

INTERNSHIP/FINAL THESIS – Studying different types of feedback for children with dysfunctional breathing

The Wearable Breathing Trainer (WBT) is a wearable that is developed to support adequate breathing for children (8-15 years) with dysfunctional breathing. During the treatment with the pediatric physiotherapist, different breathing exercises are performed with the aim to breathe towards the abdomen, decrease superficial breathing or breathing frequency. The goal of the treatment depends on the complaints of the child, which makes every treatment personalized to the needs of the patient. In combination with the treatment at the pediatric physiotherapists, children are also asked to perform breathing exercises at home, which are often considered boring. The WBT can support home treatment by monitoring breathing through a sensor placed at the thorax and the abdomen in combination with haptic stimulation for creating effective breathing exercises.



TASK DESCRIPTION

As every treatment is personalized, the goal of this project is to study different types of feedback (visual, auditory and haptic), and to particularly, **investigate different aspects of the type of feedback** that contribute to a positive user experience, such as timing (instruction, concurrent, retrospective). For the assignment, different state of the art applications such as the VGZ app and the Breathing app can be studied, and various prototypes can be made and tested with potential users. You will collaborate with material experts, designers, and textile engineers within our research group, and get the opportunity to involve the whole project team (UT, MST, Deventer Ziekenhuis, Elitac Wearables, among others).

PRACTICAL INFORMATION

- **Student profile:** We are seeking a talented student specializing in Interaction Technology, Industrial Design, Biomedical Technology, Health Sciences, Creative Technology, Psychology, Physiotherapy or a related field to join our team. Experience with user testing and qualitative research is preferred, but not required. This opportunity may involve an internship or a graduation assignment.
- We are looking for a student that can connect different fields of expertise, who is hands on in his/her approach. You will mainly work independently, but you are pro-active in including relevant partners in your research. As a group, we work together to achieve the best results in our projects.
- **Contact person(s) for this assignment:** Melissa van Schaik / m.e.vanschaik@saxion.nl +31616007678
- **Research group Sustainable and Functional Textiles:** saxion.nl/sft