

## ORTHOTICS

### Pediatric Orthotic Patient Management

The orthotic management of pediatric patients traditionally includes a number of choices for patients with lower limb weakness, deformities, spasticity and gait deviations. Pediatric orthotic management begins with a thorough evaluation by a trained physician and therapist. In many cases a Mary Free Bed orthotist is a part of the interdisciplinary team where specific goals and treatment plans are developed in conjunction with family input. Once the goals are outlined, the patient is referred to the orthotist who will evaluate, design, fabricate and fit the required orthosis according to the goals outlined by the medical professionals and family.

The orthotist must be familiar with normal development, biomechanics, pathology, and anatomy of the human body. They must be familiar with the different types, materials, and designs of lower limb orthoses available for the pediatric patient. Mary Free Bed orthotists have extensive training in pediatric patient management including Reciprocating Gait Orthoses (RGO), Dynamic Ankle Foot Orthoses (DAFO) systems, Standing Walking and Sitting Hip orthoses (SWASH), TC Flex Dynamic AFO systems, Sure Step SMO systems for low tone patients, Progressive Casting and Splinting for Lower Extremity Deformities in Children with Neuromotor Dysfunction (Beverly Cusick, M.S. P.T.), and Ultraflex Systems for ROM. Other sessions have included the American Academy for Cerebral Palsy and Developmental Medicine (AACPD), Updates in Pediatric Orthotics, and Pediatric Patient Management presented at the American Academy of Orthotics and Prosthetics.

The pediatric orthosis is designed to provide joint alignment, ROM control, standing and walking stability. With the choices of orthoses available, the orthotist will assess the patient and design the orthosis for the desired function. The orthotist must also consult with the patient and family on cosmesis, usability, and follow up to make sure the orthosis is comfortable for the patient.

New research at the University of Strathclyde in Scotland by a Scottish PT Elaine Owens has investigated ROM related to the gastrocnemius muscle group for pediatric patients. Ms. Owens's investigation shows that without adequate ROM at the gastrocnemius muscle group, the patient will have difficulty walking, with or without an orthosis. Patients with spasticity are most problematic and seem to respond better when the clinician includes the R1 ROM of the gastrocnemius muscle when assessing the available ROM for fabrication and alignment in the sagittal plane. The Scottish research studies show that patients tolerate the orthosis and actually gain ROM over time by stretching the gastrocnemius muscle group when wearing the orthosis. It was reported that if the ankle angle in the AFO is set without regard to the available gastrocnemius group R1 ROM, then there will be insufficient length to allow knee extension at initial contact and terminal stance. The author suggests that the AFO be set in plantar flexion to the degree of R1, the heel of the patient's shoe be built up to achieve the normal alignment for gait, and a rocker sole be applied to insure normal toe rocker motion. The opposite shoe would be built up as necessary to compensate for the adjustments. Elaine Owens will be reporting her findings in the Physical Therapy Journal. This approach was presented at a Rehab Institute of Chicago seminar, Updates in Pediatric Orthotics, in January 2006. John Flynn CPO, Mary Free Bed Pediatric Physical Therapists and area school Physical Therapists attended the seminar.

## ORTHOTICS AND PROSTHETICS

### Mary Free Bed Orthotics and Prosthetics Announces New Website – [maryfreebedOandP.com](http://maryfreebedOandP.com)

In May 2006, Mary Free Bed Orthotics and Prosthetics launched a new website. Patients and professionals are invited to peruse the site for useful information.

The site is directly linked to the main Mary Free Bed system site [www.maryfreebed.com](http://www.maryfreebed.com), making for a very comprehensive rehabilitation resource.

## ORTHOTICS AND PROSTHETICS – cont.

### TempusOne Scheduling Software Update

All Mary Free Bed Orthotics and Prosthetics offices have now completed an upgrade to the computerized scheduling system. The new TempusOne scheduling software is used by all Mary Free Bed inpatient, outpatient and clinic offices, allowing for better coordination of appointments across the Mary Free Bed system.

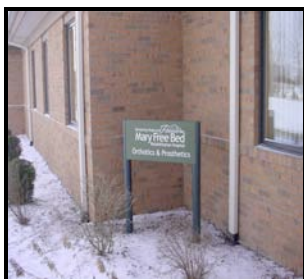
## ORTHOTICS AND PROSTHETICS SATELLITE OFFICES

MFB satellite offices continue to enhance services by providing additional appointment opportunities. Brent Tuinstra CO is now spending several days per week in Holland which will allow Mark Bennett CPO to spend more time in the Big Rapids / Greenville areas. Both areas are meeting the needs of patients who have difficulty traveling to Grand Rapids.

Mary Free Bed participated in the Lakeshore Family Health Expo at the Lakes Mall on Saturday March 4, 2006.

George Dornbos ROF, and Mark Porth CPO, and several other Mary Free Bed O/P staff attended the American Academy of Orthotists and Prosthetists National meeting in Chicago during the week of March 1 to 4.

The Holland and Muskegon offices are upgrading data lines to DSL level performance for enhanced computer links to the Mary Free Bed campus.



