

WARM UP (4/3- 4/4)

1. Take out your human body system research and diagram
2. Take turns sharing a few things you wrote on the back with your table mates.

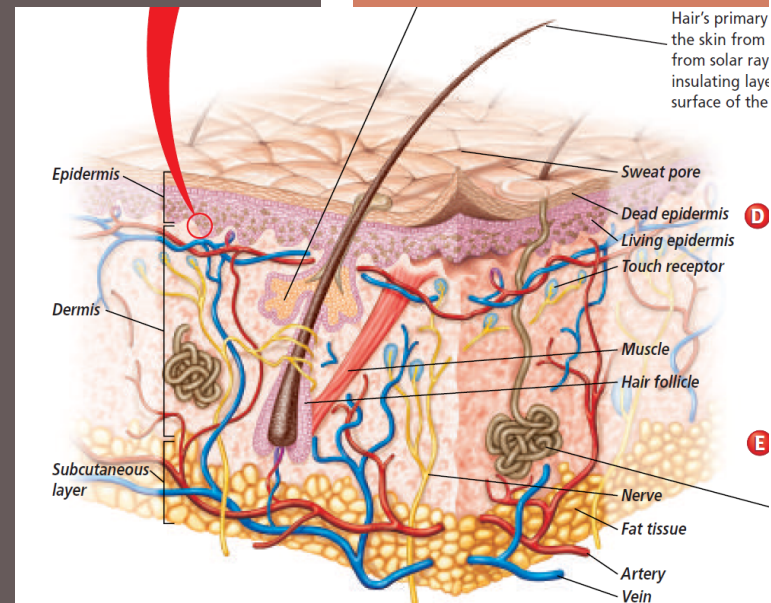
AGENDA

- Warm up
- 34.1 Notes- Skin:
The Body's
Protection
- Fingerprinting Mini
Lab

**Homework: Ch 34.1
Section Assessment
(pg. 898 #1-5)**

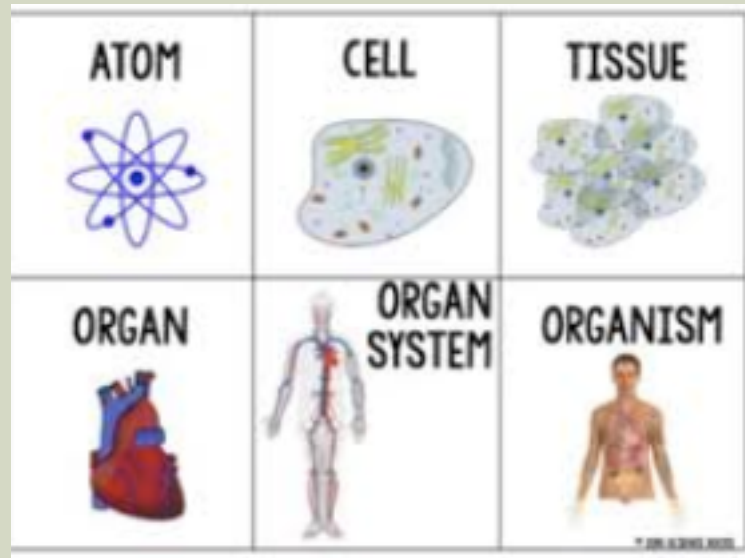
34.1

SKIN: THE BODY'S PROTECTION



INTEGUMENTARY SYSTEM

- Composed of skin, glands in the skin, hair and nails
- Humans shed 1.5 pounds of skin a year

