Cosmetic Science

Oily Skin

Definition:



- Oily skin is characterized by **excess sebum production** from sebaceous glands. Sebum is the skin's natural oil, composed primarily of triglycerides, wax esters, squalene, and free fatty acids.

Clinical Features:

- Shiny appearance, especially on the T-zone (forehead, nose, chin)
- Enlarged pores
- Prone to acne due to clogged pores from excess oil and dead cells
- Sometimes associated with a thicker epidermis

Pathophysiology:

- **Hormonal Influence:** Androgens (especially testosterone) stimulate sebum production.
- **Genetics:** Individuals may inherit more active sebaceous glands.
- **Environmental Factors:** Warm and humid climates enhance sebum secretion.
- **Dietary Factors:** Diets high in sugars and dairy may increase oil production.
- **Improper Skincare:** Overuse of harsh cleansers can strip the skin, causing a rebound increase in oil production.

Causes:

- **Overactive sebaceous glands** producing excess sebum
- **Hormonal changes** (e.g., puberty, menstrual cycle, PCOS)
- Genetic predisposition
- Use of **harsh cleansers** that strip natural oils (leading to rebound oil production)
- High humidity and heat

Managing Oily Skin

Goals:

- Control oil
- Prevent clogged pores
- Maintain hydration

Tips:

- **Cleanser:** Use a gentle, pH-balanced, sulfate-free face wash with salicylic acid or zinc.
- **Moisturizer:** Choose oil-free, gel-based products with hyaluronic acid or glycerin.
- **Sunscreen:** Use matte-finish, non-comedogenic SPF 30+.
- **Avoid over-washing** to prevent rebound oil production.
- **Exfoliate** 2–3x/week with salicylic acid.

Helpful Ingredients:

- Niacinamide, tea tree oil, green tea extract, kaolin clay

Cosmetic Considerations:

- Use of **oil-free**, **non-comedogenic**, and **mattifying** products
- Lightweight moisturizers (e.g., gel-based)
- Exfoliation to prevent clogged pores

Dry Skin

Definition:



- Dry skin occurs when the skin produces **insufficient sebum** and lacks adequate **moisture-retaining components**, resulting in a compromised barrier.

Clinical Features:

- Flaky or rough texture
- Dull appearance
- Tightness or discomfort, especially after washing
- Increased itching or irritation
- Fine lines may become more visible

Pathophysiology:

1. **Impaired Skin Barrier:** The stratum corneum (outermost skin layer) is made of corneocytes embedded in lipids. Damage to this barrier increases transepidermal water loss (TEWL).
2. **Reduced Natural Moisturizing Factors (NMFs):** These include urea, lactic acid, and amino acids. Their reduction impairs water retention.
3. **Lower Sebum Production:** Decreases the skin's natural ability to retain moisture.
4. **External Factors:** Cold, dry climates, frequent washing, or harsh products.

5. **Internal Factors:** Aging, certain medications (e.g., diuretics, retinoids), and skin conditions like eczema.

Types of Dry Skin

Type	Description
Simple Dry Skin	Rough, flaky, from cold weather or aging
Asteatotic Eczema	Cracked, red, inflamed in older adults
Ichthyosis	Genetic; thick, scaly patches
Contact Dermatitis	Reaction to allergens or irritants
Atopic Dermatitis	Chronic dry, itchy skin linked to allergies
Medical-related Dryness	Caused by diabetes, hypothyroidism, etc.

Cosmetic Considerations:

- Rich, emollient-based moisturizers
- Cream or lotion cleansers
- Products containing **humectants** (like glycerin, hyaluronic acid) and **occlusives** (like petrolatum, dimethicone)

Causes Leading to Dry Skin

- Dry skin results from intrinsic (internal) and extrinsic (external) factors that compromise the skin's lipid barrier and hydration status.

Intrinsic Factors:

1. Aging (Intrinsic Aging):

- Decreased sebum production
- Reduction in NMFs and skin lipids
- Slower skin turnover rate

2. Genetics:

- Some individuals naturally have fewer sebaceous glands or produce less NMF

3. Medical Conditions:

- Atopic dermatitis, hypothyroidism, diabetes, ichthyosis

4. Hormonal Changes:

- Post-menopause: reduced estrogen leads to decreased skin hydration

Extrinsic Factors:

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