

**Erasmus University Rotterdam, the Netherlands**  
**CSC PhD 2015 Project Description**

<b>School/Department:</b>	Erasmus MC – University Medical Center Rotterdam, Department of Public Health
<b>Project Title:</b>	The explanation of socio-economic differences in growth, development and health of children from pregnancy to early adolescence in a longitudinal population-based cohort study: the Generation R Study
<b>Abstract:</b>	<p>At the end of life, it turns out that low educated and poor subgroups in the population live much shorter (5 years or more) compared to high educated and rich subgroups. Do these socio-economic differences in health already start in early life? Preliminary data from the Generation R cohort study indicate that social inequalities already start in pregnancy and continue after birth. The Generation R cohort study documents growth, development and health of 10.000 Rotterdam children from early pregnancy onwards. In this PhD trajectory, the student will be actively involved in a general training in research skills in the field of social epidemiology and public health. The PhD student will be trained to do research and publish in high-impact international peer-reviewed scientific journals, and the student will help with data collection.</p> <p>The minimal number scientific publications that is required in a PhD thesis is 4 publications (accepted or published) of which 2 as a first author, and 2 in the ‘first quartile’ regarding ‘impact factor’ in the specific scientific field. However, with the rich Generation R data, and with proper help and coaching, it will be possible for the CSC scholar to prepare a PhD thesis that consist of six or more scientific papers in the field of social epidemiology and public health.</p> <p>The Generation R Study documents the growth, development and health, and their determinants, of circa 10.000 children and their mothers from early pregnancy onwards. Socio-economic status and social determinants have been measured repeatedly in the Generation R study; also, genetic data are available regarding the children. These data will be used to address the study questions. The PhD student can also collaborate in a worldwide research network on this topic, and may use data from other countries as well:  <a href="http://www.centrelearoback.ca/inrich/index.php">http://www.centrelearoback.ca/inrich/index.php</a> .</p> <p>The following research questions will be addressed in this PhD trajectory:</p> <ol style="list-style-type: none"> <li>1. What is the impact of low socio-economic status and adverse circumstances <u>during pregnancy</u> on childhood growth,</li> </ol>

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	<p>development and health after birth (the 'Barker hypothesis')?</p> <ol style="list-style-type: none"> <li>2. What is the impact of low socio-economic status and adverse circumstances of families on childhood growth, development and health?</li> <li>3. What is the impact of financial difficulties, the timing of financial difficulties, and the duration of financial difficulties on childhood growth, development and health?</li> <li>4. What is the association between ethnic and migration background of families and childhood growth, development and health?</li> <li>5. What is the pattern of socio-economic differences in health during childhood; do the differences increase or do they decrease while growing up?</li> <li>6. How can the associations between low socio-economic status, poverty, a minority ethnic background and poor health be explained by genetic, environmental, psychological, social and medical factors?</li> </ol>
