DESIGN UNITED

Platform for Dutch Research in Design

Comfort and Bonding in Neonatology

Design for Well-being and Embedded Neonatal Monitoring

About

This is a cluster of projects. The foremost project is IOP/IPCR ‘Design for well-being’: transformative design strategies and tools for disruptive design processes. The design for premature babies is a key case study. New technology like smart textiles will replace painful and disturbing classical electrodes. In another project, a smart patient support system is developed. Award-winning graduation student Misha Croes developed the FamilyArizing design including a parent’s necklace, mediated communication and a smart snuggle for the neonate.

Questions

Several research and design questions are intertwined and we work with partners of different disciplines to solve them.

Questions include:

- How to improve the quality of life for the baby and reduce pain, without lowering the signal quality of the monitoring equipment?
- How to design for effective interventions with respect to comfort? Can we assess the baby’s comfort or pain?
- How to design for bonding? Can we measure bonding and attachment?

Results

Improved neonatal care results in increased survival rates. However, the number of neonates at risk of poor developmental outcome also increases to over 50%. Problems include visual-motor integration problems, speech and language delay, behavioral, attention and learning problems. Many children end up in special schools, at huge societal costs. The project aims to develop applications to reduce these problems and societal costs. The Vrouw Moeder Kind Centrum Veldhoven and the Máxima Medical Center act as a test bed for such applications. In IOP/IPCR cross-fertilization with other application domains takes place (with Adidas for example).

Partners

TU/e ID, TU/e IE&IS, TUD IO, UvA, UT, Adidas, Isolectra, MMC, TomTom, Philips Design (partners in IOP/IPCR ‘Design for well-being’).
Philips Research, AME, RHF, TU/e EE, MMC (partners in eNEMO).
FWG, ZonMw (Scriptieprijs Innovaties in de Zorg en studentenparel).

People

Ir. Sibrecht Bouwstra, TU/e ID, promovendus,
Ir. Misha Croes, TU/e ID, promovendus,
Prof. dr. Sidarto Bambang Oetomo, Máxima Medical Center, head of NICU, supervisor,
Dr. Wei Chen, TU/e ID, researcher, co-supervisor,
Prof. dr. ir. Loe Feijs, TU/e ID, supervisor.