<div align="center">**News Release**</div>

Title

Default mode network in young male adults with autism spectrum disorder: relationship with autism spectrum traits

Key Points

- **The strength of resting state functional connectivity (rs-FC) in default mode network (DMN) was significantly lower in individuals with autism spectrum disorder (ASD) than individuals with typical development (TD).**
- **The strength of rs-FC in DMN is associated with autism spectrum traits in the TD population as well as patients with ASD.**
- **The rs-FCs of DMN may be useful biomarkers for the objective identification of autism spectrum traits, regardless of ASD diagnosis.**

Summary

Tetsuya Iidaka (Department of Psychiatry, Nagoya University Graduate School of Medicine,), Minyoung Jung (Department of Child Development United Graduate School of Child Development, Osaka University, Kanazawa University, Hamamatsu University School of Medicine, Chiba University and University of Fukui) and Hirotaka Kosaka (Research Center for Child Mental Development, University of Fukui) found that the strength of rs-FCs in DMN is associated with autism spectrum traits in the TD population as well as patients with ASD. Therefore, this finding suggest that the strength of rs-FCs of DMN might underlie the level of autism spectrum traits and might be one of the potential biomarkers for the objective identification of the level of autism spectrum traits, regardless of ASD diagnosis. This work was published online in the *Molecular Autism* on June 11, 2014.

Research Background

Autism spectrum disorder (ASD) is a complex neurodevelopmental disorder characterized by impaired social communication and social interaction. Social cognitive processes have been linked with cortical midline brain regions such as posterior cingulate cortex (PCC) and the medial prefrontal cortex (MPFC), reflecting the high functional connectivities within the DMN. However, the individual differences in autism spectrum traits regarding social cognition processing, which may also be associated with the strength of rs-FCs of DMN in individuals with or without ASD, have not been evaluated. Thus, aim of this study was to clarify the rs-FCs of DMN in high-functioning young male

adults with ASD by comparison with age- and IQ-matched young male adults with TD within DMN during resting state fMRI.
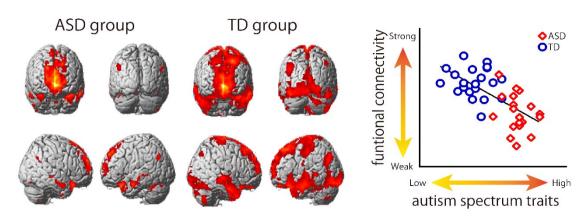
Research Results

Young male adults with high-functioning ASD display lower rs-FC between two seeds (MPFC and PCC) of DMN and other brain regions. In addition, we found that autism spectrum traits with the strength of rs-FCs of DMN that contain brain regions relevant to social cognition processing, in each TD participants and ASD participants, respectively. These findings suggest that the strength of rs-FCs of DMN may underlie some of the autism spectrum traits, regardless of ASD diagnosis.

Research Summary and Future Perspective

This study focused on the strength of rs-FCs of DMN was associated with autism spectrum traits in each ASD and TD group, regardless of ASD diagnosis. Present study suggest that strength of rs-FCs of DMN might underlie the level of autism spectrum traits and might be one of the potential biomarkers for the objective identification of the level of autism spectrum traits, regardless of ASD diagnosis.

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Japanese ver.

http://www.med.nagoya-u.ac.jp/medical/dbps_data/_material_/nu_medical/_res/topix/2014/ASD_20140618jp.pdf