

## PhD Project Description

School/Department:	Department of Neuroscience Erasmus MC
<b>Supervisor information:</b>	<ul style="list-style-type: none"> <li>• Dr Johan JM Pel, associate professor <a href="mailto:j.pel@erasmusmc.nl">j.pel@erasmusmc.nl</a></li> <li>• Prof. Dr. MA Frens <a href="mailto:m.frens@erasmusmc.nl">m.frens@erasmusmc.nl</a></li> <li>• Website: <a href="http://www.neuro.nl/research.php">http://www.neuro.nl/research.php</a></li> <li>• <b>Personal Grants:</b> <ul style="list-style-type: none"> <li>- ZonMW grant 2009, 2012, 2018</li> <li>- Zon MW – DST India grant 2012</li> </ul> </li> <li>• <b>Most important publications:</b> <ul style="list-style-type: none"> <li>Transl Vis Sci Technol. 2019 Jul 30;8(4):13.</li> <li>Graefes Arch Clin Exp Ophthalmol. 2019 Apr 3</li> <li>Brain Dev. 2018 Oct 6. pii: S0387-7604(18)30469-8.</li> <li>Cerebellum. 2018 Sep 14. doi: 10.1007/s12311-018-0975-9</li> <li>Graefes Arch Clin Exp Ophthalmol. 2018 Feb;256(2):371-379</li> <li>J Vis. 2016;16(5):18</li> <li>Dev Med Child Neurol. 2016 Oct;58(10):1030-5</li> <li>Motor Control. 2016 Jan;20(1):1-20</li> <li>J Vis Exp. 2016 Jul 9;(113)</li> <li>J Ophthalmol. 2015;2015:425067</li> <li>J Parkinsons Dis. 2014 4:599–608</li> <li>Invest Ophthalmol Vis Sci. 2013 Mar 5;54(3):1656-64</li> <li>J Alzheimers Dis. 2012 Jan 1;30(1):131-43</li> </ul> </li> </ul>
<b>Project Title:</b>	<b>Visual-motor and visual vestibular interactions</b>
<b>Abstract:</b>	<p>The reflex movements that we display as a baby gradually develop into complex goal-directed behavior, which is essential for development and learning. The underlying sensorimotor integration translates visual, vestibular and somatosensory information into (in)voluntary motor output during complex behaviors such as standing balance or goal-directed arm movements. In children, abnormal performance scores of neuropsychological and motor tests signal integration problems. They fail, however, in revealing which underlying functions, e.g. visual, motor or visuomotor integration, are impaired. In elderly, neurodegeneration may result in deficits in the sensorimotor integration network leading to behavioral problems. In our group, we are interested in the fundamental and clinical relevance of quantitatively assessed (altered) eye, hand and body movements during sensorimotor integration tests. To achieve this goal, we develop new techniques, including advanced eye movement recordings (imprinted lenses) and combine them with quantitative assessment of visuomotor integration performances and interactions. Ultimately, our approaches allow us to determine how different sensory modalities interact and how they contribute to the development and control of motor and non-motor functions.</p>
<b>Requirements of candidate:</b>	<ul style="list-style-type: none"> <li>• We are looking for a highly motivated, hardworking student to join our international team. Our strength is to tackle large scientific questions and thus requires a student with good communication skills.</li> <li>• Master degree or MD</li> <li>• Scholarship that will, at least, cover subsistence allowance and international air plane ticket (we could help with the scientific part of your scholarship proposal)</li> <li>• English language requirement:</li> <li>• English speaking countries &amp; Netherlands: no requirement</li> <li>• Other countries: IELTS 7.0 (min 6.0 for all subs), TOEFL 100 (min 20 for all subs)</li> </ul>

Application requirements & Deadlines:

<https://www.eur.nl/en/about-eur/erasmus-university-china-centre/csc-scholarship>

Erasmus MC, ranked world

\* No.32 for Clinical Medicine US News 2020:

<https://www.usnews.com/education/best-global-universities/clinical-medicine?page=3>

\* No. 30 Nature Index for Biomedical Sciences 2019:

<https://www.natureindex.com/supplements/nature-index-2019-biomedical-sciences/tables/healthcare>