

## Case Studies

### Use of the HEADALOFT™

Andrea Nadai, MHP, PT  
Boston MedTech Advisors

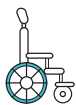
HEADALOFT™ is a versatile, clinically effective and safe solution, that provides head support for any wheelchair, car seat, or other positioning system with headrest.

In addition to addressing functional deficits, the HEADALOFT™ enhances users' ability to communicate and socially interact with family members, friends, and healthcare professionals, and enhances their self-esteem. HEADALOFT™ is currently used in rehabilitation hospitals, nursing homes, and in the community, improving care and quality of life of adults and children with diverse clinical needs.

For some patients, the HEADALOFT™ offers superior anterior and occipital head support while they recover from an illness or injury. For other users the HEADALOFT™ is a life-long companion, used during transport, or while performing specific activities, such as eating, learning, socializing, or being transported, and at times, simply to provide additional support when they are too tired to hold their head upright independently.

HEADALOFT™ users are reporting increased satisfaction with their ability to better participate in daily activities and clinical professionals, caregivers, and family members have reported multiple functional outcomes realized by using the HEADALOFT™. Some functions include:

- Improved swallowing.
- Improved strength of back and neck muscles.
- Reduced neck and back pain.
- Direct eye contact and better interaction with family members, caregivers, and friends.
- Enhanced quality of life.



**Attaches easily to any seating and mobility headrest**



**Highest quality materials and standard compliance**



**Fits most car seats**



**Crash tested**



**Machine washable**

## Traumatic Brain Injury

RZ is a 68-year-old female who sustained a traumatic brain injury following a fall when walking. Before her injury, RZ was healthy and active, despite significant scoliosis. RZ had no complaints immediately post-injury, but she developed a brain hemorrhage ten days later, resulting in hospitalization to remove a blood clot.

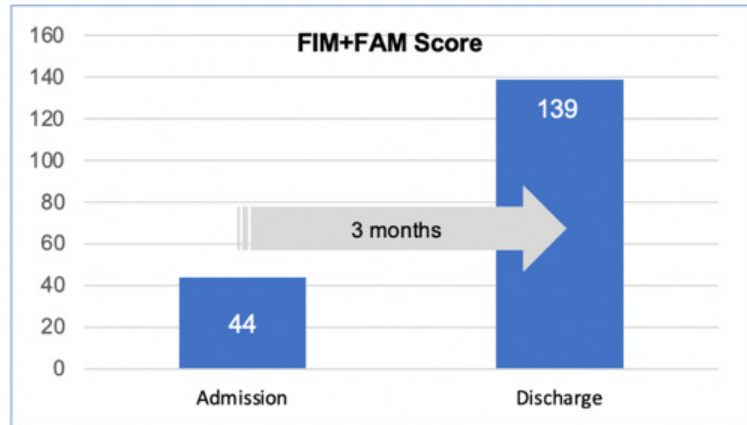
RZ was transferred to a rehabilitation hospital two weeks post-op. At the time of admission, RZ's overall disability score, assessed using the Functional Independence Measure and Functional Assessment Measure (FIM+FAM) was 44. She was unable to swallow, speak and perform most activities of daily living. A feeding tube was inserted to provide nutrition.

RZ used a tilt-in-space wheelchair to maintain postural control as she could not hold her

head upright in a sitting position. A HEADALOFT™ was added to the wheelchair to provide anterior head support for functional tasks, communication, and social interactions. The HEADALOFT™ was used when RZ was seated in the chair during the first two months. Once her posture and overall condition improved, she was transitioned to a standard wheelchair.

***"I believe that the use of the HEADALOFT™ contributed to RZ rapid and consisted improvement in communicating with her caregivers."***

Senior Physiotherapist



**The clinical team attributed the rapid recovery demonstrated by RZ, including gains made in her ability to communicate, to the use of the HEADALOFT™.**

Following continuing progress, RZ was discharged to her home after almost four months at the rehab hospital. Before her discharge, at the three months assessment, RZ's FIM+FAM score had increased to 139. Once at home, RZ no longer required the use of a wheelchair for mobility. She was able to independently hold her head upright, bathe and dress, ambulate with a walker, speak, and eat without the need for a feeding tube.

## Stroke

ES is a 50-year-old male who suffered a severe CVA resulting in left-sided hemiplegia and right-sided hemiparesis.

Before his CVA, ES was healthy, worked full-time, and had no restrictions in functional abilities. Following treatment in an acute care setting, ES was transferred to a rehabilitation hospital, three weeks post-stroke.

At the time of ES admission to rehab, his Functional Independence Measure and Functional Assessment Measure (FIM+FAM) score was 35. ES required extensive assistance with all activities of daily living. He demonstrated left-side neglect and language and cognitive deficits, and was unable to maintain eye contact, listen and pay attention.

