We investigated cognitive and affective Theory of Mind (ToM) and empathy in patients with premanifest and manifest Huntington's disease (HD). The relation between ToM performance and executive skills was also examined. 16 preclinical and 23 clinical HD patients, and 39 healthy subjects divided in 2 control groups were given a French adaptation of the Yoni test (Shamay-Tsoory and Aharon-Peretz, 2007) that examines first and second-order cognitive and affective ToM processing in separate conditions with a physical control condition. Participants were also given questionnaires of empathy and cognitive tests which mainly assessed executive functions (inhibition and mental flexibility). Clinical HD patients made significantly more errors than their controls in the first- and second-order cognitive and affective ToM conditions of the Yoni task, but exhibited no empathy deficits. However, there was no evidence that ToM impairment was related to cognitive deficits in these patients. Preclinical HD patients were unimpaired in ToM tasks and empathy measures compared to their controls.

Our results are consistent with the idea that impaired affective and cognitive mentalising emerges with the clinical manifestation of HD, but is not necessarily part of the preclinical stage. Furthermore, these impairments appear independent of executive dysfunction and empathy.