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3.9.1 Introduction

The World Health Organisation defines ‘health’ as physical and psychological well-being. Considering all physical and psychological aspects of vitiligo, dermatologists should suggest a therapy when feasible, and should also recommend psychological approaches and the use of camouflage [1–7]. Benefits can be obtained by the skilled use of corrective cosmetics, which are presented in the chaps 3.9.6–3.9.7.

3.9.2 Why Camouflage and Cosmetic Rehabilitation Are Needed

Camouflage refers to a range of special products, specially developed to disguise aesthetic skin disfigurement of any kind, requiring special application techniques. Cosmetic rehabilitation helps patients to achieve a positive image of the self.

Vitiligo is a disfiguring disease, pervasive to the patient. In an attempt to cope, patients may drastically change their way of life. They choose clothes with the sole aim of covering the patches. They feel obliged to wear long sleeves and long trousers even in the hottest summers. Patients presenting face and hands lesions demonstrate usually a higher impairment of their quality of life and self-body image than others (Chap 3.13).

The expressed fear of many vitiligo patients is that the disease may spread to visible areas. Indeed, patients with visible vitiligo are usually seeking for a treatment more actively than others. They are logically searching help first for patches in the visible areas, and only secondly for areas of lesser aesthetic importance.

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Standard and experimental vitiligo treatment options are demanding from the psychological point of view, and may be disappointing for both patient and dermatologist. Moreover, repigmentation is often partial, and relapses may occur after stopping treatment. The treatment of hand and face lesions is particularly difficult, because of Koebnerisation (Sect. 2.2.2.1). Segmental vitiligo of the face starts frequently in childhood. At this age, melanocyte cell grafts are rarely considered for ethical reasons and because some repigmentation may appear spontaneously in the future. In all these situations, when classical medical treatments fail or cannot be considered, efficient camouflage techniques should be proposed to the patient (Fig. 3.9.1).

3.9.3 Camouflage as a Medical Intervention?

Dermatologists as a rule do not know much about camouflage; in the past, they have been dismissive of what they considered merely make-up. They are uninformed about the wide range of available camouflage products and the different techniques of application. They are equally unaware of the benefits that can be

obtained by the skilled use of corrective cosmetics, such as self-tanners, stains, dyes, whitening lotions, tinted cover creams, compact, liquid and stick foundations, fixing powders, fixing sprays, cleansers, semi-permanent and permanent tattoos, and dyes for facial and head-white hair.

It is only recently that camouflage has been recognised as being equally worthy of consideration as a medical intervention, when there are no other satisfactory options to really help the patient and when the disease is recalcitrant to all standard and alternative therapies (Fig. 3.9.2). Camouflage consultations have been developed in some dermatology departments. The aim of these consultations is to educate patients about camouflage (Table 3.9.1 details the application method of commonly used products). These multidisciplinary consultations, composed of camouflage trained nurses, dermatologists, and camouflage specialised persons, have had a favourable impact on patients. Camouflage therapy or education means also to enable patients to apply the cosmetics themselves. It is worthwhile when the patient can master the correct procedure with the products chosen and the various techniques of application. Patients should also be informed on where and how to obtain the camouflage products that suit their individual needs.

Candidates for vitiligo camouflage are patients of both genders, and of all ethnic origins and ages. As with all patients, it is important for the camouflage practitioner to learn about their prior history, current medical situation, emotional state, and attitude towards camouflage. The patient's ability and desire to perform the various camouflage techniques should be discussed and the patient should be asked whether he/she has experienced allergic reactions to cosmetics in general in the past. It is important to discuss with the patient his or her lifestyle to choose products (self-tanners, cover creams, etc.) suitable for his/her case.

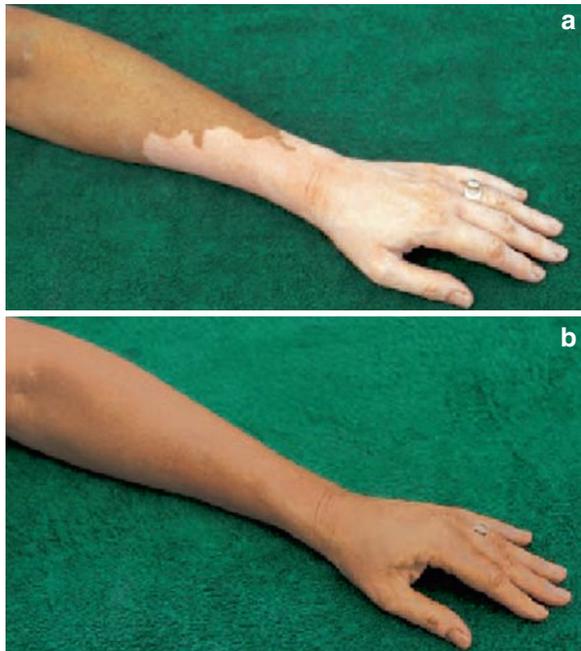


Fig. 3.9.1 (a, b) Camouflaging of hands and forehands

3.9.4 A Brief History of Camouflage

Since ancient times, an unblemished face has universally been considered a symbol of beauty and therefore sought after at all costs. In ancient Roman times, camouflage was used by the slaves who had gained their freedom, become rich, and determined to leave their