ES had difficulty breathing and could not sit without assistance, hold his head upright, and swallow, resulting in aspiration pneumonia and subsequent insertion of a feeding tube.



***“The improvement began as soon as his head was up in a symmetrical position using the HEADALOFT™, letting him once again see the world upright.”***

Primary caregiver

A tilt-in-space wheelchair was provided at admission, with ES placed in a tilted position due to poor head control. Shortly after, the HEADALOFT™ was added to allow ES to sit upright with symmetrical head alignment. Following the addition of the HEADALOFT™, the clinical team, caregivers, and visiting family members noted rapid improvements in swallowing, speech, eye contact, and social interaction. HEADALOFT™ was used throughout the hospital stay whenever ES was seated in the wheelchair.

**ES was discharged eight months after admission, with a FIM+FAM score of 45. While functional mobility deficits remained, ES demonstrated significant**

**improvements in communication, cognition, and eating. He could hold his head up for 10-15 minutes without support, speak, socially interact with family and caregivers, swallow independently and eat soft foods.**

At a follow-up review one year following discharge, ES continued to make progress with head control. He requires a wheelchair and is using the HEADALOFT™ less often, primarily for transportation and when fatigued.

## Cerebral Palsy (older child)

AA is a 16-year-old male with a diagnosis of cerebral palsy with spastic quadriplegia.

At the time of evaluation (age 13), AA was positioned in a tilt-in-space wheelchair with a standard headrest, and a supine stander. Due to his poor head control, AA maintained his neck and head in a forward flexed position and had difficulty with swallowing, was not able to feed himself, was unable to fully participate in classroom or social activities, or able to manipulate a power wheelchair joystick. AA has significant cognitive and communication impairments; he could not adequately interact with his environment without the ability to visually engage due to poor head control.

### Functional classification scores

Functional Scale	Level	Description
Gross Motor Function Classification System (GMFCS)	5	Wheelchair dependent, limited in ability to maintain anti-gravity head and trunk postures and control leg and arm movements
Manual Ability Classification System (MACS)	5	Unable to handle objects or complete simple actions with their hands
Communication Function Classification System (CFCS)	4	Seldom able to communicate effectively, even with familiar people
Eating and Drinking Ability Classification System (EDACS)	4	Eats and drinks with significant limitations to safety
Level of Sitting Scale (LSS)	3	Requires support from shoulders or trunk downward to maintain sitting position



***“My son can now communicate and ask for things he needs. He has some independence for the first time in his life.”***

AA’s mother

**Since the introduction of the HEADALOFT™ and over a period of 2.5 years, AA has demonstrated consistent neck strength progress and eventually supported his head for short periods independently.**

Once reaching that point, the HEADALOFT™ was used intermittently to support functional, educational, and recreational activities. Improvements were noted with eating and swallowing, engaging with peers and teachers at school, and participating in social and recreational activities. With improved eye-hand and

## Cerebral Palsy (younger child)

MY is a 5-year-old boy diagnosed with cerebral palsy with spastic quadriplegia, referred for power wheelchair mobility training.

At the time of evaluation, he used a tilt-in-space wheelchair for functional mobility. MY had difficulty holding his head upright for self-feeding, ambulating with a Hart walker (exoskeleton providing trunk and lower extremity support), and interacting with his environment.

### Functional classification scores

Functional Scale	Level	Description
Gross Motor Function Classification System (GMFCS)	4	Requires physical assist or powered mobility in most settings, may walk for short distances at home with physical assist, uses a manual or power wheelchair at school, outdoors and in the community
Manual Ability Classification System (MACS)	5	Unable to handle objects or complete simple actions with their hands
Communication Function Classification System (CFCS)	4	Seldom able to communicate effectively, even with familiar people
Eating and Drinking Ability Classification System (EDACS)	4	Eats and drinks with significant limitations to safety
Level of Sitting Scale (LSS)	3	Requires support from shoulders or trunk downward to maintain sitting position



Prior use of an older version of an anterior head support device was unsuccessful, with MY frequently crying and complaining of discomfort during use. Once the HEADALOFT™ was introduced to assist with head control for functional tasks, its portability has allowed MY to use the head support on multiple types of equipment, including wheelchairs, supine stander, and car seats. He can ambulate indoors with the Hart walker and has initiated power wheelchair training.

**HEADALOFT™ has allowed MY to maintain good head alignment and turn his head side-to-side for functional tasks, with more effective interaction with his environment. After a few months using the HEADALOFT™, MY has advanced to a point where he could maintain an upright head position in a supine stander, feed himself and engage in playing with siblings and peers.**

*Nothing says "I am equal and able" like the bright-eyed gaze of a person looking at the world secured and stable. HEADALOFT™ is more than an assistive device. It helps people hold their head up high. It allows them to control their life.*

Maurit Beerl, MD, MPA  
CEO, Alyn Hospital

