

## ORIGINAL CONTRIBUTIONS

# Recommendations for the use of corrective makeup after dermatological procedures

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## Abstract

**Introduction:** The number of dermatological or cosmetic procedures carried out has continuously increased over the last decades. Almost all may cause transient local skin reactions such as erythema, blistering, crusts, scaling, hypo- or hyperpigmentation, or hemorrhagic lesions. One issue of dermatological procedures is the downtime, during which patients need to hide their skin, due to these local reactions.

**Aim:** To provide dermatologists with easy-to-follow recommendations for the right timing of use of corrective makeup for patients who have undergone or who plan to undergo dermatological procedures, according to the invasiveness of the dermatological procedure chosen.

**Methodology:** A group of experts in dermatological procedures met in 2019 and at the beginning of 2020 to discuss the different procedures, their local reactions and downtime, and the opportunities to use specific corrective makeup in order to hide these transient reactions.

**Results:** As a result of the discussions, the experts proposed a tabulated algorithm of use based on a classification of the different dermatological procedures according to their invasiveness and recommended timing of the first post-procedure corrective makeup application.

**Conclusion:** Corrective makeup may be considered as a complement to certain dermatological procedures in order to minimize downtime. However, its use is conditioned by the correct understanding of skin barrier alteration and recovery time. The proposed algorithm of use of corrective makeup after procedures may help the practitioner to indicate his patient the right moment for applying corrective makeup in order to avoid local tolerance issues and post-procedure complications.

## KEYWORDS

aesthetics, camouflage makeup, corrective makeup, dermatological procedures, post-procedure clinical signs

## 1 | INTRODUCTION

The number of dermatological or cosmetic procedures has continuously increased over the last decades. In 2018, the overall incidence of cosmetic procedures in the United States increased by 2%, of botulinum toxin type A (BTA) injections by 3%, of soft-tissue fillers (STF) by 2%, and of chemical peels by 1%. The main population requesting dermatological procedures is women (92%) aged over 40.<sup>1</sup>

Dermatological procedures are mainly performed on the face and may be more or less invasive. As such, non-ablative radiofrequency is non-invasive and botulinum toxin and fillers minimally invasive, while ablative fractionated laser treatment is much more aggressive.

Even though their levels of invasiveness differ, almost all procedures result in transient local skin reactions such as erythema, blistering, crusts, scaling, hypo- or hyperpigmentation, or hemorrhagic lesions.<sup>2-24</sup> Some have even been reported to alter the integrity of the skin barrier leading to an increased risk of erythema, inflammation, and transepidermal water loss.<sup>12,14,22,25-29</sup>

The first use of makeup can be found in antiquity. Nowadays, makeup plays an important role in almost every woman's life.<sup>30</sup> Corrective makeup has been specifically developed to normalize the patient's physical or reflective image, by reducing or hiding facial disfigurements and blemishes. It increases the patient's self-esteem and helps to improve quality of life.<sup>31-35</sup> Thus, corrective makeup could be an easy-to-use means of hiding the transient facial blemishes observed after dermatological procedures.

Patients are often concerned about the downtime following dermatological procedures, during which time they may want to hide (or conceal themselves from others) due to immediate local skin reactions. Thus, it is important to correctly define the right timing for a post-procedural use of corrective makeup, as well as to choose the most suitable product, based on different factors: the procedure itself, with its invasiveness in terms of skin barrier disruption, the anticipated local side effects, skin characteristics (ie, skin type, phototype), and the timing of application and choice of cosmetics to avoid potential risks of sensitization and irritant contact dermatitis (ICD). Subjects with an impaired skin barrier have a decreased irritant threshold and/or require longer time to restore a healthy skin barrier function, making them more susceptible to develop ICD and allergies, due to the penetration of the allergens potentially contained in cosmetics.<sup>36</sup>

Therefore, apart from improving a patient's self-perception, avoiding any post-procedure complications such as infections, inflammation, or delays in skin barrier healing is important to consider.

The aim of this article was to provide dermatologists and other healthcare practitioners with easy-to-follow recommendations for the correct timing of the use of corrective makeup by their patients who have undergone or who plan to undergo dermatological procedures, according to the invasiveness of the dermatological procedure chosen.