Fig. 3.9.2 (a–d) Camouflaging of facial vitiligo in two dark skinned patients

Table 3.9.1 Self-tanner and cover creams: application method

- A cotton washcloth to exfoliate the skin, or a commercial defoliator
- Soap, skin lotion (an ordinary skin lotion should be applied to feet and ankles, knees, elbows, hands, wrists, and any area with fine lines, such as neck and face). The chosen self tanner (cream, gel, lotion or spray only for large areas)
- Gloves, the inexpensive medical supply kind which come in a box
- Facilities to wash hands frequently, a band or tie to keep hair off of the face, and a fingernail scrub brush
- Baby Wipes, Quickies, or similar products to clean the palms of hands after products application
- The room or the bathroom should not be steamy or warm, as sweating is not good
- If self tanner is applied on the back, a sponge paintbrush is needed, with a handle of three inches or more. If applied on large areas or the whole body, it's good to wear a loose outfit, while the product is drying, which takes from one to two hours
- Dark-coloured bathing suits are the best choice if the product is applied on the whole body. If the sunless tanner needs to be applied to patches on face, arms, and legs, the best choice are a dark T-shirt and shorts
- Light to medium-coloured fabrics which contain nylon are not indicated, because sunless tanners stain them permanently
- A moisturizer, to be applied every day on the fake tan

past behind. This consisted of an ochre-coloured paste made of clay and helped to cover the mark made on their forehead with a hot iron, the ignominious stigma

of slavery. In the chapter *Cutis et faciei vitiiis propellendis* of his *Liber Medicinalis*, Quinto Sereno Sammonico, a doctor in the Second Century AC,

proposes a remedy to eliminate freckles: '*Invida si maculat faciem lentigo decoram nec prodesse valent naturae dona benignae, erucam atque acidum laticem simul inline mali Saepiolae cineres ex ossibus omnia levant...*' (If the horrible ephelids spoil the skin, spoiling its natural beauty, spread a lotion made of vinegar and rocket on the skin). Until the early twentieth century, make-up in general was used only by the rich, theatre actors, or prostitutes. It was only in the twentieth century, with the birth of the film industry, that camouflage and make-up in general became a must for film stars. Products resistant to the effect of stage lighting were requested for actors with imperfections to hide. After the First World War, many soldiers came back from the front severely burnt or disfigured, and camouflage was a necessary blessing for them. The make-up and camouflage era was born, and mass production for the general public became a reality.

3.9.5 Camouflage Controlled Studies

Clinical research on camouflage in vitiligo is very limited given the practical importance of this field. A Cochrane database review in 2006 did not find any published trial in this field. Some authors report the efficacy and safety of dihydroxyacetone (DHA) in healthy volunteers and vitiligo patients. These open and/or retrospective studies have compared different DHA concentrations in patients of various phototypes. The higher the concentration, the better the response observed particularly in darker phototypes [9]. Only one study demonstrated the positive impact of self-tanning interventions on the quality of life in a cohort of vitiligo patients [8]. These studies were principally conducted with DHA-based products, which are described in detail hereafter.

3.9.6 Self-Tanning Creams, Lotions, and Sprays

Self-tanners in gel, cream, lotion, or spray give the skin a brown colour that resembles a natural tan, and normally lasts 3–5 days. The tanning of the skin develops in about 3–24 h after the application. Instant colour self-tanners, available by some manufacturers, thanks

to a colour guide, give a tanned colour instantly. These products are popular among those who cannot or do not like sun exposure, and can be considered camouflage products as they disguise depigmentation successfully. Marketed for about 40 years, self-tanners were not successful at first because they provided a yellowish and uneven colour, while today the latest formulas give excellent aesthetic results. Unfortunately, they are not suitable for coloured people, and the best results are in Caucasians of Phototypes I–III.

