

## Hands-On Activity: Nervous System Relay Race

### Part I. Getting Started

In some ways the nervous system is like a relay race. Messages are passed from one neuron to the next as quickly as possible in order to get messages to and from the brain.

In this activity, you and your child will pretend to be neurons. See how fast you can get a message from the foot to the brain and then back to the foot. You can do this activity with two people, but for even more fun, include friends and family.

### Part II. Materials

These are the things you will need for the relay race:

1. Two balloons (water balloons or tennis balls may be used instead).
2. Velcro or tape
3. Watch or timer
4. Paper station signs (included in this document): Neuron #1, Neuron #2, Brain, Sore Foot
5. Paper message signs (included in this document): "Why does my foot hurt?" and "Sit down, you hurt your foot on a tack."
6. Paper neurotransmitter sign (included in this document).

### Part III. Procedure

#### Set-up:

1. Print out pictures of the brain, foot, and neurons, or have your child make his/her own! Just be sure to use a separate sheet of paper for each part.
2. Lay the pictures on the floor or ground according to the diagram below, leaving 2-3 feet of space between signs.

Sore  
Foot

Neuron  
#1

Neuron #2

Brain

3. Label one ball or balloon with the "Neurotransmitter" label, and place it on top of the "Neuron #1" sign.

### Station 3: Neurontown

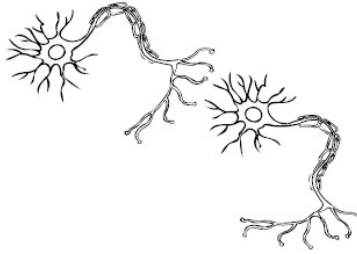
#### **Activity:**

1. Explain to your child that the two of you will model how messages are sent to the brain. Have your child stand on "Sore Foot," while you stand on "Neuron #1."
  2. Instruct your child to hand the "Why does my foot hurt?" message to you. Take the message and stick it onto the balloon.
  3. Have your child step over to the "Neuron #2" sign. Toss the balloon or ball with the message on it to your child. Your child should pop the balloon with a toothpick, or remove the message from the ball.
  4. Have your child attach the message to the second balloon or ball.
  5. Step over to the brain sign. Have your child toss you the ball.
  6. Pop the balloon, or remove the message from the ball.
  7. That's how messages get sent to the brain! Now, you can try sending the other message, "Sit down. You hurt your foot on a tack," from the brain back to the foot.
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#### ***Fun options:***

- Time yourselves with a watch, or race against another team of 2 people.
- Try groups of 2 to 3 people representing each neuron. Each neuron team will hand the neurotransmitter from one end of the neuron to the other before tossing it over the synapse (the space between groups).

