



## Chapter 7

# Skin Structure, Growth, & Nutrition

## Learning Objectives

- Describe the structure and composition of the skin.
- List the six functions of the skin.
- Name the classes of nutrients essential for good health.
- Identify the food groups and dietary guidelines recommended by the U.S. Department of Agriculture (USDA).
- List and describe the vitamins that can help the skin.

# Introduction

- The skin is the largest organ of the body!
- It is a direct reflection of the nutrients you eat and the healthy habits you keep.
- Cosmetologists are not allowed to diagnose, prescribe, or provide any type of treatment for abnormal conditions, illnesses, or diseases.
- Refer clients with medical issues to dermatologists more than to any other type of physician.

# Know the Anatomy of the Skin

- **Dermatology**
  - The medical branch of science that deals with the study of skin and its nature, structure, functions, diseases, and treatment.
- **Dermatologist**
  - A physician who specializes in diseases and disorders of the skin, hair and nails.

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## Know the Anatomy of the Skin *(continued)*

- Cosmetologist
  - One skilled in the cleansing, beautification, and health preservation of the skin
- **Esthetician**
  - Specializes in cleansing, beautification, and health preservation of the skin



## Skin Specifics

- Largest organ of the body
- Covers two square yards
- Weighs six to nine pounds
- Protects muscles, bones, nerves
- Natural barrier between our bodies and the environment
- Healthy skin should be free of any visible signs of disease, infection, or injury

## Skin Specifics *(continued)*

- Healthy skin:
  - slightly moist
  - soft and flexible
  - smooth and fine-grained
  - surface that is slightly acidic
  - immune responses that react quickly to organisms that touch or try to enter it

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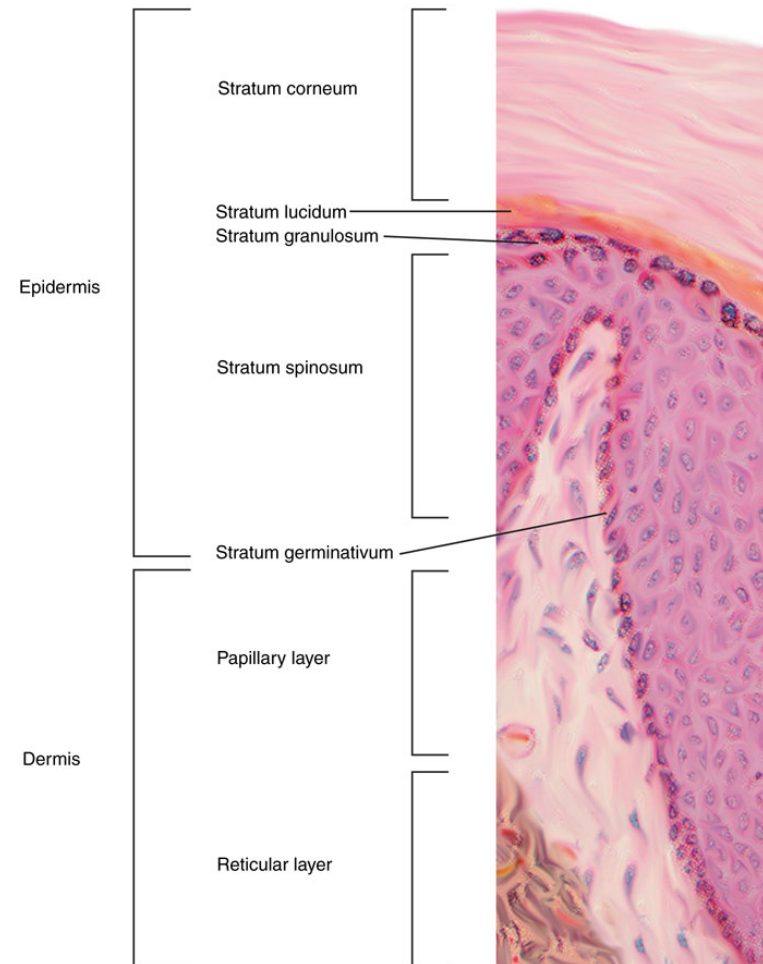
## Skin Specifics *(continued)*

- Continued pressure causes **calluses**
- Appendages of the skin include hair, nails, and sudoriferous (sweat) and **sebaceous** (oil) **glands**.
- The skin of the scalp has larger and deeper hair follicles to accommodate the longer hair of the head.

