**Protocol for gLMS and LHS training + Tasteless selection**

**OEA**

Set up in phlebotomy room (with sink):

* Penny
* Cotton swab
* 100g weight
* Bottled water
* Filled cups
  + dH2O
  + Sucrose (0.56 M)
  + Citric acid (18 mM)
  + Sucrose + citric acid mixture (1:1)
  + Apple juice
  + 4 tasteless solutions

**Introduction**

*In this session you will be introduced to the method you will use to rate the intensity of tastes and flavors. The first step will be to explain the scale on which you will make these ratings, which is very different from the 1 to 10 scales that people commonly use to describe their experiences.*

*[Start the program to show the scale on the computer screen]*

*The scale has three important and unusual features:*

***First,*** *instead of numbers, the scale has only word labels that indicate different levels of sensation intensity.*

***Second,*** *the scale is bounded by “no sensation” at the bottom and by “strongest imaginable sensation of any kind” at the top. This means the scale includes the full range of sensations that you could ever experience, and so can be used to rate the intensity of all kinds of sensations, from lights and sounds to tastes and pain.*

***Third****, the labels are not evenly spaced. This is because the label locations represent their relative distances from each other and from the bottom and top of the scale.*

*Notice, for example, that “moderate” is not in the middle of the scale. This makes sense, because a moderate sensation is much less than half as strong as the strongest sensation that you could ever experience, which would be a very intense pain. Instead, “very strong” is closer to the middle of the scale.*

*Because most of the sensations we experience in daily life are not very strong, most would be rated somewhere in the bottom half of the scale.*

**Imagined sensation practice: gLMS**

*You will now practice using the scale to rate the intensity of imagined sensations that will appear on the screen. You can make your ratings by moving your cursor to the scale and clicking. Go ahead and give it a try.* Importantly, your rating will not “lock in” until you release the mouse button. So as long as you keep the mouse button pressed down, you can still adjust your rating.

As you make your ratings, a good strategy is to first decide which label most closely describes the strength of the sensation and then fine-tune your rating by moving the cursor between that label and the next most appropriate one.

For example, if you think a sensation is approximately moderate, but a little bit weaker, you should move the cursor to the appropriate place a little below moderate. If you think another sensation is more than just barely detectable but less than weak, you should move the cursor to the appropriate place between barely detectable and weak, and so on.

Remember that the top of the scale is the strongest sensation of any kind, which represents the most intense--and therefore most painful--sensation that you can ever imagine experiencing.

*Do you have any questions about the scale before we start?*

|  |  |
| --- | --- |
| **Trial #** | **Sensation** |
| 1 | The sweetness of milk |
| 2 | The coolness of sipping an ice cold beverage |
| 3 | The warmth of sipping lukewarm water |
| 4 | The bitterness of celery |
| 5 | The burning sensation of eating a whole hot pepper |
| 6 | The burning sensation of cinnamon gum |
| 7 | The sourness of a lemon |
| 8 | The sweetness of a banana |
| 9 | The heat of sipping boiling hot tea |
| 10 | The touch of a pill on your tongue |
| 11 | The weight of a feather in your hand |
| 12 | The coolness of peppermint candy |
| 13 | The pain from biting your tongue |
| 14 | The bitterness of black coffee |
| 15 | The bitterness of fresh spring water |

**Real sensation practice: gLMS**

*You will now practice using the scale to rate the intensity of actual stimuli.*

*Before I give you each stimulus, the type of sensation I want you to rate will be displayed on the screen.*

*There are several stimuli sitting next to you in the box. The first stimulus will be the cold sensation of a coin. Could you place the coin on your wrist? Now go head to rate the intensity of the sensation of cold that you feel from the coin.*

|  |  |  |
| --- | --- | --- |
| **Trial #** | **Stimulus** | **Sensation** |
| 1 | Penny placed on the wrist | Cold |
| 2 | Cotton swab touched to the wrist | Touch |
| 3 | Penny placed on the wrist | Pressure (ignore cold) |
| 4 | 100g weight | Pressure (ignore cold) |
| 5 | Ceiling light | Brightness |

**Taste practice: gLMS**

*Now we’re going to practice only with tastes, which will sometimes be presented alone and sometimes in mixtures.*

*For every taste you will make 4 separate ratings: the intensity of sweet, salty, sour, and bitter.*

*For each taste stimulus you will rate the 4 qualities on separate screens that will automatically refresh after each rating. Remember once again that each of the sensations should be rated relative to the strongest imaginable sensation of any kind.*

*This is a difficult task, so pay close attention to each sample and be as discriminating as possible. It is just as important to indicate when you do not perceive a specific taste sensation (by clicking on ‘no sensation’) as it is to accurately rate the intensity of the tastes that are present.*

*I will leave the room for this task and give you instructions from the other side of the window. For each trial, I will instruct you to pick up a cup containing a small amount of the stimulus. You should taste the stimuli, swish it around for 2 seconds, and spit it into the sink. Then make all 4 ratings. Afterwards, rinse at least three times with pure water from the plastic bottle to remove the residual taste from your mouth.*

*[Leave room]*

|  |  |
| --- | --- |
| **Trial #** | **Stimulus** |
| 1 | dH2O |
| 2 | SUC |
| 3 | CA |
| 4 | SUC + CA |
| 5 | Apple juice |

0.56 M sucrose (SUC), 18 mM citric acid (CA)

**Imagined sensation practice: LHS**

*Now we will go over the liking/disliking scale we use in this study. It’s similar to the intensity scale, but it has different labels and instead of rating intensity, you are only rating how much you like or dislike the sensation. The bottom of the scale is the most disliked sensation imaginable and the top is the most liked sensation imaginable. In the middle is neutral, which means you neither like it nor dislike the sensation. For each sensation that appears on the screen rate how much you like or dislike it. There is no right or wrong answer, as people often have different likes and dislikes. The most important thing is that you use the scale to indicate how much you like or dislike each sensation as accurately as possible.*

*Do you have any questions?*

|  |  |
| --- | --- |
| **Trial #** | **Sensation** |
| 1 | The taste of plain bread |
| 2 | The taste of a soggy potato chip |
| 3 | The flavor of Coke or Pepsi |
| 4 | The sound of fingernails dragging across a blackboard |
| 5 | The taste of your favorite chocolate |
| 6 | The feel of a massage |
| 7 | The smell of clean laundry |
| 8 | The smell of vomit |
| 9 | The taste of water |
| 10 | The smell of a rose |
| 11 | Stinging eyes from cutting an onion |
| 12 | The feel of coarse sandpaper |
| 13 | The smell of bad body odor |
| 14 | The feel of a minor scratch |
| 15 | The taste of room temperature soda |

**Tasteless selection**

*The last part of this is to select your tasteless solution.*

*Studies have shown that water has a distinct taste compared to the saliva that’s made naturally in your mouth. Because of this, for some parts of the study we use a tasteless solution with small amounts of baking soda and potassium added to more accurately imitate saliva.*

*In front of you are 4 pipettes with different concentrations of tasteless solution. Try each one and let me know which one tastes the most like nothing.*