

Thomas Edlinger, BA
Public Relations and Event Management

Medical University of Graz
Neue Stiftingtalstraße 6
8010 Graz
thomas.edlinger@medunigraz.at

Press release
For immediate publication

Pilot study on machine listening in the delivery room: Evaluating lung function from a newborn's first cry

Graz, 04 March 2024: The first cry of a child after its birth is surely one of the most beautiful and emotional moments in a parent's life. Several studies have dealt with the duration between the moment of birth and a newborn's first cry.

A team of researchers led by Florian Pokorny of the Med Uni Graz Division of Phoniatics is now investigating the acoustics of the first cry of term and preterm infants on the basis of a large number of signal parameters. Automated, audio-based classification of the cry using artificial intelligence should also help to further evaluate neonatal lung function.

Investigating lung function with AI

The sounds produced by a newborn in the first few minutes of life ensure that a part of the exhaled air is reflected back from the larynx into the lungs, pressing amniotic fluid into the surrounding tissue. Depending on how far lung development has progressed, there may be audible differences between term and preterm infants. The pilot project starting at Med Uni Graz first evaluates the feasibility of standardized sound recordings at the moment of birth. Pilot data will be collected and used to investigate whether machine analysis of the first cry can be integrated into daily clinical practice as a prognostic and diagnostic tool.

Novelty in the field of automated voice-based detection of diseases

Studies in recent years have been concerned with automated voice-based detection of a wide variety of diseases, for example respiratory diseases, psychiatric diseases, neurodegenerative diseases and developmental disorders. "The idea of acoustically characterizing and automatically assessing the very first sound a human being makes by means of artificial intelligence for a medically relevant task is absolutely novel," emphasizes project leader Florian Pokorny.

This project should lay the foundations for a potential implementation of an innovative, audio-based and noninvasive screening procedure that is uncomplicated and cost-effective and may be carried out directly at the moment of birth.

Early childhood development as the focus of research

The research team of which Florian Pokorny is a member deals with neurofunctional development in early childhood with a focus on motor, visual, language and socio-communicative development.

The interdisciplinary team aims to describe early child development in detail and to detect deviations as early as possible using comprehensive progress forecasting.

Around EUR 70,000 in funding

The research project has a budget of around EUR 70,000 from the "*Unkonventionelle Forschung*" (unconventional research) fund of the state of Styria, abbreviated as UFO. The project is scheduled to run for one year starting in March 2024. Herbert Fluhr, head of the Division of Obstetrics, and Berndt Urlesberger, head of the Division of Neonatology, are two renowned project partners from Med Uni Graz. Florian Pokorny and two other staff members from the Division of Phoniatics are responsible for project operations.

"The findings from this study could represent a milestone in the initial assessment of preterm infants," says Florian Pokorny as he looks forward to the start of the project.

Further information and contact

Florian Pokorny, PhD
Division of Phoniatics
Medical University of Graz
Tel.: +43 316 385 30686
florian.pokorny@medunigraz.at