

Chapter 7: Skin Structure, Growth, and Nutrition

Cosmetologists should study and have a thorough understanding of skin structure, growth, and nutrition because *knowing the skin's underlying structure and basic needs is crucial to providing excellent skin care, recognizing skin diseases and disorders allows you to refer clients to medical professionals when necessary, and understanding the latest developments in ingredients and state-of-the-art delivery systems will help you protect, nourish, and preserve the health and beauty of your client's skin.*

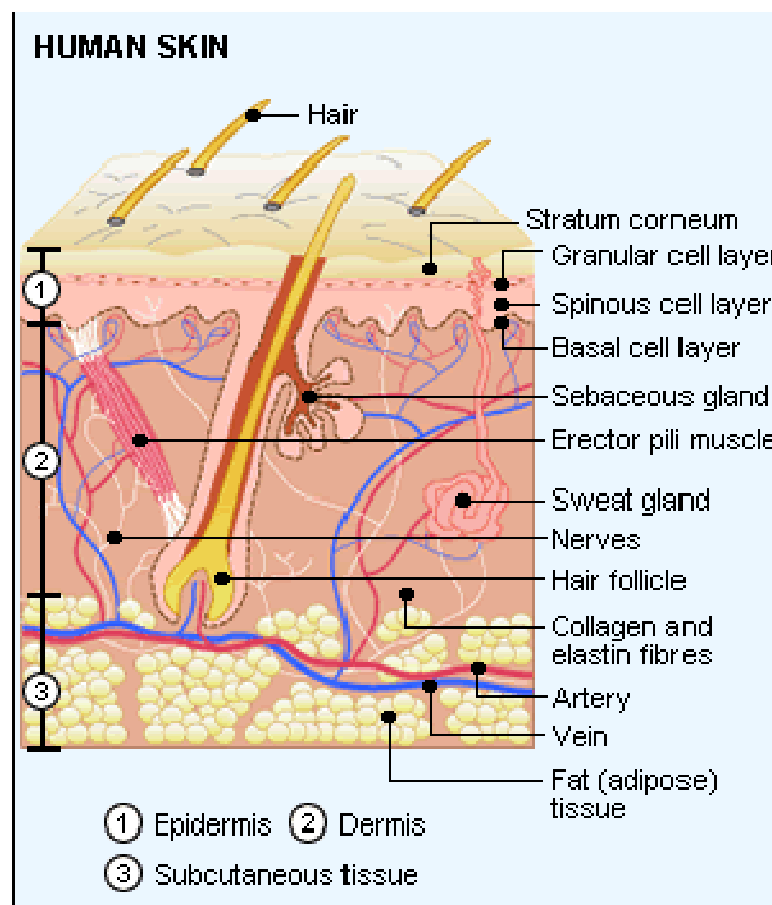
ANATOMY OF THE SKIN (p. 156-164)

- **Dermatology**- medical branch of science that deals with the nature, functions, structures, diseases and treatment of the skin (*derma means skin; -ology means study of*)
- **Dermatologist**- physician who specializes in the diseases and disorders of the skin, hair, and nails (*derma means skin; -ologist means one who studies*)
- **Esthetician**- specializes in the cleansing, beautification, and preservation of the health of the entire body, including the face and neck
- **Skin**- the largest organ of the body; natural barrier between the body and the environment; protects the muscles, bones, nerves, blood vessels, and everything else inside the body
- **Surface of the skin**- slightly **acidic**; healthy skin is moist, soft, and flexible
- **Callus**- a protective layer that develops after continued, repeated pressure on any part of the skin

The skin is composed of two main divisions:

- **Epidermis** (*“epi” means “over” or “above”; epidermis means above the dermis*)- the outermost and thinnest layer of the skin; contains no blood vessels but many nerve endings; it is made up of five layers:
 - **Stratum corneum** (horny layer)- the layer we see when we look at the skin; the layer cared for by salon professionals; made up of keratin (a fibrous protein) and lipids (fats) which combine to produce a protective, water-resistant layer
 - **Stratum lucidum**- (lucid means clear) clear, transparent layer under the stratum corneum
 - **Stratum granulosum** (granular layer)- composed of cells that look like **granules** and are filled with keratin
 - **Stratum spinosum**- the **spiny** layer where the process of skin cell shedding begins
 - **Stratum germinativum** (basal cell layer)- **deepest layer** of the epidermis; responsible for the **growth** of the epidermis; where melanin is produced (*think when seeds **germinate** from **deep** in the soil, they **grow***)

