

PROSTHETICS

The Motion Analysis Center Working with Mary Free Bed Prosthetics to Enhance Patient Outcomes

Last September, the team at Mary Free Bed's Motion Analysis Center (MAC) began a cooperative clinical gait evaluation service with Mary Free Bed Prosthetics for selected amputees.

"In the past, we performed gait analysis for a few prosthetic users by physician referral; this will be the first time patients will be scheduled through the Mary Free Bed Prosthetics department on a regular basis", said Krisanne Chapin, PhD, Manager of the Motion Analysis Center.



From left to right: Adam Miller, MSE, Mechanical Engineer; Krisanne Chapin, PhD, Clinical Bio-mechanist, Manager; Mitch Barr, PT; Dayle Maples, MD, Medical Director; Gordon Alderink, PT, PhD, Program Director.

Patients are selected from Mary Free Bed's prosthetic population and have the opportunity for evaluation using state-of-the-art computer gait analysis equipment. Staff at the Motion Analysis Center, and Mary Free Bed Prosthetics, looks for particular gait characteristics in targeted patients with unique prosthetic components or who have physical traits that are unusual, causing deviation in the patient's walking. The two programs combine skills to improve understanding of the complex gait patterns exhibited by

these patients and to quantify the impact of prosthetic modifications.

The Motion Analysis Center at Mary Free Bed is a state-of-the-art clinical gait analysis facility, and is one of only two labs of its kind in the state of Michigan. The lab opened in 1994 and receives referrals from all over the state, regularly seeing patients from the Detroit, Ann Arbor, and Traverse City areas.



Krisanne Chapin, PhD, working with patient Harry Zemmer.

The technology used in clinical gait analysis is the same as is used in the animation industry for creating digital movie and video game characters. Small, reflective markers are taped to the patient's feet, legs, and trunk. Twelve high-speed video cameras, taking 120 pictures per second, record the motion of these markers as the patient walks down a designated walkway.



Michelle Bidwell, prosthetic patient.

The Motion Analysis Center Working with Mary Free Bed Prosthetics to Enhance Patient Outcomes - continued

The lab also collects ground reaction forces, allowing specialists to estimate the loads acting at the ankle, knee and hip. The “stick figure” created with the marker data is viewed on the computer in real-time, but the advantage is in the graphical data generated after the patient leaves.



Adam Miller, MSE,
Mechanical Engineer.

Clinicians can look at detailed information of joint motion, and the forces acting at those joints, and can compare the prosthetic limb to the sound limb or to the MAC database of gait patterns of unimpaired adults or children.



Patrick Nimphie, CPO and clinical manager of Mary Free Bed Prosthetics said, “This is very exciting for us and our patients. As far as I know there may be only a handful of prosthetics departments in the entire country that have access to the kind of technology that the gait lab offers us right here on the Mary Free Bed campus.”

Other institutions using this technology include the Department of Defense’s Defense Projects Research Agency, the Veterans Administration, and The Rehabilitation Institute of Chicago in cooperation with Northwestern University.

The first patients to be evaluated came from variety of patient populations.

1. 10-year-old male with a congenital below-knee amputation. The team compared his new carbon fiber prosthetic foot to the foot he was wearing prior.
2. Adult female changing suspension of her prosthesis from an older version of sleeve

suspension, to a new style pin-locking mechanism.



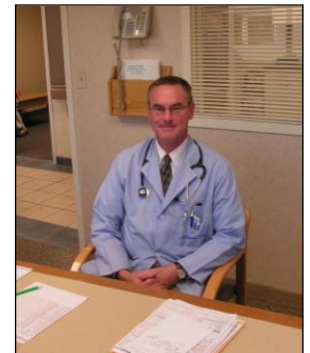
“We think we can see a significant improvement in her walking through clinical observation, but the equipment used in the gait lab will help us confirm that we are on the right track and may also help us see things

we couldn’t detect just by clinical examination,” said Mark Bennett, CPO, Mary Free Bed Prosthetics.

3. Adult above-knee amputees who are C-Leg®* users with abduction and or flexion contractures of the residual limb. These patients are analyzed for proper alignment of the prosthetic components.
4. Young male who is a new amputee receiving one of the newest prosthetic foot systems available.
5. Adult male congenital bilateral amputee who’s received treatment at Mary Free Bed since 1953. Since that time he has worn what most would refer to as “wooden legs.” The Prosthetics Department recently fit him with a C-Leg®. The patient, with his old legs, was evaluated by the Motion Analysis Center; once he has adapted to his new prostheses, he’ll be reevaluated to look for deviations from normal human locomotion and differences from his old prostheses.

