Lab 6/7 Cutaneous Receptors

purpose: The purpose of this experiment is to test our own thermoreceptors and cutaneous receptors too see if both partners can feel similar reactions. For this section of lab 6/7 we did two experiments the first one's purpose is to see the difference of each of our touch senses on different parts of our body. We have to try to find a difference in feeling of different measurements on a caliper tool. The second experiment we are meant to feel two very different temperatures, one really cold and the other hot, after two minutes we are to see what happens when both hands touch a lukewarm bath of water.

procedure: The first experiment, my partner and I, Marissa, had gotten this tool to measure spaces in between like a ruler but it opens. We had to see if we were able to feel the difference between two points like from 0ml to 2ml. We had to try putting pressure of the ruler on four different parts of our bodies, the fingertip, palm of hand, back of hand, and back of neck. When putting the ruler on our body parts we had to close our eyes and guess when the ruler had opened to about 2ml. For most times, especially in the back of the neck I couldn't tell when the ruler was at 2ml to 5ml. The back and palm of my hand seemed easier to tell even though there should be more touch senses on the tips of my finger. The second experiment, I had put both hands on two different bowls containing different temperatures of water, one with ice cold water, and the other with hot enough water. After two minutes of pain and agony, I put both hands into the lukewarm bowl of water and suddenly my cold hand felt warm and my warm hand felt cold.

results: felt the Caliper at: (milliliters)
palm of hand: 3ml
back of hand: 2ml
fingertip: 2ml
back of neck: 5 ml

feeling in cold water:
numb, hurts, so cold
it burns, want to smack someone

feeling in hot water:
not too hot, not bad at all

feeling in 25℃ water:
hand was cold now warm feels great
hand was not cold but not freezing

discussion: For the first experiment, I've never seen that tool so I wasn't entirely sure on how to use it but Marissa had helped me, feeling the difference from it being closed to slightly open felt very similar especially since this isn't a normal thing to put against our skin so the feeling was very unfamiliar. Our touch receptors are much more sensitive on our hands since we use them to touch everything, so I felt like I was able to tell more when the caliper would be opened to 2ml. But since the back of our necks are not as touch sensitive, I probably wouldn't even be able to tell if it was at 2 ml or 10 ml wide. I honestly was guessing when it felt like it was two and it ended up being 5ml. For the second experiment, I've felt the feeling of adapting very fast to different temperatures

discussion continued : Because when there was a pool and jacuzzi available I'd make sure to use both, when I would come from the pool to the jacuzzi it would feel extremely hard to get into because it felt boiling hot, eventually I got used to it and was able to go in fully, when I would want to go back to the pool I would have to jump in because stepping in would feel way too cold. I rather shock myself with the cold to get used to it quicker than taking it slow and shivering the whole time before my body adjusts to the temperature again. This context, I was able to tell how the experiment were to play out, it was very interesting.

conclusion : Understanding our cutaneous receptors allow us to navigate our environment, allows us to manipulate objects, protect ourselves, maintain body temperature and much more. With our two experiments feeling both temperatures and light touch and pressure we were able to convey in words the feelings and emotions we felt. Touch is also a big part of memories and our human nature to want physical touch and understanding what we do and don't like texture and feeling wise.

Olfactory lab 6/7

purpose : The purpose of this experiment is to understand how our nose and olfactory receptors can differentiate smells from minty to salty to neutral. Our olfactory chemoreceptors can hold the smell of something for a depending amount of time based on each person, eventually though, your nose gets used to it and you become "nose blind". When you're away from the smell and smell it once more though you will not continue your nose blindness and can smell the smell once more as if you didn't get used to it. The purpose is to see how long it would take for my to get used to the smell of camphor oil and try to smell other scents to see if I can unblind my olfactory receptors.

