

# How mirror neurons can help improving autism

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A randomized controlled trial published in the current issue of *Psychotherapy and Psychosomatics* introduces a completely new therapeutic opportunity for disturbances that are related to autism. In social interaction humans show spontaneous coordination of movements, i.e. imitation of facial expressions and postures and movement synchronization such as falling into lock-step when walking side by side. Interestingly, both imitation and synchronization have been reported to be altered in autism.

Authors thus aimed at establishing the efficacy of a newly developed [imitation](#)- and synchronization-based dance/movement intervention (SI-DMI) in fostering emotion inference and empathic feelings (emotional reaction to feelings of others) in adults with high-functioning ASD. The strategy is based on the activity of mirror neurons, a special class of neurons that are active when the individual perform an act or when observes someone else make the same movement.

Fifty-five adults with ASD (IQ  $\geq 85$ ) who were blinded to the aim of the study were assigned to receive either 10 weeks of a dance/movement intervention focusing on interpersonal movement imitation and synchronization (SI-DMI,  $n = 27$ ) or a control movement intervention (CMI,  $n = 24$ ) focusing on individual motor coordination (2 participants from each group declined before baseline testing). The primary outcome measure was the objective Multifaceted Empathy Test targeting emotion inference and empathic feelings. Intention-to-treat analyses revealed that from baseline to 3 months, patients treated with SI-DMI showed a

significantly larger improvement in emotion inference, but not empathic feelings, than those treated with CMI. On the close generalization level, SI-DMI increased synchronization skills and imitation tendencies, as well as whole-body imitation/synchronization and movement reciprocity/dialogue, compared to CMI.

According to these findings, SI-DMI can be successful in promoting emotion inference in adults with ASD and warrants further investigation.

**More information:** Svenja Koehne et al. Fostering Social Cognition through an Imitation- and Synchronization-Based Dance/Movement Intervention in Adults with Autism Spectrum Disorder: A Controlled Proof-of-Concept Study, *Psychotherapy and Psychosomatics* (2015). [DOI: 10.1159/000441111](https://doi.org/10.1159/000441111)

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