

# Cosmetic camouflage

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## Summary

Although many skin conditions are amenable to treatment, on certain occasions dermatology and plastic surgery have not much to offer and patients are left with disfigurements. Cosmetic camouflage is a therapy that has been developed to alleviate the suffering of those who have been disfigured by a congenital or an acquired lesion and who have no other choice than living with their deformity.

*Keywords:* cosmetic camouflage, cover cream, foundation, makeup

## Introduction

Makeup has been introduced as a medical aid only after the Second World War for the rehabilitation of severely burned pilots.<sup>1</sup> Nowadays cosmetic camouflage has been integrated to medical practice to help patients disguise congenital or acquired disfigurements that are not amenable to medical or surgical treatment. A study assessing the effect of cosmetic camouflage on quality of life of disfigured patients showed that attending a cosmetic camouflage clinic significantly improves quality of life.<sup>2,3</sup> Training in camouflage therapy is essential, because the application and adherence processes are different from regular makeup foundations.<sup>4-7</sup> Every dermatologist should be familiar with camouflage products in order to efficiently help his or her patients.

### Indications of cosmetic camouflage

Camouflage therapy may be used for permanent contour and pigmentary defects, but also may be used as a transitional application for postsurgical erythema.<sup>1</sup> Some of the indications for that procedure are listed in Table 1.

### Preparations for cosmetic camouflage

A good cover cosmetic should have the following characteristics<sup>4</sup>: natural looking, opaque, greaseless (not to stain clothes), waterproof, easy to apply, long-lasting, 100% fragrance free, applicable to all skin types, nonirritating, nonsensitizing, nonphotosensitizing, and noncomedogenic. Camouflage makeup should also match all ethnic skin tones and all nuances so many different shades should be available. Photoprotection is an additional benefit. Agents that provide coverage (iron oxide pigment, titanium dioxide, kaolin) also block ultraviolet B and A radiation. Foundation makeup, without sunscreen by its pigment, provides a sun-protection factor (SPF) of 3-4, and by raising the level of its pigments a higher SPF can be achieved.<sup>8</sup>

There are four basic foundation formulations: oil-based, water-based, oil-free, and water-free (or anhydrous) forms.<sup>9</sup>

**1** Oil-based foundations are primarily designed for dry skin and are water-in-oil emulsions containing pigments suspended in oil such as mineral oil, lanolin alcohol, vegetable oil (coconut, sesame, safflower), or synthetic esters (isopropyl myristate, octyl palmitate, isopropyl palmitate).<sup>10</sup> They are stable as they mix with sebum and are easy to apply. Water evaporates from the foundation after application leaving the pigment in oil on the face.

**2** Water-based foundations designed for dry to normal skin are oil-in-water emulsions containing large amounts of water and a small amount of oil in which the pigment is suspended in emulsion. They contain primary emulsifiers

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**Table 1** Indications for cosmetic camouflage.

Vascular lesions
Vascular malformations (port-wine stains) and hemangiomas
Telangiectasias
Rosacea
Varicose veins
Pigmentary disorders
Vitiligo
Postinflammatory hyperpigmentation
Postinflammatory hypopigmentation
Melasma
Lentiginos
Solar lentigo
Nevi
Café au lait spots
Dark circles of the eyes
Tatoos
Scars
Atrophic
Hypertrophic
Stretch marks
Burn scars
Chronic skin diseases
Acne
Scleroderma
Lupus erythematosus
Transient postsurgical
Laser
Dermabrasion
Chemical peels
Surgical procedures (rhytidectomy, rhinoplasty, etc.)

such as triethanolamine or a nonionic surfactant and secondary emulsifiers such as glyceryl stearate or propylene glycol stearate. They are less stable than oil-based foundations but are more popular.

**3** Oil-free foundations, designed for oily skin, instead of containing animal, vegetable, or mineral oils contain silicone derivatives, such as dimethicone or cyclomethicone, which are noncomedogenic.

**4** In water-free foundations different oils (vegetable, mineral, lanolin alcohol, synthetic esters) are mixed with waxes to form a cream, where high concentrations of pigment are incorporated. Titanium dioxide with iron oxide, occasionally in combination with ultramarine blue, are the coloring agents used. They are waterproof and opaque and well suited for cosmetic camouflage purposes.

Facial foundations are manufactured in a variety of finishes: matte, semimatte, moist semimatte, and shiny. Matte finish foundations are mostly suitable for cosmetic camouflage. Foundations are available in a variety of forms: liquid, mousse, water-containing cream, soufflé,

anhydrous cream, stick, cake, and shake lotion.<sup>11</sup> Most camouflage preparations are formulated as cream because it is possible to incorporate increased concentrations of iron oxide into a cream formulation to provide better coverage. Creams are thicker and more occlusive as they have the additional ingredient of wax.

