





Make Plans to **Attend the Amputee Golf Championship**

oin us for the 30th Annual Eastern Regional Golf Championship on July 24th through the 26th at Saucon Valley Country Club in Bethlehem, PA. The Eastern Amputee Golf Association (EAGA) was formed along the same guidelines as the National Amputee Golf Association. Its primary purpose is to organize and conduct amputee golf events and "Learn to Golf" clinics. Lawall Prosthetic & Orthotic Services is a proud sponsor of this event. It is always a fun event and offers a chance to improve your game or start playing for the first time. If you would like more information on the event you can visit www.eagagolf.org or ask your Lawall prosthetist.

Continuing Education

For more information visit www.lawall.com

It was a busy fall for Continuing Education classes. Lawall Prosthetic & Orthotic Services teamed up with Mark Edwards, a clinical specialist in prosthetics for Ottobock and the former Director of Prosthetic Education at Northwestern University. The course involved patient models to help attendees better understand gait training, balance and weight shifting exercises. The course also included an overview of prosthetic knees with a focus on microprocessor-controlled knees like the C-Leg, Genium, and X3. Therapists were given valuable tips on how to help their patients fully utilize their microprocessor knee. Fortunately, we were able to hold the course in several different locations to make it more convenient for therapists to attend.

Allard came to the Philadelphia office and offered two courses on orthotic interventions and gait analysis. The courses focused on new concepts in the management of soft tissue dysfunctions and dynamic intervention options to help patients regain their mobility. Participants went through the process of selecting AFOs for patients depending on how they presented, as well as how to customize their selection to maximize the effects of bracing.

In December, Megan Smith, CO and SureSteps Director of Clinical Research presented a course on the basics of gait development, specifically postural control and deviations. A better understanding of the foundation of gait development leads to stronger understanding of how to therapeutically and orthotically manage the gait deviations as they present themselves among our pediatric population.

Lawall will continue to offer in-services throughtout 2016. We are passionate about providing educational opportunities to all members of our patient care team. Our patients are always our top priority and we will continue to do anything we can to maximize their potential!



- Energy absorbed and redirected for extreme sports resulting in less fatique and more durability
- Patented Z-Shock™ technology delivers a smooth gait at any speed and helps preserve skin integrity
- One-third the weight of traditional vertical shock products

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ife-changing experiences don't always arrive with gilt-edged invitations. Sometimes, as Darin Oskison, CPO, can attest, they come out of the blue, and stay with you forever—like his recent week-long trip to El Salvador to treat underserved children in need of orthotic care.

PACIFIC OCEAN

A physiatrist colleague, Dr. Brian Murphy, raised the subject while Oskison was at his office fitting a leg for a patient. Intrigued by the opportunity and moved by a desire to make a real difference in the lives of children with no access to medical care, Oskison agreed to join a team of volunteers organized by Healing the Children (HC), a group that has successfully helped over 250,000 children in over 95 underserved countries during its 36-year history.





When he arrived at El Salvador's Central Military Hospital in San Salvador on Sunday, September 26, with a team of other volunteers, they were greeted by more than 1,000 people hoping to receive care for their children and grandchildren.

"The need was unbelievable. On that first day, 456 children were screened for potential surgery or orthotic fitting," Oskison recalled. "Throughout the week our group performed 60+ surgeries, fitted roughly 400 donated orthotics, and fitted hundreds of shoes to help



These small miracles—or perhaps not so small, at that—were received with touching gratitude.

children walk."

Oskison was one of three CPO's on the HC team, which included doctors, podiatrists, nurses, students, and other volunteers. Throughout the previous year, donated supplies had been collected in anticipation of patient needs, and volunteers brought with them all the tools and equipment necessary to perform their respective duties.

"The surgeons and nurses brought everything needed to perform surgery. As a CPO, I brought tools and supplies necessary to retrofit various knee-ankle-foot orthoses (KAFOs), ankle-foot orthoses (AFOs), Supra-Malleolar Orthoses (SMOs) and other foot orthotics," said Oskison. "Many of the donations came from DAFO and SureStep."

