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SELF-REPORTED RUMINATION AS TRAIT MARKER FOR DEPRESSION: EVIDENCE FROM FUNCTIONAL NEUROIMAGING

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Background: Research using fMRI indicates that sustained limbic activity is linked to processing negative words and self-reported rumination in currently depressed individuals. It is unknown whether this is also present in remitted depressed individuals. We tested the hypothesis that a tendency to ruminate constitutes a trait for depression by using a standard covert fMRI emotional task face in previously and never depressed volunteers and postulated that high rumination scores would correlate with activity in brain areas previously associated with depression.

Methods: 37 controls (25 female) and 30 remitted depressed (RD, 22 female) were enrolled. Volunteers completed the Ruminative Responses Scale (RRS) and underwent fMRI scanning using a standard covert fMRI emotional task faces. Significance level was set at $p < 0.05$ (FWE).

Results: With RRS score controlled for RD showed reduced subcortical and limbic activity to sad and fearful faces compared to controls. Correlations between RRS scores and neural activity in all participants and control participants alone were very limited. However, in RD, RRS score was negatively correlated with neural response to happy faces and positively correlated with neural response to sad and fearful faces, in cortical and limbic regions associated with depression (hippocampus, thalamus, caudate, insula and cingulate gyrus).

Conclusion: The results suggest that reduced limbic activity is associated with remission, possibly as a maintenance mechanism. However, within the remitted group the more ruminative participants show greater response in these areas to negative stimuli, and less to positive stimuli. This could be a neurobiological marker for risk of relapse