<b>Requirements of candidate:</b>	<p>Background: A background in medical/health sciences (for example public health, medicine, epidemiology or psychology) is required. The candidate should have a strong methodological background. Excellent analytical and writing skills are required, as well as a keen interest in the impact of social and environmental circumstances on health.</p> <p>Master degree: Yes  IELTS Grade: 7.0 (minimal 6.0 per component)  or  TOEFL: 100 (minimal 20 per component)</p>
<b>Supervisor information:</b>	<p>Professor Hein Raat, MD, PhD, MBA  Email address <a href="mailto:h.raat@erasmusmc.nl">h.raat@erasmusmc.nl</a>  Personal website <a href="http://nl.linkedin.com/pub/hein-raat-md-phd-mba/12/92a/625">http://nl.linkedin.com/pub/hein-raat-md-phd-mba/12/92a/625</a></p> <p>Some selected publications (a publication list can be mailed upon request):</p> <p>Hein Raat, Mirjam K Struijk, Teun Remmers, Eline Vlasblom, Amy van Grieken, Suzanne ML Broeren, Saskia J te Velde, Maaïke Beltman, Magda M Boere-Boonekamp and Monique P L'Hoir, Primary prevention of overweight in preschool children, the BeeBOFT study (breastfeeding, breakfast daily, outside playing, few sweet</p>

	<p>drinks, less TV viewing): design of a cluster randomized controlled trial. BMC Public Health 2013 13:974. DOI: 10.1186/1471-2458-13-974 URL: <a href="http://www.biomedcentral.com/1471-2458/13/974">http://www.biomedcentral.com/1471-2458/13/974</a></p> <p>Selma H. Bouthoorn, Frank J. van Lenthe, Romy Gaillard, Albert Hofman, Eric A. P. Steegers, Vincent W. V. Jaddoe, Hein Raat, Socioeconomic inequalities in placental vascular resistance: a prospective cohort study. Fertil Steril 2014 May 14;101(5):1367-74. Epub 2014 Mar 14.</p> <p>Bannink R, Broeren S, Joosten-van Zwanenburg E, van As E, van de Looij-Jansen P, Raat H, Effectiveness of a Web-Based Tailored Intervention (E-health4Uth) and Consultation to Promote Adolescents' Health: Randomized Controlled Trial. J Med Internet Res 2014;16(5):e143 URL: <a href="http://www.jmir.org/2014/5/e143/">http://www.jmir.org/2014/5/e143/</a> doi: 10.2196/jmir.3163 PMID: 24878521</p> <p>Busra Durmus, Denise Heppe, Hendrik Taal, Rashindra Manniesing, Hein Raat, Albert Hofman, Eric Steegers, Romy Gaillard, and Vincent Jaddoe, Parental smoking during pregnancy and total and abdominal fat distribution in school-age children. The Generation R Study. International Journal of Obesity (22 January 2014)   doi:10.1038/ijo.2014.9</p> <p>van Beelen MEJ, Beirens TMJ, den Hertog P, van Beeck EF, Raat H, Effectiveness of Web-based, Tailored Advice on Parents' Child Safety Behaviors: A Randomized Controlled Trial. J Med Internet Res 2014;16(1):e17 doi:10.2196/jmir.2521</p> <p>Pauline Jansen, Marina Verlinden, Anke Dommisse-van Berkel, Cathelijne Mieloo, Hein Raat, Albert Hofman, Vincent Jaddoe, Frank Verhulst, Wilma Jansen, &amp; Henning Tiemeier, 'Teacher and Peer Reports of Overweight and Bullying Among Young Primary School Children. Pediatrics 2014; <a href="http://www.pediatrics.org/cgi/doi/10.1542/peds.2013-3274">www.pediatrics.org/cgi/doi/10.1542/peds.2013-3274</a> doi:10.1542/peds.2013-3274</p> <p>Kruizinga I, Visser JC, van Batenburg-Eddes T, Carter AS, Jansen W, et al. (2014) Screening for Autism Spectrum Disorders with the Brief Infant-Toddler Social and Emotional Assessment. PLoS ONE 9(5): e97630. doi:10.1371/journal.pone.0097630</p> <p>J. Lock, H. Raat, N. Duncan, A. Shapiro, M. Beijlvelt, M. Peters,</p>
