

Rehabweek 2022
Erasmus MC labtours
Friday, 29 July 2022

Introduction Erasmus MC

Erasmus University Medical Centre

Welcome to the Erasmus University Medical Centre. We dare to step forward in research, education and healthcare and we are committed to a healthy population and excellence in healthcare through research and education.

The Erasmus University Medical Centre is the largest of the eight university medical centres in the Netherlands. The Erasmus University Medical Centre, Erasmus University's Med School and its University Hospitals are integrated into one campus and led by one executive board.



In 1968 our Medical Faculty including the Research & Education centre was opened, the Sophia Children's Hospital opened in 1994 its doors and in 2009 we started building the New Erasmus MC. The new Education Centre opened in 2012 with 40 teaching & lecture rooms for up to 6,000 students and was awarded a number of architectural prizes shortly after. Following years of preparations our new hospital was opened by our King in May 2018. Natural light, space, and clarity are the keywords for our new building in which patients, together with us, will have more control over their stay and treatment.

Education, Research & Innovation: Erasmus MC offers BSc, MSc, PhD and Residency programs to train the next generation of medical practitioners and researchers. We are one of the largest European medical schools, with ~2,500 medical students and 220-250 PhD graduations per year. Our overall research aim is to translate bench discoveries to bedside applications and cover all fields from preclinical via clinical to health sciences research. The worldwide impact of our research papers in preclinical, clinical & health sciences is 2,35 which is in the top of the world wide ranking list, just below Harvard (2,37).



For a sneak preview: *Erasmus MC: The Movie* <https://youtu.be/LtjpwmgkJK>

We invite you to register and join one of the Rehabweek 2022 Tours on Friday 29 July 2022.

Tour option #1: **Child brain lab & Generation R**

Times: 09.30 – 12.00 hrs & 13.30 – 16.00 hrs

Duration: each tour 1 hour, 15 min coffee break between the tours

Number of participants: 30 persons (to be split in 2 groups of 15)

Both tours will take place in the **Sophia Children's Hospital** located within the Erasmus University Medical Centre building. The Erasmus MC Sophia Children's Hospital provides care for children with rare and complex disorders and was founded more than 150 years ago. We offer the entire spectrum of specialisms in the field of paediatric medicine, surgery, and psychiatry. The knowledge of all the disciplines involved in Sophia Children's Hospital is bundled into four focus areas: The Mother and Child Center, The Pediatric Brain Center, The Center for Rare Diseases and The Paediatric Thoracic Center. We welcome you to the Child Brain Lab, an innovative test facility at the Pediatric Brain Center.

Brain development affects all aspects of life. Abnormal brain function in children has great consequences for cognition, behaviour, motor development and social interactions. In the Pediatric Brain Center professionals of the Erasmus MC-Sophia, TU Delft and Erasmus University merge their expertise to facilitate optimal development in children with brain-related disorders. We combine clinical care and research to generate developmental growth curves in relevant domains, to develop innovative and meaningful outcome measures, to study new treatments and to rapidly translate findings to these children.



Child Brain Lab (part 1)

As part of the Pediatric Brain Center, we are setting up a new test facility, the Child Brain Lab, to assess multiple metrics across domains, ranging from genotype, brain structure and neurophysiology to behavior, quality-of-life, and societal participation in child patients with a variety of brain-related disorders across the life course. We use a child-centered approach and state-of-the-art techniques (e.g. high resolution EEG, MRI, activity tracking).

Data is systematically collected – starting early in life. Thus, we make most use of the inherent plasticity of the developing brain, so that interventions will have the most impact. We aim to build a precision-medicine framework for use in daily clinical care.

We aim at realizing three important targets in the Child Brain Lab:

- Creating shared and cross-disorder developmental curves for relevant and meaningful outcomes in children with brain-related disorders to enable early detection of an abnormal course and prediction of personalized trajectories. These curves will aid the design of intervention-trials.
- Developing innovative paradigms and parameters from neurophysiological, brain structure and motor measurements.
- Testing interventions that influence the course of disease at different levels, focusing on the underlying disease cause, early manifestations of disease, functional deficits, or behaviour and coping of children and their parents.

This tour includes an introduction to the new Child Brain Lab and offers the possibility to experience a number of tests.

Generation R Study (part 2)

The **Generation R Study** is a prospective cohort study from foetal life until young adulthood in a multi-ethnic urban population. The study is designed to identify early environmental and genetic causes of normal and abnormal growth, development and health from foetal life until young adulthood. Results from the Generation R Study contribute to the development of strategies for optimizing health and healthcare for pregnant women and children within Rotterdam and beyond.



Two cohorts are enrolled in the study:

More than 10,000 mothers and their children enrolled in the first cohort between 2002 and 2006. Data collection in the prenatal phase included physical examinations, questionnaires, foetal ultrasound examinations and biological samples. The children form a prenatally recruited birth-cohort that are followed until young adulthood. This cohort is currently around 17 years old and are invited to visit the research centre for the Generation R Focus at 17 project.

In 2017 Generation R launched the second cohort Generation R Next focussing on preconception phase and early pregnancy.

Both studies focus on five primary areas of research:

- Growth and physical development
- Behavioural and cognitive development
- Asthma and atopy
- Diseases in childhood
- Health and healthcare



During this tour the Generation R team will explain this cohort study, you will be able to experience being a participant of Generation R by demonstrations of research measurements, and to be in contact with the research team.

Morning program:

- 09.30 u **Arrival** at the Erasmus MC (exact location TBC)
Group to be split in 2 smaller groups of 10 persons each
- 09.45 u **Start** of the first tour
- 10.45 u **Coffee break**
- 11.00 u **Start** of the second tour
- 12.00 u **End of visit**

Afternoon program:

- 13.30 u **Arrival** at the Erasmus MC (exact location TBC)
Group to be split in 2 smaller groups of 10 persons each
- 13.45 u **Start** of the first tour
- 14.45 u **Coffee break**
- 15.00 u **Start** of the second tour
- 16.00 u **End of visit**