

Basic Principles of skin

Moisturizers and Cleansers

Learning Objectives

- Explain the importance of skin hydration.
- Describe causes and clinical features of dry skin.
- Explain the role of the lipid film and natural moisturizing factor (NMF).
- Differentiate between occlusives and humectants.
- Select an appropriate moisturizer according to skin type.
- Explain the mechanism of cleansing by soaps and surfactants.
- Describe the disadvantages of traditional soap and the importance of skin pH.
- Compare regular soaps, synthetic or soapless cleansers, and cleansing creams.
- Give practical recommendations for facial cleansing.

Skin Moisture and Moisturizer

Skin Water Content

The water content of the dermis and epidermis is approximately 70–80%, while the keratinous layer contains approximately 15–30% water. Adequate water in the keratinous layer contributes to skin smoothness, softness, and healthy appearance.

Water normally moves from deeper layers toward the surface and eventually evaporates.

Causes of Dry Skin

- Dry environmental conditions and low humidity.
- Wind.
- Indoor heating and air-conditioning.
- Frequent washing.
- Detergents and solvents.
- Some medical treatments.
- Aging and certain skin diseases, including atopic dermatitis.

Clinical Characteristics of Dry Skin

Low skin water content produces roughness, fine scaling, fissuring, increased visibility of fine lines, itching, and loss of suppleness. Severe dryness is termed xerosis. Fissuring compromises the protective function of the skin and can further increase water loss.

Natural Mechanisms Preventing Skin Dryness

The surface lipid film acts as a relatively occlusive layer and reduces water evaporation. It contains mainly sebum and lipid degradation products. The Natural Moisturizing Factor, consists of compounds within the keratinous layer that help retain water. Examples include urea, lactic acid, glycolic acid, phospholipids, malic acid, pyruvic acid.

Is Water Alone a Moisturizer?

Repeated washing can result in evaporation of water from the superficial skin layers and may contribute to dryness. Prolonged soaking can cause swelling and maceration of the keratinous layer.

maintaining skin moisture therefore requires appropriate moisturizing preparations rather than simply repeatedly wetting the skin.

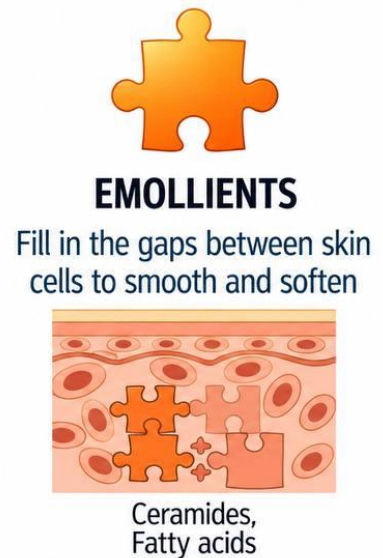
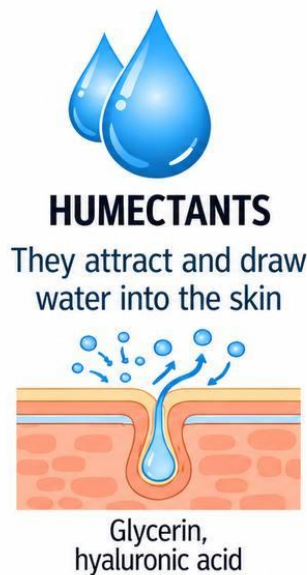
What Is a Moisturizer

A **skin moisturizer** is a topical preparation designed to **increase and maintain the**

water content of the stratum corneum, thereby improving skin **softness, smoothness**, and reducing dryness. Moisturizers mainly work through:

- **Occlusives:** reduce transepidermal water loss by forming a protective film.
- **Humectants:** attract and retain water within the stratum corneum.
- **Emollients:** These use lipids and oils to smooth and soften skin texture by filling in tiny gaps between skin cells. Examples include squalane, ceramides

