

Aspen

Collar/CTO
Cervicothoracic Bracing System



Innovative Patient Care



Cervical Collars you can count on!

Effective Motion Restriction...

Aspen® Cervical Collars minimize skin breakdown while providing substantial motion restriction. The structural elements of the collars have been designed to spread support across broad contact surfaces there by eliminating "hot-spots" that can cause decubitus ulcers. Research has proven that this design enables the collar to maintain skin contact pressures well-below the capillary closing threshold.¹

The motion restriction provided by the Aspen Collar has been scientifically evaluated. Utilizing videofluoroscopy, researchers have documented both the translation and angulation of each vertebral segment through the entire range of motion. Results show the Aspen system to be unsurpassed in its ability to safeguard the patient.²

- *Comfort for Compliance*
- *Extensive Customer Support*
- *Better Patient Outcomes*

without Skin Breakdown

Aspen's unique CushionFlex Tabs™ allow the collar to conform to each patient as it is tightened for a true custom fit. Tightening the Occipital Support Strap™ further customizes the collar by creating an adjustable, three dimensional "shelf" that cradles the back of the head. Comfort is further enhanced by hypoallergenic, cotton-lined replacement pads that cushion the interface between the "structure" of the collar and the tender skin surface of patients. This attention to comfort results in better patient compliance.

Customer training is also a top priority. Local representatives and in-service nurse educators work closely with facilities to reinforce proper use and ongoing care. When coupled with a comprehensive protocol that includes cervical spine clearance procedures, proper sizing and application, as well as regular hygienic care, Aspen Cervical Collars have been documented to eliminate, or dramatically reduce, collar related skin breakdown,^{3,4} while providing unsurpassed motion restriction.



Complete Infant & Pediatric Collar Line



References:

1. Plaisier, B. et al. Prospective Evaluation of Craniofacial Pressure in Four Different Cervical Orthosis. *Journal of Trauma*, 1993, Vol. 37, No. 5.
2. Gavin, T., Carandang, G.; Havey, R.; Flanagan, P.; Ghanayem, A.; Patwardhan, A. Biomechanical analysis of cervical orthoses in flexion and extension: A comparison of cervical collars and cervical thoracic orthoses. *Journal of Rehabilitation Research and Development*, 2003, Vol. 40, No. 6.
3. Blaylock, B. Solving the Problem of Pressure Ulcers Resulting from Cervical Collars. *Ostomy/Wound Management*, May 1996, Vol. 42, No. 4.

4. Powers, J. A Multidisciplinary Approach to Occipital Pressure Ulcers Related to Cervical Collars. *Journal of Nursing Quality*, 1997, Vol. 2, No. 1.
5. Alberio, Marc J., Foamex International Inc., personal correspondence, February, 28, 2002.
6. Absorption Comparison Test, Orange County Materials Test Laboratories, Anaheim Ca, May 28, 2002.





Cervical Collars and a Cervicothoracic Bracing System

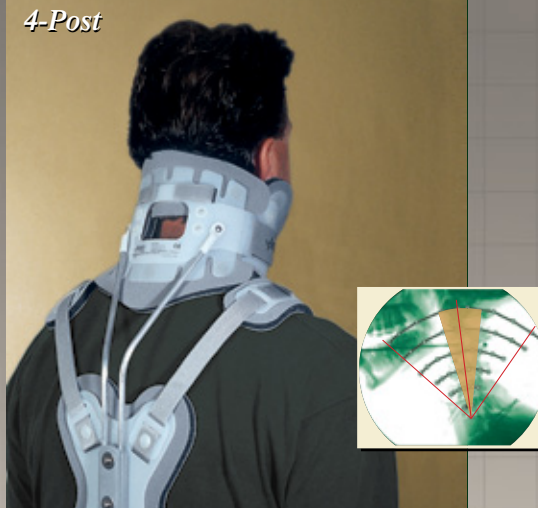
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CTO Step Down System

4-Post



2-Post



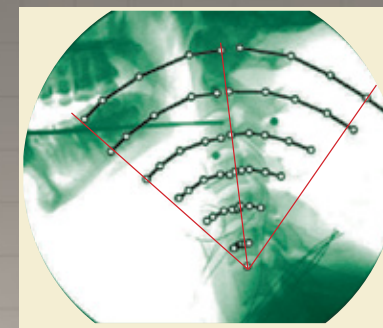
Collar



with Multiple Orthotic Options

The Aspen® Cervicothoracic Bracing System™ provides a fully integrated approach for quantifiable motion restriction of cervical spine patients. Physicians are now able to prescribe patient therapies based upon the needs defined at specific vertebral levels to ensure the best possible outcomes.

