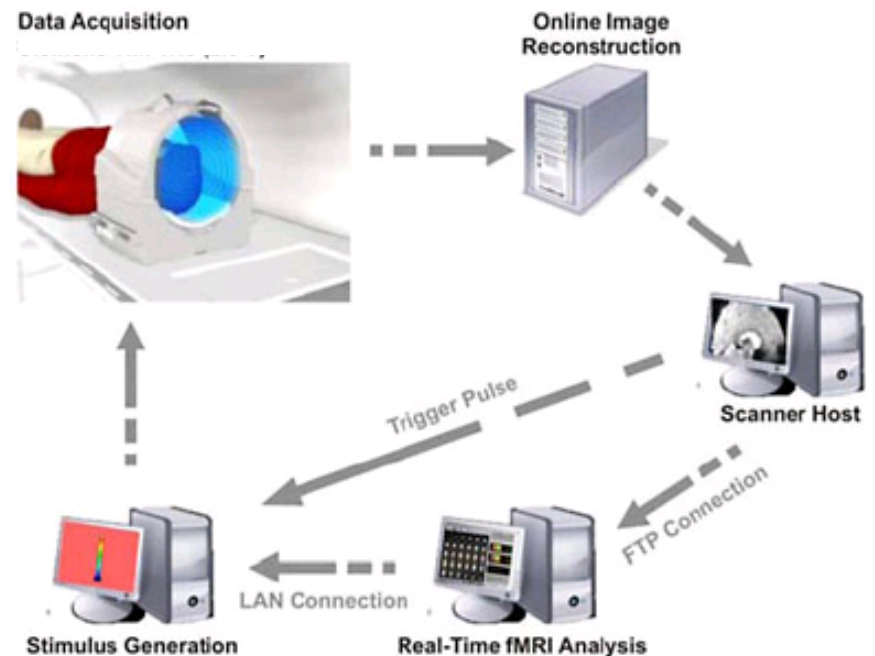
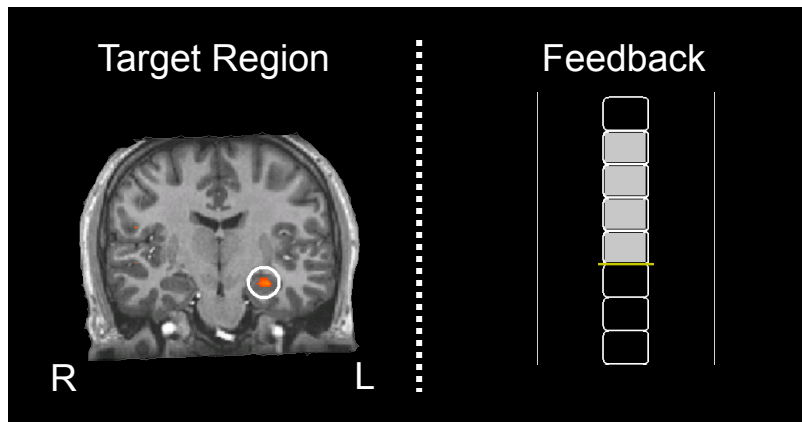


Welcome to Neurofeedback Experiment

Neurofeedback Experiment

In this experiment, we combine real-time fMRI and neurofeedback training to investigate if individuals can learn to directly control activation in the **amygdala**, a region involved in emotional processing.

The results of this experiment might enable control over the neuro-physiological mechanisms that mediate emotions and could potentially provide a new approach for treating depression.



Inside the MRI scanner

- **Stay calm and relaxed, ignore the scanner noise**
- **Remain as still as possible during the entire session**
- **Look at the screen and follow the instructions**
- **Stay awake and alert, try not to fall asleep**
- **Use the rubber alert bulb to call attention**

Duration of the experiment:

1 hr 20 min

Instructions for Tasks - Rest

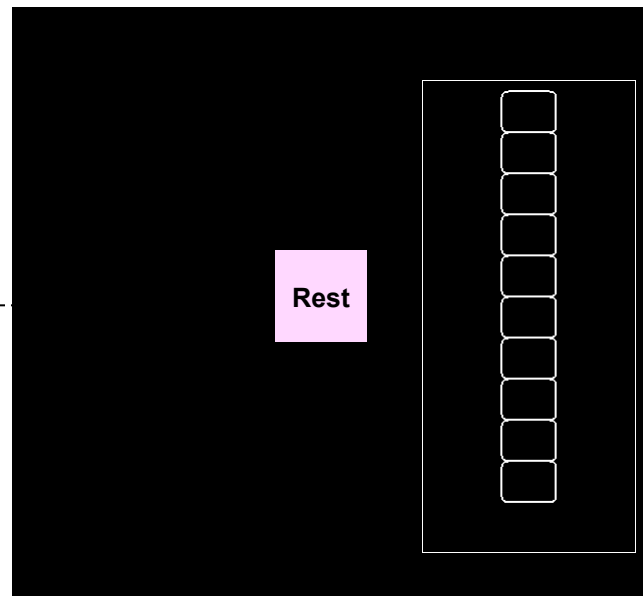
Rest

During this task, we would like you to **rest**. Please stop generating any thoughts and relax, be calm while looking at the screen.

Focus on your breathing

.....
Screen

Condition



Instructions for Tasks - Count

Count

During this task, we would like you to **mentally count** backwards from 300 by subtracting a given number as shown on the screen.

