Structural neuroimaging in early onset schizophrenia spectrum disorders

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Neuroimaging studies in youth with schizophrenia may provide insight into psychophysiology by identifying related brain changes. Comparisons with adults and longitudinal studies provide information about the neurodevelopmental and progressive features of schizophrenia. Recent volumetric and spectroscopy magnetic resonance imaging studies examining the brains of youth with schizophrenia werereviewed. Sixteen youth with schizophrenia, 11 of whom were rescanned after a period of 16 weeks, were included in the study.

Thirteen youth with psychotic mood disorders and 17 youth without psychiatric disorders were also scanned. The regional volume changes observed in a neurodevelopmental syndrome that confers high risk for schizophrenia, velocardiofacial syndrome were also examined. Results showed that youth with schizophrenia show reductions in total grey matter, particularly in the frontal and temporal cortices and hippocampus with significant increases in volumes of CSF spaces. The volume changes in these structures appear progressive during adolescence. Relative N-acetyl aspartate concentrations (NAA) in the frontal cortex and hippocampus were reduced.

In VCFS, reductions in the temporal cortex and hippocampus were primarily observed in youth whose maternal chromosome was deleted.