Vision is probably our most essential sense. One particularity of our environment is that it is made of moving objects. In order to get a clear vision of what surrounds us, we need a good ability to visually track moving targets.

In this thesis, we studied the development of visual tracking abilities using oculomotor tasks that combine the two essential types of orienting eye movements that are smooth pursuit and saccades. As eye movements are controlled by muscles commanded through complex brain circuits, the goal was to better understand the development of oculomotor control with age.

The evaluation of the typical development is also essential to detect deficits. In particular, we were interested in this thesis in characterizing the potential disorders of eye movements in children with cerebral palsy or autism spectrum disorder.

Altogether, this thesis illustrates how eye movements can be used to better understand some developmental processes and disabilities.

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