Dr. Benjamin Bruinsma, Mary Free Bed’s Amputee Program medical director, supports using this technology for his patients with limb loss.

“Under the current concept and with specifically selected patients in which there are questions about optimal gait that cannot be easily seen during clinical observation, the Motion Analysis Center can be a great help,” said Bruinsma.



The MAC team:

- Dayle Maples, MD, Medical Director
- Gordon Alderink, PT, PhD, Program Director
- Krisanne Chapin, PhD, Clinical Bio-mechanist, Manager
- Mitch Barr, PT
- Adam Miller, MSE, Mechanical Engineer

* C-Leg® is a state-of-the-art microprocessor knee made by Otto Bock that allows patients more stability and independence. For more information about the C-Leg®, go to www.ottobockus.com.

Mary Free Bed Hosts Upper Extremity Luncheon

Mary Free Bed Rehabilitation Hospital Orthotics & Prosthetics hosted an upper extremity luncheon on February 24, 2010. Approximately 40 physical therapists, occupational therapists, physicians, and case managers attended the luncheon to learn about the care of upper extremity prosthetic patients.

In addition to several Mary Free Bed speakers, the event also featured a Mary Free Bed upper extremity prosthetic patient, Jerry Jones. Jerry demonstrated many of the items discussed during the presentation.



From left to right: Patrick Nimphie, CPO, FAAOP; Dave Firlik, CP; Benjamin Bruinsma, MD; Barb Kaniewski, OTR/L; Mark Bennett, CPO; John King, CP, FAAOP, BS.

If you missed the luncheon, here are the highlights:

Benjamin Bruinsma, MD

- Incidence, levels of amputation and the phases of rehab.

Barb Kaniewski, OTR/L

- Rehabilitation and therapeutic considerations for the upper extremity amputee.

Mark Bennett, CPO; Dave Firlik, CP; and Patrick Nimphie, CPO, FAAOP

- Various prosthetic devices available, the referral process, Mary Free Bed's Regional Adult Amputee Clinic, insurance information.

To refer a patient to the Amputee Clinic, please call 616.242.0396; to be evaluated by a prosthetist, contact the Prosthetic Department at 616-242-0342.

First Bilateral Amputee to finish Ironman Triathlon speaks in Grand Rapids



Scott Rigsby is the first double-leg amputee athlete to finish the grueling 140 mile Ford Ironman Triathlon. Scott came to Grand Rapids in March to speak to audiences about his life, his book "Unthinkable", and the importance of an active lifestyle. The event, "No Finish Line in Site" was sponsored by

Mary Free Bed Rehabilitation Hospital, Gazelle Sports, and First United Methodist Church of Grand Rapids. Scott's talk inspired many who heard it.

John Zick, RN, River Valley Orthopedics, and tri-athlete, said, "What a champion to turn his life around. He inspired me so much."

"He was funny and inspirational and totally made me re-think my goals and how I could go about achieving them," said Amy VanWagoner, clinical business coordinator, Advent Physical Therapy.

Jennifer Adams, tri-athlete and production control specialist with Elan Nutrition said, "The presentation was extremely motivational. To hear of someone overcoming so many obstacles the way he did is incredibly inspiring."

First Bilateral Amputee to finish Ironman Triathlon speaks in Grand Rapids - continued

"He also opened my eyes to the many challenges that people with disabilities face every single day. I'm really glad to know that Mary Free Bed is committed to helping to make living more enjoyable for those people with physical challenges."

Scott Rigsby's journey began on July 23, 1986, in his hometown in Georgia. Just months after graduating high school, he was in a traumatic accident. After a long day working his summer job, Scott and his friends were sitting in the back bed of a moving truck on their way home. A fast approaching 19-wheeler semi attempted to pass them, knocking Scott off the truck. The semi dragged Scott for 325 feet. Scott miraculously lived. He broke his femur, putting him in a wheelchair for two years. His right leg was immediately amputated below-the-knee. His left leg was salvaged to his foot. Doctors reconstructed his heel. During his first 6 weeks in rehab, Scott endured 8 painful surgeries, and within the year he had undergone 17 surgeries.

