

ORTHOTICS

Plagiocephaly and Torticollis: Asymmetrical Head Shape Treated with Cranial Remolding Orthoses

“When I took Sayla to our physician for her 4 month checkup, I questioned her head tilt and she had a bump on her forehead.” said Shanda Bender, Sayla’s mom. “My doctor said the bump was because of the flat spot on her head and suggested I try repositioning techniques. At that point, we met with a physical therapist, and began treatment for torticollis.” The therapist also recommended that Sayla have an evaluation for a cranial remolding helmet.



While the *back to sleep, front to play* campaign has reduced the incidence of SIDS by 40%, placing infants on their backs for sleeping has created a higher incidence of cranial deformities from the pressure placed on the back and sides of babies’ soft skulls. In the first few months after birth, a baby’s skull remains soft and malleable to accommodate a rapidly growing brain. Skull plates have not yet fused together.

Cranial deformities can occur when pressure is regularly placed on one area of a baby’s skull: for example, a baby with reflux problems who sleeps in a car seat to keep from regurgitating may develop a flat area on the back of his or her head. An infant, who prefers to turn his or her head one way when sleeping, can develop a flat head

area as well. In some instances, helmet therapy may be required to help reshape the baby’s head.

The four types of cranial deformity are; brachycephaly, plagiocephaly, schaphocephaly, or a combination, with the most common being plagiocephaly. Plagiocephaly is characterized by flatness on one side of the back of the head. This condition can be accompanied by a bossing above the same side eye, and the ears can be out of alignment. Some infants have a side preference because of a condition called torticollis, where a weakness or shortening of the sternocleidomastoid muscle causes tightening on one side, making turning and tilting the head in the other direction uncomfortable. Physical therapy is frequently recommended for babies with torticollis.

While it is possible for some heads to reshape on their own, those who don’t will likely require a cranial remolding orthoses or helmet. Helmet therapy is a passive process. Voids are shaped into a custom helmet to allow the flatter area to expand while also providing protection from deformational pressures in other areas.

If you have a patient who might be a candidate for therapy or a cranial remolding orthoses, he or she can be evaluated at Mary Free Bed’s comprehensive program based on a prescription. If a cranial remolding orthosis is indicated, Mary Free Bed Orthotics will scan the child’s head to determine the severity of asymmetry. Data from the scan will be used to create a model of the child’s head, as it exists. The model will be modified and the cranial remolding orthosis will be made using the symmetrical (corrected) model.



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Plagiocephaly and Torticollis: Asymmetrical Head Shape Treated with Cranial Remolding Orthoses – cont.

The best age to start helmet therapy is between 4 and 6 months, when growth is rapid, but an evaluation and baseline scan can be done as early as 2 months. The helmet is usually worn 23 hours a day. Regular follow up appointments are made to allow the certified orthotist to modify the cranial remolding orthosis as the child's head grows to symmetry. We have found outcomes are generally good if intervention is early and parents are compliant with protocols: full-time wear, regular appointments, and attention to hygiene.

Bringing a baby's head closer to symmetry is not just a cosmetic issue. Asymmetry can lead to other issues. Eye positions may develop on different planes, teeth may not line up to the jaw, and balance may be adversely affected. In some cases, babies who aren't treated may have complications later in life with vision and jaw function.

Mary Free Bed uses the StarScanner to evaluate and measure head shape, and to prepare for manufacture of the helmet. This process is a lot less stressful for parents and the child, compared to older methods, which required casting the babies head in plaster.



Elijah Pletcher's mother, C.J., was concerned when she first heard that her baby needed a helmet, but after they started the process C.J. said, "Elijah never seemed to even notice it. The people at Mary Free Bed Orthotics were great! Our clinician, Gina, put us at ease and we saw an improvement in 2

weeks." Elijah will wear the helmet for approximately 4 months, but mom says that it's worth it.

Sayla's mom echoes those sentiments. She adds, "When I took Sayla to Mary Free Bed, her head didn't look that bad to the naked eye. However, the scan showed Sayla was a candidate for the helmet and Mary Free Bed Staff Orthotist, Elisa de Jong, started and completed her treatment within 3 months."

