

Impact of paediatric critical illness on development into puberty, adolescence and young adulthood

Ref. BAP-2024-335

The Intensive Care Medicine Research Group is part of the department of Cellular and Molecular Medicine at the University of Leuven (Belgium). We are a highly successful, multidisciplinary, translational basic/clinical research team that combines a research laboratory with a large intensive care unit (ICU). This unique combination allows effective cross-talk between knowledge generated from patient studies and from animal and molecular studies in the laboratory. Our research focuses on critical illness, which is any disease state in which the function of one or more organ systems is impaired to the extent that the patient would die shortly when not receiving intensive medical care in the ICU to support the failing organs. Our overall objective is to unravel key pathways involved in critical illness-induced organ failure and long-term debilitating consequences after critical illness that may persist up to years after hospital discharge.

Critical illness in children occurs at a time in their life when normally they develop, grow and mature. Consequently, these crucial developmental processes can be disturbed so that these children often survive with multi-domain health sequelae, summarised as "post-intensive care syndrome in children" or PICS-p. The focus of earlier studies on PICS-p was on childhood problems. However, the later impact of critical illness on the further development into puberty, adolescence and young adulthood remains unclear, meaning that any detrimental health consequences hereof beyond childhood are missed. Thorough characterisation of all milestones throughout development, with identification of (modifiable) risk factors and underlying mechanisms of developmental impairments opens perspectives for major progress towards prevention and/or early detection of specific somatic, psychological and psychiatric morbidity in a targeted population, while avoiding unnecessary follow-up of patients who are unlikely to develop such long-term problems.

<https://gbiomed.kuleuven.be/english/research/50000618/laboratory-of-intensive-care-medicine>

Project

The major focus of this project will be on an extensive follow-up of former critically ill children 12 years after admission to a paediatric intensive care unit (PICU) to thoroughly characterise maturation into puberty, adolescence or young adulthood, compared with matched healthy participants, with detailed assessment of pubertal development and other aspects of physical development, in relation to neurocognitive functioning, emotion/behaviour and daily life impact.

You will be responsible for the medically oriented interviews with the participants and/or their parents, as well as for the clinical examination of the participants and blood sampling. Neuropsychological testing of the participants will be performed by psychologists in the team.

You will work closely with them and with other members of the clinical research team. The investigations will preferably take place in the hospital, but house calls will be offered for participants unable or unwilling to come to the hospital. You enter the information you obtain in the research database.

This 12-year follow-up study will be the common thread throughout your PhD and will be its crowning piece. Meanwhile you will work on other projects as part of your PhD to gain further insight in risk factors for and/or mechanisms underlying developmental impairments after paediatric critical illness.

The project will be conducted under supervision of Prof. Dr. Ilse Vanhorebeek (Bio-Engineer), Prof. Dr. Jan Gunst (Medical Doctor, Intensive Care Medicine, Dr. An Jacobs (Medical Doctor, Paediatrics) and Prof. Dr. Greet Van den Berghe (Medical Doctor, Chair Intensive Care Medicine).

Profile

- We are looking for a highly motivated, enthusiastic, critical, and creative Medical Doctor (you have or will obtain this degree in 2024) with strong interest in paediatrics.
- You are interested in scientific research and like to work with young people.
- You have good social and communicative skills, both towards the participants in the study and your colleagues.
- You are a good team player, but can also work independently.
- You are punctual in collecting and reporting of research data.
- You are prepared to do house calls, have a driving license B and have a car.
- You have solid knowledge of Dutch, French and English.

Offer

The PhD candidate will become part of a multidisciplinary research team that is internationally recognised as the expert in research integrating Intensive Care Medicine and Endocrinology/Metabolism/Nutrition. The group's landmark clinical/translational studies worldwide initiated major changes in the care for critically ill patients. We have unraveled several mechanisms involved in persistent organ failure and in effects observed in randomized clinical studies, which identified new targets for intervention. The symbiosis between people of different educational background offers a unique stimulating environment to learn from each other.

We offer a full-time scholarship for 4 years. The position is initially offered for 1 year, renewable after a positive evaluation up to a total of 4 years, and is expected to result in the completion of a PhD.

Interested?

For more information, please contact Prof. Dr. Ilse Vanhorebeek, tel.: +32 16 33 05 32, email: ilse.vanhorebeek@kuleuven.be; Prof. Dr. Jan Gunst, tel.: +32 16 34 40 21, email jan.gunst@kuleuven.be or Dr. An Jacobs, +32 16 34 38 40, email an.jacobs@uzleuven.be.

You can apply for this job no later than July 08, 2024 via the online application tool (Bij publicatie komt hier automatisch de link naar de online sollicitatiepagina.)

KU Leuven strives for an inclusive, respectful and socially safe environment. We embrace diversity among individuals and groups as an asset. Open dialogue and differences in perspective are essential for an ambitious research and educational environment. In our commitment to equal opportunity, we recognize the consequences of historical inequalities. We do not accept any form of discrimination based on, but not limited to, gender identity and expression, sexual orientation, age, ethnic or national background, skin colour, religious and philosophical diversity, neurodivergence, employment disability, health, or socioeconomic status. For questions about accessibility or support offered, we are happy to assist you at this email address. <https://www.kuleuven.be/wieiswie/nl/person/ue711656>