- **Dermis** (also known as *derma*, *corium*, *cutis*, or *true skin*)- underlying or inner layer of the skin; highly sensitive; 25 times thicker than the epidermis; contains blood vessels, lymph vessels, nerves, sudoriferous glands, sebaceous glands, hair follicles and arrector pili muscles (that cause goose bumps); it is made up of two layers:
 - **Papillary layer** (superficial layer)-outer layer of the dermis
 - **Reticular layer**- deeper layer that supplies the skin with all of its oxygen and nutrients (*P* comes before *R* in the alphabet so the papillary layer is first and the reticular layer is underneath it)
- **Subcutaneous Tissue** (*adipose tissue*)- fatty tissue found **below** the dermis; gives smoothness and contour to the body; contains fat used for energy and as a protective cushion to the skin; varies in thickness due to age, gender, and general health



How the Skin is Nourished (p. 160)

- Blood supplies nutrients and oxygen to the skin
 - **Nutrients** are molecules from food, such as protein, carbohydrates, and fats
 - **Lymph** are the clear fluids that bathe the skin cells, remove toxins and cellular wastes, and have immune functions that help protect the skin and body against disease

Nerves of the Skin (p. 160)

- **Motor nerve fibers**- carry impulses *from the brain to the muscles* (think motor-movement-tell muscles what to do)
- **Sensory nerve fibers**- send *messages to the brain* (react to heat, pressure, cold, touch, and pain (think your senses))
- **Secretory nerve fibers**- regulate the secretion of perspiration and control the flow of sebum (fatty/oily secretion) to the surface of the skin

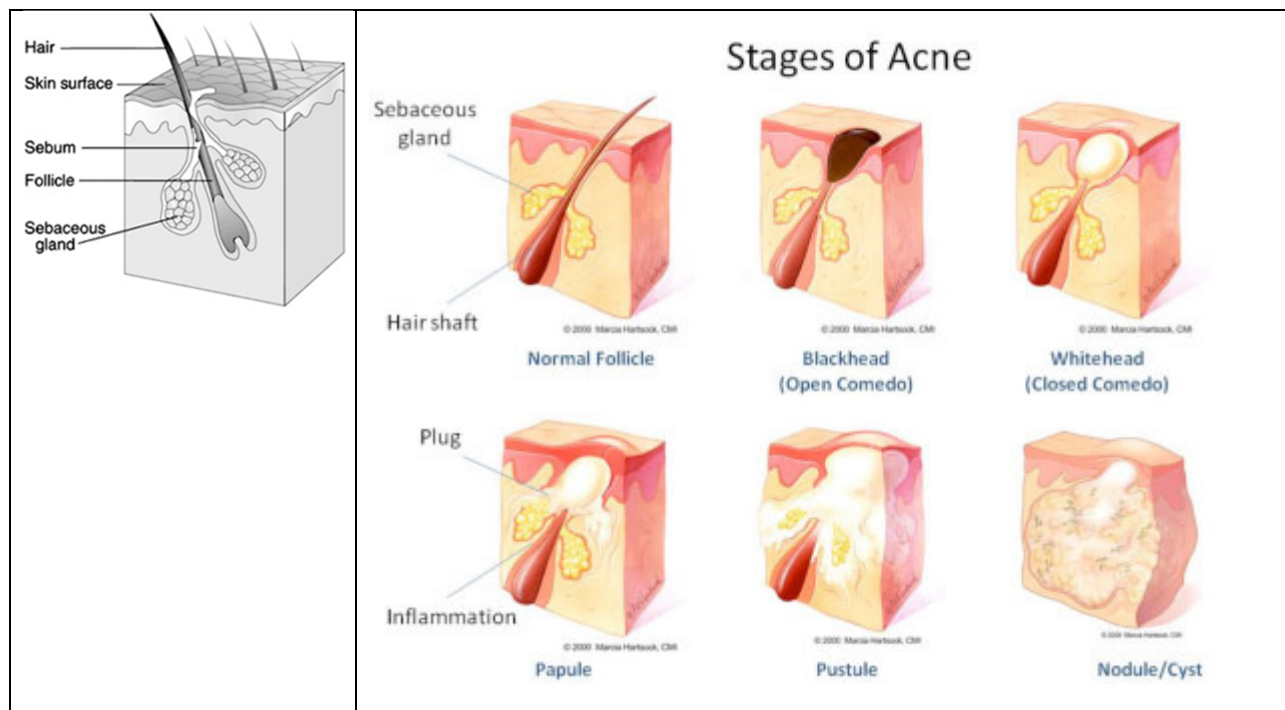
Skin Color/Strength (p. 160-161)

