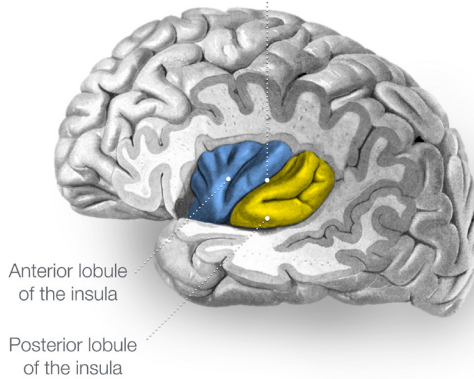


Insular cortex

Central sulcus
of the insula



Anterior lobule
of the insula

Posterior lobule
of the insula



NeuRA

Discover. Conquer. Cure.

SCHIZOPHRENIA LIBRARY

SCHIZOPHRENIA Factsheet

October 2020

What the insular?

The insular cortex is located deep within the lateral fissure, between the frontal and temporal lobes. The insular has connections with the thalamus, amygdala and cortex, with suggested functions including the integration of sensory, affective and cognitive components of a painful stimulus to create the sensation of pain; homeostatic regulation; as well as motor control such as speech articulation; it has also been linked with internal awareness.

What is the evidence for changes in the insular?

Structural changes

Moderate to high quality evidence found reductions in insular grey matter volume in both chronic and first-episode schizophrenia (treated or antipsychotic naïve), as well as in people at high risk (clinical or genetic), compared to controls. Moderate quality evidence found reductions in left insular grey matter volume were associated with increased severity of auditory hallucinations. Moderate to low quality evidence found similar grey matter volume reductions in the right insular of people with schizophrenia and in people with an autistic spectrum disorder.

Moderate quality evidence found people at genetic high risk (relatives) showed increased left insular grey matter volume compared to people with chronic schizophrenia, with no differences between relatives and people with first-episode schizophrenia. People at clinical high risk (those with subclinical symptoms) showed increased left insular volume compared to people with first-episode schizophrenia. People at clinical high risk showed increased insular volume when compared to people at genetic high risk. People at clinical or genetic high-risk who developed a psychotic episode showed decreases in the right insula compared to those who did not develop psychosis.

Functional changes

Moderate to low quality evidence found increased activation in the insular of people with schizophrenia during auditory hallucinations. Compared to controls, there was increased activation in the right insular during executive function tasks, increased activation in the insular during emotionally neutral tasks, and decreased activation in the insular during working memory tasks. There was decreased activation in the right insular of people with schizophrenia during theory of mind tasks when compared to people with an autism spectrum disorder.

Moderate to low quality evidence found increased activation in the bilateral insular of people with schizophrenia after cognitive remediation.

For more information see the technical table



NeuRA

Discover. Conquer. Cure.

NeuRA (Neuroscience Research Australia) is one of the largest independent medical and clinical research institutes in Australia and an international leader in neurological research.

Diseases of the brain and nervous system pose the greatest health, economic and social burden of any disease group because they are chronic, debilitating and have no known cures.

Medical research is the cornerstone of efforts to advance the health and wellbeing of families and the community. Our dedicated scientists are focussed on transforming their research into significant and practical benefits for all patients.

While we hope you find this information useful, it is always important to discuss any questions about schizophrenia or its treatment with your doctor or other health care provider.

HOW YOUR SUPPORT HELPS

We are able to make significant advances due to the generosity of countless people. Your donation allows us to continue to work towards transforming lives. For information on how you can support our research, phone **1300 888 019** or make a secure donation at neura.edu.au/donate/schizophrenia.