

Dynamic headrest helps wheelchair users

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A dynamic headrest will soon reduce pain and other discomforts for wheelchair users. Anoeck Geers constructed the prototype of this new head support within the framework of the University of Twente's PDEng programme. She is hoping to obtain a doctoral degree with the final design. Anoeck is the 50th PDEng trainee to receive her diploma at the University of Twente.

Anoeck Geers was placed at Focal Meditech, a manufacturer of devices for the healthcare sector, as a PDEng programme trainee. The Brabant company has been working on improving the dynamic adjustability of headrest supporting structures within the NWO Symbionics [project](#) for a few years. This is necessary, among other reasons, because traditional head supports do not move along with changes in sitting posture. "This can result in pain and stiffness. Some [wheelchair users](#) have difficulty swallowing or cannot maintain proper eye contact with the person they are talking to. These are all obstacles that we want to remove."

Anoeck Geers started the two-year PDEng programme after receiving her degree in Biomedical Engineering. "I worked as project engineer at an offshore company for a few years, but my interests lie in another direction. The PDEng programme has given me the opportunity to increase my knowledge of robotics and to work on a practical [design](#) project. It has been a stepping stone to a job that suits me."

The programme laid an emphasis on expanding knowledge, especially in the robotics field, in the first year. The Focal Meditech design project was also started. The second year focused entirely on designing. Anoeck

studied the current use of the headrest and formulated the fundamental rules for the new generation head support. She then constructed the prototype of this dynamic headrest. "What I did during the PDEng programme goes further than research for a bachelor's or master's programme. This is more in-depth and carries greater responsibility. I was given the chance to be in charge of most of the design process."

Now that Anoeck has finished the PDEng programme, she wants to go further. She is working on the next phase of the design at Focal Meditech and wants to obtain a [doctoral degree](#) at the University of Twente in three years' time on the basis of this research. "My objective is for there to be a concrete product on the market. I want it to be useful for people in an electric wheelchair."

Provided by University of Twente

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