The mission trip focused on lower extremity complaints and Oskison's duties were strictly orthotic in nature;



team treated numerous club foot, cerebral palsy, and spina bifida cases, in addition to various foot issues. Most cases were congenital and had unfortunately progressed for years with no medical or orthotic intervention.

Using custom orthotics that had been originally made for other people, then donated, the team was able to fit or adjust an appropriate orthotic solution for almost every child, noted Oskison, who found the task exhausting, but immensely rewarding.

"Many of the kids we fit with AFOs—especially kids with CP and spina bifida—had arrived in wheelchairs, but were able to walk out when we were done," he said.

These small miracles—or perhaps not so small, at that—were received with touching gratitude.

"The people were so kind and patient; they waited hours to see us and we didn't hear a single complaint. The families were so grateful for whatever

(continued on page 11)



(Photos - left - page 4) Volunteer translators assisted the team in explaining the treatment plans. This child was fit with SureSteps, straight last shoes, and a Denis Browne Bar for treatment of clubfoot/tibial torsion. (top left - page 5) Twin sisters with Down syndrome were both fit with SureSteps and shoes. (top right - page 5) This young girl was fit with two Molded Ankle-Foot Orthoses (MAFOs) and shoes. (bottom left - page 5) After being screened by physicians, a crowd of hundreds of patients and their families wait for orthotic evaluation and fitting. Most had traveled great distances and waited in line for hours to be seen by the team, yet all were kind, patient and grateful.





What is the treatment for foot drop?

The most common treatment is an ankle foot orthosis (AFO), which provides support to the ankle and foot. The AFO helps control foot drop and ankle instability by providing a better sense of balance. Often times, individuals are fit with a custom molded plastic AFO, however, there are other orthotic options available that provide superior function and performance.

What is the goal of orthotic treatment for foot drop?

The goal of orthotic treatment options is to help you maximize your mobility and independence. Chances are your most important need is to be able to walk better, without assistance and for longer periods of time without getting exhausted. Hundreds of thousands of people with foot drop have experienced an improvement in their mobility thanks to the stability and dynamic assistance provided when wearing a ToeOFF, a unique patented carbon fiber composite AFO.

What is a ToeOFF and how does it work?

The ToeOFF, product line is made of ultra lightweight materials including carbon fiber, fiberglass and Kevlar. The light weight is especially important to those individuals affected with neuro-muscular deficits from CMT. ToeOFF, provides a natural bio-mechanical response similar to the movement of your own muscles. The footplate and "open heel" design are major contributors to the function of the ToeOFF.

When your heel strikes the ground, energy passes down the side of the AFO to create a dynamic response that reflects the energy to the footplate to prevent "foot-slap" and lift up the forefoot, much like the spring of a swimming pool diving board. The design and materials allow for enough strength to control the position of your foot as you swing your leg, thus making walking easier with less energy consumption. Unlike a custom molded plastic AFO that covers and immobilizes the ankle, the ToeOFF's open heel design allows your heel to move freely as it normally would, allowing proper biomechanics to occur in the foot.

What are the benefits of *ToeOFF*?

ToeOFF provides a stable, fluid, propulsive and symmetrical walking pattern.

ToeOFF can improve your quality of life by:

- 1. Restoring balance and improving stamina A strong and durable AFO design allows you to move on uneven surfaces and climb stairs or ramps more confidently and independently, without stumbling or falling. Studies have shown that ToeOFF users can walk further in *ToeOFF* than in conventional molded plastic AFOs.
- 2. Decreasing risk of muscular atrophy A recent study revealed that plastic AFOs can lead to ankle immobilization which resulted in calf muscle atrophy.
- 3. Fitting inside your existing footwear The thin and lightweight carbon fiber design ensures that you can wear your AFO inside any standard shoe that provides good supportwithout increasing your shoe size.