## 2 | METHODOLOGY

A group of five dermatologists who are also currently qualified medical experts with an experience of up to 28 years in aesthetic dermatology and dermatological procedures met at the end of 2019 and at the beginning of 2020, to discuss and classify the different procedures with regard to their potential to alter the skin barrier and to cause local skin reactions that would require cover makeup and to the method, as well as the timing, that specific corrective makeup may be applied in order to hide these local reactions.

Prior to the discussion, an extensive literature review was conducted based on research carried out on PubMed using the following keywords: aesthetic surgery, aesthetic treatment, aesthetic procedures, local skin reactions of aesthetic procedures, camouflage makeup, corrective makeup. Results served as a basis for discussions during two physical meetings and four review and discussion rounds via email to agree on the experts' experience on skin reactions observed during their management and to establish the recommendation of use of corrective makeup after aesthetic procedures proposed hereafter.

## 3 | RESULTS

As a result, a tabulated algorithm of use is proposed. The algorithm is based on a classification of the different dermatological procedures according to their invasiveness in terms of skin barrier alteration and recommended timing of the first post-procedure corrective makeup application (Table 1). Based on the literature, discussions, and experiences of the experts, four different levels of invasiveness are proposed: non-invasive, minimally invasive, moderately invasive, and invasive procedures.

We suggest that the use of corrective makeup immediately after procedures should be limited to non-invasive interventions, such as non-ablative radiofrequency, high-intensity focused ultrasound (HIFU), photobiomodulation, or non-ablative laser. For minimally invasive, moderately invasive, or invasive procedures, corrective makeup should only be applied after complete skin healing and skin barrier recovery. This is primarily to avoid hiding potential local reactions that may occur after procedures and which may require specific post-procedure care and, secondly, to avoid superinfection.

According to the literature and our experience, different local skin reactions can be observed after dermatological procedures.<sup>3,25,37-40</sup>

Based on our experience, the following side effects may be observed after minimally invasive procedures:

- Vascular lasers: erythema and purpura; intensive pulsed light (IPL): transient erythema and transient darkening of spots;
- Non-ablative radiofrequency, non-ablative laser, and HIFU: transient erythema;
- Botulinum toxin injections: purpura, hemorrhagic papules, and hematoma; and

TABLE 1 Proposed algorithm of use of corrective makeup after dermatological procedures

	Non-invasive	Minimally invasive
Degree of Invasiveness	Non-ablative radiofrequency High-intensity focused ultrasound (HIFU) Photobiomodulation Non-ablative laser Vascular lasers (YAG/Pulsed dye) Intense pulsed light (IPL)	Thread lift devices Soft tissue fillers (ie, hyaluronic acid) Botulinum toxin injections
Proposed timing for corrective makeup application according to clinical signs	Immediately after dermatological procedure, except for patients with risk factors (ie, delayed wound healing)	Avoid puncture points Apply after clinical signs have disappeared

- fillers and thread lift devices: transient erythema and hemorrhagic lesions.

The following local side reactions may be observed after moderately invasive or invasive procedures:

- superficial peeling: erythema, desquamation, and scaling;
- photodynamic therapy/rejuvenation: crusts, erythema, and erosions/ulcerations;
- Q-Switch laser: darkening of spots, erythema, crusts, and hypo/hyperpigmentation depending on the phototype;
- fractionated non-ablative laser: erythema, edema, worsening of melasma, hypo/hyperpigmentation, and suntanned-like pigmentation;
- microneedling or radiofrequency using short needles: crusts, oozing, and erythema; and
- cryotherapy: erythema, crusts, and hypo/hyperpigmentation.

Time limits for the use of corrective makeup, depending on the invasiveness of the procedures are given in Table 1. These time limits range from an application immediately after an intervention following non-invasive procedures, such as non-ablative radiofrequency or laser, HIFU, photobiomodulation, vascular lasers (YAG/pulsed, dye), or IPL or even botulinum toxin injections, to a 10-12-day makeup-free recovery period for invasive procedures.

For fillers and botulinum toxin injections, cosmetics or makeup may be applied immediately after injections.<sup>3,44</sup> However, injection points should be avoided, especially when using a large cannula (ie, after filler injections).

