

Lab Report 6/7

Purpose: Understand the different capabilities of our sensory systems.

Procedure: 6/7 A:1: Two-point discrimination

With your partner's eyes closed, apply two caliper pinpoints as closely together as possible on your partner's skin on the palm of his/her hand.

2.Remove the pins and move them 1 millimeter apart. Reapply the caliper points to your partner's skin. Repeat this procedure until your partner can discriminate two distinct points.

3.Record this distance between pins at which your partner can discriminate two separate caliper points.

4.Compare results obtained from the following areas:

- a. palm of hand
- b. back of hand
- c. fingertip
- d. back of neck

5. Have your partner repeat this experiment on your skin.6. Interpret the results you have obtained.

A-2: Accommodation of thermoreceptors.

1.Place your left fingers in 15°C water and your right fingers in warm water (37°C) and record the sensation of each. Keep hands immersed for 2 minutes.

2.After two minutes, describe the sensation in each hand.

3.Remove hands and promptly place them both in 25°C water. Describe the immediate sensation in each hand.

6/7-B: Olfactory adaption.

1.Block your left nostril. Uncork and hold the bottle of camphor oil under your nose until you can no longer detect the camphor. Do not consciously sniff the contents of the vial! Record the adaptation time.

2.Remove the camphor and place the bottles of cloves, then peppermint oil under your nose. Distinguish the smells of cloves and peppermint oil.

3.Uncork and hold the bottle of camphor under your nose again until the smell is no longer recognized. Record this second adaptation time

4.Unblock your left nostril determine if the camphor is detected.

5. Interpret these results.

6/7-E1: Demonstration of the blind spot.

1. Cover your left eye and focus the right eye on the center of the cross below.
2. Slowly bring the page closer to your eye until the spot disappears.
3. Have your partner measure this distance from your eye to the page.
4. The image of the spot is now superimposed on the optic nerve. Explain the lack of vision at this point.

E-2: The Snellen test.

1. Stand 20 feet away from the Snellen chart. Cover your left eye.
2. Attempt to read the line designated "20".
3. If you cannot read line 20, attempt line 30, 40, 50, 70, 100 or 200 until a line is legible. Perform these attempts with your left eye, covering your right eye.
4. The Snellen chart is analyzed in the following way:

Visual acuity = Distance you read the letters / Lowest line read clearly at 20 feet

E-3: Astigmatism.

1. Stand approximately 8 –10 inches away from the radial astigmatism eye chart so that it fills your field of vision. Cover your left eye.
2. Focus on the lines in the vertical plane with your right eye.
3. If a blur appears in the lateral lines or the lines converge into one, you have an astigmatism in this plane of your eye.
4. Record the results of this test and repeat with the left eye.

E-5: Perimetry.

1. Seat yourself before the perimeter board with your right eye at the edge of the semicircle. Cover your left eye. Stare at the centerline.
2. Your lab partner will introduce several different colored blocks into your field of vision. Identify these blocks by color. Do not take your eye from the center of the chart or uncover your left eye.
3. Your partner will record the degree at which the colors were discriminated on the perimetry score sheet on page 47.

4.Repeat these procedures for each block for both the horizontal and vertical perimetry charts. Record the data and connect the same colored dots to form an outline of cone placement of your right eye on your data sheet.

5.Explain these results in regards to cone placement in your retina.

Results: A-1:

Palm of hand	Back of hand	Fingertips	Back of neck
6mm	5mm	2mm	8mm
10mm	3mm	3mm	9mm

A-2:

Temp.	Time	Sensation
15° C	2 min.	L hand numb
37° C	2 min.	R hand warm
25° C	After 2 min.	L hand warmer, R hand colder

6/7-B:

Substance	Time
Camphor oil (before)	14.55 sec.
Camphor oil (after)	22 sec.

E-1:

The spot disappeared once the page was 23cm from my eye.

E-2:

Visual activity: 20/20 =normal

E-3: No astigmatism

E-5:

Horizontal	Left	50 red	59green	65blue
	Right	87 red	77 green	86 blue
Vertical	Above	75 red	75 green	70 blue
	Below	80 red	80 green	78 blue

Discussion: For lab A-1, we concluded that the skin on our fingertips were more sensitive to touch vs the back of our neck. For A-2, we noticed that although the left hand became numb when placed in 15° C water for 2 minutes, after placing it in 25° water, the temperature of the left hand immediately changed to warm. We concluded that with constant stimulation, the sensation is easily influenced. For 6/7B, we noticed Camphor oil is a strong stimulant to our sense of smell, because even after introducing 2 different substances, Camphor oil was not eliminated in our sense of smell. For E-1, we concluded when an image is at a certain angle or distant, our photoceptors cannot detect the light. In E-2, we were both able to read line 20, which concluded our vision to 20/20. In E-3, we concluded that we had no astigmatism which means no abnormalities of the cornea. For E-5, we noticed when the perimeter board was vertical, one direction (below) was easier to see. When the board was horizontal, the right side also was easier to capture.

Conclusion: Sensory involves multiple receptors that demonstrate different capabilities to help the human function.