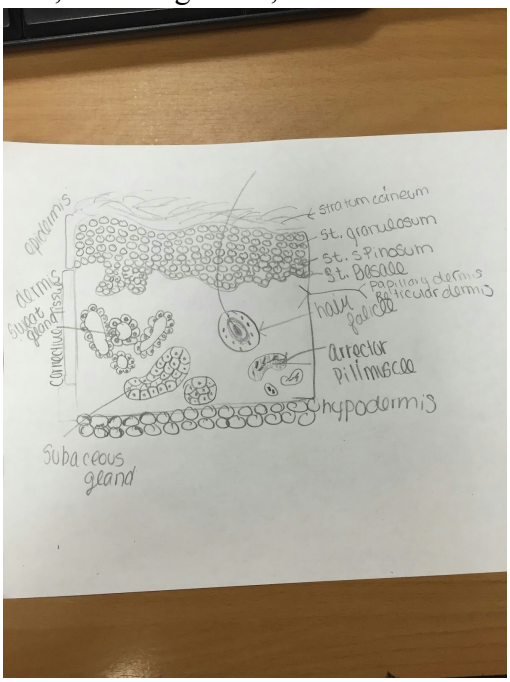
Megan Arney 9/28/2015

Integumentary System LAB Report

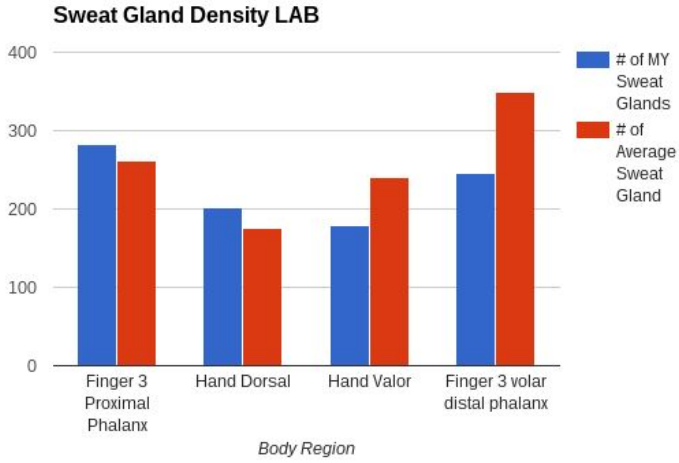
General Structure & Function

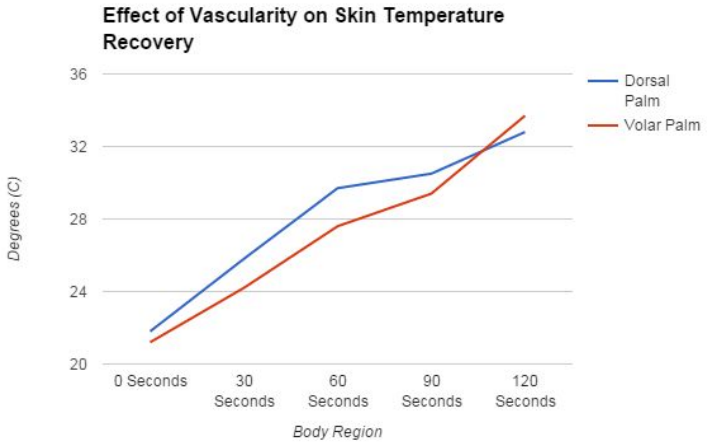
The integumentary system continue to amazes me. The integumentary system is composed of the epidermis, Hair, Nails, Sweat and sebaceous glands, associated muscle and nervous tissue. Its functions include Protection, Contains sensory receptors, production of vitamin D, regulation of body temperature, and excretion and absorption.The cutaneous membrane and is the largest organ of the human body. which can be broken down into 3 sections. The Epidermis, dermis, and hypodermis. The epidermis is composed of epithelial tissue. The dermis is composed of connective tissue which attaches to the basement membrane of the epidermis. The dermis provides nutrients to the epidermis. The hypodermis is not part of the integumentary system. Major storage site of adipose tissue. The epidermis has four types of cells, Keratinocytes, Melanocytes, Langerhans, and Merkel cells. The Cutaneous Membrane plays a key role in four body systems. Since the skin is one of the first mechanisms for our Immune system, Tiny glands in the skin, called subcutaneous glands secrete oils that enhance the barrier function of the skin. Immune cells live in the skin and provide the first line of defense against infections. By helping to synthesize and absorb vitamin D, the integumentary system works with the digestive system to encourage the uptake of calcium from our diet. Healthy functioning of your skin also is related to the digestive system because the digestion and assimilation of dietary fats and oils are essential for the body to be able to make the protective oils for the skin and hair.The integumentary system also works closely with the circulatory system and the surface capillaries through your body.nervous system depends on neurons embedded in your skin to sense the outside world. It processes input from your senses, including touch, and initiates actions based on those inputs.