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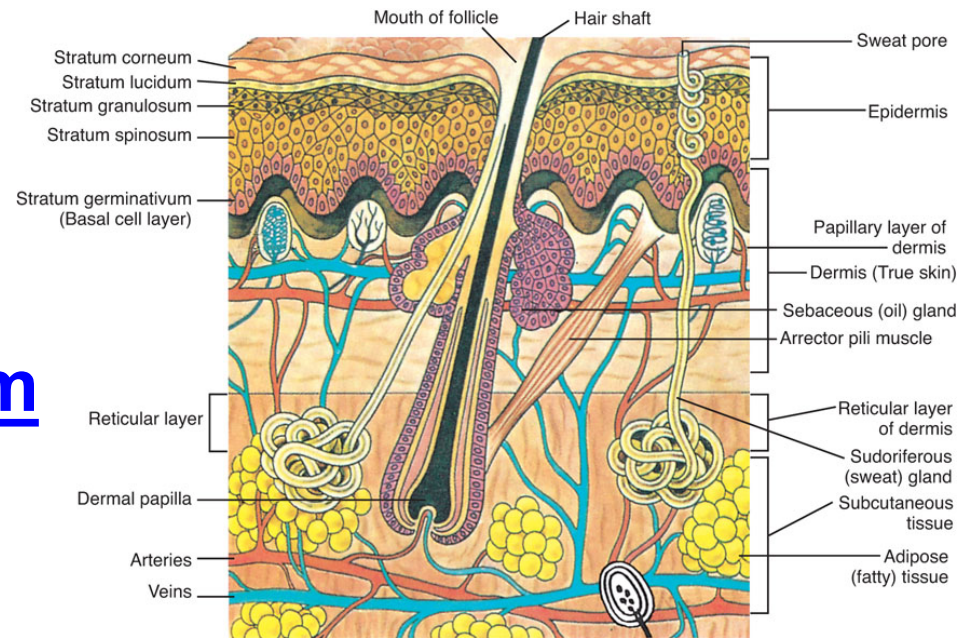
## Skin Specifics *(continued)*

The skin is composed of two main divisions: the **epidermis** and the **dermis**



# The Epidermis

- Stratum corneum
- Stratum lucidum
- Stratum granulosum
- Stratum spinosum
- Stratum germinativum
  - Melanocytes



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## The Dermis

**Dermis** is the underlying, inner layer of the skin.

- Papillary layer: outer layer beneath epidermis

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## The Dermis *(continued)*

- **Reticular layer:** deeper layer of dermis
- **Subcutaneous tissue:** fatty layer below dermis

## Fluids of the Skin

- The blood supplies nutrients, molecules from food such as protein, carbohydrates, and fats, to the skin.
- Lymph bathes skin cells, removes toxins and cellular waste, and has immune functions that help protect the skin and body against disease.

## Nerves of the Skin

- **Motor nerve fibers:** cause goose flesh
- **Sensory nerve fibers:** send messages to brain
- **Secretory nerve fibers:** regulate perspiration