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	<p>R.Y.J. Tamminga, F.W.G. Leebeek, H.A. Moll, M.H. Cnossen, Adherence to treatment in a Western European paediatric population with haemophilia: Reliability and validity of the VERITAS-Pro scale. <i>Haemophilia</i> (2014), 1–8. DOI: 10.1111/hae.12463</p> <p>Teun Remmers, Suzanne ML Broeren, Carry M Renders, Remy A Hirasing, Amy van Grieken and Hein Raat, A longitudinal study of children's OP using family environment and perceived physical environment as predictors. <i>International Journal of Behavioral Nutrition and Physical Activity</i>. 2014, 11:76  DOI: 10.1186/1479-5868-11-76 URL:  <a href="http://www.ijbnpa.org/content/11/1/76">http://www.ijbnpa.org/content/11/1/76</a></p> <p>Lenie van Rossem, Esther Hafkamp-de Groen, Vincent WV Jaddoe, Albert Hofman, Johan P Mackenbach and Hein Raat Title : The Role of Early Life Factors in The Development of Ethnic Differences in Growth and Overweight in Preschool children: A Prospective Birth Cohort. <i>BMC Public Health</i> 2014, 14:722 doi:10.1186/1471-2458-14-722</p> <p>Bouthoorn SH, Wijtzes AI, Jaddoe VW, Hofman A, Raat H, van Lenthe FJ, Understanding the development of socioeconomic inequalities in obesity among Dutch pre-school and school-aged children. <i>Obesity (Silver Spring)</i>. 2014 Oct;22(10):2230-7. doi: 10.1002/oby.20843. Epub 2014 Jul 10.</p> <p>Anne I Wijtzes, Selma H Bouthoorn, Wilma Jansen, Oscar H Franco, Albert Hofman, Vincent WV Jaddoe and Hein Raat, Sedentary behaviors, physical activity behaviors, and body fat in 6-year-old children: The Generation R Study. <i>International Journal of Behavioral Nutrition and Physical Activity</i> 2014, 11:96 doi:10.1186/s12966-014-0096-x</p> <p>Selma Bouthoorn, Frank van Lenthe, Jessica Kieffe-de Jong, H. Rob Taal, Anne Wijtzes, Albert Hofman, Vincent jaddoe, Maria Glymour, Fernando Rivadeneira, and Hein Raat, Genetic taste blindness to bitter and body composition in childhood: a Mendelian Randomization Design. <i>International Journal of Obesity</i> 2013. Advance online publication, 27 August 2013; doi:10.1038/ijo.2013.141 .</p> <p>Selma H. Bouthoorn, Frank J. Van Lenthe, Layla L. De Jonge, Albert Hofman, Lennie Van Osch-Gevers, Vincent W.V. Jaddoe, and Hein Raat, Maternal Educational Level and Blood Pressure, Aortic</p>
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	<p>Stiffness, Cardiovascular Structure and Functioning in Childhood: The Generation R Study. American Journal of Hypertension. 2013 doi:10.1093/ajh/hpt180 .</p> <p>Hein Raat, Anne Wiltjes, Vincent W.V. Jaddoe, Henriëtte A. Moll, Albert Hofman, Johan P. Mackenbach, The health impact of social disadvantage in early childhood; the Generation R study, Early Hum Dev 87 (2011) 729–733, doi:10.1016/j.earlhumdev.2011.08.022 .</p> <p>Dennis O. Mook-Kanamori, Eric A. P. Steegers, Paul H. Eilers, Hein Raat, Albert Hofman, Vincent W. V. Jaddoe, Risk Factors and Outcomes Associated With First-Trimester Fetal Growth Restriction. JAMA. 2010;303(6):527-534</p> <p>Raat H, van Rossem L, Jaddoe VW, Landgraf JM, Feeny D, Moll HA, Hofman A, Mackenbach JP. The Generation R study: a candidate gene study and genome-wide association study (GWAS) on health-related quality of life (HRQOL) of mothers and young children Qual Life Res. 2010 Dec;19(10):1439-46. Epub 2010 Oct 28. (DOI 10.1007/s11136-010-9773-7)</p> <p>Raat H, Mohangoo AD, Grootenhuys MA. Pediatric health-related quality of life questionnaires in clinical trials. Curr Opin Allergy Clin Immunol 2006;6(3):180-5.</p> <p>Raat, H., et al., Feasibility and reliability of a mailed questionnaire to obtain visual analogue scale valuations for health states defined by the Health Utilities Index Mark 3. Med Care, 2004. 42(1):p.13-8.</p> <p>Raat, H., et al., Reliability and validity of comprehensive health status measures in children: The Child Health Questionnaire in relation to the Health Utilities Index. J Clin Epidemiol, 2002. 55(1): p. 67-76.</p>
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