

**Olfaction: Taste and Smell in Space Lab Session**

**Preparation:** Read and review lab and slides

**Duration:** 1 Lab period    **Materials:** Lab plan, Scientist PPT,

**Standards:** A,C,F,G

Lab materials

**Objectives**

1. Students will learn the basic functions and anatomy of the nose.
2. Students will learn about structure and function
3. Students will learn comparative nasal anatomy

# Olfaction Laboratory Session: Methods

## *Exercise One - Step I*

**Determine Direction of Nasal Cycle & Congestion**

### **TASK 1:**

Close your mouth and take a deep breath in through your nose.

### **QUESTION 1:**

Was it easy to breathe in through your nose with your mouth closed?

Check Box 1 on the chart YES or NO.

## *Exercise One - Step II*

### **TASK 2:**

Block your *LEFT* nostril with thumb, then take a deep breath in through your nose (mouth should be closed).

### **QUESTION 2:**

Was it easy to breathe in through your *RIGHT* nostril only with your mouth closed?

Check Box 2 on the chart YES or NO.

## *Exercise One - Step III*

### **TASK 3:**

Block your *RIGHT* nostril with thumb, then take a deep breath in through your nose (your mouth should be closed).

### **QUESTION 3:**

Was it easy to breathe in through your *LEFT* nostril only with your mouth closed?

Check Box 3 on the chart YES or NO.

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*Exercise One - Step IV*  
**Quick Comparison**

**QUESTION 4:**

Could you breath in equally freely through both nostrils?

Check Box 4 on the chart YES or NO

**QUESTION 5:**

Were nostrils of both sides of your nose equally congested?

Check Box 5 on the chart YES or NO

*Exercise One - Step V*  
**Determine Groups**

**GROUP 1:**

**IF...** Left nostril air-flow is better OR right nostril air-flow is better:

(DO Participate in Exercise 2)

**GROUP 2:**

**IF...** Left and right nostrils equally free flowing:

(DO NOT Participate in Exercise 2)

**GROUP 3:**

**IF...** Left and right nostrils BOTH congested:

(Choose LEAST congested nostril and DO Participate in Exercise 2)

*Circle YOUR GROUP on the chart*

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## Exercise Two - Step I Determine Nervous System Manipulation to Increase Nasal Airflow

### **TASK 1**

People in GROUP 1 - Note side of nose you had determined to be your only congested side

People in GROUP 3 - Note side of nose that is your least congested of two congested sides

Compress **MEDIAN NERVE** of the hand (*hard*) on this side, with thumb of hand on opposite side, for 5 minutes



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## *Exercise Two - Step II*

### **TASK 2:**

Block the other nostril with your thumb and breath in again through the previously congested side

### **QUESTION 6:**

Is it now easy to breathe in through the nostril on this side?

Check Box 6 on the chart YES or NO

## *Exercise Three - Step I*

Determine Odors Perceived in an Olfaction Test

### **TASK:**

- 1) As soon as instructed, open the top of the vial (starting with #1 and ending at #10) and place it in front of both nostrils.
- 2) Take a number of sniffs over the allotted 5 second period.
- 3) As soon as instructed close the vial and pass it to the person to your left.
- 4) Circle the identity of your smell on the choice of the four alternatives listed for the smell number listed on that vial.

***ONE CHOICE ONLY & NO CROSSOUTS!!***

## *Exercise Three - Step II*

- 5) As soon as instructed, open the top of the NEXT VIAL.
- 6) Continue this process and when finished with identification of all 10 smells wait for answers to be shown on screen.
- 7) Add up how many you identified correctly 0-10.
- 8) Pass your answer sheet to the instructor for data entry.

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# The Smell Test

What do these samples smell like to you?

Circle **one** on each line.

1.	Apple	Orange	<b>Vanilla</b>	Cocoa
2.	Pizza	<b>Orange</b>	Menthol	Black Pepper
3.	Ginger	Cinnamon	<b>Mint</b>	Shoe Polish
4.	<b>Vinegar</b>	Cilantro	Curry	Onion
5.	Paint	Coffee	Spearmint	<b>Pine</b>
6.	Vapo-Rub	<b>Coffee</b>	Cologne	Pine tree
7.	Olive Oil	Garlic	Fish	<b>Cinnamon</b>
8.	<b>Black Pepper</b>	Cigar	Mothballs	Mint
9.	Lemon	Chocolate	Coconut	<b>Garlic</b>
10.	Vanilla	Barbeque	<b>Soap</b>	Clove
11.	<b>Coconut</b>	Orange	Mint	Fish
12.	Garlic	Lemon	<b>Soy Sauce</b>	Paint

Number Correct = \_\_\_\_\_ out of 10

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11.	Coconut	Orange	Mint	Fish
12.	Garlic	Lemon	Soy Sauce	Paint

Number Correct = \_\_\_\_\_ out of 10