Instructions for High Frequency Threshold

subjID: subject number

uniID: University ID (e.g., “umn” for University of Minnesota or “bu” for Boston University”)

1. Type in the Matlab command window: HighFrequencyThresh(‘subj’, ‘uniID’)
2. The HighFrequencyThresh function will place Psychtoolbox at the top of your path. The text that prints on the screen is automatically generated by Psychtoolbox and can be ignored. **See “Instructions for Initial Setup” if you do not want Psychtoolbox to be added/removed from your path.**
3. Read the following instructions to the subject:

“In this experiment, you will hear a pulsing noise in one ear. Press and hold down the spacebar for as long as you hear the pulsing noise. Make sure you hold DOWN the spacebar the entire time you hear the pulsing- this will make the noise sound “higher” in quality. At some point, you will no longer hear the pulsing. When this happens, release the spacebar. Then, once you can hear the pulsing again, press and hold down the spacebar, and then release the spacebar once you cannot hear the pulsing, and so on. You will continue to do this until the run is complete. There will be continuous noise in your opposite ear; ignore this noise and just listen for the pulsing. The first run is practice and will take less than 1 minute. Once it finishes, let me know. Do you have any questions? [Double-check for comprehension if necessary. Make sure the right side of the headphones is over the right ear, as this is a monaural task.] Once the door is shut, you may press any button on the keyboard to begin.”

1. After the first run, a figure will appear showing the subject’s data. There should be 10 red circles on the figure, corresponding to the points at which the participant changed their spacebar response (i.e., the turnpoints). If the participant did not understand the instructions, there will be 0 or 1 turnpoint, meaning they either never pressed the spacebar (0 turnpoints) or they pressed the spacebar the entire time (1 turnpoint). If there are 0 or 1 turnpoints, please very carefully check that the participant understands the instructions before beginning the next run.



*Example adaptive track for the first run of the High Frequency Threshold experiment. On the x-axis, each trial number corresponds to two target pulses. The y-axis corresponds to the target center frequency. The red circles are the turnpoints, and the dashed line represents the highest frequency the participant can perceive at their threshold (the average of the last 6 turnpoints).*

1. To begin the next run, close the figure, and type the following into the command window: HighFrequencyThresh(‘subj’,’uniID’)
2. Read the following to the subject:

“Now you will complete three more runs, with each one lasting a little less than 1 minute. This is the same as the practice you just did, but some runs will have the pulsing target in the opposite ear. Like the practice run, press and hold the spacebar for the entirety of the time you hear the target, and release the spacebar when you don’t hear the target. After you finish a run, you may press any button on the keyboard to move on to the next run until all 3 runs are finished.”

1. Once all the runs are complete, you may continue to the next experiment. If you try to run the HighFrequencyThresh function again for the same participant and uniID, the following message will print to the command window: “Participant ‘subj’ has already completed all 4 runs.”

The results are stored in the “data” folder; each subject has their own .mat file. The “runOrd” variable is the order of the target presentation ear (1=left; 2=right). The columns of runOrd correspond to the run number (1, 2 and 3), with 1 being the first run. The “allThresholds” variable has the threshold for each run, defined as the average target center frequency at the final 6 reversal points.