ToeOFF has several different categories of carbon braces depending on the patient's presentation. There are also other product lines for carbon AFOs. Each design has it owns unique advantages. It is important to consult with your orthotist regarding the most optimal bracing option to maximize your level of independence. Below is a quick reference for some of the popular carbon AFOs available.

ToeOFF - the original carbon composite developed to assist different levels of dorsiflexion weakness

- The rigid LATERAL strut and energy reflecting footplate function together to achieve "push-off" during the 3rd rocker of gait.
- Open calcaneus allows heel to invert and evert which is crucial to trigger a normal bio-mechanical chain reaction.



Blue Rocker - identical in shape and design to the **ToeOFF** but provides more rigid control

• Commonly used for bilaterally involved patients and patients with weaker quadriceps

Yipsilon - lower profile design

- Designed for the stable ankle to provide dynamic toe-off assistance, while allowing natural ankle movements
- Provides virtually no pressure on tibial crest

Ottobock Walk On - carbon composite strut inserts into the footplate MEDIALLY and wraps around POSTERIORLY to allow the material to flex, which reduces the risk of material failure

• Provides heel compression at initial contact and dynamic movement from mid-stance to terminal stance for easy rollover

Ottobock Flex - identical in design and shape to the Walk On

• Ideal for patients who require less support for mild foot drop.

Custom Carbon AFO - a carbon composite AFO that is custom molded from a cast of the patient

- Ideal for patient with unique foot and ankle alignment.
- Degree of flexibility of the carbon composite can be customized to patients needs.

FOR MORE INFORMATION

- Walk On http://media.ottobock.com/orthotics/walk-on/files/walkon-afos-product-information.pdf
- Carbon Composite AFOs https://www.allardusa.com/carbon-composite-afos.html
- Foot Drop http://lermagazine.com/issues/may/allard-usa-get-back-up-today

Nathan and his KiddieGAIT AFO!



At age six Nathan was provided hist first AFO as part of his treatment plan for hemiplegia.

With his energy level, it was important to provide a brace with ground reaction forces that would work with him instead of a plastic design that might slow him down.

He quickly adapted to the KiddieGAIT's lightweight design and stability, allowing him control and improved gait while keeping up with his siblings

"Nathan loves his new independence, and we love his smile."

Jeanine Doty, CPO



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rom the time he was a young child who experienced a playground incident that gave him whiplash and a neck injury, Jerry Cronin had also been subject to periods of lower back pain that he took in stride, as a normal part of life. But increasing problems with herniated disks and more frequent bouts of increasingly intense pain through his teens and college years finally brought him, at age 35, to emergency surgery, partial paralysis, and the opportunity to become the youngest individual to try out a state of the art orthotronic solution—and one that worked beyond his most hopeful expectations!

Cronin recalls the long path that led him from an active and productive lifestyle to a crisis that began in his late 20s. He had been told he was too young for surgery, but newly married and looking forward to raising a family, he was determined to be proactive concerning the painful spasms he experienced. Unfortunately, a clear diagnosis continued to be frustratingly elusive.

In March 2013, however, Cronin experienced an "'on-fire' pain in legs, hips, groin—everything from the middle of my back down; and it kept getting worse." He wound up in the emergency room, and following an MRI, he was quickly scheduled for emergency decompression surgery. Tests revealed a spinal cord trauma resulting from a rare but serious condition known as cauda equina syndrome, characterized by extreme pressure and swelling of the nerves at the base of the spinal cord. Causes vary, from a lumbar herniated disc, lumbar stenosis, ankylosing spondylitis, spinal cord infections, spinal tumors, or a gunshot or knife wound to the lower back. The cause of Cronin's condition is still a mystery.