Mary Free Bed Orthotics and Prosthetics  
Big Rapids  
(800) 474-0324

**Patients at this office are seen by appointment only.**



Mary Free Bed Orthotics and Prosthetics  
Hastings  
(800) 474-0324

**Patients at this office are seen by appointment only.**



Mary Free Bed Orthotics and Prosthetics  
1078 E. Sternberg Rd.  
Muskegon, MI 49444  
(231) 798-0047 or (800) 474-0325



Mary Free Bed  
Orthotics and  
Prosthetics  
175 South Waverly.  
Holland, MI 49423  
(616) 392-6240 or  
(800) 474-0325

## PROSTHETICS PRESENTATION TO MIDWEST ORTHOPEDIC RESIDENTS

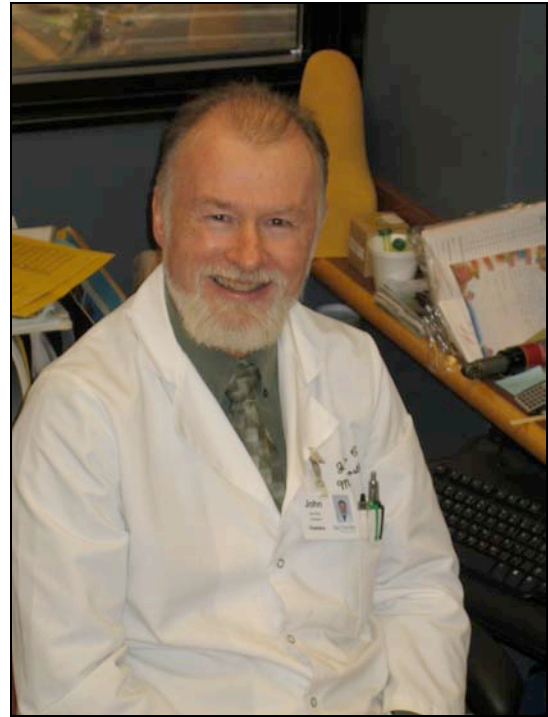
On April 26, John King CP FAAOP (Mary Free Bed Prosthetics) and Charles Bukrey, MD (Orthopedic Associates and Mary Free Bed's Center for Limb Differences) provided a prosthetics overview to orthopedic residents in Michigan and Indiana. This presentation was broadcast from the Grand Valley State University Cook Medical building in Grand Rapids via closed circuit television to remote locations around the two states. A local audience was also present consisting of West Michigan residents and other attending physicians.

King's power point presentation was intended to give the residents a basic understanding of prosthetic principles. The topics covered were socket design and fit, alignment, component type, selection, and troubleshooting prosthetic problems. King not only addressed the more basic prosthetic systems and their rationale, but also some of the latest technology available in prosthetics. The material was based on select prosthetic sections from the 2-day physician and therapist program given at Northwestern University. King states that he structured his presentation on an educational model that had been well received by Mary Free Bed physicians in the past. The program at Northwestern University is still available, and is highly recommended to physical therapists and physicians with an interest in gaining a more in-depth knowledge of prosthetics.

Dr. Bukrey followed with a 2-hour presentation on other prosthetics principles such as upper extremity prosthetics, knee components, pediatric prosthetics and surgical techniques and intervention. Dr. Bukrey provided an emphasis on the vagaries and differences of the pediatric population.

King states that he "enjoyed very much this opportunity to serve our orthopedic residents not only here in West Michigan but throughout the rest of the state and in Indiana". He commented that he was "honored to have the opportunity to collaborate with a distinguished pediatric orthopedic surgeon such as Dr. Bukrey, and at the same time contribute to the education of these residents".

If you would like more information on this presentation or portions of it, please feel free to contact the Mary Free Bed - Prosthetics Department at (616) 242-0342.



John King, CP, FAAOP  
(Photo used with permission)

## STAFF UPDATES AND NEWS

Brent Tuinstra CO completed his certification exams in Orthotics and now is an ABC Certified Orthotist.

Becky Meyer CO, Gina Corazza CO, Brent Tuinstra CO, Ethan Leavitt Orthotic Resident, Pat Dorgan RTPO, Anthony Hill RTO attended the American Academy of Orthotist and Prosthetist meeting March 1-4, 2006 held in Chicago. A number of scientific seminars on Orthotic patient management were presented during the meeting.

Restoring Hope and *Freedom*  
**Mary Free Bed**  
Rehabilitation Hospital



**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), Mark Bennett CPO (Scoliosis 616-242-0457), 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, Larry Dubinshak CPed (616-356-1884), Becky DeLongpre CPed (616-356-1894), Stacy Mulder, Assistant (River Valley Orthopedics 616-493-9698).

**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), David Firlirk CP (Upper Extremity 616-242-0453), Tony VanEss CP (Pediatrics 616-242-0461), John King CP (Trans Femoral 616-242-9240), Lindsay Homrich (Staff Prosthetist 616-242-0437).

**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 (Clinical Manager 616-392-6240).