Skin lesions may demonstrate only subtle textural and pigment changes or may be more complex. For mild problems, usually a simple foundation cream suffices with or without a color corrector.<sup>11</sup> However, for difficult problems that require full concealment one should use cover creams, commonly called concealers.<sup>11</sup> Cover creams are more opaque than over-the-counter brands of traditional enhancement makeup and have a waxy, thick, pastelike consistency. They consist of various coloring agents in an oily base. The coloring agents give the product its covering ability, and in various combinations provide the required color. Substances used for that purpose include various minerals and metal compounds such as titanium dioxide, iron-based compounds, zinc and magnesium compounds, and other pigments.

To achieve the desired look multiple items are used in different parts of the face. On the face foundations, concealers, powders, and blushers may be applied.<sup>12</sup> On the eyes foundations, eye shadows, eyeliners, mascaras, and eyebrow pencils are employed, whereas for the lips lipsticks, lip-liner crayons, foundations, and glosses may be used.<sup>12</sup>

There are several companies that distribute products for camouflage therapy. The different brands will vary in composition and in color selection. It is possible to match most white skin colors with 7–8 shades, but for black skin usually 10–12 shades are needed. Therefore, most therapists prefer to have on hand at least three palettes from different cosmetic companies, so a full range of skin pigment shades will be available. It is recommended that no more than two shades should be selected for color blending, otherwise the camouflage process will be costly and time consuming for the patient and the final color will be muddy.

## The procedure

### Before starting cosmetic camouflage

Before disguising a skin lesion a physician should determine the nature of the problem and whether medical or surgical treatment could offer any benefit. Laser treatment, bleaching preparations, surgery, or other therapeutic modalities might cure the problem or simply improve the condition.

The consultation before cosmetic camouflage should be informative of<sup>11</sup>



**Figure 1** A patient with vitiligo (A) before and (B) after cosmetic camouflage.



**Figure 2** A patient with discoid lupus erythematosus (A) before and (B) after cosmetic camouflage.

- 1 the patient's medical history and the duration and location of the problem;
- 2 topical or systemic medication that might alter the color of the patient's skin and interfere with color match;
- 3 any possible allergies or sensitivities;
- 4 any skin care products that the patient has been instructed to use by the doctor (cleansers, sunscreens, emollients, etc.);
- 5 the psychological impact the condition has on the patient;
- 6 the patient's expectations from the cosmetic camouflage;
- 7 the patient's social activities, hobbies, and sports; and

- 8 the nature of the patient's employment and the environmental conditions of his or her work (lighting, humidity, etc.).

The patient should understand that after camouflage therapy, it will be obvious that he or she is wearing a cosmetic. The camouflage therapist should take into consideration the patient's individual budget. This is particularly important for long-term use of makeup products, as they may be quite costly.

A thorough evaluation of the actual disfigurement should follow: shape, size, and location. In addition, color, texture, moisture, and oil content of the skin are determined. Face characteristics should also be analyzed. Physical and not artificial lighting should be used for that purpose.



**Figure 3** A patient with acne (A) before and (B) after cosmetic camouflage.

### Technique of cosmetic camouflage

The technique itself includes the following steps:

- 1 Preparation of the skin: the skin should be perfectly cleaned and moisturized as any residue left may cause discoloration and affect coverage.
- 2 Neutralization/correction of color: it may be necessary to neutralize the color of a lesion by using an opposite color. For pink or red discoloration a green-colored corrector is used. For yellow shades a lavender corrector is preferable, whereas for gray discoloration a gold corrector is more suitable.
- 3 Cover cream: the cover cream palette is held alongside the area of the skin to be camouflaged and the therapist makes a quick scan to determine which shade best matches the patient's skin color. Whenever possible, not only should the color surrounding the area to be camouflaged

be matched, but consideration should be taken to match the face and neck color. The closer the shade blends with the rest of the face and neck, the better the camouflage. If necessary a second color may be added and blended. The percentage of each should be determined. A small amount of the final blend is then placed and spread on the back of the therapist's hand.

Three different combinations are recorded and a small sample of each is applied to the patient's skin. If the shade is the right one, it will barely be noticeable. If the shade is too dark a little bit of the lighter color or a pinhead of white cover cream can be added. If it is too light a little more of the darker shade may be added. The cover cream should then be dabbed with the third finger or a synthetic sponge rather than rubbed. Dabbing is necessary for good adherence especially in the case of scars where follicular

ostia are lacking. The edges of the cover cream should blend with the surrounding skin.

