



Original Research Article

COMPREHENSIVE GUIDANCE FOR APPROPRIATE USE OF TOPICAL CORTICOSTEROIDS: A NARRATIVE REVIEW

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ABSTRACT

Topical corticosteroids (TCSs) are fundamental for managing various dermatological conditions because of their anti-inflammatory properties. This document outlines the appropriate use of TCS, emphasizing the balance between therapeutic benefits and potential risks. The introduction addresses the global prevalence of skin diseases, highlighting the significant impact on quality of life and the importance of TCS in symptom relief. However, misuse due to misdiagnosis, poor communication, and nonmedical influences is a concern.

Common skin conditions effectively treated with TCS are categorized on the basis of the effectiveness of the corticosteroids. Proper prescription practices involve thorough consultation, tailored treatment, specific application techniques, and supervised usage. It is crucial to avoid prolonged use, improper occlusion, and application to infected skin or for skin-lightening purposes. Healthcare recommendations for selecting the right TCS focus on potency classification and factors influencing the choice, such as age, lesion location, and skin characteristics.

The document highlights the importance of understanding dosage calculations via the fingertip unit (FTU) method and the variability in TCS absorption across different anatomical sites. Awareness of adverse effects, both local (e.g., skin atrophy, rosacea) and systemic (e.g., adrenal suppression, Cushing's syndrome), is crucial. Strategies to address steroid phobia include patient education, individualized counselling, proper application demonstrations, open communication, and regular monitoring.

In conclusion, appropriate TCS use requires precise prescription practices, patient education, and adherence to guidelines. This comprehensive approach ensures optimal therapeutic outcomes while minimizing risks, effectively addressing the needs of patients with diverse skin conditions. Healthcare professionals must balance the benefits and risks of TCS, providing evidence-based guidance to enhance patient care.

Keywords: Topical corticosteroids, inflammation, fingertip unit, application, dosage, potency, steroid phobia.

INTRODUCTION

Skin diseases are prevalent globally and constitute a common health issue with significant impact. The burden of skin diseases extends beyond physical symptoms, encompassing psychological, social, and financial consequences affecting patients, their families, and society.^[1]

Chronic skin conditions such as psoriasis and eczema cause discomfort and impair quality of life. While some types, such as contact dermatitis, are curable, they still pose challenges for patients. Malignant skin diseases, such as malignant melanoma, pose a substantial risk of mortality, further emphasizing the severity of certain skin conditions. Various health status and quality-of-life measures are available, facilitating efficient assessment of the impact of most skin diseases on patients' lives.^[1]

Individuals with dermatological conditions, especially when visible, may feel embarrassed and stigmatized, which impacts their psychological well-being and societal interactions. These feelings are crucial determinants that substantially diminish the overall quality of life for those dealing with such skin conditions.^[2]

Topical corticosteroids provide rapid relief in dermatological conditions but are often misused without proper guidance. Collaboration among healthcare professionals is ideal, but reliance on vague product labels like "apply thinly" can cause anxiety and poor adherence. The fingertip unit (FTU) system simplifies dosing by specifying the required amount for different body areas, boosting patient confidence. Patients should be educated on proper use, cautioned not to exceed the prescribed treatment, and advised to discontinue only under medical supervision.

II. Factors Contributed to Topical Corticosteroid (TCS) Abuse:^[3]

Medical Practice

Misdiagnosis or product misinformation, poor doctor-patient communication, and improperly filled prescriptions can all lead to incorrect topical corticosteroid (TCS) use. Misdiagnosis or inadequate product details, lack of clear instructions and patient education, and prescription errors in dosage or duration contribute to misuse.

Pharmaceutical Practice

Nonmedical advice from sources like media, family, or the pharmaceutical field, along with over-the-counter accessibility of TCS, can lead to misuse without proper medical supervision.

Media Influence

Online medical information and social media consultations encourage self-treatment, while advertisements promote TCS products, fostering confidence in purchasing without proper medical consultation.

Patient/Consumer Behaviour

Poor patient–doctor communication, lack of education, and economic concerns lead to improper TCS use, with patients often relying on nonmedical advice and self-treatment.