To people living with a physical disability or fighting illness, Scott has this advice; "You need to set your short-term expectations low. Be kind to yourself mentally and set realistic expectations. If you want to be walking in 3 months, give yourself 6 months. You may be struggling physically, but it's your mind you have to battle. Every day I focused on what I could do, not what I couldn't do. What happens then is progress. You can't allow doubt to enter your mind".

After finishing rehab Scott went through a dark period in his life. Addicted to alcohol and pain medication, he slipped into a deep depression. One day Scott realized God had a greater plan for him and his life. To read more about his battle, from his accident to the Ironman, pick up a copy of Scott's inspirational book.

Today, Scott tours the country as a motivational speaker, inspiring others to do the unthinkable in their own life. Scott also raises funds for the Scott Rigsby Foundation, which is dedicated to influencing all physically challenged people to pursue an active lifestyle.

Prosthetic Patient's First Try in Extremity Games a Success

Mary Free Bed Orthotics & Prosthetics patient, George Rickman, and his family were thrilled with George's second-place finish in the kayaking event at last year's Extremity Games at Holloway Reservoir Regional Park, near Flint.



George successfully out-paddled a host of contenders, though he privately thought he'd finish last.



George began kayaking the previous fall on Reeds Lake in East Grand Rapids. The following spring and summer, George continued to paddle evenings and weekends to gain skill and power. He jumped at the chance to compete at the Extremity Games and began training in earnest. With his newly provided swim prosthesis, he graduated to a touring kayak, practicing sprints and turns in preparation for competition.

At the event, the kayak race included two elimination heats, with a final heat for the top 5 racers. Only 18 seconds separated the first and last boat in the final heat. George's consistency was uncanny, finishing all three heats in exactly 3 minutes and 18 seconds. He reserved energy for the last race, but when he began his final sprint, his swim prosthesis slipped off his foot brace causing him to lose balance and time.

George's victory was about much more than winning a kayak race. He was injured in 1998 from a fall at a construction site. George's accident caused a closed head injury and he lost the ability to speak and read. Not only was he a patient with Mary Free Bed's Brain Injury Program, George also underwent 17 surgeries in an attempt to save his crushed leg, which he eventually lost. During his surgeries and recovery, he became addicted to pain medication.

As a man of faith, George prayed for strength and was able to stop the pain medications cold turkey. He now counsels other church members who have endured similar addictions. A successful C-Leg® user, he has regained walking independence and travels extensively.

The Otto Bock C-Leg®



George arriving at the event, with his family's support written on the windows.



George gets ready for the race.



George with his granddaughter.

This event was co-sponsored by Mary Free Bed Rehabilitation Hospital Orthotics & Prosthetics and Riverside Kayak Connection.

ORTHOTICS

Physician Documentation Requirements for Therapeutic Shoes for Diabetic Patients

When providing diabetic shoes and inserts to Medicare participants, **the physician who treats the patient's diabetes** is required to complete and sign an SCP form stating that all coverage requirements are met.

The following criteria must be sent to Mary Free Bed Orthotics & Prosthetics, before we can see the patient.

1. Document in your records that you are managing the patient's diabetes
2. Document that one of the conditions listed on the form 3a-3f is present

Without this documentation, we cannot see your patient. At Mary Free Bed O&P, we realize this is additional paperwork and will only request necessary information to allow Medicare to reimburse for these items.

You can find a link to this medical policy at www.MaryFreeBedOandP.com/Alerts.php
Or call 616.242.0315.

Breaking News: PECOS Rejections Delayed Again!

The Centers for Medicare and Medicaid Services (CMS) announced a new implementation date for PECOS rejections beginning January 3, 2011.

Prior to this announcement, CMS stated rejections would begin April 4, 2010, for any services ordered by physicians who are not enrolled in PECOS.

Suppliers will receive warnings on remittance notices when the referring physician is not in PECOS, but claim rejections won't begin until next year.

Later this year, CMS will send letters directly to physician not enrolled in PECOS notifying them that they must enroll or they will not be able to make referrals.

If you have any questions regarding PECOS, please visit

http://www.cms.hhs.gov/MedicareProviderSupEnroll/04_InternetbasedPECOS.asp.

For more O & P news, you will find our current and back issues of the Orthotics and Prosthetics Clinical Bulletin on our website:

www.maryfreebedoandp.com

Look under the "News" tab.

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