Meanwhile, post-surgery, he was unable to operate his successful business cleaning home exteriors, and wound up restricted to a wheelchair, walker, or crutches as he waited for the inflammation to subside before further surgery could be attempted. Several months later, it was determined that the damage to his spinal cord had resulted in an incomplete but permanent paralysis of his lower extremities; he was left with a severely weak left leg and a right leg only slightly stronger.

It was a long road for Cronin, involving "dozens of doctors and specialists," a seemingly endless series of infections requiring more surgeries, 21 courses of antibiotics, and 19 rounds of steroids while he was laid up for months. He reports that "certain areas on my legs are dead, my feet are numb, I have bladder dysfunction and take medication and injections for bowel and bladder functions, but I'm still lucky—some people are paralyzed from the waist down."

While undergoing therapy at the Elkins Park Moss Rehab facility, Cronin heard a member of his care team mention a new alternative to the standard orthotic systems that had proved inadequate for his needs.

At 6'4" and 260-265 pounds, I was too tall and too heavy for most of the KAFOs (knee-ankle-foot orthoses) available," he explained. "I couldn't propel a regular KAFO, so I just used the wheelchair, walker, and super-strong forearm crutches; but I needed to get off the couch. Someone suggested that I talk to Lawall to find out more about the new system; I was surprised to find out my wife had gone to school with Ann (Lawall) Roque as a kid, so I picked up the phone."



Pete Michener, CPO, remembers Cronin's first visit to Lawall's Pottstown facility on November 13, and the logic that led to their endorsement of Cronin as a candidate for Ottobock's new C-Brace®. "We knew that with his lack of strength—incomplete paralysis of both lower extremities—a conventional KAFO or even stance control KAFOs would not benefit him at all and would be contraindicated. He did not have enough strength for the other KAFOs to advance his legs, and we felt they would actually cause further damage and potentially hurt him."

Where the standard functions of previous orthosis systems had been limited exclusively to locking and releasing the knee joint, the C-Brace is the first to go a step further: The unique functions of the SSCO® (stance and swing phase control orthosis) allow both the swing phase and the stance phase to be controlled for the first time. This means the user has control through the entire gait cycle—in real time.

An ankle movement sensor transmits signals to the microprocessor-controlled hydraulic knee joint unit, which is integrated into a carbon fiber frame along with the electronics. The C-Brace's microprocessor receives and processes sensor signals and controls walking in real time. In additional a knee angle sensor measures the current position of the joint every 0.02 seconds, noting flexion of the knee joint and its angular velocity, and allowing the hydraulic resistances to respond appropriately, controlling flexion and extension based on the phase of gait.

Its advantages of support and stability while restoring more natural walking function seemed to make it the perfect choice for Cronin.

At that point only 60 people in the United States had been fit with the new C-Brace, and Cronin was the youngest candidate to

"...The first time I stood up in two years was when I was in the C-Braces. It was absolutely amazing. My wife was crying. I walked and walked—it was the most I had walked in a long time!"

- Jerry Cronin

be considered. Obtaining insurance coverage for the braces, still considered "experimental" by most healthcare insurance providers, would be an uphill battle, requiring extensive paperwork and evaluations, but Cronin played an active and enthusiastic role in the time-consuming battle to get coverage for these braces—potentially the most appropriate solution for his needs.

Six months later, in May of 2014, Cronin visited Lawall's office and met with a team including Michener, Richard Bash, CPO, and a representative from Ottobock who helped to fit Cronin with a set of trial C-Braces in order to assess their suitability, and Cronin's ability to succeed with them.

"He had broken two pairs of crutches before coming to us, and was experiencing compression of the brachial plexus and causing numbness down both his arms as a result of using crutches. His gait with crutches was slow—1.2 feet per second, well below the norm of 4.17 feet per second for his age group. He was just barely getting along with crutches. We were hopeful that the C-Braces would be the

answer for him," Michener remembers. "We were so thrilled when he walked!"

Cronin was also hopeful—but admits that the C-Braces far exceeded his expectations. "The first trial I had with them was awesome!" he exclaimed.