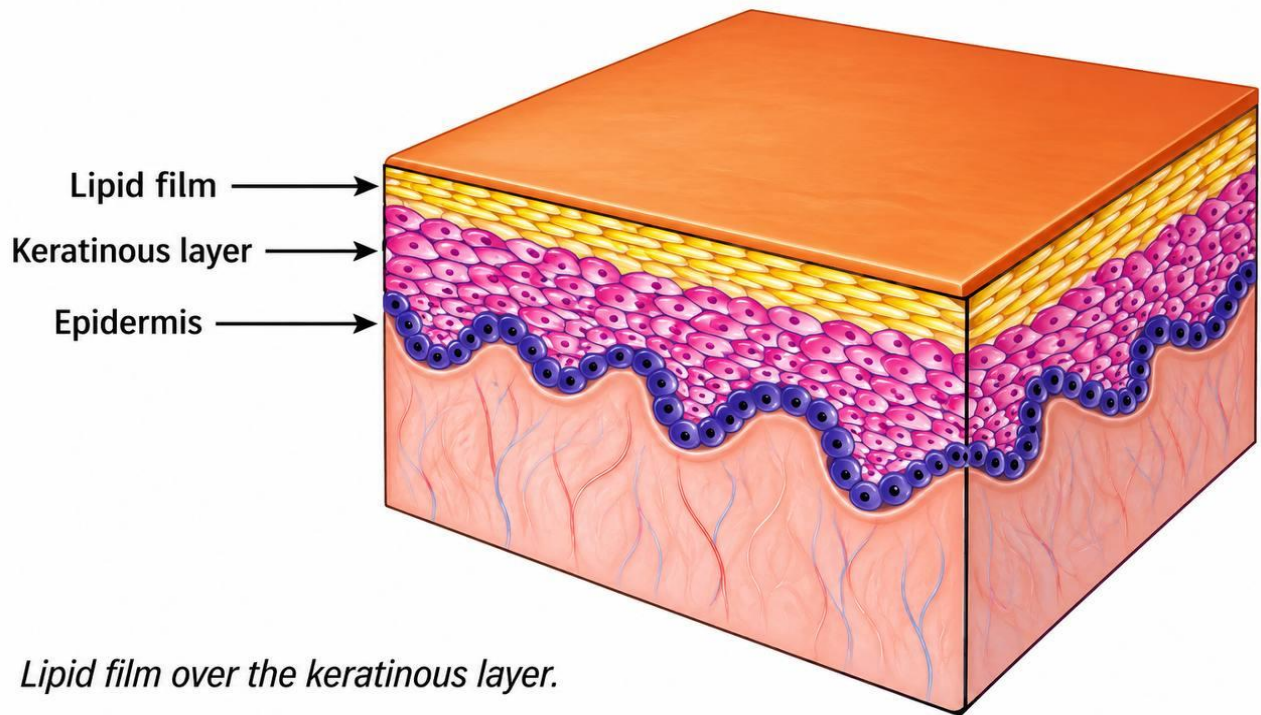
Three Types of Moisturizers



NOTE: MOST MOISTURIZERS USE A COMBINATION OF ALL THREE

Occlusives

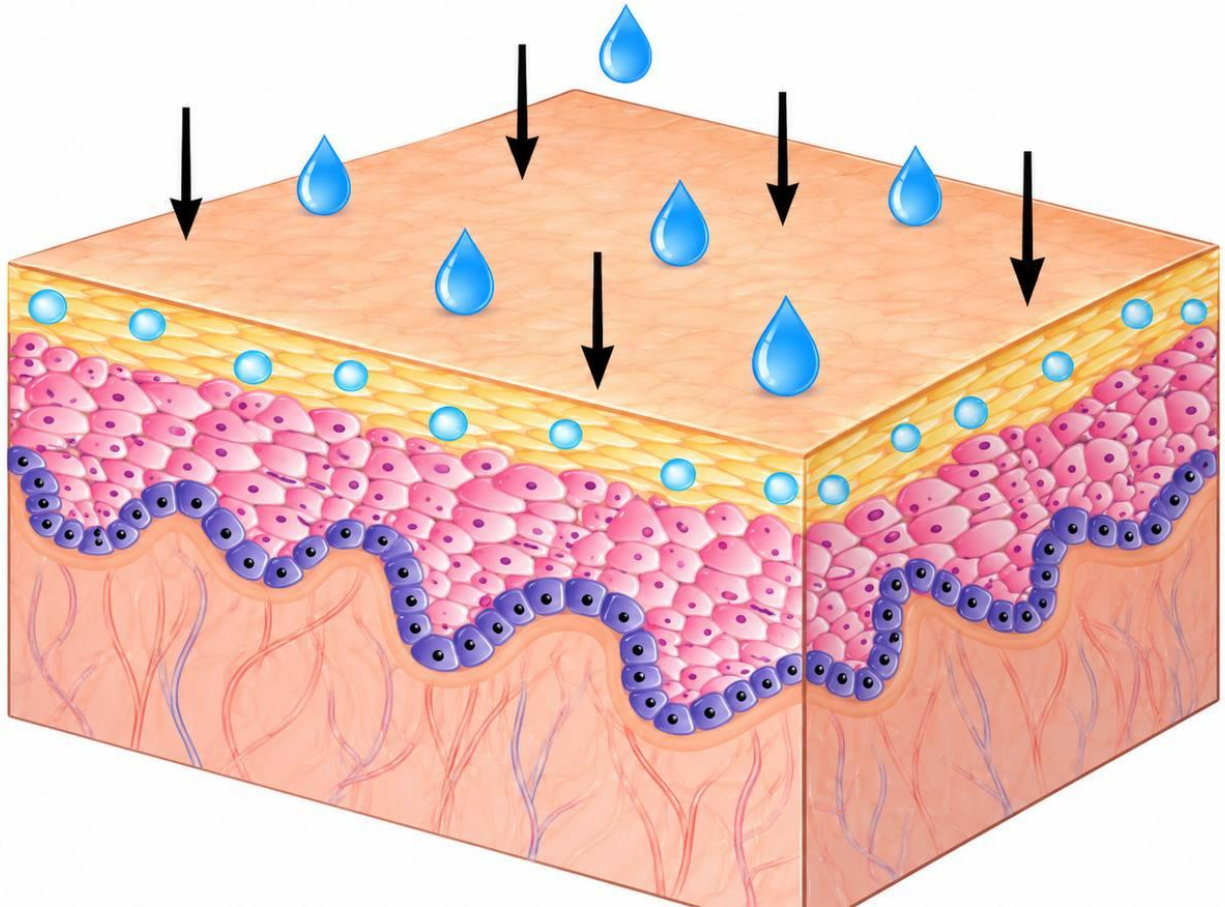
- Form an oily layer over the skin.
- Reduce water evaporation.
- Increase water retention in the keratinous layer.
- Examples include petrolatum or petroleum jelly, paraffin and vegetable oils.
- Mineral-derived occlusives are highly effective but may feel greasy or sticky



Humectants

- Absorb water.
- Some can penetrate the keratinous layer and increase its water content.
- Examples include glycerine, sorbitol, propylene glycol, glycosaminoglycans such as hyaluronic acid, urea, lactic acid, and phospholipids.

SKIN MOISTURE AND MOISTURIZERS



Occlusives and Humectants

Feature	Occlusive	Humectant
Main action	Reduces water loss	Absorbs water
Main effect	Protective oily layer	Increases water content
Examples	Petrolatum, paraffin, lanolin	Glycerin, sorbitol, propylene glycol
Typical feel	More oily or greasy	Usually less greasy

Moisturizer Selection According to Skin Type

- **Dry skin:** an oily moisturizer with a relatively higher concentration of occlusive compounds. Humectants alone may be insufficient.
- **Normal skin:** a preparation combining an occlusive substance with a humectant, with relatively less oily material.
- **Oily skin:** moisturizers are generally unnecessary except when the skin becomes dry under certain environmental conditions.
- **Combination skin:** avoid unnecessary moisturizing of the T-zone; use a non-oily product on the remaining areas when needed.

