

## **Do smokers have a different perception of taste than non-smokers?<sup>1</sup>**

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Sense of smell is important to our perceptions of taste. Reformed smokers often remark that food tastes better to them after they quit smoking. It has been argued that this is due to improved sense of smell, rather than improvement of sense of taste. The present study directly compares taste perception (without smell or sight) of smokers and non-smokers. Participants made taste judgments for different foods having similar textures. If smell is a critical factor in taste perception, we expect little difference between groups. However, if smoking does affect taste, then differences should be observed.

### **Hypothesis**

We believe that smoking cigarettes affects the sense of taste. We believe that our experiment will prove that smokers will be able to identify less of the foods than non-smokers.

### **Introduction**

Four sensory systems (sight, taste, smell and touch) combine to produce the experience of flavor. Because these different systems combine to create the psychological experiences underlying flavor, anything that could affect one or more of these processes should affect accuracy (or enjoyment) of flavor.

Due to habituation, smoking may result in a decrease in smokers' ability to detect smoking related odors. In addition, it is possible that regular smoking might result in more stress to the olfactory epithelium compared with non-smokers. In either case, if the sense of smell is impaired, it is likely that taste (flavor) should also be affected.

We plan to test a variety of smokers and non-smokers as well as females and males. We hope to find results to support our hypothesis.

### **Method**

#### **Participants**

The 30 volunteers were all Robert Morris University undergraduates who either received

course credit or were interested in participating. The total number of smokers was 10 (four males and six females), while the total number of non-smokers was 20 (nine males and eleven females).

#### **Materials**

Plastic forks and spoons; Styrofoam bowls with lids; napkins; blindfold; bottled water; oranges; lemons; grapes; cherries; potatoes; pears; chocolate pudding; vanilla pudding; Nutella; peanut butter; pencil/pen; participant sheets.

#### **Procedure**

First we sat the participant down in a chair. We explained the experimentation process to them. We then asked them if they have any food allergies. After the participant replied, we began to fill out the participant sheet.

Next we blindfolded the participant and had them pinch their nose. We handed the participant a fresh bottle of water and asked them to take a drink before we began, in order to cleanse their palates. We then used a clean plastic fork to place a food sample (e.g., a grape) into the participant's mouth. After the participant chewed the sample, we asked them to identify the food. If they could not identify the food, we asked them to guess. We recorded the results and asked them to take a drink of water to cleanse their palates once again. We proceeded to get a clean fork and placed the next food sample (e.g., a cherry) into the participant's mouth and

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asked them to identify the food. After they responded, we recorded the results and continued in this manner until all food items were sampled.

**Results**

Number of correct responses by food-type.

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Food Type	Smokers		Non-Smokers	
	Male	Female	Male	Female
Cherry	2	6	4	7
Grape	4	6	9	11
Potato	0	2	1	4
Pear	2	1	0	6
Pudding (C)	3	5	8	8
Pudding (V)	2	5	7	7
Nutella	0	1	0	0
Pnt. Butter	4	6	8	10
Orange	3	5	6	10
Lemon	4	6	3	9

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**Conclusions**

After performing this study, we have concluded that smokers and non-smokers have a slight difference in their sense of taste, but not significant enough to be noticed. Our results indicated that smokers and non-smokers could identify (or not identify) basically the same foods.

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