"I was more than willing; they put the left leg on—which was my weakest leg—then they tried the second leg; then I started walking around. My pain was SO diminished I thought it was gone! I didn't have to lean over or hunch on the crutches! The first time I stood up in two years was when I was in the C-Braces. It was absolutely amazing. My wife was crying. I walked and walked—it was the most I had walked in a long time!"

Immensely encouraged as a result of his success wearing the trial braces, Cronin resumed the battle with insurance providers and intensified his efforts to raise funds for the braces.

"Jerry was a great advocate," Michener noted.
"We supported him, but he wrote three pages back in May after he had been through the C-Brace trial, pleading his case."

(continued on next page)



(continued from page 9)

Patient Profile: Lawall Patient Sets Record with New C-Brace Technology

Cronin not only wrote letters, he spent countless hours on the phone with insurance company representatives, and went through six appeal processes—even including a trip into Philadelphia for a faceto-face meeting with his insurance company to make an appeal. In the end the braces were denied.

But in an amazing coincidence of great timing which Cronin calls ironic, "I got my insurance company's final denial—a 7th level appeal—in December 2014, on the very afternoon I received a call from OVR (the Office of Vocational Rehabilitation) with their offer to pay for a major portion of the braces!"

Within 2 weeks of the approval Cronin was casted for his new braces, and the fabrication and fitting process was underway.

"It was a good 15 months I spent fighting the insurance company," says Cronin "between the first recommendation in November 2013 until the fitting of my real C-Braces on March 17, 2015—a little bit of luck there, on St. Patrick's Day. I had just turned 35, actually on March 5. We all went out to lunch and had a green beer to celebrate!"

Since then, says Cronin, his life has completely changed:

"Being down in a wheelchair, my legs were so swollen. Once I got the C-Braces, I lost 35 pounds in a very short time, just from having the blood pumping and my body being upright and active."

Although his muscles and nerves limit him from running, there isn't much else that Cronin can't do, now.

"I don't have balance, but the C-Braces make up for a large portion of that. It just amazes me; now standing is just second nature to me. I can brush my teeth standing up, I can make dinner—these are things that are just mind-blowing and huge for our family. Now I can hold my 1-year-old daughter—something I thought I'd never be able to do. And I coach third base for my 5-year-old son during his first year at T-ball. It really made him feel special."

Michener, too, continues to marvel. "With the C-Braces, Jerry's quality of life has improved dramatically. There have been improvements on the braces just within the year since his trial, including articulated ankles that make it much easier going up and down ramps, and sitting down and getting up from a chair. Ottobock has given the upgrades and sent support to us to apply them.

"Jerry is in better shape, has lost weight and trimmed down because he's able to walk; it has definitely helped his physical fitness. He has been wonderful to deal with because he is so encouraged and optimistic, willing to try something new and committed to succeeding."

Cronin's commitment extends, too, to others who have experienced similar frustrations in getting coverage for the devices so necessary for his changed life. He is determined to spread the word that options like the C-Brace are available for those who may be close to giving

"I want them to know that they've got to fight for technology like this that has changed our lives permanently. You have to search on your own; be your own advocate; do your homework—make sure you're going to the right places.

"I hope other people see this and know there is hope." 💓



Consider Donating Your Used Prosthetics and Orthotics

In the spirit of goodwill, below are some organizations that accept used prosthetic devices and donate them to underserved countries. The thought of prosthesis or prosthetic components sitting in a landfill in the United States, when there are clinics and amputees in desperate need of assistance throughout the world is a frightening thought.

Here are several organizations that will accept prosthetic donations:

• The Bowman Limb Bank Foundation is an organization founded in 2001. It collects and distributes prosthetic limbs to those in need both inside and outside the U.S.

Bowman-Siciliano Limb Bank Foundation 100 Spanish Oak Road | Weatherford, TX 76087 (817) 597-1826

• Limbs for Life is an organized that collects and distributes limbs to patients in third world countries. They will accept an entire prostheses, prosthetic components, and unused liners and sleeves.

