

What Role Can Neuroimaging Play in Autism Research/Diagnosis?

A state-of-the-art review of current imaging approaches in autism research will be presented. Different imaging approaches are currently used to a) identify the earliest differences in the brain development detectable by in vivo imaging in babies, b) investigate the neurobiology of autism across the lifespan, c) describe structural and/or functional pathology underlying specific signs and symptoms, d) determine ways to biologically stratify individuals with autism to improve treatment effectiveness/efficacy, e) identify indicators of genetic liability in unaffected family members, f) understand the effects of variation in autism risk gene alleles on variation in typical brain structure and function; and g) develop informative alternative phenotypes that may contribute to the discovery of new risk genes and other factors involved in the disorder. To date, neuroimaging research has not improved the clinical identification or care of individuals with autism or babies at high risk. New approaches are critically needed.