## Log Sheet



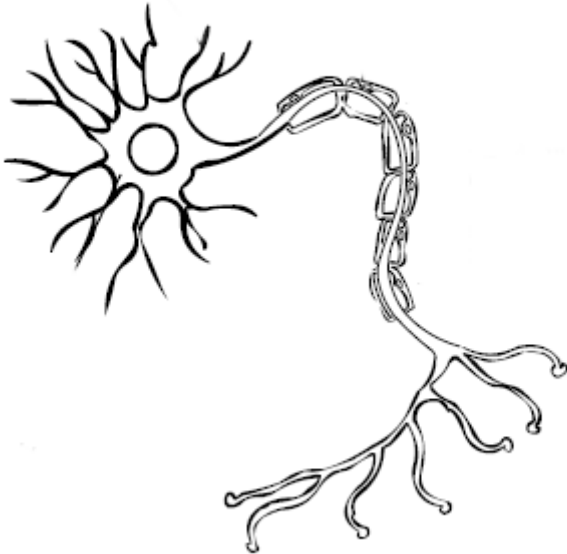
Name: \_\_\_\_\_

My picture of neurotransmission

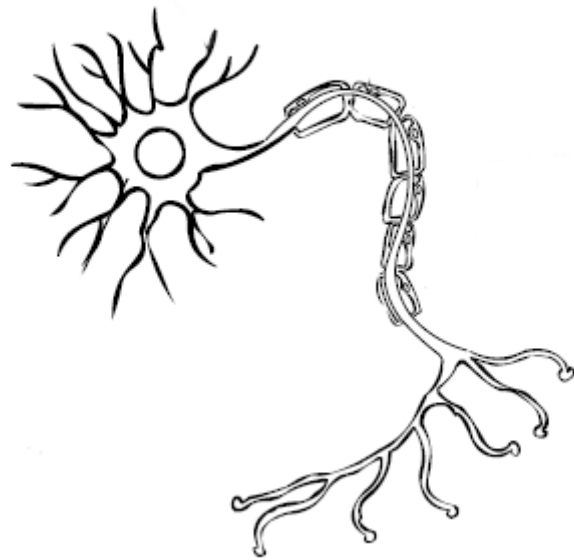
Questions I have about neurotransmission

What I learned about neurotransmission

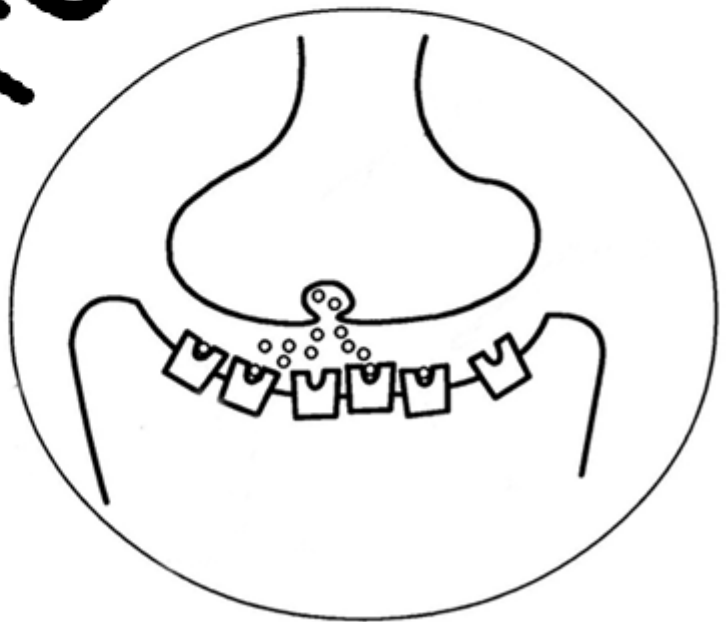
# Neuron #1



# Neuron #2



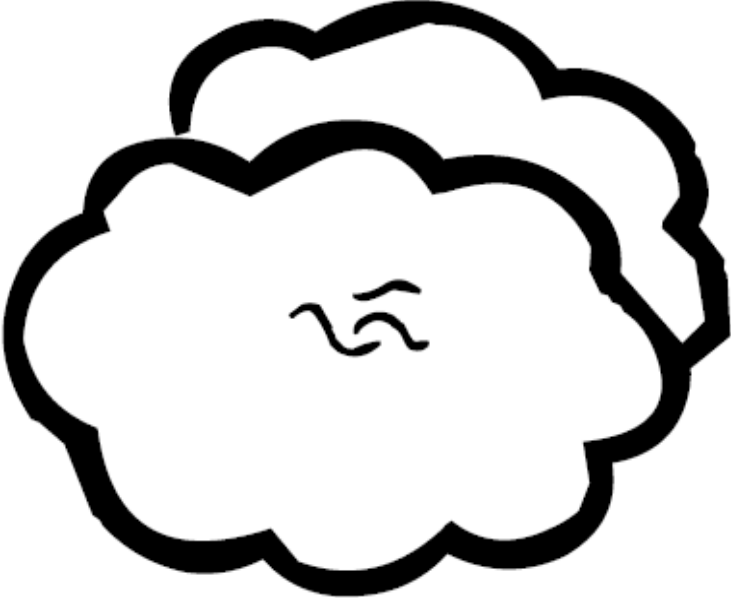
# Neurotransmitter



Sore Foot



Brain



Why does my foot hurt?

Sit down. You hurt your foot  
on a tack.