To find out more about treatment options and protocols for plagiocephaly and torticollis, plan to attend our **Plagiocephaly and Torticollis In-service Luncheon on January 16, 2008**. Dayle Maples, MD; Gina Corazza, CO; Sue Uglietta, PT; and Penny Richards, OT, will present and answer your questions.

Because lunch will be provided and space is limited, please RSVP for this event by January 5, 2008, by calling Stephanie Millis at 616-242-0305, or e-mail at Stephanie.millis@maryfreebed.com.

DAFO Event

On Friday, October 12, 2007, Mary Free Bed Orthotics and Prosthetics was host to Cascade DAFO, along with 30 physical therapists, orthotists and physicians for an event focused on ankle foot orthotics for challenging pediatric patients. Cidny Fox, CPO, from Fairfax, VA, was the featured presenter at the daylong in-service. Participants were able to work with Cidny to learn correct positioning and casting techniques. Cidny addressed some of the most challenging pediatric issues.

Cascade DAFO, Incorporated, is the leader in design, innovation and manufacture of dynamic Ankle Foot Orthotics for children and adults.

If you work with a patient that you think would be a candidate for the DAFO lower extremity bracing system, contact MFB Orthotics and Prosthetics at (616) 242-0315, and someone will be happy to assist you.

Restoring Hope and *Freedom*
Mary Free Bed
Rehabilitation Hospital

PROSTHETICS

L.A.S.A.R.™ Posture

When fitting a patient with lower-limb prostheses, a critical final step is proper static and dynamic alignment. Proper alignment allows for a safe and stable gait. For the above knee prosthesis, it is important that the prosthetic knee remain extended and fully supportive during the stance phase. While the plumb bob was our most effective way to accomplish optimum prosthetic alignment, the latest technology is the L.A.S.A.R.™ Posture device, by Otto Bock. The system consists of a force-sensing platform, laser projection, positioning system and supporting units.



A laser beam is projected, which quickly and precisely determines the weight and center of balance of a standing patient and shows the force and path of force along an amputee's leg during weight bearing. This system allows our prosthetists to achieve a bio-mechanically correct and optimal static alignment for the individual, and allows the prosthetist to later check the dynamic alignment of each prosthesis we create.

The L.A.S.A.R.™ Posture device measures in both the sagittal and frontal planes, and reduces the need for time-consuming trial fittings. Currently trans-tibial prostheses are aligned based on references, which are subjectively determined by the clinician. This can create a time consuming process until an acceptable result is achieved.

The new L.A.S.A.R.™ Posture device allows a better alignment and eliminates the guess work. In one study,

the posture and static alignment of prostheses of 18 trans-tibial amputees were successfully determined using the new Otto Bock L.A.S.A.R.™ Posture device. In addition to their regular prosthesis, the patients wore a variety of prosthetic feet. The L.A.S.A.R.™ Posture device quickly and accurately determined the center of pressure for a standing person, and indicated the amputees' unique load line by projecting a laser light on the limb. In addition, shifting the laser line manually allows the clinician to measure the distance of a specific body part or joint position from the load line.

The results indicate that the distance from the load line to the knee joint center is independent of the ankle/foot mechanism, but is somewhat dependent on the patient's weight. At present, clear bio-mechanical "rules of alignments" can be developed. The knee center should be 10-30 mm behind the load line, depending on the patient's weight. The foot position related to the load line varies according to the functional capabilities of the components.

The L.A.S.A.R.™ Posture consists off a force-sensing plate with four measurement cells located in each corner of the plate. Using these inputs, the L.A.S.A.R.™ Posture device can determine the center of the forces measured. The ruby laser line that is projected onto the body or object being measured represents its unique line of gravity. Mary Free Bed Prosthetics is now using the L.A.S.A.R.™ Posture Device to optimize the fitting process of our prosthetic patients. If you would like more information about why we feel that the L.A.S.A.R.™ Posture device can help your patients when fitting a prosthetic limb, please contact our office at (616) 242-0342.

