

WHAT IS A CRANIAL ORTHOSIS?

There are two main categories of cranial orthosis. The first being protection the second category being remolding.

Protective cranial orthosis have been used for decades for children and adults who are self-abusive, prone to falls, have other neurological disorders in which the risk of injury to the skull is great, or patients who have had recent skull surgery.

Cranial remolding, while performed for centuries, has been growing exponentially over the last 14 years. The modern cranial remolding orthosis is considered by the FDA to be a Class II neurologic device. This classification was achieved after stringent documentation and bench testing to demonstrate clinical effectiveness was performed. Cranial remolding orthosis can be made using foam to lie against the skin then covered by a rigid plastic. Other designs utilize a more flexible plastic and omit the foam layer. There are remolding orthosis, which are encapsulating, similar to a football helmet enclosing the ears and top of the head. Still other designs -termed Bands- have a large opening at the top and do not enclose the ears.

HOW DOES A REMOLDING ORTHOSIS WORK?

Regardless of the design of the orthosis, all remolding orthosis work on the same theories and biomechanical principals.

The Orthotic design looks to restrict growth in the bossing or bulging areas of the skull and allow growth in the flattened areas. The orthosis provides total contact in the areas where growth is to be curtailed or restricted. Space is then allowed in areas of desired growth. This design principal gently guides the infant skull into a more normal shape.

The orthosis will facilitate midline head positioning while the infant is supine(on their back). Since the orthosis is a hard, symmetrically curved surface, the infant will be able to activate neck and trunk musculature to both sides. This will enhance their ability to roll from prone (belly) to supine (back) and back again, which are skills that provide a foundation for higher-level motor activities. The orthosis will attempt to restore symmetry to the skull so that the child will be able to wear standard, protective head gear for bicycling, baseball, football and other activities as they mature.

We recommend that treatment be implemented during the period of most rapid cranial growth, from 3-8 months of age, and encourage physicians to refer patients early, usually at 3-5 months of age, for best results. The goal is to control as much remaining brain growth as possible and complete treatment before the cranial sutures close (approximately 18 months of age) or brain growth slows (usually around 12 months of age).



WHAT DO INFANTS AND PARENTS EXPERIENCE WHEN USING THIS DEVICE?

A vast majority of parents comment that their infants had little to no problems accepting the device. The younger the child the more likely they are to treat this device as another piece of clothing.

Older children who are becoming self-aware tend to need more distraction to limit their fussing with the helmet. Often in three to four days they too accept wearing the device. A problem all children wearing a cranial helmet experience is perspiration. Perspiration can lead to skin rashes, irritations, and odor. Standard NiC BAND Program protocol calls for two-one hour breaks and two-half hour breaks during a 24 hour period. At each break the helmet is cleaned and powdered.

HOW LONG DOES TREATMENT LAST?

Depending on the age of the child at the start of treatment, a course of cranial remolding can last from 2-6 months, sometimes longer. Infants beginning treatment at age 3-4 months are often treated until they are 7-8 months of age to reduce the potential need for a second helmet to maintain correction. At 8 months of age infants are usually rolling over, on their own, and sleeping on their stomachs. At this age their skulls are more calcified and they tend to be sitting up more. All these factors help reduce the likelihood of losing any correction that was gained during treatment.

THE FUTURE?

Bay Orthopedic and Rehabilitation Supply's portable, state-of-the-art three dimensional laser scanner has provided a faster, cleaner and less traumatic method for fitting infants with cranial deformities versus the traditional plaster casting method. Using a simple sock with reflective targets we are able to create an image of the infants head, accurate to within 2mm. This permanent, digitized image allows for comparisons of head shapes during treatment, calculates an infinite number of measurements, and allows for printing and emailing of the image for insurance coverage purposes.

In recent years parents have become more active in seeking information on Deformational Plagiocephaly thereby increasing the number of infants being referred earlier for treatment. This trend, along with advances in technology, is expected to lead to much better outcomes for patients and their families.

Please click on the CONTACT US tab (www.bayorthopedic.com) for any specific questions.