procedure : During this experiment I had blocked my left nostril and hovered the camphor oil under my nose until it was no longer detectable, it took me 27 seconds to get used to the smell. After I had removed the camphor under my nose I held peppermint oil and cloves under my nose to smell the differences and the peppermint smells like Christmas and the cloves smells salty like a dinner meal. Blocking my left nostril again, I smelled the camphor once more and it took me 20 seconds this time to get used to it, after getting used to it I unblocked my left nostril and the smell felt new, like I smelled it for the first time again.

results : Camphor oil adapting time : 27 sec
peppermint oil smell : candy cane, Christmas
Cloves : salty turkey lol
Camphor oil adapting time 2nd time : 20 sec

Discussion : At the beginning of the experiment, I was initially sniffing the oil so I feel that is a reason why it took me longer to adapt to the smell compared to the second time. When I did get used to it I still feel like I wasn't completely nose blind though since the smell was really strong and I feel my nose is really sensitive to smells. What was surprising to me though was when I unblocked my left nostril on the second trial of smelling the camphor oil and suddenly I smelled the oil as if I smelled it for the first time. It seemed as if both sides of my nostrils have different olfactory receptors on each side and one adapted way before the other that was previously blocked.

Conclusion: Our olfactory receptors are a big part of our lambic system where we can recognize specific smells for specific memories, it makes it feel more connected with our emotions and feelings. For an example how I correlated the smell of the peppermint with the memory of Christmas time when I was younger and used to make peppermint bark to share with my friends. Our olfactory receptors are especially important for our overall survival for an example, smelling a gas leak so that we don't suffocate and die, or smelling something odd in your drink that usually never smells that way. This experiment showed us the way our noses adapt to smells over a long period of time, but the adaptation is never permanent.

Lab 617 Vision

Purpose: To understand how our rods, cones, cornea, and retina work to aid us in being able to see objects and their colors. For this experiment, we are able to indicate if we may need to seek aid for our eyes whether it'd be blindness, color blindness, or astigmatism.

Procedure: For this lab section, we had done three experiments to test our vision. The first experiment would be the Ichikawa color blindness charts. We would look up the charts and see if we are able to see the given number clearly. The charts would be in a form of a circle with multiple colors of the same pallets in the center would be a number that would be a little hard to read, but if you were color blind the number would blend very well to the rest of the other colors and you wouldn't be able to tell what the number is. The second experiment is where we stand 10 inches away from this astigmatism chart and color one eye. We focus on the vertices planes and if a blur were to appear on the lateral planes then we have astigmatism in that eye. We tried it for the other eye as well. For the third experiment, we tested to see how far our peripheral vision goes by using a semicircle and colored blocks. We tried three different trials with three different colors. Every time we see the block in our peripheral vision we would see at what degree it took to see it.

Results: Peripheral

	flag from left:	flag from Right:	flag from above:	flag from below:
red:	90	70	78	60
green:	90	69	77	64
blue:	91	70	80	68

Color blindness:
score 12/12

Astigmatism:
Astigmatism in left eye
normal Right eye

Discussion: I was already informed before by my eye doctor that I had astigmatism but I never know how to test it myself and see the different between my left and right eye. Trying that experiment out it was shocking to see that were was an obvious difference in my vision with the vertical lines being blurry. The Ichikawa tests I have seen before and we actually tried the online test that did it out of 12 points. Some were actually pretty hard but by squinting a bit I was able to decipher the number. For the peripheral tests, Marissa and I had trouble assembling the equipment because we didn't know how to use it correctly. Eventually we got to use it and it was very easy to see the colored blocks due to them being so vibrant and huge. Our scores were about the same.

Lab 9/7 vision con.

Conclusion: These experiments Marissa and I have learned different ways to see whether our cornea, rods and cones, and retina are working properly. We preformed three experiments to see each part of the eye is working to its full strength and whether or not aid is needed such as glasses or colorblind contacts. We have learned more about the functions of our eye and photoreceptors like how if you were to see blurry vertical lines on the astigmatism test you have astigmatism in one eye.