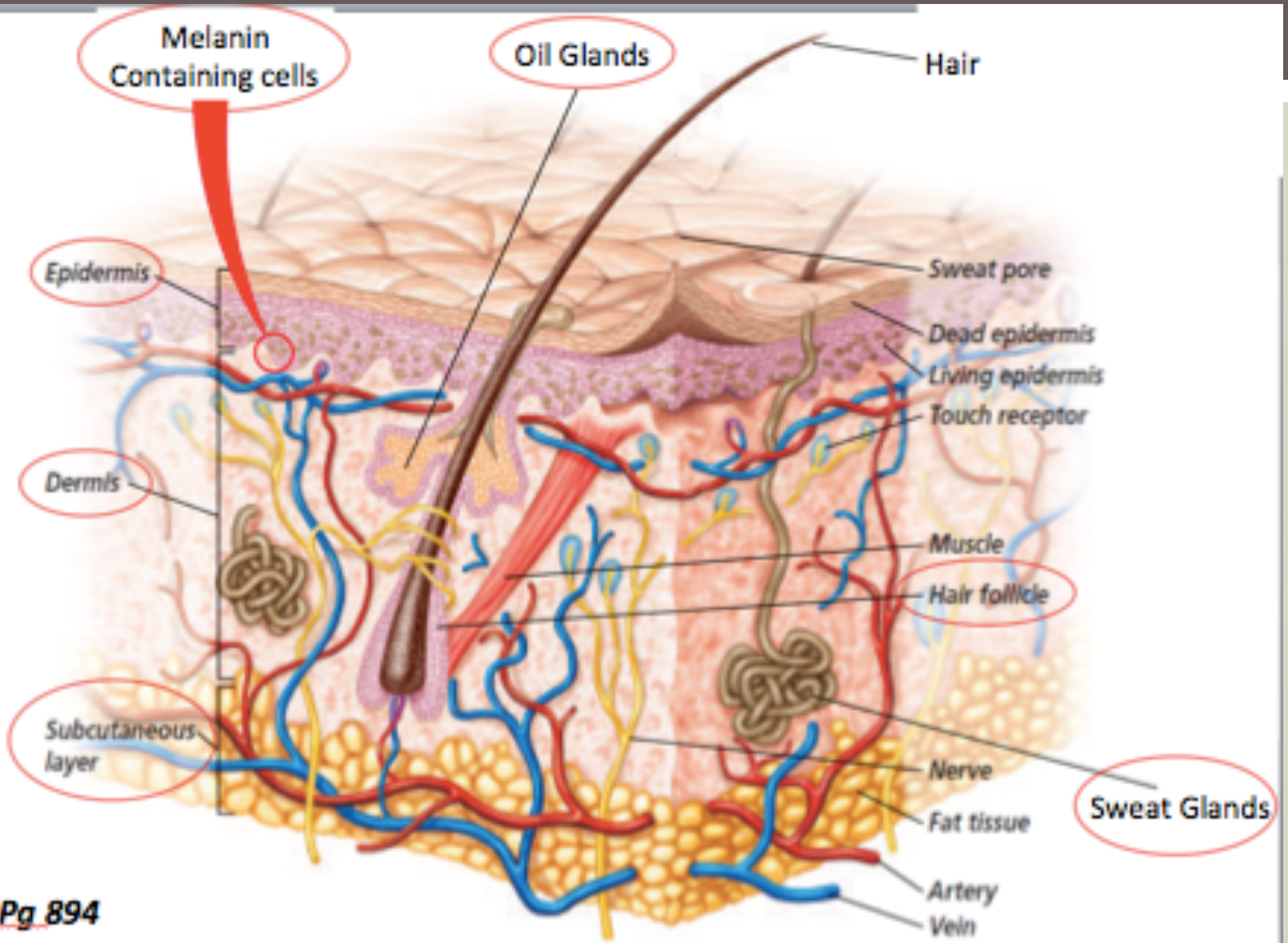


LAYERS OF THE SKIN

- **Epidermis: Outermost layer of skin**
 - Composed of mainly dead cells continuously being shed.
 - Contains keratin- protein that protects living cell layers; makes up hair and nails
 - Lower layers of epidermis contain living cells that divide and replace dead cells
 - Contains melanin- pigment that colors the skin and protects cells from solar radiation. Dark skin= more melanin

https://www.youtube.com/watch?v=_r4c2NT4naQ

- **Dermis: Inner, thicker portion of skin**
 - Contains blood vessels, nerves, hair follicles, sweat glands and oil glands
 - Subcutaneous layer- fatty tissue layer beneath the dermis



