

PRESS RELEASE

The project will start in January 2014 and last for 3 years. A phase of experimentation will follow. The goal is to reduce the risk of brain damage in new-borns from 25% to 20% in extremely preterm babies. In Europe alone, this involves more than 25,000 babies per year.

BabyLux for premature babies: Italy, Spain, Germany and Denmark launch an innovative technique that accurately detects oxygen in the brain

Milan, January 21, 2014 - Nine European partners got together in Milan today to start the BabyLux project. The initiative has one strong goal, that of controlling the oxygenation of the brain of babies born prematurely with a high level of accuracy. BabyLux -involving Politecnico di Milano, Fondazione Politecnico di Milano, ICFO- The Institute of Photonic Sciences, Fraunhofer Institute for Production Technology IPT, Hemophotonics SL, PicoQuant GmbH, Competitive Network SL, Region Hovedstaden and Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico- applies innovative techniques. The project, partially funded by the European Commission under the ICT Policy Support Programme (ICT PSP) as part of the Competitiveness and Innovation Framework Program, will last three years, at the end of which a six-month trial period will follow at the Mangiagalli Hospital in Milan and at the Rigshospitalet in Copenhagen. Through the monitoring of optical signals NIRS, the ultimate goal is to reduce the risk of brain lesions from 25% to 20% which can eventually decrease the number of children with disabilities by more than 1,000 per year in Europe alone.

This tool will enable neonatologists to measure the blood flow to the brain and its oxygenation non-invasively and to intervene promptly in case of a problem so as to avoid serious clinical complications leading to brain damage and permanent physical damage and cognitive disabilities. Extremely preterm infants are under intensive hospital care during the first vulnerable months and this possibility is relevant whenever there is a concern for the brain. The tool is portable and can be brought to the bedside, and measurements can be done in a few minutes or done repeatedly if the condition is critical.

According to the Global Action Report published by The World Health Organization in 2012, preterm births are 15 million every year and rising. About 1.1 million babies die from preterm birth complications. 5-18% is the range of preterm birth rates across 184 countries of the world. More than 80% of preterm births occur between 32-37 weeks of gestation and most of these babies can survive with essential newborn care. More than 75% of deaths of preterm births can be prevented without intensive care.

The extremely preterm infants (born at less than 28 weeks of gestation) represent 0.5% of all births which when translated into numbers is equivalent to more than 25,000 cases per year in Europe. These children have a higher risk of death, approximately 20%. They usually remain in intensive care for several weeks and then in the hospital for 2-3 months before going home. Furthermore, one in four grows up with some kind of disability, mainly due to brain injury.

The BabyLux project aims to reduce this problem.

"We are very proud to present a European project of this magnitude", said the project coordinator, Alessandro Torricelli, Associate Professor in the Department of Physics at Politecnico di Milano, "Our goal is to fill a void in the neonatal intensive care, where there aren't any reliable tools to assess the brain blood flow and oxygenation in infants born prematurely. With the synergy and joint work of researchers, clinicians and SMEs from 4 European countries at the end of three years, we aim to have a significant step forward in this important area – improving the future of our smallest children."

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