

Name: _____ Period: ____ Date: _____

Ms. Randall A&P

Lab activity: Modeling absorption

Introduction

This lab, often called “The Grossest Lab Ever,” will show you how important the large intestine is to absorption of water in the body. This lab also addresses mechanical and chemical digestion, enzymes, and voluntary/involuntary muscle action.

Supplies per group

- 9x13 pan (can be foil or metal)
- 3 Ziplock bags
- 10 crackers
- 40 mL water
- 40 mL orange juice
- Tube sock (with the end cut off)

Lab Question: Over half of our bodies are water. Where does that water come from?

Procedure:

- 1) Place crackers in a baggie.
- 2) Add 40 mL of water. This is **SALIVA**.
- 3) Use your pencil to crush the crackers for 30 seconds. This is chewing, which is a form of **MECHANICAL DIGESTION**. Chewing is a **VOLUNTARY MUSCULAR ACTION**.
- 4) Place your baggie into another baggie.
- 5) Repeat step 4. The 3 baggies represent the 3 layers of smooth muscle in your **STOMACH**.
- 6) Add 40 mL of orange juice. This is **GASTRIC ACID**, which aids in **CHEMICAL DIGESTION**.
- 7) Knead the bag for 2 minutes. The soupy goo is called **CHYME**.
- 8) Pour the **CHYME** into the tube sock. The sock represents the **LARGE INTESTINE**. (Yes..we skipped the small intestine)! Keep your tube sock over the 9x13 pan at all times.
- 9) Using both your hands, push the CHYME through the tube sock. This muscular action is called **PERISTALSIS**, which is a form of **INVOLUNTARY MUSCULAR ACTION**.
- 10) Continue pushing until the food exits the tube sock into the 9x13 pan.

Reflection Questions:

- 1) What happened to the water once it reached the large intestine?
- 2) Where does your body get most of its water?

With your group, write definitions of the following terms:

Absorption

Chemical digestion

Mechanical digestion

Voluntary muscle action

Involuntary muscle action

Chyme

Peristalsis

Enzyme