As the largest university hospital in Belgium, University Hospital (UZ) Leuven and its 10,000 staff members aim to push boundaries by combining specialized care and innovative treatments with a strong focus on human attention and respect. Future healthcare providers and employees receive high-quality training, emphasizing lifelong learning and innovation. As a pioneer in clinical research, the hospital is continuously shaping the patient care of tomorrow.

In 2024, UZ Leuven facilitated 782,208 consultations, 137,011 day admissions, and 56,917 surgical procedures. A total of 387 organs were transplanted, representing 32.7% of all organ transplants in Belgium — making UZ Leuven the largest of the eight Belgian transplant centres. The hospital also oversaw 2,454 deliveries.

That same year, the hospital conducted 15,758,809 laboratory tests, averaging 1,794 tests per hour or 43,057 tests per day. In addition, 910 new studies were registered with the Clinical Trial Centre (CTC), including 279 commercial, 488 academic, and 143 studies involving human body material.

The UZ and KU Leuven biomedical research facilities are centralised at Gasthuisberg Campus. UZ Leuven

Health Sciences Centralised on the Gasthuisberg Campus

UZ Leuven has evolved over time, historically spread across several sites. On the outskirts of the centuries-old university city of Leuven lies the Health Sciences Campus Gasthuisberg, a 75-hectare site that has become one of Europe’s largest centres for medicine, biomedical research, and training.

The foundation stone of the Gasthuisberg campus was laid in the 1970s. Since then, numerous buildings have been modernized to meet contemporary healthcare standards and the specific requirements of a university hospital. KU Leuven has consolidated its biomedical education and research on the site. Guided by a long-term master plan for infrastructure development, the university and the hospital are further expanding the campus. To ensure renovations of older facilities can proceed with minimal disruption to patients, several new buildings will be constructed in the coming years.

European Support for Construction Ambitions

In 2025, the European Investment Bank (EIB) granted UZ Leuven a €230 million loan to further expand the Health Sciences Campus. The funding will help transform the campus into an innovation ecosystem, in line with Flanders' ambition to strengthen its knowledge economy through close collaboration with KU Leuven. The loan will support projects including the development of nuclear medicine research facilities and a tissue and biobank.

Expertise in Lung Transplants

In 2025, the lung transplant team at University Hospital Leuven successfully completed its 1,500th lung transplant. The team performs an average of 70 procedures annually, accounting for roughly two-thirds of all Belgian lung transplants. While most lung transplants are performed on middle-aged adults, the hospital has also transplanted 25 children, making it one of the few centres in Europe with such expertise.

Since 2001, the Leuven Lung Transplant Centre has been a leader in both clinical and experimental research — from developing drugs that reduce chronic rejection risk to pioneering organ preservation techniques such as ex vivo perfusion, which optimizes donor lungs before transplantation.

UZ Leuven is by far the largest Belgian transplant centre. UZ Leuven

In 2022, the centre achieved a European first by using a novel preservation technique in which the donor lung is stored at approximately 6 °C instead of on ice. This warmer storage reduces tissue damage and avoids overnight surgeries.

Ongoing research focuses on pre-transplant therapies, new medications, lung volume reduction techniques, gene therapy, and artificial lung development, along with improved treatments to prevent rejection.

Better Diabetes Management in Young People

An international study led by UZ Leuven confirmed in 2025 that children and young people with type 1 diabetes can maintain their insulin production longer with low-dose antithymocyte globulin (ATG), a well-known immunosuppressive drug.

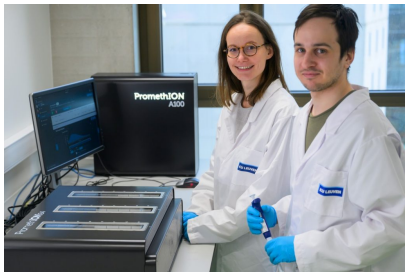
The study followed more than 110 participants aged 5 to 25 across 14 hospitals in eight European countries. “Unique to this study was that we received permission to include very young children – and it was in this group that we observed the strongest effect,” explains Prof. Dr. Chantal Mathieu, lead researcher. “Moreover, ATG is a relatively inexpensive medication: treatment involves a one- or two-day infusion and costs less than €200.”

Prof. Dr. Chantal Mathieu. UZ Leuven

Faster Diagnosis of Rare Diseases

Researchers at Centre for Human Genetics (CME) have developed a new diagnostic method that simultaneously detects genetic and epigenetic abnormalities in a single analysis. This breakthrough opens new possibilities for diagnosing rare developmental disorders and is expected to become part of standard clinical practice soon.

Besides genetic abnormalities, such as errors in the sequence of DNA base pairs, epigenetic abnormalities can also play a significant role in disease. “Epigenetic changes – also known as episignatures – are linked to approximately 10% of developmental disorders. These are often very rare diseases that are clinically difficult to distinguish, forcing patients on a ‘diagnostic odyssey,’” explains Prof. Dr. Joris Vermeesch, geneticist at CME.



Researchers from the Centre for Human Genetics (CME) have developed a new diagnostic detection method for (epi)genetic abnormalities. UZ Leuven

Traditional epigenetic testing involves multiple steps and can take months. The new method uses nanopore sequencing, a cutting-edge third-generation (long-read) technology that reads an entire genome's DNA base pairs. A sophisticated algorithm then scans millions of DNA sites for potential epigenetic abnormalities — a task requiring massive computational power, for which the researchers were able to utilize the Flemish Supercomputer.

Combining epigenetic analysis along with the genome sequence in a single test is unprecedented and provides a much more complete clinical picture, enabling faster and more accurate diagnoses and greater insight into the cause of rare diseases. The cost is comparable to existing methods, making broad clinical implementation feasible across Belgium.

Environmental Influence on Congenital Heart Defects

Roughly 1 in 100 children is born with a heart defect. While 25% of cases have a genetic explanation, the cause remains unknown in three-quarters. Cardiologists at University Hospital Leuven have now identified a link between maternal infections during early pregnancy and congenital heart disease in babies. Further research is needed to establish a causal link in this area.

Analysing an international dataset of 1.7 million pregnancies, researchers found that women who experienced an infection during the first trimester had a statistically higher risk of having a child with a heart defect.

The hypothesis is that mild infections, such as a common respiratory infection or influenza, may play a role in the development of certain heart defects. Heart defects involving a hole in the septum appear particularly susceptible to infections in the first trimester.

Future research will explore other environmental and socioeconomic factors, as well as potential links with inflammatory conditions. The team plans to develop experimental models to study how specific viruses affect heart development and to investigate whether influenza vaccination before pregnancy can reduce the risk of congenital heart defects.

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