- **Melanin**- tiny grains of pigment; skin color is a hereditary trait and varies among races and nationalities; helps protect sensitive cells from sun's UV light but cannot prevent skin damage (use sunscreen!)
 - **Pheomelanin**- red to yellow in color; people with light skin produce mostly pheomelanin
 - **Eumelanin**- dark brown to black in color; people with dark skin produce mostly eumelanin
- **Collagen**- fibrous protein that **gives skin its form and strength**; make up large percentage of the dermis; allow skin to stretch and contract; loss of collagen may result in wrinkles and sags (imagine those two lls in the word collagen as tall, strong towers adding strength)
- **Elastin**- similar to collagen; is interwoven with collagen fibers; **gives skin its flexibility and elasticity**

Glands of the Skin (p. 162-163)

- **Sudoriferous glands**- also known as **sweat glands**; excrete perspiration and detoxify the body by excreting salt and unwanted chemicals; found throughout the body with numerous ones on the palms of the hands, soles of the feet, forehead, and underarms; regulate heat; normally one to two pints of salt containing liquids are eliminated daily (imagine you hear the word **ODOR in sudoriferous** and think **sweat**)

- **Sebaceous glands**- also known as **oil glands**; consist of little sacs with ducts that open to the hair follicles; secrete sebum (fatty or oily substance that lubricates the skin); found on all parts of the body (except the palms of the hands and the soles of the feet), especially the face and scalp
 - **Comedo (comedones)**- also known as a **blackhead**; sebum hardens and clogs the pore
 - **Acne**- also known as acne vulgaris; chronic inflammation of the sebaceous glands
 - **Papule**- also known as a **pimple**; small elevation on the skin that contains no fluid but may develop pus (think two “p” in papule, two “p” in pimple)
 - **Pustule**- raise, inflamed papule with a white or yellow center containing pus



Functions of the Skin (163-164)

The six principle functions of the skin are protection, sensation, heat regulation, excretion, secretion, and absorption.

- **Protection**- protects the body from injury and bacterial infection; epidermis is water-resistant due to thin layer of sebum
- **Sensation**- the skin responds to heat, cold, touch, pressure, and pain
- **Heat regulation**- as changes occur in outside temperature, the body makes necessary adjustments in the glands of the skin to be cooled by the evaporation of sweat (or warmed by shivering of the muscles)

- **Excretion**- perspiration is excreted through the skin
- **Secretion**- sebum is secreted through the sebaceous glands
- **Absorption**- some ingredients can be absorbed through the epidermis but most cosmetic products are not formulated to do so

NUTRITION AND MAINTAINING SKIN HEALTH (p. 164-170)

To keep the body healthy, people must ensure that they eat what helps to regulate hydration (healthy level of water in the body), oil production, and overall function of the cells.

Essential Nutrients (p. 165-166)

There are six classes of nutrients: carbohydrates, fats, proteins, vitamins, minerals, and water

In order to get all of these nutrients, people must eat from the five basic food groups: grains, dairy (healthy fats), vegetables, fruits, meat, poultry, fish and beans (proteins)

Vitamins and Dietary Supplements (p. 166-167)

Vitamins play an important role in skin health, often aiding in heal and softening the skin and in fighting diseases. These vitamins must come from food sources

- **Vitamin A**- aids in the health, function, and repair of skin cells; may improve skin's elasticity and thickness
- **Vitamin C**- aids in and accelerates the skin's healing process; promotes production of collagen
- **Vitamin E**- helps protect skin from sun damage

Water

- Composes 50% to 70% of the body's weight
- Sustains the health of the cells
- Assists with the elimination of toxins
- Helps regulate the body's temperature
- Aids in digestion

I'm a big believer in that if you focus on good skin care, you really won't need a lot of makeup.

-Demi Moore