By incorporating design elements that allow the Aspen System to be "stepped down" from a 4 post CTO, to a 2 post model and then to a stand alone collar, it is now possible to tailor the degree of motion restriction to the specific needs of the patient. And, because no ferrous metal is used, the brace is MRI compatible.



The anterior and posterior red lines represent unbraced range of motion as measured by videofluoroscopy.

and Proven Performance

Utilizing videofluoroscopic technology, university researchers and practicing clinicians have quantified cervical motion restriction at each vertebral segment.

Data were compiled for each of the three different orthotic configurations.² Numerical results are shown in the table

to the right. These findings are graphically shown as insets on the photographs to the left. The gold wedges show motion allowed in flexion and extension when moving from the 4 post CTO, to a 2 post CTO, and finally an Aspen Collar.

Cervicothoracic Bracing Options (Percentage of Unrestricted Centroid Motion)

Flexion Motion Allowed					
4-Post	11.6	17.8	13.8	16.6	22.2
2-Post	22.0	22.2	25.3	25.3	29.9
Collar	37.0	43.4	41.3	47.1	47.7

Extension Motion Allowed					
4-Post	25.5	28.0	25.9	22.8	19.7
2-Post	49.5	51.7	52.8	51.5	45.5
Collar	54.4	58.1	58.5	60.3	62.2

C ₁₋₂	C ₂₋₃	C ₃₋₄	C ₄₋₅	C ₅₋₆
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- Segment Specific Data
- Secure Bracing Solutions
- MRI Compatible

Pediatric CTO Option



Aspen
Cervical
Collar

Aspen
CTO

Collar Replacement Pads



Comfortable by Design

Aspen® Replacement Pads are all about comfort. Dense, clickable foam offers superior cushioning to other leading collars⁵ and is your best defense against skin breakdown. While the two-tone color scheme provides insurance against improper pad replacement, the gray, nappy surface makes a great bond with the hook velcro inside the collar to maintain alignment and eliminate migration.

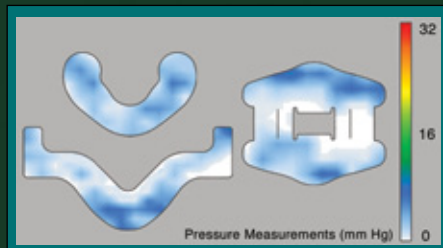
The white cotton, hypoallergenic contact surface draws fluids through itself and into the pads⁶ to minimize moist contact surfaces where problems can begin. And, because the patient contact side is white, Aspen pads clearly show areas where fluid drainage, or soiling has occurred so it does not go unattended.



Perform Under Pressure

Aspen® Cervical Collars have been evaluated for pressure created at the surface of the patient's skin¹. Utilizing a force sensitive pressure mapping system, readings were taken across the entire contact surface of the pads. Results are shown in the images to the right.

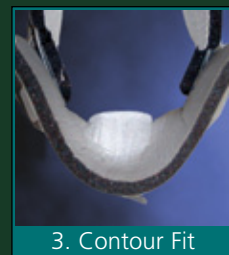
To further reduce localized pressure, an Occipital Support Strap™ allows you to create compound curves to better follow the contours of the occiput. To create these curves, simply peel back the strap, tighten as needed and secure for a contour fit.



1. Peel Back



2. Tighten



3. Contour Fit



Fit Patients and Their Needs

A special "Large Back" allows for proper fitting of extra heavy, or fluid resuscitated patients while an optional "Small Back" panel can be used to minimize contact surfaces on patients requiring prolonged recovery time in a supine position.

Collars can be purchased alone and then used with extra pads or in "sets" with the extra pads already included. By utilizing these options health care professionals can keep patients comfortable and minimize skin breakdown problems when pads are being washed or become too soiled to use.