

Saliience network is linked to brain disorders

December 5 2014

How does the brain determine what matters? According to a new scientific article, a brain structure called the insula is essential for selecting things out of the environment that are "salient" for an individual, and dysfunction of this system is linked to brain disorders such as autism, psychosis and dementia.

In psychology and neuroscience, the term "salient" is used to describe a thing, person, place or event that stands out, or that is set apart from others. The current article, published online by *Nature Reviews Neuroscience* evaluates recent studies on saliience processing.

The findings show that the [insular cortex](#) is a complex and multi-purpose structure that can be separated into, at least, three separate regions with distinct functions. Specific subdivisions of the insular cortex, along with other cortical and subcortical regions, form a "saliience network." Compromises to the integrity of this network can contribute to deficits in attention and affect, as well as social and cognitive processes.

"We are constantly bombarded with stimuli from the environment that place demands on our attention," said Lucina Q. Uddin, assistant professor of Psychology in the College of Arts and Sciences at the University of Miami and author of the article. "The function of one of the insular cortex subdivisions is crucial for orchestrating activity in other brain regions that are important for guiding attention," Uddin said.

The article implies that mapping the structure and function of the insular cortex may help provide more targeted drugs and behavioral treatments

for certain developmental and degenerative disorders of the brain.

"Understanding of the functions of each insular region and how they operate as a network will be valuable in understanding other disorders that are associated with insular dysfunction including anxiety, depression and chronic pain," Uddin said.

The opinion piece is titled "Salience Processing and Insular Cortical Function and Dysfunction." Uddin is now working on characterizing insula dysfunction as it relates to autism spectrum disorders.

Provided by University of Miami

Citation: Salience network is linked to brain disorders (2014, December 5) retrieved 12 March 2026 from <https://medicalxpress.com/news/2014-12-salience-network-linked-brain-disorders.html>

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