The active ingredient is DHA, a sugar that reacts with the proteins of the stratum corneum, and gives a tan resembling the solar UV-induced tan. This is due to the so-called Maillard's reaction, after the author who studied the chemical reaction that golden the crust of bread in the oven. Recent studies have demonstrated that DHA reacts totally and only with the first cells with which it comes into contact, and therefore it remains on the surface of the stratum corneum, until it is eliminated with the normal turnover of the epidermis. Preparations containing DHA are stable between pH 4 and 6. At neutral pH, brown grumes are formed inactivating pigmentation. It has been noticed that the presence on the skin or in the product of little organic or inorganic molecules may alter the DHA colouring capability. Traces of metals such as iron, titanium, zinc, or alpha-hydroxy-acids such as lactic acid can inactivate the product. So to avoid the frequent risk of lack of uniformity, a good rule is not to utilise self-tanners after using creams with zinc or titanium or after washing the skin with alkaline or lactic acid-based soaps largely present in products being defined by manufacturers as 'at physiologic pH' [1]. They can be used throughout the year, they are waterproof, and the fake tan developed does not stain clothes or sheets. However, sea water makes them fade away quickly, whilst swimming pool water does not.

No sunless tanner currently available contains adequate sunscreen, so sun-shielding products as well as moisturisers may be applied during the day, but only after the desired colour intensity has been obtained. Before applying self-tanners, it is advisable to gently rub the skin with a very soft brush to eliminate dead cells, especially on elbows, knees, and knuckles, in order to obtain an even skin colouring. It is advisable not to apply these products during the hot hours of the day in summer, because excessive sweat can result in uneven application and may prevent the active substance to develop colour properly. Only a small

Table 3.9.2 DHA tanning camouflage, practical points

- the products are to be used on perfectly dry skin
- on large areas, they should be developed with circular movements to obtain a homogeneous result,
- use a very spare quantity on hands, elbows, knuckles, and knees
- application on eyebrows or near the forehead hairline should be avoided
- apply sparingly to the face and neck area, because this part of the skin takes to self tanners quite well, and especially sparingly to the forehead hairline area. If the hair is short, the product should be applied behind ears.
- Application on mucosa or near the eyes should be avoided.
- After applying the product, avoid washing for 3 hours. No swim, bath, or anything that will make sweat for one hour; no tight jeans, belts, shoes, and bras for one hour, if the products have been used on the body.
- wash hands thoroughly, use a nail scrub brush to clean the nails, but be prudent because of Koebner's phenomenon if this area is not already depigmented. The palms of the hands, between the fingers, the knuckles have to be cleaned well.

quantity of the product should be applied first, and if the desired colouring is not achieved, it is possible to intensify with additional daily applications. If too much of the product is used, the result will be unnatural.

For small-sized vitiligo lesions, it is advisable to use a self-tanner in lotion (not in cream) with a q-tip. The lotion is spread from the centre of the lesion towards the outside, up to 1–2 mm from the lesion edge. A different technique is to spread the product over the entire area, for instance hands and arms, including the normal pigmented areas and subsequently repeat over only in the white areas using a q-tip dipped in the product.

Most sunless tanners' instructions for using the product advise to rub it well until it is absorbed, but this takes too much time for hands that are going to be orange. Instead, the product should be applied quickly, but thoroughly, spreading it in a circular motion to avoid streaking. Other important points are outlined in [Table 3.9.2](#).

3.9.7 Cover Creams, Foundations, Sticks

Highly pigmented creams come in compact, liquid, or stick formulations and are available from several manufacturers in a wide range of natural skin colours.

Table 3.9.3 Tips on cover creams application technique

- The cover-cream mixture is applied with the ball of the middle finger, and smoothed over the discoloured area with a light-pressing motion. A flat brush can be used to feather out the outer edges of the thick, opaque cover-cream solution until it is so well-blended to become undetectable.
- Fixing powder: with a small cotton pad apply the translucent, colorless powder to stabilize the foundation. This procedure makes the application waterproof and resistant to smudges and friction. A few minutes for the talc to be absorbed, then the excess is dusted off.
- Fixing spray: maintains the corrective make-up for a whole day. Vaporized at a distance of 40 cm, it creates, thanks to its silicon and polymers formula, an elastic film that guarantees coverage.

They are lightweight and easy to apply, usually free of contact allergens, but dermatitis and allergic reactions may occur, due to fragrances and preservatives present in some brands. The texture is denser than traditional foundation creams used by the general public, as their aim is to provide effective cover. They may contain up to 50% mineral oils and wax. The texture, different from normal foundation products, is also due to titanium dioxide, used as a thickening and shielding agent, offering sun protection, while the colours are provided by iron oxides. Blended to complement the individual's particular skin colour, they can conceal disfiguring vitiligo patches of exposed areas. Suitable for men, women, and children, their waterproof characteristics allow shower and swimming. They should be applied on the face and removed every day. It is crucial to choose one's basic colour, and then the various shades that can vary indefinitely, according to the different parts of the body, to the seasons or simply from one day to another. Sometimes, it is necessary to mix more colours of different brands.