Melanin
Containing cells

Oil Glands

Hair

Epidermis

Sweat pore

Dead epidermis

Living epidermis

Touch receptor

Dermis

Muscle

Hair follicle

Subcutaneous
layer

Nerve

Fat tissue

Sweat Glands

Artery

Vein

COMPREHENSION CHECK

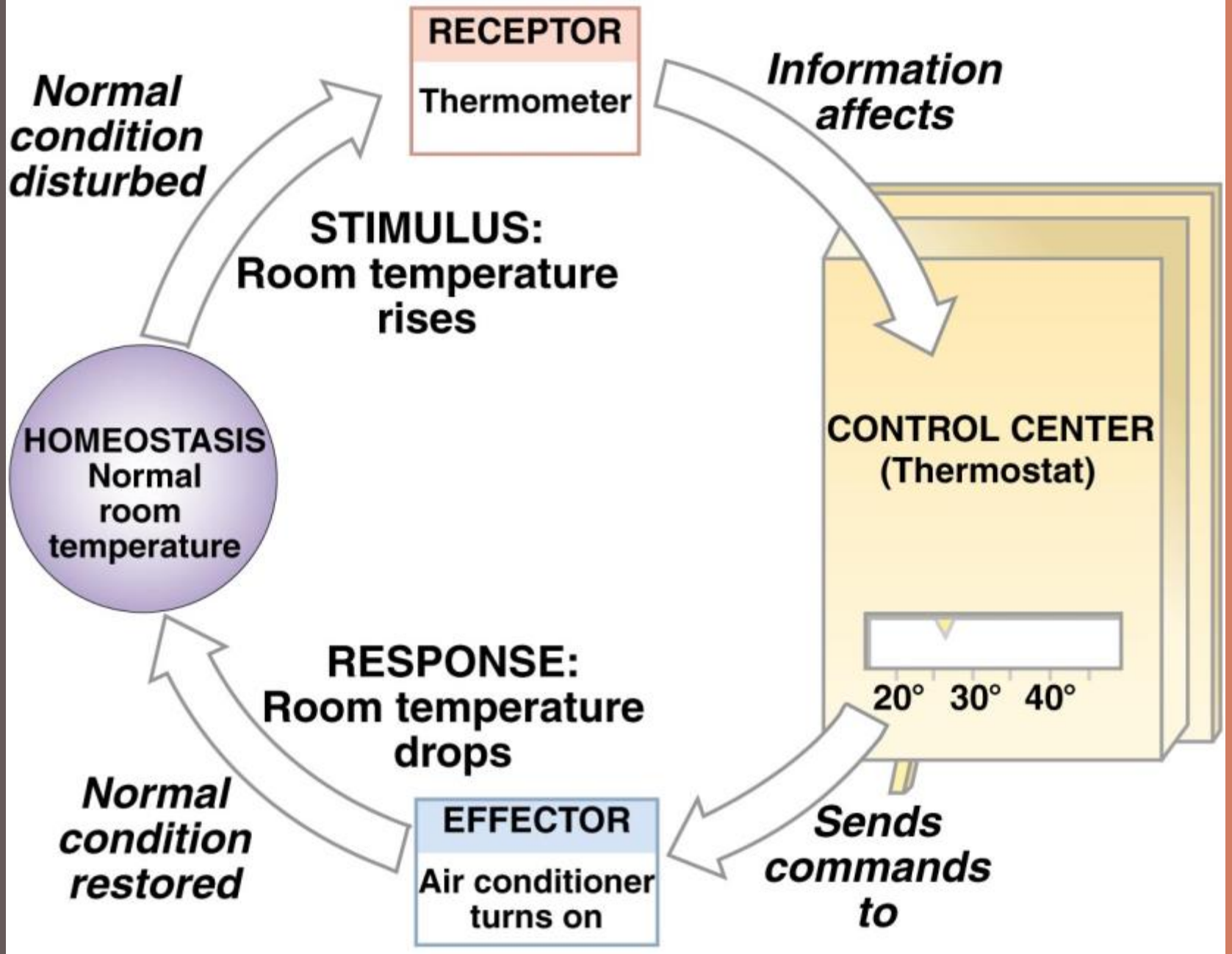
Description	Epidermis	Dermis
1. The outermost layer of skin		
2. Contains connective tissue, glands, and muscles		
3. The thicker, inner layer of skin		
4. Partly composed of dead, keratin-containing cells		
5. Contains pigmented cells that protect against the sun's rays		
6. Hair follicles grow out of this layer		
7. Site of continual mitotic cell divisions		
8. Richly supplied with blood vessels and nerves		

