



# **Therapeutic Techniques**

## **Microdermabrasion & masks**

*Dr. Hussein Safaa*  
*Plastic Surgeon*

# Learning Objectives

- Understand the principles and benefits of microdermabrasion.
- Identify types of facial masks and their therapeutic uses.
- Learn indications, contraindications, and safety measures.
- Gain insight into practical techniques and aftercare.

# Introduction

- **Therapeutic facial treatments are advanced skincare procedures that rejuvenate the skin by promoting cell renewal, improving circulation, and restoring balance.**
- **Techniques like exfoliation and nourishment help keep the skin smooth, bright, and youthful.**

# Mechanical Exfoliation

- **Mechanical exfoliation refers to the physical removal of corneocytes from the skin surface using abrasive materials or devices.**
- **This process enhances epidermal turnover, improves texture, and promotes a smoother, more radiant appearance.**
- **The most common clinical and cosmetic techniques include microdermabrasion and manual brushing or scrubbing systems.**

# Microdermabrasion

- **Non-invasive cosmetic dermatologic procedure used to exfoliate the stratum corneum and stimulate skin rejuvenation.**
- **It is one of the most commonly performed aesthetic procedures worldwide due to its safety, simplicity, and minimal downtime.**
- **The technique was first introduced in the 1980s as a gentler alternative to traditional dermabrasion.**
- **It is a mechanical exfoliation technique that uses a controlled stream of fine abrasive particles or a diamond-tipped applicator to remove the superficial layers of dead skin cells.**
- **It induces a mild, controlled injury to the epidermis, promoting natural healing, collagen remodeling, and enhanced skin renewal.**

# Mechanism of Action

1. **Physical Abrasion:** The surface of the skin is abraded by:
  - o Aluminum oxide (corundum) crystals, sodium bicarbonate, or other fine particles.
  - o Alternatively, a diamond-tipped wand may be used to abrade the epidermis mechanically.
2. **Vacuum Suction:** Simultaneous vacuum suction removes exfoliated keratinocytes and stimulates blood circulation, which enhances nutrient delivery and fibroblast activity in the dermis.
3. **Biological Response:**
  - o **Immediate effects:** Removal of corneocytes (cells of the stratum corneum).
  - o **Delayed effects:** Enhanced epidermal turnover, increased collagen and elastin synthesis, and improved dermal remodeling.
  - o **Result:** Smoother texture, even tone, and improved radiance of the skin.











# Indications

**Microdermabrasion is effective for:**

1. Photoaged skin and uneven texture.
2. Superficial hyperpigmentation (melasma, post-inflammatory).
3. Fine lines and superficial wrinkles.
4. Mild acne, Comedonal and acne scars.
5. Enlarged pores.
6. Stretch marks (striae distensae).
7. Keratosis pilaris.

# Benefits of Microdermabrasion

- **Stimulates Cell Turnover:** Encourages new skin cell growth, resulting in fresher and healthier-looking skin.
- **Improves Skin Texture and Tone:** Smooths rough areas and evens out discoloration for a more radiant complexion.
- **Reduces Fine Lines and Pigmentation:** Minimizes the appearance of aging signs, sun damage, and mild acne scars.
- **Enhances Product Absorption:** Removes dead skin buildup, allowing skincare products to penetrate deeper and work more effectively.

# Contraindications

## Absolute:

- Active skin infections (bacterial, viral, fungal).
- Inflammatory acne with pustules or cysts.
- Rosacea or telangiectasia (risk of exacerbation).
- Open wounds or recent facial surgery.
- History of keloid formation.

## Relative:

- Recent chemical peel or laser therapy (within 2 weeks).
- Use of isotretinoin (should be discontinued at least 6 months prior).
- Thin or fragile skin.
- Sunburn.

# Procedure Steps

- 1. Skin analysis & preparation.**
- 2. Cleansing the area.**
- 3. Performing the exfoliation with the device.**
- 4. Removing residues.**
- 5. Applying soothing mask or serum.**
- 6. Moisturizing & sunscreen application.**

# **Safety Precautions & Aftercare**

- **Avoid sun exposure for 24–48 hours.**
- **Use mild skincare products.**
- **Hydration and SPF protection.**
- **Frequency: every 2–4 weeks.**

# **Histological Changes after Microdermabrasion**

- **Thinning of the stratum corneum with compact, healthy keratinocytes.**
- **Increased epidermal cell turnover.**
- **Enhanced fibroblast activity and neocollagenesis.**
- **Thickening of the papillary dermis with improved elasticity and vascularity.**



# Advantages

- **Painless, no anesthesia required.**
- **Safe for all Fitzpatrick skin types.**
- **Minimal recovery time (“lunchtime procedure”).**
- **Non-invasive and repeatable.**
- **Enhances penetration of topical agents (vitamin C, retinoids, etc.).**

# Complications

## **Mild and transient side effects:**

- Erythema (redness).
- Mild edema (swelling).
- Dryness or flaking.
- Post-inflammatory hyperpigmentation (rare, in darker skin types).
- Bruising from excessive suction.

