bettie, 2000, 2003; Trautner, 2005; Frederickson & Roberts, 1997).

The body beautiful, tanned and slim, whilst when exaggeratedly dark clearly not natural, appears to have become an ideal within the exotic and club dance space. Melanotan for the most part appeared to embody sexualised femininity in this 'nocturnal genderscape' (Henderson, 1997, 96), and act as medium to support dichotomised identities (Bergman & Chalkley, 2007; Frederickson & Roberts, 1997; Philaretou, 2006; Trautner & Collett, 2010). Her control of and investment in her body with cosmetic enhancement, diet, exercise and use of synthetic tanning agents promoted her self-confidence and perceived attractiveness to others. Research by Roach (2007) has commented on an exaggerated engagement of exotic and club dancers in so called 'bodywork'. It is understandable given the tanning and anorexigenic effects of melanotan II to name it the 'Barbie Drug' (Strange, 2009; Mahiques-Santos, 2012). We know that use of other image enhancement drugs (for example anabolic steroids) provide a medium for self-expression, social space, status and agency (Baker, Graham & Davies, 2006; Christiansen & Møller (2012); Grogan, Shepherd, Evans, Wright & Hunter, 2006; Lupton & Tulloch, 2002; Smith & Stewart, 2012; Walker and Joubert, 2011; Wright, Grogan & Hunter, 2000). Synthetic tanning for this case was grounded in her desire to keep up with the so called 'glamourama' of exotic dance and club culture (Almond, 2011; Cannon, Calhoun & Fisher, 1998; Goulding & Shanker, 2011; Goulding, Shanker & Elliot, 2002; Wesley, 2002). We question whether synthetic tanning agents like Melanotan have become part of the poly drug taking repertoire of the 'beautiful people' (Thornton, 1996; Cooper, 2007), by providing a medium for self-expression and outer shell of consistent (and streak free) bronzed beautification. It may also have assisted the case in dealing with social anxiety while performing (Stockdale et al., 2007; Maticka-Tyndale et al., 1999, 2000; Wesely, 2006).

The case was an experienced recreational poly club drug user, who did not report substance use whilst performing, as being visibly intoxicated would negatively affect her ability to dance. She had no prior experience of injecting. Despite fear of injecting, she did not report attempting to source the nasal spray, and was initiated by another user. Of interest is her lack of identification as injecting drug user (see McVeigh et al., 2012), and her premeditated safe injecting practices and responsibility in disposal of sharps. She appeared conscious of the need for safe injecting practices, despite admitting that the product was unlicensed, unregulated, with potential for contamination. Lack of identification with the injecting drug user profile meant the case was more likely to seek out the advice of peer user groups, and less likely to engage with NSPs when seeking clean needles or harm reduction information. She did not hide her use from peers or primary health care professionals, and appeared very conscientious about her general health and wellbeing. The case described herself as a healthy person, and displayed an ability to control her personal recreational drug consumption. In this regard she distanced herself from the drug addicted persona, despite admitting dependence on synthetic tanning. In many ways, the bronzed tanned look is the antithesis of the unhealthy drug addict, with synthetically tanned skin posing an interesting challenge to embodied deviance, and reliant on self-control, self-medication and ethno-pharmacological knowledge (see Ettore, 2004; Orford, 2000; Terry & Urla, 1995). She appeared self-assured in the preparation, injecting, dosage and self-management of nausea by injecting before sleep and self-medication with benzodiazepines. Similar forms of drug outcome management are observed in the club drug literature (Kurtz, Surratt, Buttram, Levi-Minzi, & Chen, 2013). Of concern given the additional side effect of sexual stimulation when using melanotan (Evans-Brown et al., 2009), is the potential for sexual dis-inhibition

and sexual risk taking fuelled by the concurrent or poly use of other club drugs (Klitzman, Greenberg, Pollack & Dolezal, 2002; Mattison, Ross, Wolfson & Franklin, 2001; Semple, Patterson & Grant, 2002).

Experiences and outcomes of melanotan were for the most part very positive for the case, with exception of nausea attributed to the administration of double dosage. Her description of side effects (drowsiness, yawning, sexual stimulation, sickness) is consistent with the clinical literature on melanotan II (Dorr et al., 1996; Wessells et al., 1998, 2000). She described patchy tanning in places, but did not report any abnormal growths as reported in clinical case studies (Bartenwerffer von, Siebenhaar & Hunzelmann, 2011; Cardones et al., 2009; Cousen et al., 2009; Ellis et al., 2009; Ferrandiz-Pulido et al., 2011; Langan et al., 2009; Paurobally et al., 2011; Rhodes and Langan, 2011; Thestrup-Pedersen & Sondergaard, 2010, 2011). She was aware of the risks of UVR exposure and associated carcinogenesis and reported using Melanotan to avoid burning, despite her use of tanning beds. Of concern are her comments around development of tolerance and the ability to double dose on the drug, and her admittance of potential dependence on the drug and UV tanning beds. Interestingly, her use of UV tanning beds had increased since her Melanotan use due to reduced incidences of burning. This contradicts claims by melanotan companies that the product reduces time spent exposed to harmful UV rays in users. The case stated no intention to stop using melanotan, citing cancer or the death of many friends through its use as the only imagined motivator for change. Benefits far outweighed the risks (Mahiques-Santos, 2012). Melanotan users often exist in a denial state where aestheticism takes priority over risk (Brennan et al., 2013). Indeed, risk literature emphasises how personal risk assessments, tolerance of risk and optimistic bias are located within the individuals own circumstances and priorities (Becker, 1974; Kunda, 1987; Lupton, 1995). Given the rise in health consumerism and calculative approaches to achieving aesthetic ideals via navigation of 'short cuts' (Bacchi & Beasley, 2002), synthetic analogues of  $\alpha$ -MSH are potentially habit forming (Evans-Brown et al., 2012; Kaur et al., 2006; McVeigh et al., 2012; Nolan et al., 2009).

## Conclusion

Discourses, norms and social values placed on image enhancement and the pursuit of aesthetic ideals create challenges for public health and drug policy. Of concern is the scant public understanding of synthetic tanning agents despite evident *health marketability* and diffusion of use into mainstream society via web and other uncontrolled sourcing routes (Baym, 2010; Benkler, 2007; Boase, Horrigan, Wellman & Rainie, 2006; Burgess & Green, 2009; Dutton & Blank, 2011; Feick and Werle (2010); Forman, Woody, McLellan & Lynch, 2006; Glover-Thomas & Fanning, 2010; Gordon et al. (2006); Halavais, 2008; Hassan, 2008; Halper and Pope (2001); Jecker, 2011; Kuzma, 2011; Schnetzler, Banks, Kirby, Zou & Symonds, 2010; Van Hout and Bingham, 2013). Prevalence of synthetic tanning remains unknown. Inaccurate perceptions of user risk are fuelled by the exchange of potentially harmful anecdotal advice amongst face to face and online user networks, and the users' immense (and immediate) positive outcomes on body image (Brennan et al., 2013). The growing online community of melanotan users will hinder targeted harm reduction initiatives and highlight the need for dissemination of credible information in a non-judgemental manner (Clement, Marlowe, Patapis, Festinger & Forman, 2012; Cordaro, Lombardo & Cosentino, 2011; Evans-Brown et al., 2012; Fox, Ward & O'Rourke, 2005; McVeigh et al., 2012). We recommend further ethnographic and longitudinal research to track the sourcing and use of synthetic tanning products over time, and amongst a host of identifiable user groups. Additionally, further investigation of the long term clinical outcomes of use is warranted.

## Conflict of interest statement

The authors declare no conflict of interest.

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