How Should Moisturizer Be Applied?

How Should Moisturizer Be Applied?



1. Cleanse
the skin
gently



2. Pat dry,
leaving the skin
slightly damp



3. Apply
moisturizer



4. Spread
gently without
vigorous rubbing



5. Ensure
even coverage
on the face
and neck

- Cleanse the skin and wash with water.
- Apply moisturizer while the skin is still slightly damp.
- Apply gently.
- Adjust frequency according to skin dryness.

Moisturizers and Cold Weather

It is recommended to apply moisturizers approximately 20–30 minutes before exposure to cold, dry, or windy conditions rather than immediately before exposure. Under these conditions, an oily moisturizer may be preferable.

Moisturizers and Anti-aging Claims

Standard moisturizers are primarily intended to improve hydration and appearance. Moisturization can temporarily improve smoothness and make fine lines less apparent.

Skin Cleansing

Definition

A skin cleanser is a topical preparation used to remove dirt, sebum, sweat, cosmetic residues, and other substances from the skin surface.

Cleansers contain substances such as surfactants that interact with oily material and allow it to be dispersed and removed with water.

Why Do We Cleanse the Skin?

Skin cleansing is important for maintaining skin health and contributing to aesthetic appearance.

Material requiring removal includes dust, soot, sweat, sebum breakdown products, cosmetic residues, makeup, and other environmental substances.

These substances become incorporated into the oily layer on the skin surface.

Why Is Water Alone Not Enough?

Water does not efficiently remove oily material because the dirt is embedded within the oily surface layer. A cleansing substance capable of interacting with oily material is therefore required.

The Skin's Acid Mantle

Normal skin has an acidic pH of approximately 4.5–6.5 average around 5.5 . This acidity contributes to protection against bacterial and fungal infection.