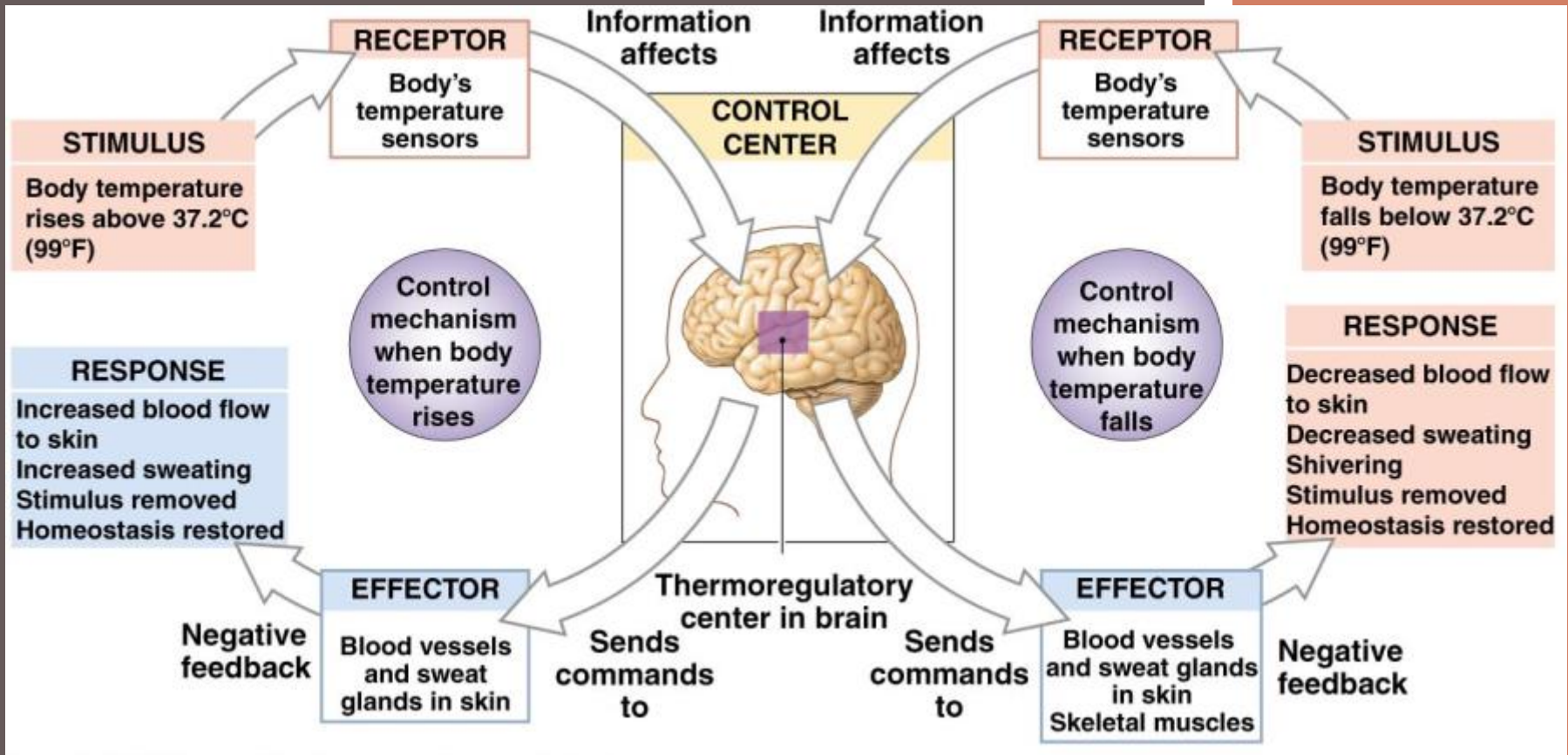
FUNCTIONS OF INTEGUMENTARY SYSTEM

- Protective layer to underlying tissue
- Help maintain homeostasis (stable internal conditions) by regulating internal body temperature
 - Blood vessels dilate (hot) or constrict (cold)
 - Sweat production
- **Example of a negative feedback loop: Returns a system back to “normal” limits
