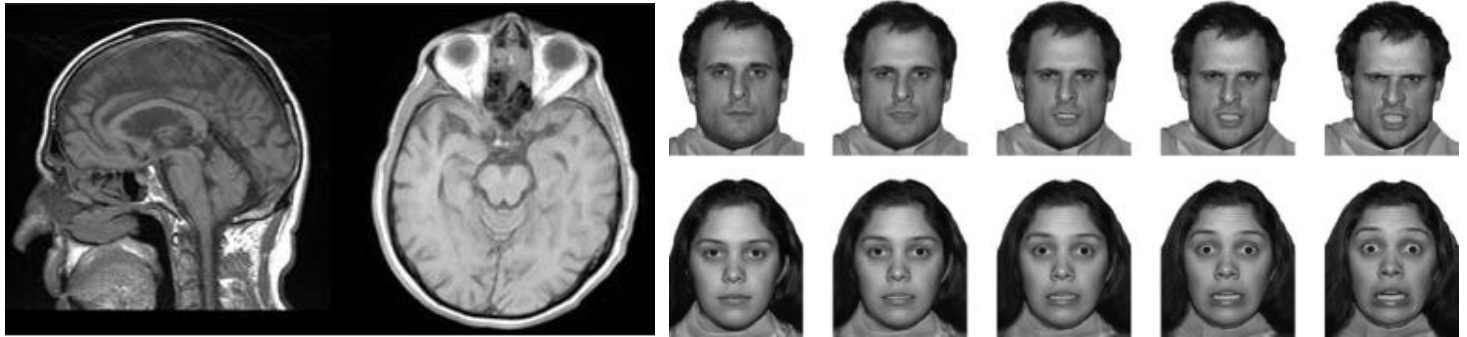


Bipolar Disorder, Faces, and the Developing Brain

By Diego Velasquez



Bipolar Disorder and Faces

So, what does looking at emotional faces have to do with Bipolar Disorder? When most people think of bipolar disorder, they think of an individual that has extreme highs (mania), which is described by some as a feeling of invincibility and extreme lows (depression) and the behaviors that come with these highs and lows. Most people would think that trying to study people and their brains while they are experiencing these highs and lows would be the best way of learning what may be causing the disorder. But due to practical reasons it would be difficult to study these individuals in those states.

Neuroscientists have come up with a clever way of studying the brain of these individuals using human faces. So, what is the connection between faces and bipolar disorder? At the level of the symptoms there is no connection, but having individuals look at these faces has provided much insight into how the brain of these individuals work.

Studying Bipolar Disorder

Neuroscientists have been examining the neural mechanisms of bipolar disorder in both adolescents and adults using a technique called, “functional magnetic resonance imaging.” While these individuals are being scanned, the researchers have the individuals do an “emotional face labeling task.” In this task individuals must label an emotional face correctly. This task gets certain patterns of brain activity going in healthy individuals but in individuals with bipolar disorder the patterns of brain activity are different. The pattern also differs between adolescents and adults.



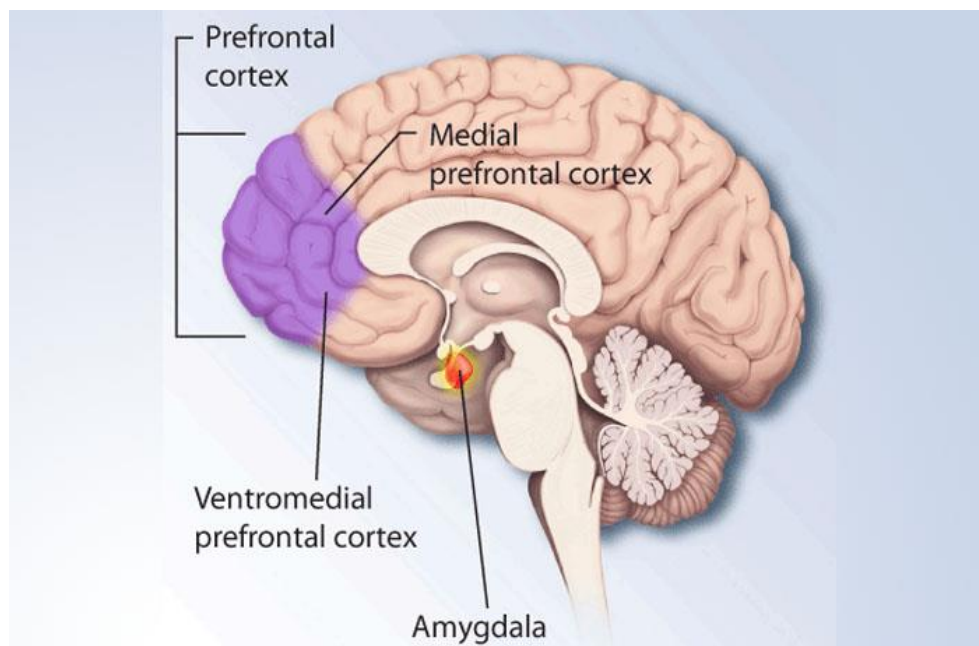
Brain Activity

Researchers discovered in previous studies using the “emotional face labeling task” that adolescents and adults with bipolar disorder have impaired face emotion processing. There are differences in the brain activity underlying the face emotion processing between adults and adolescents with bipolar disorder compared to healthy adolescents and adults. Adolescents and adults with bipolar disorder show less activity in the parts of the brain that are associated with emotion, compared with healthy adolescents and adults. For example, Adolescents show greater activity in a part of the brain called the amygdala in response to emotional faces. In essence there are distinct patterns of brain activity that characterize bipolar disorder in adolescents and adults.

What Does This Mean?

Knowing that differences in brain activity exist can tell us a few different things about bipolar disorder and development. One is that the difference in activity between adolescents with bipolar disorder and adults with bipolar disorder is the result of the major impairment that bipolar disorder causes. Another is that these differences in brain activity is due to the use of medications to treat the disorder. The last could be that this is simply the result of becoming an adult.

Brains Regions Associated with Emotion:



Kryza-Lacombe M., Brotman M.A., Reynolds R.C., Towbin K., Pine D.S., Leibenluft E., & Lee Wiggins J. (2017). Neural mechanisms of face emotion processing in youths and adults with bipolar disorder.