III. Common conditions associated with treatment with topical corticosteroids

The U.S. Food and Drug Administration has approved topical corticosteroids for relieving the inflammatory and pruritic manifestations of corticosteroid-responsive dermatoses. Table 1 lists the skin conditions associated with positive responses to treatment with topical corticosteroids.

Choosing the appropriate potency for topical medication depends on patient factors (age, lesion location), skin condition characteristics (see Table 1), and medication attributes (molecular structure, concentration, formulation). The method of application, including the use of occlusive or wet dressings, also impacts potency and efficacy. Thus, the decision integrates patient-related factors, lesion specifics, medication properties, and application techniques to achieve optimal outcomes.

IV. Contraindications and Relative Contraindications of TCS

A. Contraindications to TCS: 5

- **Fungal Infections:** Masks infection, delaying diagnosis.
- **Bacterial Infections:** Avoid in impetigo, furuncles, cellulitis, erysipelas, and lymphangitis.
- **Other Infections:** Contraindicated in erythrasma, candida, and dermatophyte infections.

B. Relative Contraindications of TCS:^[5]

Topical corticosteroids should be used with caution in the treatment of scabies to avoid the development of a condition called scabies incognito.

V. Best Practices in Prescribing TCS

A. Do's while prescribing a TCS

- **Prescription and Consultation:** Ensure the TCS is prescribed for the correct indication following a thorough patient consultation.
- **Specific Dermatoses:** Tailor treatment to the specific dermatological condition for optimal effectiveness.
- **Application Technique:** Instruct patients on applying a thin layer of TCS using the fingertip unit method, covering about 2% of the body surface.
- **Supervised Usage:** Use steroids under supervision, applying only to affected areas to avoid unnecessary exposure.
- **Proper Frequency:** Provide clear instructions on the application frequency and stress the importance of adherence.
- **Referral:** Refer the patient to a dermatologist if there is no improvement within 2–4 weeks.

B. Do not's while prescribing a TCS

- **Prolonged Usage:** Avoid extending or reusing steroids without medical guidance.

- Occlusion: Instruct patients to follow occlusion guidelines and avoid covering treated areas improperly.
- Skin-Lightening: Do not use steroids for skin-lightening; use them strictly for the prescribed condition.
- Infections: Refrain from applying steroids to infected skin areas to avoid masking symptoms and delaying treatment.
- Sharing: Do not share prescribed steroids to prevent adverse effects and complications.

VI. Healthcare Recommendations for Selecting TCS

A. Selecting the Right Topical Corticosteroid

Topical steroids are categorized into four groups based on their potency: mild, moderate, potent, and very potent. [Table 2] The potency of these compounds is determined by their ability to inhibit inflammation and their potential for side effects.

B. Factors to Consider when Choosing Topical Steroids.^[3]

- Age: Children absorb topical steroids more rapidly, so low-potency options are preferred.
- Pregnancy and Lactation: Mild to moderate steroids are generally safe; use caution with potent steroids on highly absorbent areas.
- Sensitive Areas: Areas like the face, eyelids, and intertriginous zones require low-potency steroids due to rapid absorption.
- Thick Skin: Potent formulations may be needed for areas with thick, rough skin such as palms and soles.
- Formulation: Ointments provide better skin penetration compared to creams.

The absorption variabilities of topical corticosteroids (TCSs) vary across different anatomical sites. [Table 3]

C. Maximizing Topical Steroid Benefits.^[10]

1. Confirm the correct diagnosis before initiating treatment.
2. Limit continuous use of ultrahigh-potency steroids to a maximum of three weeks.
3. Adjust treatment duration based on lesion type and severity.
4. Transition from daily to alternate-day, twice-weekly, or weekend application once inflammation subsides.
5. Use adjunct emollients with topical corticosteroids to enhance moisturization and reduce steroid use.

VII. Dosage Calculation of Topical Corticosteroids:^[10]

A. Understanding the FTU (Fingertip Unit):

One FTU is the amount of topical steroid squeezed from a standard tube along an adult's fingertip (Fig. 1).