Thermoregulation

Thermoregulation is the process that allows the human body to maintain its core internal temperature. The state of having an even internal temperature is called homeostasis. All thermoregulatory mechanisms are designed to return the body to homeostasis. Normal body temperature is 98.0 degrees fahrenheit. If your core temperature fall below 95 degrees you could start experiencing Hypothermia which can cause cardiac arrest, stroke, or even death. If your body's internal temperature climbs to over 107 degrees you could suffer brain damage as a result of temperatures that are too high. Let me break it down how thermoregulation works. Sensors in your central nervous system send messages to your hypothalamus, telling it your internal temperature is increasing. Your hypothalamus, which controls thermoregulation, receives the message. Your hypothalamus activates one of several mechanisms to decrease your temperature. The same process occurs when your body senses your temperature is falling too low. I would conclude that the more number of sweat glands in a given region the faster the body is able to warm up or cool down to maintain homeostasis.





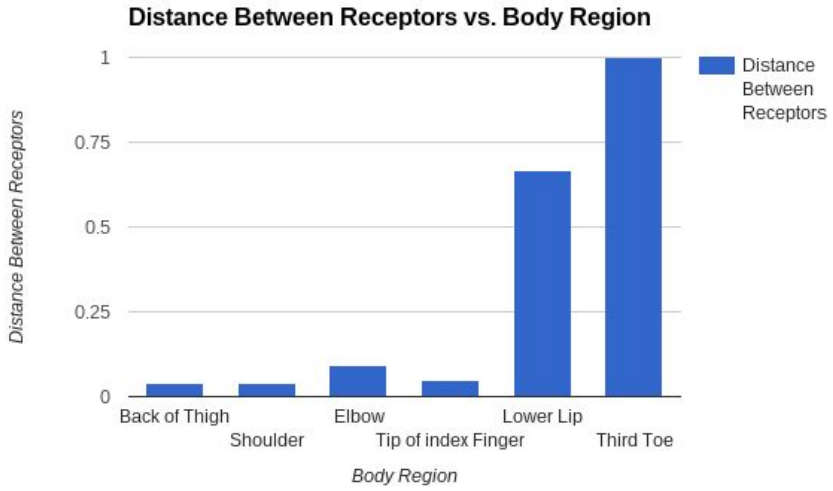
In my Density of Sweat Gland lab we tested four sites with a small amount of iodine. After it dried ice. we placed a small 1cm by 1 cm after about 2 square of bond paper over the tested site. We checked the bond every few seconds. After the iodine reaction to our sweat we counted the number of purple dots (sweat glands).

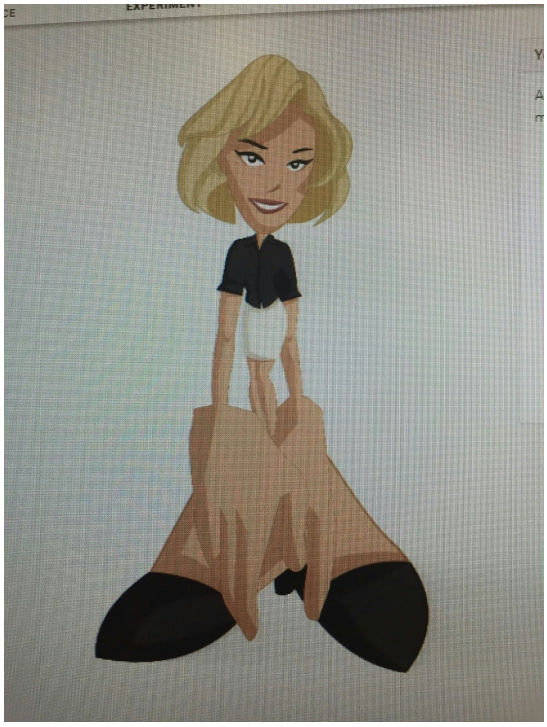
In this lab, we tested to see how long it took our skin to recover from being exposed to a piece of To its original homeostasis

minutes.

Sensory Function

The sensory receptors in our body respond to stimuli and transmit data about them to our brain. In the skin, receptors detect touch, pressure, vibration, temperature, and pain. Elsewhere in the body, more specialized receptors detect light , sound , smell, and taste. Internal receptors, called proprioceptors sense body position and the location of body parts in relation to each other. Touch receptors are found all over the body. The most common are free nerve endings, which sense pain, pressure, and temperature in addition to touch. Other touch receptors include Merkel's discs and Meissner's corpuscles, which detect light touch, and Pacinian corpuscles, which sense deep pressure and vibration. From the published websites and medical journal and compared their results and conclusions with my data and thoughts. I can conclude that the closer my receptors are, the more sensitive those are and the more detailed the signals are traveling up to my brain. We need more sensory receptors on our hands, feet, lips, and nose because those are the "tools" we use to touch.





Megan’s Homunculus Drawing
My hands and feet are much larger than my arms and legs because my sensory glands are much closer to each other.

Work Cited

Holland, K. (Ed.). (2013, June 4). Thermoregulation. Retrieved September 29, 2015.

Kindersley, D. (2010). Structure and Function: Sensory Receptors. Retrieved September 30, 2015