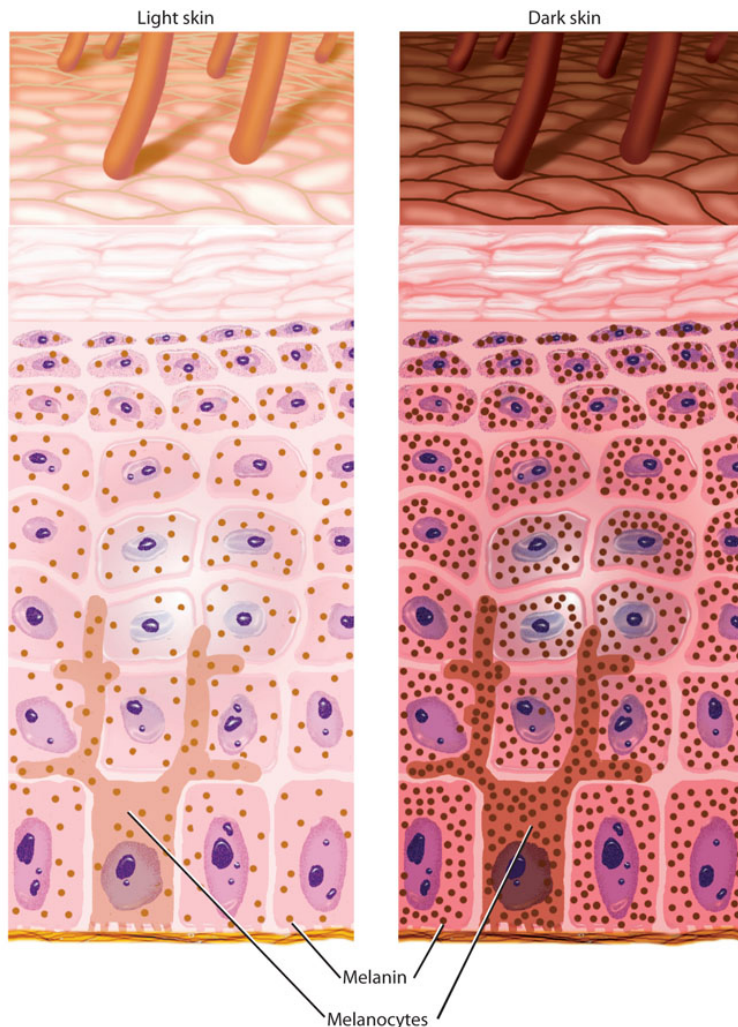
## Sense of Touch

- Nerve endings are found in the papillary layer.
- They register sensations:
  - Touch
  - Pain
  - Heat
  - Cold
  - Pressure





# Skin Color



- Depends primarily on melanin

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## Skin Color *(continued)*

- The color of the skin is a hereditary trait and varies among races and nationalities.
- Genes determine the amount and type of pigment produced in an individual.
- Melanin: tiny grains of pigment in stratum germinativum
  - **Pheomelanin**: red to yellow in color
  - **Eumelanin**: dark brown to black in color