Upcoming Event

Date: Tuesday February 26, 2008

Event: Mary Free Bed Prosthetics Presentation

Topic:

- Transfemoral (Above Knee) Amputees in the Community
- Transfemoral Amputation – Prosthetic Indications, Capabilities and Limitations
- Traditional Transfemoral Fitting (Preparatory & Definitive Care)
- Advanced Transfemoral Fitting (C-leg, Rheo, Seal in Liners)

Presenters: Benjamin Bruinsma, MD

David Firlik, CP

Patrick Nimphie, CPO

Mark Bennett, CPO

John King, CP

STAFF UPDATES / NEWS

Mary Free Bed Orthotics & Prosthetics - Holland Satellite Moves to New Location



Mary Free Bed Orthotics and Prosthetics - Holland satellite office moved to a new location on November 1, 2007. This new location will provide patients with a larger facility, and will allow our clinicians the ability to provide more extensive services. The new office is located just west of US-31 and Riley Street:

**12662 Riley St., Suite 150
Holland, MI 49424**

(616) 392-6240 / Phone
(800) 474-0325 / Toll Free
(616) 392-7071 / Fax

Our Holland location is staffed by:

Mark Porth, CPO, FAAOP
Brent Tuinstra, CO
Maureen Luckett, Patient Coordinator

If you need more prescription pads, would like us to provide an in-service at your office, or would like more information on our services in Holland, please contact Maureen Luckett at (616) 392-6240.

Elisa de Jong Completes Orthotics Residency at Mary Free Bed



Elisa de Jong has just completed her one year residency with Mary Free Bed Orthotics. She has worked with a variety of patients, both independently and by assisting other orthotists. Her residency included fitting Cranial Remolding orthoses, spinal orthoses, and a variety of upper and lower extremity orthoses.

Elisa received her undergraduate degree in psychology from Eckerd College in St. Petersburg, FL. From there, Elisa went to California State University at Dominguez Hills, where she received her Orthotist education. Elisa says, "I decided to become an orthotist because I liked the combination of patient care and working with my hands". A Tennessee native, Elisa says, "Michigan reminds me of home. Now that her Orthotics Residency is over, Elisa will take her certificate exams this winter.

In her spare time, Elisa enjoys playing tennis, biking, reading and traveling. Elisa has been an outstanding addition to our orthotics department and we would like to congratulate her on completion of her residency.

Staff Contacts:

Orthotics: John Flynn CPO (Clinical Manager 616-459-1810), Rex Brown CO (Pediatrics 616-356-1886), Gina Corazza CO (Plagiocephaly 616-356-1887), Doug Richardson CO (Spinal Deformities, Brain Injury and Facial Burns 616-242-0315), Becky Meyer CO (Spinal and Pediatrics 616-242-9213), Brent Tuinstra CO (Pediatrics and Plagiocephaly 616-493-9823), Elisa de Jong Staff Orthotist (616-242-0457), Larry Dubinshak CPed (616-356-1884), Becky de Longpre CPed (616-356-1894), Stacy Eddy, Assistant (River Valley Orthopedics 616-493-9698), Jennifer Marcellus, Assistant (River Valley Orthopedics 616-233-1117).

OrthoS.E.A.T.: Karen Gora (Clinical Manager 616-242-0347), Steve Anderson (Production Supervisor 616-456-4847), Joel Allchin SLP (616-242-0342), Peggy Barbour OTR (616-356-1907), Mary Hamell COTA (616-456-4843), Lisa Newhouse OTR (616-242-9278), Amy Ortego OTR (616-242-9289), Matthew Scholtens (Assistive Technology Specialist 616-356-1892).

Prosthetics: Patrick Nimphie CPO (Clinical Manager 616-356-1865), Mark Bennett CPO (Staff Prosthetist 616-242-0437), David Firlik CP (Upper Extremity 616-242-0453), Tony VanEss CP (Pediatrics 616-242-0461), John King CP (Trans Femoral 616-242-9240).

Rehab Technology Center: Karen Gora (Clinical Manager 616-242-0347), Sister Kathryn Mullarkey (Assistive Tech Coordinator 616-242-9253).

Orthotics & Prosthetics Muskegon / Holland Satellites: Mark Porth CPO (Clinical Manager 616-392-6240).

In-service Requests: Stephanie Millis (Orthotics Assistant and Marketing Specialist 616-242-0305).