- Sensory organ- nerve cells in dermis sense pressure, pain and temperature to the brain
- Produces vitamin D

HOMEOSTASIS

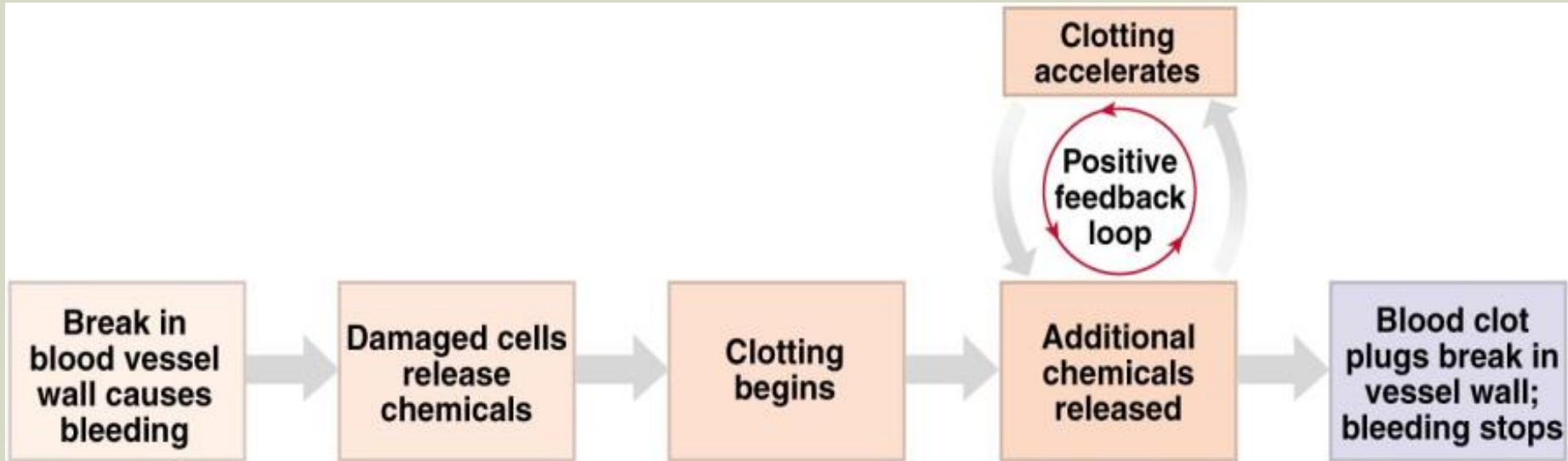
- **Maintains stable internal conditions**
 - Temperature
 - Ionic concentrations
 - Blood sugar levels, etc.
- **Utilizes negative feedback mechanisms**
 - Reverses a variation outside of the “normal” limits to return to “normal”

