Sheffield Support Snood for neurodegenerative conditions

The Sheffield support snood is a neck orthotic designed and developed by the collaborative Devices for Dignity (D4D) ‘Head-Up’ project, for patients with motor neurone disease and other neurodegenerative conditions causing neck muscle weakness. Patients with motor neurone disease and other neurodegenerative conditions commonly experience a progressive deterioration in neck muscle strength and mobility, giving rise to difficulties with correct positioning for speaking, breathing and eating. The Sheffield support snood is intended to provide support to alleviate symptoms and support functioning for patients with motor neurone disease and has the potential to aid rehabilitation for other neurodegenerative conditions.

The Sheffield support snood consists of a lightweight snood that fits the neck of the user, allowing it to be worn under clothing. It functions as a scaffold for the additional lightweight polymer support structures that can be added or removed, according to the degree of support required by individual users. Four support structures with separate functions accompany the snood: i) A straight support of differing sizes fitted according to patient need, ii) A reverse bias support fitted to the back of the collar to pull the head backwards, iii) A shoulder support to prevent lateral tilt and iv) A jaw support to support the head to the rear of the jaw. The support can be adjusted to be task-specific, asymmetric, and increased or decreased over time for degenerative or rehabilitative conditions, respectively. The snood sits on the patient’s neck and offers support along the contours of the neck muscles, which, the developers claim, makes it easier for patients to carry out everyday tasks such as eating and speaking.

Following an initial fitting appointment with a clinician, the adaptive support offered by the Sheffield support snood means that patients and their carers can independently increase (or decrease) the levels of support according to disease progression. A training video is provided with the snood to guide fitting procedures.

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The Sheffield support snood received CE marking in September 2013 and developers anticipate launch for private and NHS clinical use in November 2014 and April 2015, respectively. It is currently undergoing evaluation in a clinical trial, which is expected to complete in July 2014.

**POTENTIAL FOR IMPACT**

Current neck orthotic options include soft foam collars, which may not offer sufficient support and trauma collars which, as they are designed to immobilise, are not usually clinically or functionally desirable. Feedback from the Sheffield motor neurone disorders research advisory group highlighted the need for a customisable neck collar that offered support to weak neck muscles whilst also allowing freedom to move the neck.

The developers state that the key innovative features of the Sheffield support snood are its ability to offer asymmetrical and tailored support to the neck and head, whilst also allowing head movement and facilitating eye contact, speech, eating, swallowing and drinking. Whilst the snood has not been designed to change the disease course, developers hope it will help alleviate neck weakness symptoms and improve quality of life among patients with motor neurone disease and other neurodegenerative conditions. The developers also expect reductions in, and possibly even elimination of, the need for patients to attend regular collar fitting and testing appointments. At this stage the developers anticipate the Sheffield support snood will retail at between £20-30, however final costing discussions with manufacturers are pending.

In the results of a preliminary cost-effectiveness analysis, it is claimed there is scope for a new neck collar for patients with motor neurone disease that also represents a cost effective use of NHS resources. It is anticipated that even if a brace costs around £1,000, it might be cost-effective, assuming that it provides a very substantial increase in adequacy rates from 18% to 50% for patients with moderate needs, and from 0% to 30-50% for patients with severe needs.

**EVIDENCE**

**COMPLETE UNPUBLISHED STUDIES**


**ONGOING STUDIES**


**COMPANY INFORMATION**

The 'Head-Up' project is funded by the National Institute for Health Research (NIHR) Invention for Innovation (i4i) Programme. It is a collaboration between Sheffield Teaching Hospitals NHS Foundation Trust, Barnsley Hospital NHS Foundation Trust, the University of...
Sheffield (Sheffield Institute of Translational Neuroscience) and Sheffield Hallam University. The team was brought together and provided with early funding by the NIHR Devices for Dignity Healthcare Technology Co-operative (D4D HTC).

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This Alert is based on information from the ‘Head-Up’ project research team and a time-limited internet search.