For a correct application, the skin should be cleaned. Any previous makeup has to be gently removed. The patient has to learn proper makeup-removal techniques, that is, gentle movements to avoid the Koebner phenomenon. Using a sample palette of cover creams, two or three shades can be mixed to achieve the desired colour match. More than three colours will make the procedure too complicated and expensive. An optimal blend of colours should be created, and when applied, this should match the colour of the surrounding skin as closely as possible ([Table 3.9.3](#)).

3.9.8 Vitiligo of the Lips

Transfer-resistant lip colour lasting up to 12h of wear, in matte formulas, is available in many shades that duplicate the natural colour of the lips, suitable also for male patients. They are an alternative to lip tattoos. These very popular cosmetics are easily available in almost all departmental stores and pharmacies.

3.9.9 Leukotrichia

Leukotrichia can affect visible areas on the beard, moustaches, eyebrows, and eyelashes. In these cases, it is advisable to dye the white hair in a hairdressing salon the first time, and subsequently the dyeing can be practiced at home with products formulated for these delicate areas.

3.9.10 Permanent and Semi-Permanent Camouflage

Also referred to as micro-pigmentation, cosmetic tattooing or dermal pigmentation, are techniques that require an experienced technician, qualified to offer these services. Results vary according to the skill of the practitioner and his experience with colours. Cosmetic tattoo may be suitable for depigmented lips, especially in black people, and for depigmented nipples. As regards other vitiligo areas, results may be very disappointing. Pigments specially formulated for cosmetic application are implanted beneath the epidermis into the dermal layer, by microinsertion. Topical anaesthetics are used to minimise discomfort; allergic reactions are rare; sterile needles and surgical gloves are used for each procedure. Semi-permanent camouflage or cosmetic tattooing differs from traditional tattooing, where permanent skin inks and dyes are placed into the skin. It can be considered ‘permanent’ if compared to normal make-up, but as it will fade with time – usually it lasts from 2 to 5 years – it is actually ‘semi-permanent.’

3.9.11 Precautions of Use

Some precautions should be considered when a camouflage technique is used or proposed to the patients. Firstly, the patient should be taught that camouflage has to be removed smoothly avoiding intensive friction or use of washcloths. This is of importance as the Koebner’s phenomenon is observed in areas where an adherent camouflage needs an intense frictional washing to pull it off (Sect. 2.2.2.1). Similarly, fixing powder should be used cautiously and avoided whenever possible. Smooth, liquid, and light instant colour self-tanner and stains should be preferred for these reasons.

Another point of importance is the risk with permanent camouflage. Indeed, vitiligo course is highly unpredictable. Even after many years, stable large patches can resolve spontaneously. Given these considerations, permanent camouflage and tattoos should be considered with particular caution. The development of a depigmented patch around an area previously treated with these techniques can lead to inaeesthetic results. Thus, if performed in vitiligo, the colour of the tattoo has to be very close to the natural pigmentation of the patient, which is very difficult. Since the colour of the tattoo is definitive and does not follow the UV-induced tanning changes, the contrast between tattooed skin and natural pigmented areas may cause problems.

3.9.12 Conclusion: Camouflage as a Balm for ‘Bruised’ Souls

Camouflage increases the patient’s confidence and improves his quality of life. It is readily accepted by women, who, unlike children and men, may already be accustomed to use make-up products. But both men and adolescents can easily learn how to apply the products.

There are many ways to conceal small or large areas of vitiligo, and the natural result increases the patient’s confidence. No more embarrassing questions or intrusive staring, wearing a short-sleeved shirt or shorts in the summer, no hands hidden in pockets, greeting with a handshake without fear; this is what ‘camouflage therapy’ can do to improve the quality of life of vitiligo patients.

Summary Messages

- › It is only recently that camouflage has been recognised as being a medical intervention, when there are no other satisfactory options to really help the patient.
- › It is important to discuss with the patient his or her lifestyle to choose products (self-tanners, cover creams, etc.) suitable for his/her case.
- › Non permanent techniques such as self tanners should be usually preferred
- › The Koebner's phenomenon can be observed in areas where an adherent camouflage needs an intense frictional washing to pull it off
- › Cosmetic tattoo may be suitable for depigmented lips, especially in black people, and for depigmented nipples
- › Camouflage can improve the quality of life of vitiligo patients

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Further Reading

www.skin-camouflage.net < <http://www.skin-camouflage.net> >
<http://www.redcross.org.uk/standard.asp?id=49354>