This assumes that the tube has a standard 5 mm nozzle.

A fingertip is measured from the very end of the finger to the first crease in the finger.

B. Application Coverage:

One FTU is sufficient to treat an area of skin twice the size of the flat of an adult's hand with the fingers together, resembling a 'handprint.'

1FTU = 0.5 g cream/ointment

C. Whole-Body Application:

A single adequate application on the entire body of an adult typically requires approximately 30 g of topical corticosteroid (Figures 2 and 3).

D. Hand area application:

An area equivalent to one hand (palm and digits) requires half an FTU per application.



Figure 1: Fingertip Unit – FTU⁴

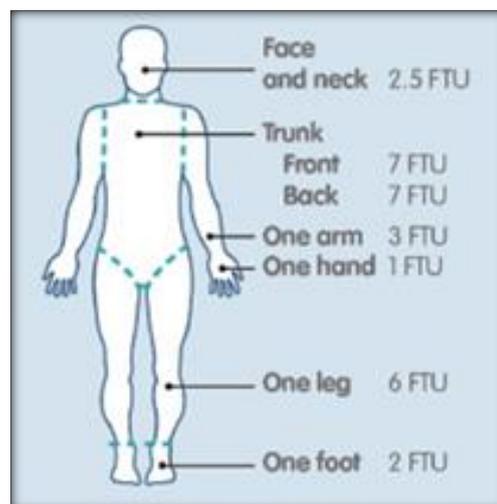


Figure 2: Number of FTUs for different body parts⁴

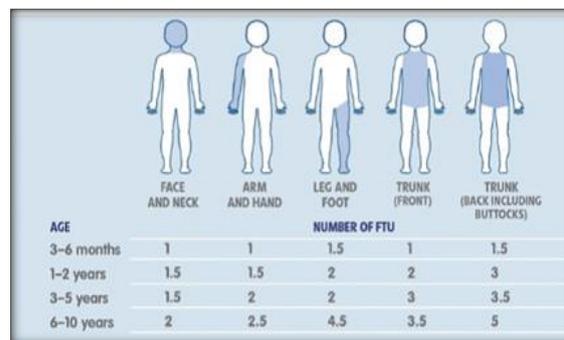


Figure 3: Amount of FTUs in children for different body parts⁴

VIII. Adverse Effects of Topical Corticosteroids

Proper and cautious usage is essential to minimize the risk of adverse effects associated with topical steroid application. It is recommended to follow prescribed guidelines and seek medical advice for any concerns.

A. Local adverse effects

- Skin atrophy, telangiectasia, striae, and easy bruising.
- Steroid-induced rosacea, acne, and perioral dermatitis.
- Delayed wound healing and potential glaucoma if used around the eyes.
- Contact sensitivity to preservatives.
- Rebound effects upon discontinuation.
- Tachyphylaxis, with skin tolerance leading to reduced efficacy; pulse therapy with a 4-day break is recommended.
- Masking of cutaneous infections like tinea incognito and scabies incognito.

B. Systemic adverse effects

- Suppression of the hypothalamic–pituitary–adrenal axis
- Addisonian crisis
- Cushing’s syndrome

- Hyperglycemia

IX. Individualized Counselling for Steroid Phobia.^[11]

To effectively address steroid phobia and enhance adherence to topical corticosteroid treatment, consider the following strategies:

1. **Patient Education:** Provide detailed information on the benefits and risks of topical corticosteroids to counter misconceptions and fears.
2. **Individualized Counseling:** Offer tailored counseling sessions to address specific concerns and anxieties about steroid use.
3. **Application Demonstration:** Show patients the correct application technique to prevent misuse or overuse.
4. **Encouragement of Open Communication:** Foster an environment where patients feel comfortable voicing their concerns and asking questions.
5. **Regular Monitoring and Follow-up:** Schedule routine follow-ups to evaluate treatment progress and resolve any ongoing issues or concerns

Table 1: Common skin conditions effectively treated with TCS.^[4]

