Social interaction depicted by point-lights: searching for early markers of social dysfunctions in Alzheimer's disease

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Abstract

Deficits in social cognition are observed in Alzheimer's disease (AD) at very mild stages. They may reflect disabling behavioral troubles, especially social disinvestment. Understanding social interactions requires the ability to accurately interpret conspecifics' actions. We used point-light displays to investigate the understanding of social scenes based on body language in mild AD. We presented 50 point-light animations depicting two actors either engaged in a social interaction (SI) or engaged in different actions without interacting (NSI). The participants were asked the question: "Are the two subjects acting together or alone?". Twenty patients with mild AD were evaluated through cognitive and neuropsychologic testing. Twenty control subjects were matched to the AD subjects. The age range was between 60 and 90 years. While patients with AD were able to understand isolated actions depicted by point-lights, they encountered difficulties in understanding the general concept of social interactions. The general performance strongly differed between the two groups. Patients with AD over classified the NSI as being SI. They were biased toward interpreting the actions of the two actors as being related to each other. In conclusion, patients with AD at mild stages present with abnormal interpretation of social body interactions that may participate to social behavior disorders.

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