

SPINAL RESEARCH ORTHOTIST VISITS MARY FREE BED

On April 1st the Orthotics department was privileged to host Thomas Gavin, CO nationally recognized research orthotist, for an intensive on-site training session in spinal orthotics.



Pictured from left to right: Patrick Dorgan Orthotist, Kim Nequist Orthotics Assistant, James Storms Orthotics Resident, Thomas Gavin CO and President of BioConcepts Inc., Arnold Harting Biomechanical Engineer with BioConcepts Inc., John Flynn CPO, Gina Corazza CO, Doug Richardson CO, and Brent Tuinstra Orthotics Resident. (Photo used with permission.)

Mr. Gavin opened the day with a hospital-wide Grand Rounds presentation which reviewed the fundamentals of anatomy and kinematics of the human spine. He went on to explain spinal stability, pathomechanics, and biomechanical behaviors of spinal injury. Mr. Gavin demonstrated how various types of injuries and neuromuscular deficits can profoundly affect the load carrying capacity of the spine. It was interesting to contrast the Follower Load model to the older Euler model of sagittal plane response to vertical load. The newer concept demonstrates how co-activation of paired muscles results in decreased shear (less risk of spondylolysis/spondylolisthesis).

“Where the rubber meets the road” is in the application of this knowledge to orthotic treatment. Preventing gross spinal motion with the use of TLSOs, LSOs, and even corsets may have more of an effect than

once thought. To be most effective, the orthosis must aggressively position the spine in extension (the so-called “hyperextended” position). It was explained how a custom molded TLSO in a hyperextended position can be much more effective than a Jewett or C.A.S.H. orthosis because it provides more bending moment and less shear at the site of the injury. There is also the benefit of greater surface area contact and triplanar control. So for trauma cases involving compression and burst fractures, the *Bivalved Hyperextension TLSO* is clearly a choice to be considered.

For the elderly kyphotic spine with osteoporosis & compression fractures, especially in chronic cases, the *hyperextension Posterior Shell TLSO (with apron front)* may be of benefit. The stooped posture may even be reduced over time in some cases. This design is under evaluation at Mary Free Bed Orthotics and is available for your patients.



Posterior Shell TLSO



Mr. Gavin demonstrated various molding techniques for custom TLSOs and scoliosis orthoses. He provided us with samples of the Rosenberger scoliosis orthosis and hyperextension Posterior Shell TLSO, both of which he and his staff designed.

Rosenberger Scoliosis Orthosis BioConcepts, Inc is located near Chicago in Burr Ridge, Illinois, just several miles from the Veterans Administration Hines Musculoskeletal Biomechanics Laboratory where Tom Gavin, CO, has a close working relationship with Avinash G. Patwardhan, Ph.D. Patwardhan is known for his extensive orthopedic spinal implant research and was the recipient of the North American Spine Society’s sole 2005 prestigious Award for Clinical Excellence for his original work on the *Charite Artificial Disc*.

PROSTHETICS

New Prosthetic Technology

Mary Free Bed Prosthetic staff recently attended an Ohio Willow Wood training seminar addressing the design and fabrication of custom silicone liners. The custom liners are fabricated using the Omega T-ring Scanning System.



The Omega T-ring Scanning System is a CAD-CAM system that uses digital technology to assist in the evaluation, measuring, and fabrication of the custom liners as well as prosthetic sockets. The T-ring scans the residual limb using a special silicone liner and 8 digital cameras which produce a 360-degree scan. All modifications to the liners are performed on the computer, allowing the clinicians to custom fit the product to meet the needs of the patient. So far the Omega System has been used to carve positive models for 37 patients. Clinicians have reported that prosthetic fittings using this system are comparable to fittings using conventional methods, and waiting times for fittings are reduced.

ORTHOS.E.A.T.

New Seating Technology

Today's market for wheelchair bases is becoming more diverse and is leading to unique patient positioning solutions. OrthoSEAT staff has researched some custom seating products, including a lateral tilt manual wheelchair from Gunnell, Inc. that allows for intermittent tilt to the left or right, as well as upright position and backward tilt. For one client this has significantly diminished abnormal muscle tone patterns, improved comfort and respiratory function. A second unique product is from Motion Concepts, Inc. It is a

powered forward tilt unit that can be added to many power wheelchair bases to allow clients support at their back, even when leaning forward to perform writing or typing tasks. It is highly functional, and complements a wheelchair with a seat elevator feature to allow the feet added clearance space. OrthoSEAT does not sell wheelchair bases, but our therapists complete mobility evaluations to recommend the most appropriate equipment, as well as positioning. We work cooperatively with many DME suppliers throughout Michigan in providing the mobility base, combined with their custom positioning components, and finally fabricated by OrthoSEAT.

