

## **P-354 - ADOLESCENTS WITH MAJOR DEPRESSION DEMONSTRATE ALTERED AMYGDALA FUNCTIONAL CONNECTIVITY: A 3-T FUNCTIONAL MRI STUDY**

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**Introduction:** Heightened emotional reactivity and amygdala activation have each been shown to play a role in the etiology of adolescent-onset major depressive disorder. However, the link between emotional reactivity and amygdala response in adolescent-onset major depression is not well understood.

**Objectives:** In this study, we compared amygdala activation during an emotional regulation task in depressed and healthy adolescents.

**Aims:** We conducted a functional connectivity analysis to examine the neural correlates of amygdala reactivity during emotion regulation in adolescent depression.

**Methods:** Fourteen unmedicated adolescents diagnosed with current depression without comorbid psychiatric disorders and fourteen well-matched controls ages 13 to 17 years underwent an emotional regulation task during functional magnetic resonance imaging. Participants were asked to either notice how they were feeling ("Maintain") or employ cognitive reappraisal strategies ("Reduce") while viewing negatively-valence images.

**Results:** Imaging analyses demonstrated that depressed adolescents:

- (1) had greater right amygdala activation during the maintain condition relative to controls,
- (2) showed less connectivity during the maintain condition between the amygdala and both the insula and medial prefrontal cortex than controls, and
- (3) showed a significant positive correlation between amygdala-seeded connectivity during maintenance of emotion and psychosocial functioning.

**Conclusions:** During the maintain condition, depressed adolescents showed a heightened amygdala response and less reciprocal activation in brain regions that may modulate the amygdala. A poorly modulated, overreactive amygdala may contribute to heightened emotional reactivity. Adolescents with depression may benefit from treatments that:

- (1) reduce amygdala hyper-reactivity,
- (2) improve cognitive control of affective circuits, and
- (3) improve skills in self-awareness.