Neural correlates of the integration of gestures and speech in autistic spectrum disorders

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Ethical review	Approved WMO
Status	Pending
Health condition type	Communication disorders and disturbances
Study type	Observational invasive

Summary

ID

NL-OMON30868

Source
ToetsingOnline

Brief title
Neuroimaging of pragmatic language functions in autistic spectrum disorders

Condition

- Communication disorders and disturbances

Synonym
autism, autism spectrum disorders

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Sint Radboud
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: autism, fMRI, language

Outcome measures

Primary outcome

Primary study parameters are fMRI data that are collected during a passive listening and viewing task (pragmatic language task).

Secondary outcome

fMRI data collected during a period in which subjects lie in the scanner and are instructed to do nothing. These data will be used to facilitate the interpretation of the fMRI data collected during the pragmatic language task.

Study description

Background summary

People with ASD have difficulty with understanding several aspects of language and more in particular with pragmatic language processing. In daily life, pragmatic language plays an improtant role in communication. For example, when someone talks to us, we not only hear speech but also see the speaker's hand, mouth and body movements. In conversational settings, the brain therefore continuously integrates language and information coming from other sources to improve the listener's understanding of a speaker's message. The integration of gesture and speech can be seen as a pragmatic aspect of language, i.e. the integration of language in context. It is the integration of information in a context that people with ASD have problems with. The uncovering of the neurofunctional organization of language in ASD and the dissection of the neural correlates of the various language components (pragmatic versus semantic aspects of language) would contribute to a better understanding of the neural base of ASD.

Study objective

The primary objective of this study is to identify the neural correlates of language functions and, in particular, abnormal pragmatic communication in autistic spectrum disorders. The secondary objective of this study is to relate

resting state activity in the brain of people with ASD to neural correlates of pragmatic language functioning to and see whether pragmatic language functions are influenced by resting state activity in the brain.

Study design

To investigate pragmatic language, or more in detail, how integration of gestures and speech takes place in the autistic brain, we use fMRI and compare activation patterns of people with ASD and healthy controls. While lying in the MRI scanner, participants listen to sentences presented by headphones and, at the same time, they see short movies on a screen which contain gestures that do or do not match the spoken content of the sentences. A comparison will be made of fMRI images of both groups and based on this comparison of brain activations, conclusions can be drawn about neural correlates of the integration of gestures and speech and therefore about pragmatic language in ASD. Next to listening to sentences and watching movies, subjects are asked to lie still in de MRI scanner for ten minutes. In this period fMRI images of the brain in resting state can be collected. This provides us with the oppurtunity to relate resting state activity to activation related to pragmatic language aspects and this will improve the interpretation of activation patterns during the pragmatic language task.

Study burden and risks

This fMRI study has already been done in healthy subjects by another researcher at the F.C. Donders centre and the coordinating investigator already has performed similar fMRI reasearch in people with ASD. Based on this experience it is estimated that the burden perceived by the subjects will be minimal. Participants will undergo a one hour scanning session in the MRI scanner. This session is divided in two sessions of 30 minutes separated by a 15-minute break. The F.C. Donders Centre has a lot of experience with the research we are proposing in this protocol and there are no special risks associated with this kind of research.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Right handed, between 18 and 40 years old, normal intelligence

Exclusion criteria

metal in body, neurological impairments

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	12-04-2007
Enrollment:	48
Type:	Anticipated

Ethics review

Approved WMO

Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL17182.091.07