**4 Powder:** the cosmetic should be allowed to dry for 5 min and then it is waterproofed and set with a colorless powder. The setting time of the powder will depend on the patient's skin type.<sup>11</sup> If the patient has oily skin, then the powder should remain 8–10 min to absorb excess oil. For patients with dry or aging skin the cover cream should be allowed to dry longer (8–10 min) before applying the setting powder. The excess powder is removed with a brush or a cotton ball. Patients with extremely dry skin will not require a setting powder. Makeup should be applied to the other half of the face to create a more natural-looking appearance.

**5 Creating imperfections/camouflaging scars:** special theatrical sponges (stipple sponges) can be lightly dabbed on the cover cream to create natural imperfections such as freckles or beard stubble to achieve a more natural cosmetic result. Scars are most difficult to disguise. Shading and lighting are employed to minimize the scar contour abnormalities.<sup>8</sup> Depressed scars appear darker than the surrounding skin, so a lighter powder is applied over the scar. For elevated scars a darker powder is used. Sometimes artificial devices are needed to replace nails, eyelashes, or eyebrows to optimize the cosmetic result.

**6 Removal of the camouflage:** common facial-cleansing methods, such as scrubbing the skin with water and soap, will not remove the oil-based camouflage makeup. A water-in-oil-based cleansing solution is indicated to break down and dislodge the oil and wax coating, which adhere to the skin's surface. Then water and soap cleansing is recommended.

After the cosmetic procedure has been completed and the patient is completely satisfied, then he or she is asked to reproduce it. The patient should have makeup applied that will be able to be duplicated the following day.

#### Special considerations (men and children)

Instructing men how to use makeup may be problematic because they are unfamiliar with makeup products, techniques of application, and removal techniques. Moreover, the great majority of available products are designed for women, so to normalize a male's appearance tools and techniques of theatrical nature should be used. Men usually have a coarser skin texture than women and most importantly they have a beard. Recreating male skin nuances is of major importance to achieve a normal-looking appearance.

Cosmetic camouflage for children has also several differences. For children up to 9 years old, a parent or a guardian should be trained in the application technique to apply the makeup to the child or to assist the child in

its application. Older children may practice cosmetic camouflage independently providing that the therapist has kept the number of products to a minimum. The makeup used for children should maintain the childlike look and should not take any of the adult styles and fashions.

#### Conclusion

Physicians are coming to realize that in some instances medical or surgical treatment cannot restore patients' appearance to a cosmetically acceptable level. Instead of condemning them to social deprivation and stigma, hospitals should offer an alternative form of treatment: camouflage therapy. A camouflage clinic can be developed at least in every university hospital to meet the needs of a large number of patients with skin imperfections. We strongly encourage the cosmetic camouflage use.

#### References

- 1 LeRoy L. Camouflage therapy. *Dermatol Nurs* 2000; **12**: 415–16, 442.
- 2 Holme SA, Beattie PE, Fleming CJ. Cosmetic camouflage advice improves quality of life. *Br J Dermatol* 2002; **147**: 946–9.
- 3 Kent G. Testing a model of disfigurement: effects of a skin camouflage service on well-being and appearance anxiety. *Psychol Health* 2002; **17**: 377–86.
- 4 Roberts NG, Nordlund JJ, Wright C. The corrective cover or camouflage clinic. *Ear Nose Throat J* 1989; **68**: 480–2.
- 5 Rayner VL. Assessing camouflage therapy for the disfigured patient: a personal perspective. *Dermatol Nurs* 1990; **2**: 101–4.
- 6 Rayner V. Clinical cosmetology. *A Medical Approach to Cosmetic Procedures*. Albany, NY: Milady Publishing; 1993: 116–22.
- 7 Rayner V. Cosmetic rehabilitation. *Dermatol Nurs* 2000; **12** (4): 267–71.
- 8 De Buys HV, Levy SB, Murray JC, Madey DL, Pinnel SR. Modern approaches to photoprotection. *Dermatol Clin* 2000; **18**: 577–90.
- 9 Draelos ZD. Colored facial cosmetics. *Dermatol Clin* 2000; **18** (4): 621–31.
- 10 Draelos ZD. Therapeutic moisturizers. *Dermatol Clin* 2000; **18**: 597–607.
- 11 Rayner V. Camouflaging skin lesions and other disfiguring conditions. In: A Shai, HI Maibach, R Baran, eds. *Handbook of Cosmetic Skin Care*. London: Martin Dunitz; 2001: pp. 241–50.
- 12 Westmore MG. Camouflage and makeup preparations. *Clin Dermatol* 2001; **19**: 406–12.
- 13 Fiedler JG. Foundation makeup. In: MS Balsam, E Sagarin, eds. *Cosmetics, Science and Technology*, 2nd edn. New York: Wiley-Interscience; 1972: 317–34.
- 14 Rayner V. Camouflage cosmetics. In: R Baran, HI Maibach, eds. *Textbook of Cosmetic Dermatology*, 2nd edn. London: Martin Dunitz; 1998: 418–32.

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