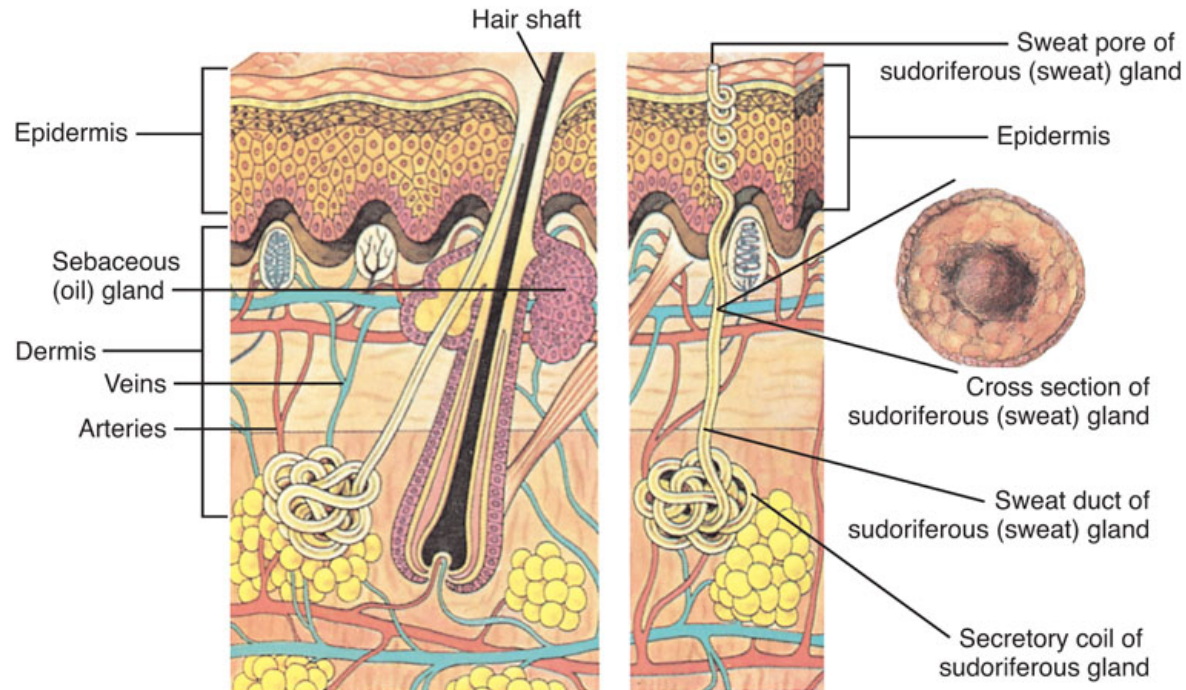
## Strength and Flexibility of Skin

Two structures, collagen and elastin, make up 70 percent of the dermis and give strength, form, and flexibility to skin.

- **Collagen:** a fibrous protein allowing skin to stretch and contract
- **Elastin:** a protein base that forms elastic tissue; gives skin elasticity

# Glands of the Skin

- Sudoriferous (sweat) glands
- Sebaceous (oil) glands



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## Glands of the Skin *(continued)*

### Sebaceous Glands

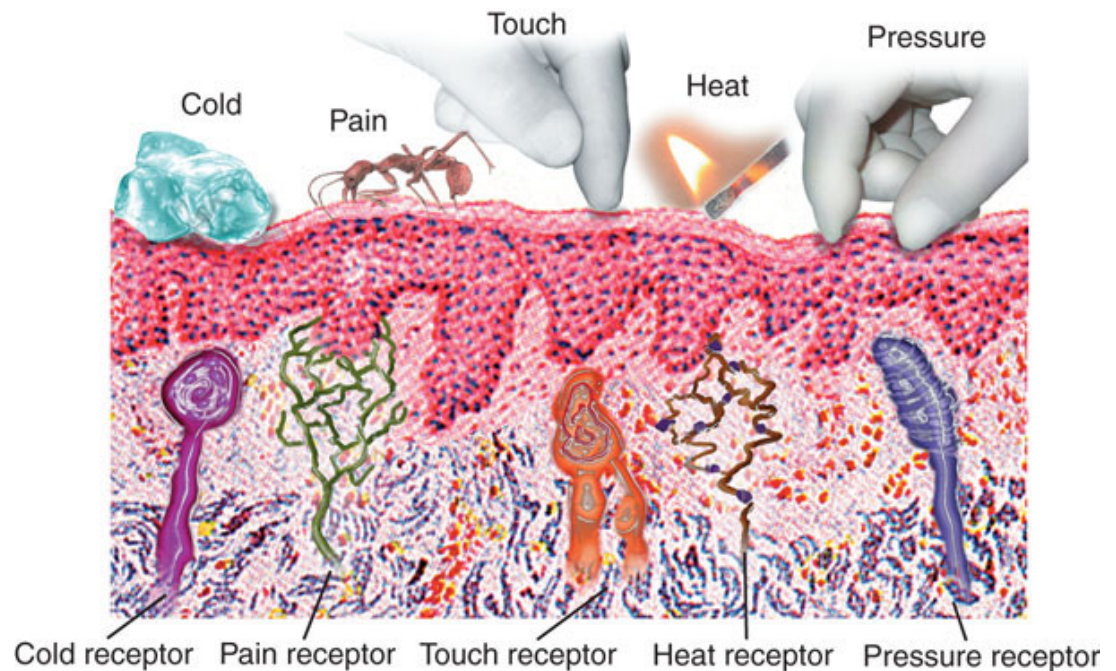
- **Open Comedo:** blackhead
- **Closed Comedo:** whitehead
- **Acne:** chronic inflammation of sebaceous glands
- **Papule:** small, round elevation on skin
- **Pustule:** inflamed pimple containing pus





