

Ensuring optimal development of young children

With 183 beds and 250,000 consultations a year in its outpatient sector, Queen Fabiola Children's University Hospital (HUDERF) conducts internationally recognised research as can be witnessed by its 100 to 140 articles published annually in peer-reviewed journals.

The Belgian Kid's Fund for Pediatric Research



© Yvon Lammens - Dr Nicolas Lefèvre, scholarship holder of HUDERF and recipient of the prestigious paediatric award of the Royal Academy of Medicine

Twenty years ago, the HUDERF created a foundation to support young doctors who wished to do research: The Belgian Kid's Fund for Pediatric Research. Since that time, the foundation has awarded 140 research grants and facilitated the completion of 36 doctoral theses in the last six years. It has been honoured by major prizes like the GlaxoSmithKline Prize awarded to Pierre Smeesters, head of the Paediatrics Department, for the development of a vaccine against streptococcus, two prestigious prizes awarded by the Royal Academy of Medicine to Sophie Blumental and Nicolas Lefèvre as well as a very prestigious prize awarded to psychologist Simon Bajiot for his thesis on autism.

Paediatric Laboratory of ULB

This level of excellence can be found at the paediatric laboratory of ULB: it is noted for a high level of screening children for metabolic diseases from blood samples taken from the heel five days after birth. Currently, it does this screening for more than half the annual births in Belgium. The HUDERF has the ambition of setting up a research institute on paediatrics relying on the expertise of this laboratory to develop interuniversity research on rare diseases and child pharmacology. This means setting up a clinical investigation centre that abides by the Declaration of Helsinki to cure more children using innovative medicines.

Research Strands of Excellence

In the meantime, the HUDERF has continued its research work around five strands of excellence:

- **Neurosciences** (neuro-development, neuro-protection, rehabilitation of children presenting problems related to the screening of genes of certain diseases).
- **Haematology and oncology** (classification of cancers depending on mutated genes to improve diagnosis and treatment, optimisation of the care programme of children with sickle cell anaemia through grafts).
- **Immunology and inflammation**, allergology (with one centre caring for over 400 children with food-related anaphylaxis).
- **Metabolic and rare diseases** (acidosis, metabolism problems of amino acids, undernourishment caused by pneumonia or a renal problem, nutrition improvement for better prognosis when undergoing surgery).

Ongoing Research Projects

Among the research projects in progress, there is a study into sexual differences in cases of acute inflammation (women have much better prognoses due to their two X chromosomes which encourage double expression of certain genes) or chronic inflammation (such as lupus or cystic fibrosis, which, when the inflammation is continuous, causes much greater harm to women).

In addition, there is an assessment unit for children with autism spectrum disorders, which enables their development to be pointed in a positive direction thanks to early neuro-developmental treatment techniques. The HUDERF researchers also work on new techniques for diagnosing rare diseases and monitoring their progress.



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Academic and Industrial Partnerships

Buoyed by its numerous academic partners (Brasilia University, Sainte-Justine Hospital in Montreal, UGent, Interuniversity Institute of Bioinformatics in Brussels and the Royal Children's Hospital of Melbourne) and manufacturers (with 35 to 40 new pharmaceutical studies per year), the HUDERF indeed intends to tackle the major research challenges in paediatrics through its future research institute. These challenges include rare diseases, genetic diseases linked to consanguinity, immunology and inflammation, pharmacology and vaccinology. The objective is to ensure optimal development of young children.



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for Pediatric Research

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