

## **Usability assessment of a headrest accessory used for wheelchairs**

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### **Abstract**

**Background:** A large number of wheelchair users have limited control of their neck muscles; head supports are available for these users. The majority of supports are designed to keep the head from tipping to the side; forward tip is mainly controlled by chair tilt. This research team has been asked to complete a human factors assessment of a prototype that fully supports the head regardless of chair tilt. **Objective:** This project's aim is to evaluate the usability of the prototype and determine if changes are necessary to facilitate successful interaction with the product by users. **Methods:** Wheelchair users in local therapy facilities will participate in this study by using the prototype for five days. The users and their caregivers will evaluate the product based on usability (SUS and PSSUQ). They will also describe their experience along with any favorable or unfavorable features of the product. From these results suggested design changes will be offered to the organization for incorporation in future designs. **Impact:** This product will allow users improved interaction with their surroundings, possibly improving their quality of life. It could also lead to increased research on wheelchair head supports and may give new design recommendations to the wheelchair industry.

### **Keywords**

Usability, Wheelchair, Human Factors, Product Design, Headrest

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