Mild/Low potency TCS	Mild-to-moderate potency TCS	Moderate-to- potent/ultrapotent TCS
Dermatitis (face, eyelids, napkin area)	Atopic dermatitis	Atopic dermatitis (severe)
Intertrigo	Asteatotic eczema	Alopecia areata
	Contact dermatitis	Contact dermatitis (severe)
	Intertrigo (short term)	Palmar plantar eczema
	Post scabietic dermatitis	<ul style="list-style-type: none"> • Granulomatous skin disorders • Granuloma annulare, sarcoidosis • necrobiosis lipoidica
	Seborrhoeic dermatitis	• Pemphigus and pemphigoid
	Lupus erythematosus	Psoriasis
	Lichen simplex chronicus	Stasis dermatitis
	Lichen planus	
	Lichen sclerosus	
	Vitiligo	

Adapted from Aung T, Aung ST. Selection of an effective topical steroid Aust J Gen Pract 2021;50(9):651-55

Table 2: Classification of the topical corticosteroid (TCS) potency,^[6,7,8,9]

Classification	Examples
Mild	Desonide* 0.05% cream, lotion, or ointment
	Hydrocortisone 1% and 2.5% cream, lotion, or ointment
Moderate	Betamethasone valerate 0.1% cream, lotion, or foam
	Clobetasone butyrate# 0.05% cream or ointment
	Desoximetasone 0.05% cream
	Fluocinoloneacetonide 0.025% cream or ointment
	Fluticasone propionate 0.05% cream
	Hydrocortisone butyrate 0.1% ointment
	Hydrocortisone probutate 0.1% cream
	Hydrocortisone valerate 0.2% cream or ointment
	Methylprednisolone† 0.1% cream, lotion, or ointment
	Mometasonefuroate 0.1% cream, lotion, or ointment
Prednicarbate† 0.25% cream or ointment	
Potent	Triamcinolone acetonide 0.025%, 0.1% cream, lotion, or ointment
	Amcinonide 0.1% cream, ointment
	Augmented betamethasone dipropionate 0.05% cream, lotion
	Betamethasone dipropionate 0.05% ointment
	Desoximetasone cream, gel, or ointment
	Diflorasone diacetate 0.05% cream
	Fluocinonide 0.05%, 0.1% cream, gel, or ointment

	Halcinonide 0.1% cream, ointment, or solution
	Fluticasone propionate 0.005% ointment
	Triamcinolone acetonide 0.5% cream or ointment
Very Potent	Clobetasol propionate 0.05% in any vehicle
	Augmented betamethasone dipropionate 0.05% gel or ointment
	Diflorasone diacetate 0.05% ointment
	Fluocinonide 0.1% cream
	Halobetasol propionate 0.05% cream or ointment

Table 3: Anatomical site-specific absorption of topical corticosteroids

Anatomical Site	Percentage of TCS Absorption
Eyelids and genitals	30%
Face	7%
Armpits	4%
Forearms	1%
Palms	0.1%
Soles	0.05%

CONCLUSION

The appropriate use of topical steroids is crucial for balancing therapeutic benefits and potential risks in treating diverse skin conditions. Topical corticosteroids (TCSs) play a pivotal role, but their misuse can result from factors such as misdiagnosis and nonmedical influences. The key recommendations for healthcare practitioners include precise prescription practices, targeted treatment, and patient education. Adherence to proper application techniques and recommended frequencies is vital.

Healthcare guidance involves selecting TCS potency based on a classification system and considering patient demographics and lesion characteristics. To maximize the benefits of TCS, dosage calculations, absorption variabilities, and the selection of suitable formulations are needed. Awareness of adverse effects, both local and systemic, underscores the importance of cautious usage.

Considering the absorption variabilities of anatomical sites, dosage calculations based on FTUs and adherence to guidelines are essential for optimal TCS usage. This comprehensive approach ensures appropriate TCS use, aligning treatment with patient needs to maximize benefits while minimizing associated risks.

Conflict of interest

The authors declare that they have no conflicts of interest related to this report. All the opinions expressed are based on a thorough review of the literature and aim to provide unbiased, evidence-based guidance on the use of topical corticosteroids in dermatological practice.

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