Bikes For The Rest Of Us Special Event

On April 30, 2005 Mary Free Bed Rehabilitation Hospital sponsored a special biking event to showcase recreational biking equipment. This equipment serves people with disabilities. Specially designed bikes from various manufacturers, and local vendors, were available for trials. Volunteer therapists assisted over 90 pre-registered participants and their families in finding the best bike for their needs. Funding applications were available for those requesting financial assistance. These applications are now being processed. The bikes will be fit and modified as necessary during the summer. The event is held at Mary Free Bed each spring. For details on next year's event please visit our website www.maryfreebed.com in late January 2006.

NEW PRESCRIPTION PADS

Mary Free Bed Orthotics and Prosthetics sent out a special mailing to our referring physicians. This mailing included an informational packet that summarizes the services we provide at Mary Free Bed Orthotics, Prosthetics, OrthoS.E.A.T., and Rehab Technology. We also included one of our new prescription pads for convenience in referring patients to our facilities. If you did not receive this mailing, or need additional prescription pads, please contact: Ellie Boomer CO at (616) 242-0315.

Restoring Hope and *Freedom*
Mary Free Bed
Rehabilitation Hospital

STAFF UPDATES AND NEWS

Ellie Boomer, CO; John Flynn, CPO; Lisa Gerard, Business Office Manager; and Brent Tuinstra, Orthotic Resident; all attended the AOPA coding conference April 20th & 21st which addressed coding and documentation for Medicare and other insurance companies.

Patrick Nimphie, CPO is a participant on the exam planning committee for the American Board of Certification in Prosthetics and Orthotics, which met April 29th – 30th in Charleston, North Carolina.

Orthotics

Becky Meyer, CO passed her Orthotic Exams in February 2005, and is now an ABC Certified Orthotist.

James Storms, ABC Board-Eligible Orthotist, is sitting for his Certification exams this spring and summer.

Anthony Hill will be sitting for the ABC Orthotic Technical Exam in October, 2005 in Spokane, Washington.

Several orthotists, assistants and technicians attended various regional continuing education conferences this spring. They returned with great information for the benefit of the patient.

Prosthetics

Mary Free Bed Prosthetics Staff recently attended a training seminar on the fit and function of Otto Bock prosthetic foot and knee components. These components benefit the lower limb population, both transtibial and transfemoral. Otto Bock is a prosthetic manufacturer with headquarters in Minneapolis, Minnesota. Otto Bock is a manufacturer of prosthetic knees, prosthetic feet, as well as upper extremity componentry. Otto Bock is also the manufacturer of the C-leg, a microprocessor knee unit.

Patrick Nimphie, CPO, Lindsay Homrich, Prosthetic Resident; Ellie Boomer, CO and Staff Prosthetist; Rex Brown, CO; John Flynn, CPO; and James Storms, Orthotic Resident attended the American Academy of Orthotists and Prosthetists, and the Association of Children's Prosthetic-Orthotic Clinics in March 2005. The meeting lasted four days and highlighted advance training in orthotics and prosthetics and clinical patient management.

John King, CP was recently named a fellow to the American Academy of Orthotists and Prosthetists. To earn this title John attended varying seminars aimed at promoting professionalism and advancing the standards of patient care through education, literature, research, advocacy and collaboration in the field of prosthetics.

Jennifer Essex, RTO and Carl Kirby will be sitting for the ABC Prosthetic Technical Exam in October, 2005 in Spokane, Washington. This exam will test their skills in the fabrication of prosthetic devices by a national board. When completed, they will earn the title of Registered Prosthetic Technician (RTPO and RTP, respectively).

Ellie Boomer, CO a board eligible prosthetist as well as a certified Orthotist here at Mary Free Bed, completed her residency in February 2005 and took her Boards in Prosthetics in May 2005. Ellie is currently a staff prosthetist at Mary Free Bed and plans to continue her employment as a Certified Orthotist - Prosthetist.

Lindsay Homrich, a Prosthetic Resident here at Mary Free Bed, has completed her prosthetic residency and will be taking her Boards in Prosthetics.

Patrick Nimphie, CPO returned to Honduras for the completion of his earlier mission trip. The trip's focus was to provide amputee patients with prosthetic devices. Evaluations and casting procedures occurred on Patrick's first visit, while the fabrication of their prosthetics devices took place in the Mary Free Bed Prosthetic Department following his return. The fit and delivery of the prosthetic devices occurred on the return trip.



Orthotics Staff Contacts: 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), Larry Dubinshak CPed (616-356-1884), Becky DeLongpre CPed (616-356-1894), Ellie Boomer CO (Plagiocephaly, Scoliosis, Marketing 616-242-0315).

OrthoS.E.A.T.: Karen Gora (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).

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