EX: subtract 3: 300, 297, 294, ... (-3)

This task is designed to get you to stop thinking about your memories (not to test you math skills)

Try not to move your mouth when you count – this will cause your head to move

.....
Screen

Condition

Count 300, 297, 294 ...



Count

Instructions for Tasks - Happy

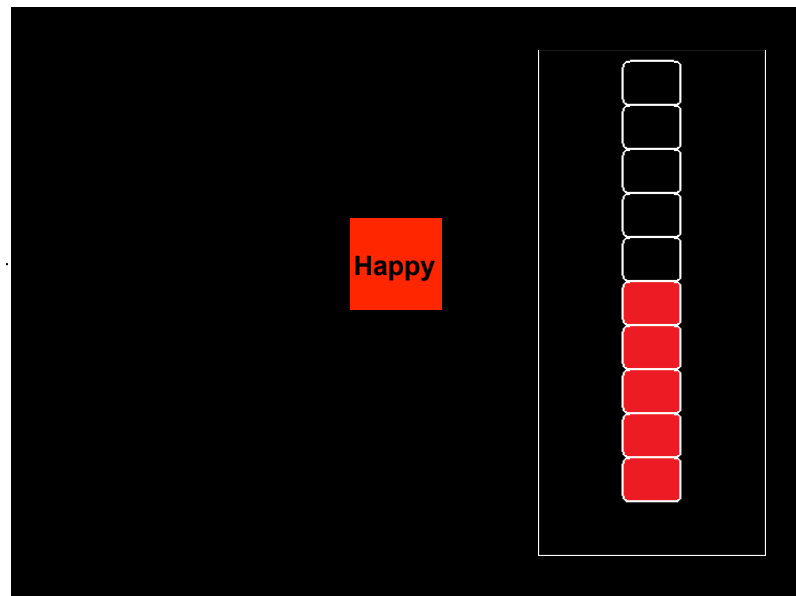
Happy

During this task, we would like you to become **happy**. Please use memories of past events to make yourself feel happy while trying to increase the level of the thermometer.

Note that there will always be a delay of 3-4 sec between your brain activity and the change in the level of the thermometer.

Screen

Condition



Neurofeedback

Tips for the Happy task

Happy

- Keep it simple – use simple and powerful happy memories that you can evoke quickly without effort. Avoid too many details.
- Try a different memory – if the current memory is not working.
- Don't look directly at the thermometer– focus on your mental picture and look at the center of the screen.
- Don't get discouraged – if the thermometer is low. Try to improve your performance from block to block and from run to run.

Please

- ✓ ***Think of 3 memories that make you feel really happy***
- ✓ ***Try to use them inside the scanner to feel happy***

Practice Run and Baseline/Transfer Run

Practice

- Use each of the 3 memories as prompted on the screen
- Use the best of the 3 memories when prompted for best memory

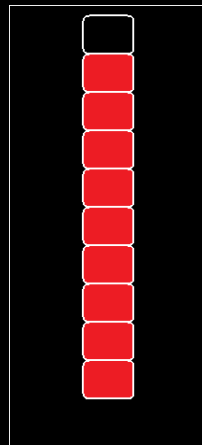
Baseline

Transfer

- The thermometer will not move during this run
- Do the same as in the previous runs to make yourself feel happy

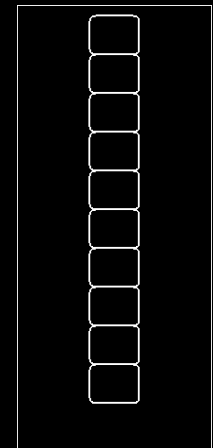
Happy – try 1st memory

Happy



As Happy as possible

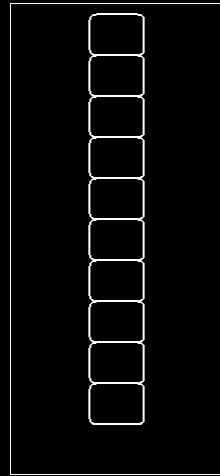
Happy



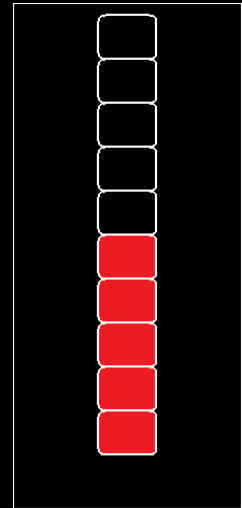
Summary of Tasks

Rest

Rest

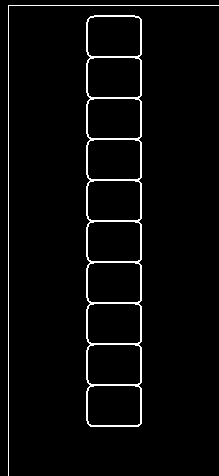


Happy

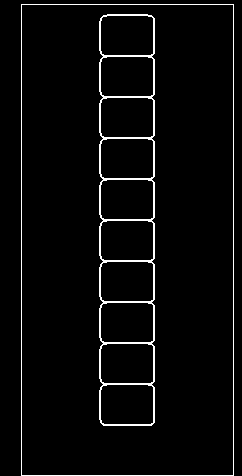


Count 300, 297, 294 ...

Count



Happy



Thank you for your participation !