Imaging method for early detection of autism in children

Published date: Feb. 17, 2012

Technology description

Summary

Problem or Unmet Need:
Current autism diagnosis methods are subjective processes typically based on behavioral observations taken at relatively late stages in a child's development. This is largely due to a general definition of autism that comprises a broad range of symptoms, many of which are detected through assessments of a child's speech and social skills. A method by which autism could be objectively detected at an early stage of life would facilitate earlier, more effective, treatment regimes.
This invention describes an imaging method for early, objective diagnosis of autism in children possibly as young as 2-3 years of age. It utilizes a combination of widely accepted imaging techniques to generate functional images of a child's brain during auditory stimulation. Images taken from autistic individuals exhibit several distinct traits when compared to control individuals known to be non-autistic. The technique is ideal for very young individuals who may not have established speaking ability as it uses a series of familiar auditory stimuli to assess brain response.

Application area

- This invention can be used as an objective, early diagnostic imaging method for detecting autism in children.
- This invention can also be used to track disease progression and treatment efficacy through multiple imaging sessions.

Advantages

- An early autism diagnosis method that does not require the child to have speaking / social abilities
- Objective autism diagnosis method that relies on established brain imaging techniques
- No side effects associated with imaging sessions because imaging modality does not use radiation
- Enables tracking of disease progression and treatment effectiveness through multiple imaging sessions

Institution

Columbia University

Inventors

Joy Hirsch