Methods: Ten individuals diagnosed with ASD and ten individuals in a typically developing comparison group, matched for full-scale IQ, were asked to complete a computerized visual illusion task (Shams, Kamitani, & Shimojo, 2002) that assessed susceptibility to auditory-guided visual illusions. In this task, participants were required to determine whether they had perceived 1 or 2 flashes (F) while simultaneously hearing 0, 1, or 2 beeps (B). Participants were exposed to four non-illusion trials (i.e., 2F2B, 2F0B, 1F1B, 1F0B) and two illusion trials, whereby a discordant number of flashes and beeps were presented; (a) the fission illusion trial containing 1 flash and 2 beeps (1F2B), and (b) the fusion illusion trial containing 2 flashes and 1 beep (2F1B). Efficient MSI typically results in susceptibility to the illusion, with responses driven by number of beeps (B) presented (i.e., perceiving 2 flashes for the 1F2B illusion trials). Susceptibility was measured for each group across illusion and non-illusion trials.

Results: A mixed-model ANOVA was conducted to determine if group-differences in illusion susceptibility (i.e., decreased accuracy for identifying number of flashes) existed across experimental conditions. Results indicated a significant decrease in accuracy for the illusion compared to the non-illusory conditions for both autism and control groups (i.e., the illusions are present). However, significant group differences were not found for any condition.

Conclusions: Comparable between-group performance on the auditory-guided visual illusion task used in the present study indicates that individuals with autism are able to efficiently integrate low-level, visual and auditory information that is void of social content (i.e., beeps & flashes). This result is consistent with the suggestion that atypical MSI in autism may be specific to situations that call for integrating socially laden information, such as faces and voices.

Methods: In order to answer these questions, a prospective multicentre study has been organized, involving several units for diagnostic and functional assessment attached to an Autism Resource Center (CRA Midi Pyrenees, CRA Centre, CRA Aquitaine). The ABC Movement (Henderson & Sugden, 1992) has been used to measure motor troubles both quantitatively (assessment of the level of motor impairment) and qualitatively (clinical characteristics having been listed thanks to the observation ABC-M checklist). We used ADOS, more particularly the Ghotam et al. algorithm (2007) to measure the intensity of autistic symptomatology. Lastly, cognitive level was assessed through several tools (Wesler scales (WPPSI, WISC), K-ABC, EDI-R).

Results: 70 children aged 4 to 12 were part of this study. The results show that, in accordance with our hypotheses, motor troubles in children with ASD are frequent and intense and affect the whole spectrum. Moreover, the level of motor impairment appears to be correlated with the cognitive level but seems independent from symptomatology intensity. Lastly, various motor profiles seem to have been distinguished.

Conclusions: Motor disorders appear to be a central feature in ASD. Taking into account this dimension in the evaluation and functional diagnostic appears fundamental to clarify the most effective therapeutic.