Literature reports that the application of makeup or cosmetics may result in contact dermatitis, even in skin which has not undergone physical stress, such as dermatological procedures, due to penetrating ingredients.<sup>41,42</sup> As invasive dermatological procedures damage the natural skin barrier, we consider that makeup should not be applied until complete recovery of the damaged skin barrier, in order to prevent any risk of superinfection, or contact dermatitis.<sup>41,43</sup>

In patients at risk of altered wound healing, the use of corrective makeup must be delayed until such signs have disappeared, in order to avoid any skin concern such as desquamation, scaling, scales or crusts, infection, or the onset of contact dermatitis. Concealer or foundation stick presentations, providing extreme cover thus hiding eventual small superficial transient hematoma at injection sites, and ultra-fluid formulations may be considered as the most suitable for use after non-invasive/minimally invasive or moderately invasive dermatological procedures. Moreover, corrective makeup containing UV filters may be considered to limit exposure to deleterious UV rays.<sup>45-47</sup>

## 4 | DISCUSSION AND CONCLUSION

Dermatological procedures have become increasingly popular over the last decades and are now part of the daily practice of most of the dermatologists and physicians interested in this type of intervention. Despite their increasing success and the progress made to reduce local tolerance issues of the different techniques used, some may still result in more or less visible local skin reactions lasting for a few hours or days to much longer periods.<sup>3,4,25,37-40,48</sup> During this period, patients may want to hide such visible reactions in order to improve their transient physical appearance and minimize their downtime. Corrective makeup therefore plays an important role.<sup>30,49</sup> Corrective makeup may help patients to cover procedure-related local skin reactions and reduce the risk of post-inflammatory hyperpigmentation. As such, Dermablend<sup>®</sup>, a corrective makeup brand specifically developed by Vichy Laboratoires, France, allows to cover permanent and transient blemishes with sensorial, very high coverage formulas. It exists in several shades, formulations with a sun protection factor and presentations, adapting easily to each specific situation. Dermablend<sup>®</sup> products, especially the Fluid Corrective Foundation, have been tested to also protect against visible light compared to regular sunscreen.<sup>50</sup> This effect is due to the high concentration in mineral pigments, including iron oxide in their formulas. In addition, corrective

Moderately invasive	Invasive	
Microdermabrasion	Microneedling using long needles	Resurfacing using ablative lasers (CO <sub>2</sub> /erbium YAG)
Superficial peeling	Radiofrequency using long needles	Medium depth peelings
Photodynamic therapy	Fractioned ablative Laser (CO <sub>2</sub> /Erbium YAG), high settings	Mechanical dermabrasion
Photodynamic rejuvenation	Medium depth peelings	
Q-Switch laser	Cryotherapy	
Fractione non-ablative laser		
Microneedling (short needles)		
Radiofrequency (short needles)		
Fractioned ablative Laser (CO <sub>2</sub> /Erbium YAG), low settings		
2-3 days after dermatological procedure	Recovery period	
	3-5 days after dermatological procedure	10-12 days after dermatological procedure

makeup has been proven not only to improve physical appearance but also to improve quality of life.<sup>32-35</sup>

Informing healthcare givers and educating patients about the correct use and timing of corrective makeup after dermatological procedures should be a part of the procedure. Respecting recovery periods after procedures to allow the skin barrier to be restored thus avoiding infections or contact dermatitis due to early use of makeup and choosing the right corrective makeup will help to improve the healing process and allow patients to feel less self-conscious until the complete resorption of procedure-related local skin reactions.

In conclusion, we consider that corrective makeup may be a useful complement to dermatological procedures. However, its use remains conditioned by the procedure itself, its invasiveness on the skin barrier, and skin characteristics. Likewise, patients with known risk factors, especially regarding superinfections, may require specific attention and should avoid using corrective makeup immediately after their procedure. Therefore, the herewith proposed algorithm of use of corrective makeup may help the practitioner to indicate his patient the right moment for applying corrective makeup in order to avoid local tolerance issues and post-procedure complications.

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#### AUTHOR CONTRIBUTIONS

E.A, A.L.P.P, M.K, D.K, and E.R. participated at the expert meetings and provided substantial input and information. D.K provided literature to be reviewed and to be discussed. E.A, A.L.P.P, and D.K participated in writing the manuscript and all approved its content.

#### ETHICS STATEMENT

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#### DATA AVAILABILITY STATEMENT

Data available on request from the authors.

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