# Functions of the Skin

1. Protection
2. Sensation
3. Heat regulation
4. Excretion
5. Secretion
6. Absorption





# Promote Nutrition and Skin Health

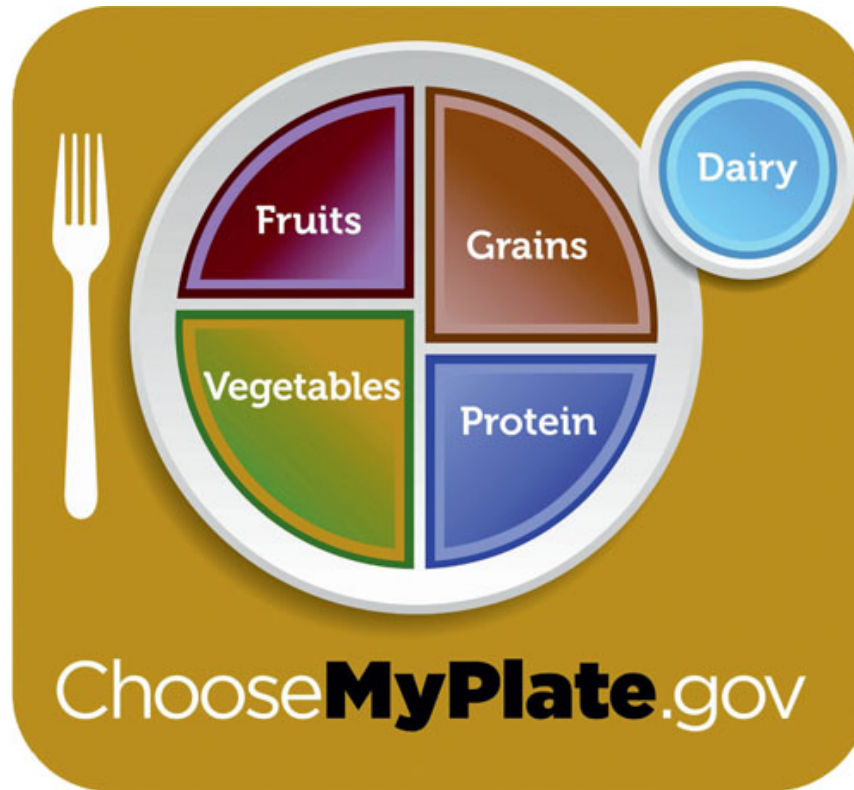
## Essential Nutrients

1. Carbohydrates
2. Fats
3. Proteins
4. Vitamins
5. Minerals
6. Water

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## Promote Nutrition and Skin Health *(continued)*

### My Plate



Courtesy of U.S. Department of Agriculture.

## Dietary Guidelines

- Eat a variety of foods.
- Eat fruits, vegetables, and grains.
- Eat moderate salt and sugar.
- Drink an appropriate amount of water.
- Minimize alcohol intake.
- Exercise appropriately.
- Maintain/improve body weight.



# Vitamins and Dietary Supplements

- **Vitamin A:** improves elasticity and thickness
- **Vitamin C:** accelerates healing process
- **Vitamin D:** enables absorption of calcium
- **Vitamin E:** protects against sun's rays

## Water and the Skin

- Comprises 50 to 70 percent of body's weight
- Sustains the health of cells
- Aids in elimination of toxins and waste
- Helps regulate body temperature
- Aids in proper digestion

## Summary and Review

### The skin:

- Is the largest organ of the body and protects us from the environment.
- Regulates body temperature.
- Provides sensation.
- Affected quite easily by most salon services

## Chapter Review Questions

1. Define *dermatology*.
2. Briefly describe healthy skin.
3. Name the main divisions of the skin and the layers within each division.

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## Chapter Review Questions *(continued)*

4. List the three types of nerve fibers found in the skin.
5. Name the two types of glands contained within the skin and describe their functions.
6. What are collagen and elastin?
7. Explain how collagen and elastin can be weakened.

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## Chapter Review Questions *(continued)*

8. What are the six important functions of the skin?
9. What are the six classes of nutrients that the body needs and how are they obtained?

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## Chapter Review Questions *(continued)*

10. What are the five basic food groups?
11. Can the skin be nourished with cosmetic products?

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## Chapter Review Questions *(continued)*

12. Name four vitamins that can help the skin and describe how they help.
13. What is the one essential item that no person can live without, and why is it essential to the skin and body?