## **Severe (rare):**

- Bacterial or viral infection (if poor hygiene).
- Scarring (only if overly aggressive treatment).

# Treatment Regimen

- **Typical course:** 6–10 sessions at 1–2 week intervals.
- **Maintenance:** Once every 1–2 months depending on skin condition.
- Results are cumulative and best combined with topical therapy or chemical peels.



# Facial Masks





# Facial Masks

- Are topical skincare treatments designed to improve the skin's health and appearance by delivering concentrated active ingredients.
- They play a vital role in hydrating dry skin, purifying clogged pores, and soothing irritation or inflammation.
- Depending on their purpose and ingredients, masks can be categorized into types such as clay, cream, gel, or natural-based formulas, each tailored to specific skin needs.



# Classification of Facial Masks

- Facial masks can be classified based on their **composition, mechanism of action, or in the effect.**

# A. According to Physical Form

1. **Cream masks** – rich, emollient-based formulations suitable for dry or mature skin.
2. **Clay (mud) masks** – composed mainly of natural clays like kaolin or bentonite; ideal for oily and acne-prone skin due to their adsorptive properties.
3. **Gel masks** – water-based, cooling, and soothing; often used for hydration or post-procedure care.
4. **Sheet masks** – fabric, bio-cellulose, or hydrogel sheets saturated with serums; provide occlusion that enhances ingredient penetration.
5. **Peel-off masks** – form a thin film that can be peeled from the skin; help remove surface debris and keratin plugs.
6. **Exfoliating masks** – contain mechanical abrasives (e.g., microbeads) or chemical exfoliants (e.g., AHAs, BHAs, enzymes).

## B. According to Function

- **Cleansing masks:** absorb excess sebum and remove impurities.
- **Hydrating masks:** increase skin moisture content via humectants (e.g., hyaluronic acid, glycerin).
- **Anti-aging masks:** deliver antioxidants, peptides, and retinoids to improve elasticity and reduce wrinkles.
- **Brightening masks:** contain agents such as vitamin C, niacinamide, or licorice extract to reduce hyperpigmentation.
- **Soothing masks:** include botanical extracts and anti-inflammatory agents for sensitive or irritated skin.

# Mechanism of Action

- Facial masks work primarily through **occlusion, absorption, and penetration enhancement**.
- **1. Occlusion:** The mask creates a semi-permeable layer that prevents transepidermal water loss (TEWL), thus increasing skin hydration and softening the stratum corneum.
- **2. Absorption and Adsorption:** Clay and charcoal masks adsorb sebum, toxins, and dead cells through surface interactions.
- **3. Penetration Enhancement:** Occlusive and hydrating environments temporarily increase stratum corneum permeability, improving delivery of active compounds such as vitamins, enzymes, and peptides.
- **4. Mechanical Action:** Peel-off and exfoliating masks remove corneocytes, promoting smoother texture and enhancing epidermal renewal.

# Mask Application Technique

**1–2 times per week, depending on skin type and mask formulation.**

1. Skin should be cleansed and toned before application.
2. The mask is applied evenly, avoiding eye and lip areas.
3. Exposure time varies (10–30 minutes) depending on mask type.
4. Removal: rinsing, peeling, or lifting the sheet.
5. Followed by moisturizer or serum to seal benefits.

# Dermatological Considerations

- **Skin Type Matching:** Oily skin benefits from clay or charcoal masks; dry skin requires hydrating or cream-based masks.
- **Potential Adverse Reactions:** Allergic dermatitis, irritation, or barrier disruption from fragrances, alcohol, or strong exfoliants.
- **Contraindications:** Active infections, open wounds, severe rosacea, or post-laser procedures (unless medically advised).

# Recent Advances

- **Nanotechnology-based masks:** Enhanced delivery of encapsulated actives (e.g., liposomes, niosomes).
- **3D biocellulose masks:** Mimic skin's structure for superior adherence and hydration.
- **Smart masks:** Infused with thermal, LED, or iontophoresis technology for professional-grade effects.
- **Sustainable formulations:** Use of biodegradable sheets and natural bioactives to reduce environmental impact.



# Integration of Techniques

- **Combining microdermabrasion + mask for optimal results.**
- **Post-exfoliation mask helps soothe and nourish skin.**
- **Treatment frequency and client follow-up.**

# Summary

- Both microdermabrasion and facial masks are essential therapeutic techniques that enhance skin health and appearance.
- Microdermabrasion focuses on exfoliation and cell renewal, while facial masks provide hydration, nourishment, and balance.
- Ensuring client safety through proper assessment and hygiene is crucial.
- Each treatment should be personalized based on the client's skin type and condition, with professionals using their judgment and expertise to achieve the best results safely and effectively.