Limbs for Life Foundation 9604 N. May Avenue | Oklahoma City, OK 73120 (405) 843-5174 or 1-888-235-5462 (toll-free) limbsforlife.org/get-involved

• Physicians for Peace is an international, nonprofit, humanitarian, medical education organization. It seeks to have an exponential effect on the communities it helps by educating and training members of the community who then go on to educate and train others. Physicians for Peace has a "Walking Free" program specifically designed to train, support and empower prosthetic, orthotic, and rehabilitation professionals in developing nations.

Physicians for Peace 500 East Main Street, Suite 900 | Norfolk, VA 23510 (757) 625-7569 physiciansforpeace.org/gifts-kind.html

• Prosthetic Hope International is an organization with a goal to elevate the quantity and quality of prosthetic and orthotic care everywhere. They have established a clearinghouse where new orthotic and gently used and new prosthetic devices can be sent. These devices will then be made available to non-governmental organizations (NGOs), P&O practitioners, developing world P&O schools and facilities, and researchers.

Prosthetic Hope International 1937 Shalimar Drive | Atlanta, GA 30345 prosthetichope.org/projects/pocc

• Standing With Hope is a faith based organization doing prosthetic outreach in West Africa. They recruit certified prosthetists to train local technicians in the communities they serve. They accept socks, liners, and other prosthetic supplies and used prostheses.

Standing With Hope P.O. Box 159115 | Nashville, TN 37215 (866) 377-7175 standingwithhope.com/prosthetics/donate-a-used-prosthetic-limb

If you are interested in making a donation please feel free to speak with a Lawall practitioner if you need assistance or have any questions. (continued from page 5)

Serving the Children of El Salvador

we did, because they just don't have healthcare."

He recalled one case that left a lasting impression: "On the first Sunday, I had fit an 18-month-old lowtone child with SureSteps and shoes, and barely remembered him by the end of the week. But on Friday, our only day of rest, I was walking with a podiatrist from Spain on a beach a few



hours away from the hospital when a lady came up and gave me a hug. The podiatrist was able to interpret for me as she pointed to her little son, who was swimming. She said I had fitted her son six days earlier, and she just wanted to say how grateful she was."

Such an experience makes one grateful for what you have, he observed. "It opens your eyes to how blessed you are."

According to Healing the Children, an estimated 1 billion of the world's almost 7 billion people have never nor will ever be able to consult or be treated by a healthcare professional of any kind; an estimated 60% of the underserved populations in emerging and developing countries are children under 18 years.

To date, over \$700 million in medical services have been donated by healthcare professionals like Oskison who volunteer their time and service to missions for Healing the Children. (Volunteers pay their own way, including hotel accommodations and travel. Lawall helped to sponsor Oskison's costs for the trip.)

"The people I went with were wonderful," said Oskison. "Some were returning for their 20th annual mission. What impressed me most was their ability to love, laugh, and care—and their willingness to go make a difference in

the life of child. I was so fortunate to be a part of this mission. I came to make a difference but was blessed with far more than I gave." Although this was

his first trip, Oskinson hopes to be able to return every year. "It's an experience that can change the direction of your life." 💓



For more information visit: www.healingthechildren.org



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Willow Grove

701 North Easton Road Willow Grove, PA 19090 Phone (215) 657-3344 Fax (215) 657-3742

Springfield

Crozer-Keystone Medical Pavilion II 100 West Sproul Road Suite 123 Springfield, PA 19064 Phone (610) 544-1281 Fax (610) 544-1387

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883 S. Arlington Avenue Harrisburg, PA 17033 Phone (717) 541-1605 Fax (717) 541-1607

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)rlando

Nemours Children's Hospital 13535 Nemours Parkway 5th Floor Orlando, FL 32827 Phone (407) 567-5190 Fax (407) 567-5191

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