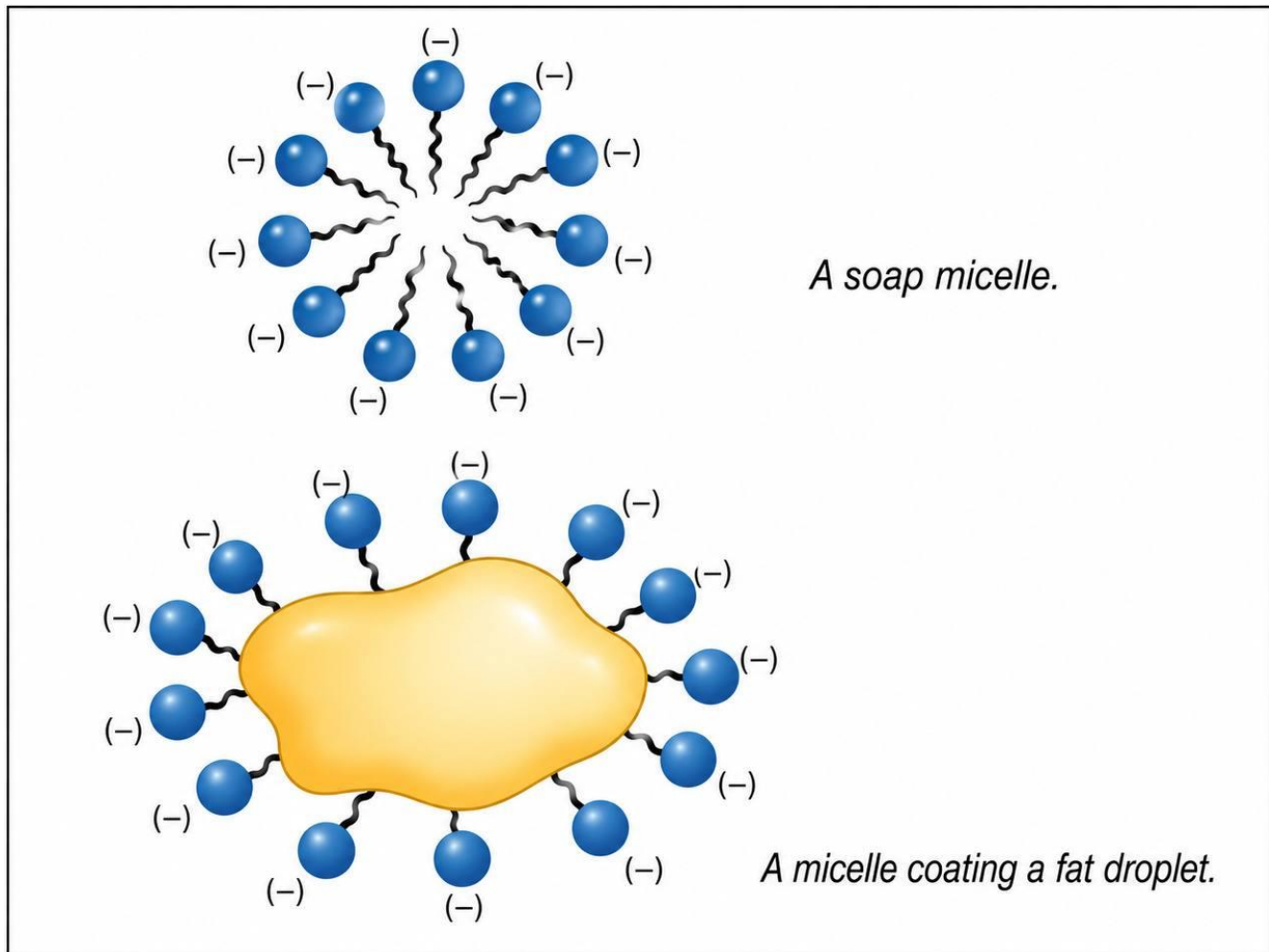
so adjustment of cleansing-agent pH toward normal skin pH as a principle of modern cleansing preparations.

Basic Facial Cleansing Principles

- Use a mild cleanser suited to the skin type.
- Use lukewarm water.
- Avoid excessive scrubbing and vigorous rubbing.
- Pat the skin dry gently with a soft towel.
- For dry skin, consider a cleanser containing moisturizing components.

Soap: Mechanism of Action

Traditional soap consists primarily of salts of fatty acids. Soap molecules surround sebum droplets containing dirt and form structures called micelles, allowing oily material and embedded dirt to be dispersed and removed with water.



Problems with Traditional Soap

- Traditional soap usually has a pH of approximately 9–10 or higher, compared with normal skin pH of average around 5.5
- Soap removes not only dirt and sebum but also part of the protective lipid layer, which may increase dryness and irritation.

- Calcium and magnesium in tap water can react with soap and form poorly soluble salts that remain on the skin and may contribute to irritation.

Synthetic and Soapless Cleansers These products are also described as soapless soaps, nonsoaps, synthetic soaps, or surfactant-based cleansers.

Synthetic cleansers can be formulated with a pH closer to that of normal skin and may cause less irritation than traditional soaps.

Cleansing Creams

What Are Cleansing Creams?

Cleansing creams and liquid emulsions are mixtures of oil, water, and cleansing substances. Liquid emulsions are thin and fluid, whereas creams are more viscous or semi-solid.

How Do Cleansing Creams Work?

They already contain water and can disperse oily dirt without initially requiring tap water. They are applied with the fingertips, left briefly on the skin, and removed. Rinsing with water is preferred.

When Are Cleansing Creams Useful?

- Dry or delicate skin.
- Heavy or waterproof makeup.
- Irritated or compromised skin barrier.
- Atopic dermatitis .

Abrasive or physical Cleansers

Abrasive cleansers contain fine particles that mechanically remove superficial keratin.

Excessive or vigorous use may damage the epidermis. If used no more than once weekly, with very gentle application.