

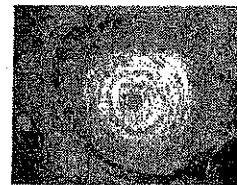
Name _____

Per. _____

Skin Physiology – Sensors



You will conduct three different physiological experiments regarding your skin's sensors. You and your partner will take turns experimenting on each other. Afterwards, complete the review questions in preparation for the test.



Activity 1: Determining the Two-Point Threshold

The density of the touch receptors varies significantly in different areas of the body. In general, areas with the greatest density of tactile receptors have a heightened ability to “feel.” These areas correspond to areas that receive the greatest motor innervations; thus they are also typically areas of fine motor control.

1. Using a caliper and a metric ruler, test the ability of your partner to differentiate two distinct sensations when the skin is touched simultaneously at two points. Beginning with the face, start with the caliper arms completely together. Gradually, increase the distance between the arms, testing your partner's skin after each adjustment. Continue with this testing until the subject reports that two points of contact can be felt. This measurement, the smallest distance at which two points of contact can be felt, is the two-point threshold. The “guinea pig” should look away or close their eyes during the testing.
2. Repeat this procedure on the back and palm of the hand, fingertips, lips, back of the neck, and ventral forearm. Record your results in the chart below
3. Which area has the smallest two-point threshold? _____

Determining Two-Point Threshold

<i>Predicted order</i>	<i>Body area tested</i>	<i>Two-Point Threshold (mm)</i>
	Face	
	Back of hand	
	Palm of hand	
	Fingertip	
	Lips	
	Back of neck	
	Ventral forearm	

Activity 2: Testing Tactile Localization

Tactile localization is the ability to determine which portion of the skin has been touched. The tactile receptor field of the body periphery has a corresponding “touch” field in the brain. Some body areas are well represented with touch receptors, and tactile stimuli can be localized with great accuracy, but density of touch receptors in other body areas allows only crude discriminations.

1. Your partner's eyes should be closed during the testing. Touch the palm of your partner's hand with a pointed black felt-tipped marker. Your partner then tries to touch the exact