



# Disruptive Mood Dysregulation Disorder V.S. Bipolar Disorder

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What characterizes Bipolar Disorder and Disruptive Mood Dysregulation Disorder?

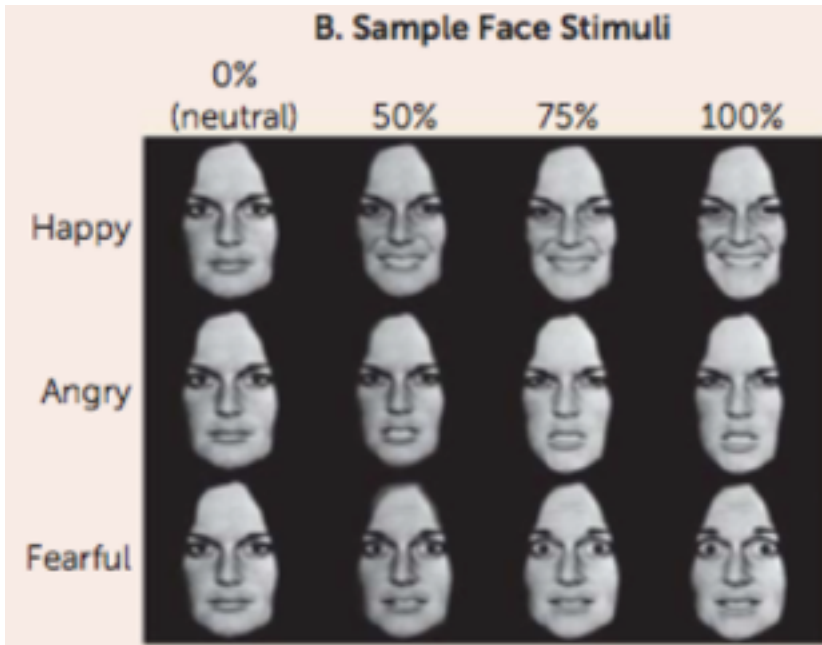
Bipolar Disorder is characterized by mood swings, sadness, mania and elevated mood. Some patients may experience some irritability while euthymic (normal, non-depressed mood) with an increase in irritability during manic or depressed episodes. In contrast, Disruptive Mood Dysregulation Disorder is a childhood condition

DMDD is thought to occur more often in boys while pediatric bipolar disorder is more frequently seen in girls.

characterized by extreme irritability, anger, and frequent temper outbursts. This disorder was recently inducted into the DSM-5 and in order to be diagnosed, symptoms must persist for 12 months or more and the child has to be between the ages of 6 and 18 years old.

### What are some differences in brain activity between children with Bipolar Disorder and DMDD?

Although DMDD and Bipolar Disorder have irritability as a common denominator, there are clear differences in brain activity among children with these disorders. One study hypothesized that irritability would be associated with dysregulation in the amygdala, the brain structure which is primarily responsible for emotion, in both children who have Bipolar Disorder or DMDD. However, researchers hypothesized that the nature of this association would differ in both disorders because the clinical presentation of irritability differs between the two. To test this hypothesis, participants with Pediatric Bipolar Disorder and DMDD were asked to label the emotions seen on faces when presented with Happy, Angry or Fearful faces on an intensity scale of 0 to 100% (Figure 2). As a result, both groups showed significant differences in their



amygdala activation (hyper activation v.s. decreased activation) to the same faces.

What do differences in brain activity between children with Bipolar Disorder and Children with DMDD tell us?

**Figure 2** Different brain activity patterns across diagnoses suggest that treatment for these disorders may have to differ. Computer games structured to train children with DMDD to properly label facial emotions has been proven effective. This study suggested that they have the most trouble labeling ambiguous faces, those which fall in 50-75% intensity, and so training must be specifically geared towards these types of faces. This study proves that although DMDD and Bipolar Disorder have some very similar symptoms, they effect the brain in different ways and, therefore, they must be treated as independent diagnoses.

Wiggins, J.L., Brotman, M.A., Adleman, N.E., Kim, P., Oakes, A.H., Reynolds, R.C., Chen, G., Pine, D.S., Leibenluft, E. (2016). *Neural correlates of irritability in disruptive mood dysregulation and bipolar disorders*. *American Journal of Psychiatry*.