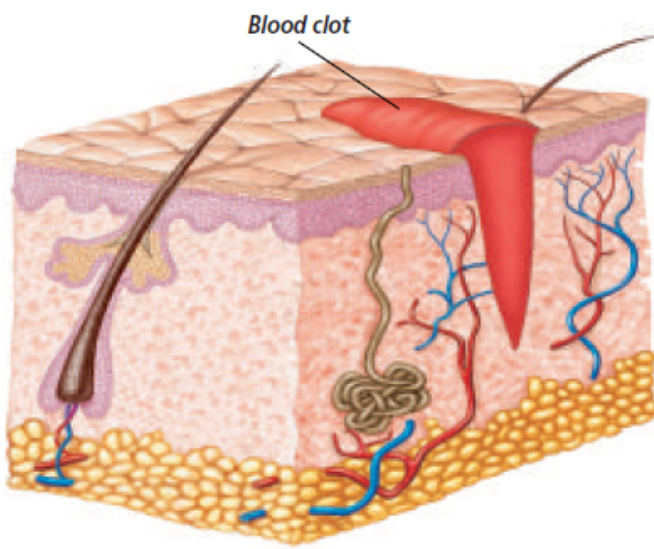




SKIN INJURY AND HEALING

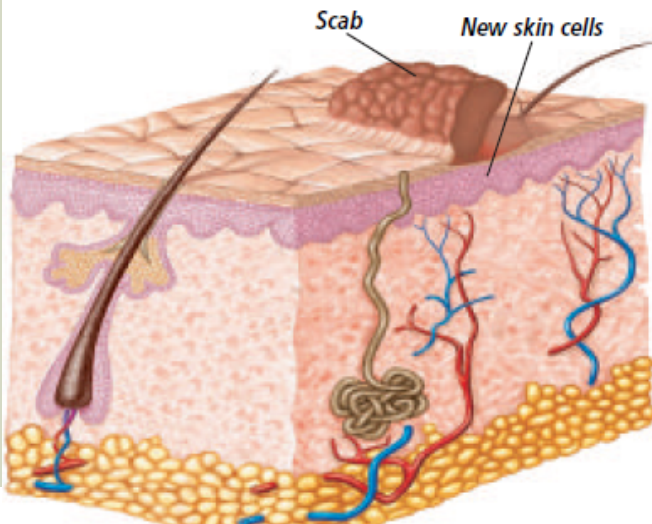
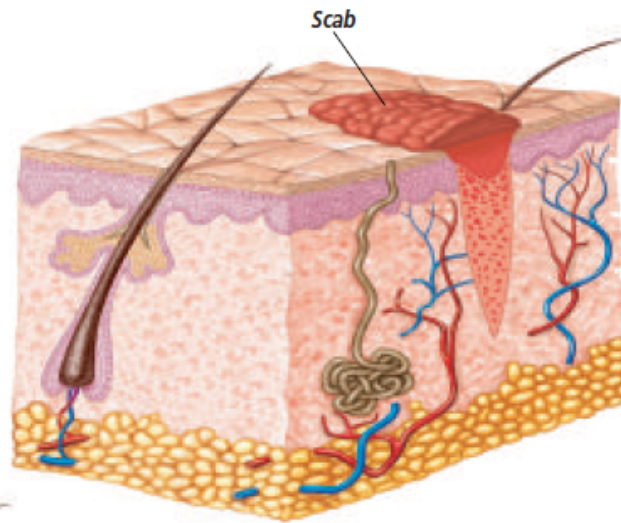
- Aging: skin loses elasticity
- Cuts:





A Blood flows out of the wound until a clot forms.

B A scab soon develops, creating a barrier between bacteria on the skin and underlying tissues.



C New skin cells begin repairing the wound from beneath. A scar may form if the wound is large.

■ Burns:

- **1st degree-** epidermis damage; < a week to heal
- **2nd degree-** epidermis and dermis damage; blistering and scarring
- **3rd degree-** destroys epidermis and dermis; skin function is lost