Differentiating Unipolar and Bipolar Depression in Young Adults Using fMRI

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NCT 01811147

Image Acquisition:

MPRAGE: A high-resolution anatomical volume will be comprised of 160 sagittal slices with slice thickness of 1.2 mm, TR/TE 2300/2.98 ms and have 1.0×1.0×1.2 mm voxel dimension.

fMRI: All Echo planar imaging (EPI) images will be acquired using a TR/TE 2800/29 ms; 39 slices and 3.5 mm slice thickness.

Resting state connectivity: Two resting state scans will be acquired one with eyes open and the other with eyes closed. During the eyes closed resting state session the subjects will hear a beep sound every 2 minutes to assure they are not asleep and will be asked to press the button box when they hear it. 175 image volumes will be acquired during 8:166 min duration. In the eyes open resting state session the subjects will be asked to look at a cross sign on the monitor during which 132 image volumes will be acquired in 6:16 min.

Maintain & Suppress: During the maintain session the subjects will be asked to maintain their emotions while looking at negative pictures and rate them at the end on a scale of 1 to 4 and during the suppress session the subjects are asked to suppress their emotions while looking at the negative pictures and rate them at the end on a scale of 1 to 4. In each of these sessions 115 image volumes will be acquired in 5:366 min.

Face-Task activation: This was developed by Hariri and colleagues to focus subjects attention on the negative facial emotion depicted reliably activates the amygdale and limbic regions. During face- task activation scan the subject are shown blocks of negative facial emotion pictures and a blocks of shapes. Seven trails are shown 3 of faces and 4 of shapes. The task involves the subject to match the face/shape on top with the one of the two faces/shapes shown at the bottom. 58 image volumes will be acquired in 2:7min.

Emotional Go-NoGo task: This task combines presentations of emotional and non-emotional faces. The non-emotional faces consist of female and male faces. During the non-emotional trail the subject will follow the instructions whether to press the button or not based on the gender. There will also be a control GO only trail for the non-emotional faces. The emotional faces will have 2 different sets of faces one with happy faces and the other with fearful faces. The subject will follow the instructions whether to press the button or not when they see a particular emotional face. For the emotional faces there will be a neutral face control trail. During this task 164 image volumes will be acquired in 7:65 min.

DTI: 79 image volumes; 52 slices with a TR 7500 ms and 2 mm slice thickness will be acquired.

GRE-field map: Dual echo (TE 2:46 ms; 4:96 ms) FOV 256 X 256; TR 300ms.

The scanner was upgraded from Trio to Prisma.