

O&P IMPACT

PROVIDING OUR PEDIATRIC PATIENTS KID-FRIENDLY CARE AND BEST ORTHOTIC AND PROSTHETIC SOLUTIONS

There are a number of product choices for pediatric patients with limb loss and lower limb weakness, deformities, spasticity, and gait deviations. Working closely with the patient's rehabilitation team, a Leimkuehler certified and licensed orthotist or prosthetist will assess the pediatric patient's needs and desired outcomes.

We are creative thinkers providing the best design for optimal comfort, fit, and function. We specialize in difficult orthotic and prosthetic fittings. Our goal is to help our young patients – from infants through teens – enjoy life to their highest potential as they grow and thrive. Below is a sampling of products used to improve function and ambulation.

STARband™ Cranial Remolding Orthosis

The STARband™ from Orthomerica is a custom cranial remolding orthosis used to treat deformational plagiocephaly, brachycephaly, and other head shape deformities in infants 3-18 months of age. The STARband name is derived from its purpose – Symmetry Through Active Remolding.

The helmet orthosis provides total contact over the prominent areas of the skull and leaves a void over the flattened areas to facilitate more normal skull symmetry. The rigid outer shell maintains the



structural design integrity and is either lined with closed cell foam to allow progressive adjustments or is made of a clear thermo-plastic material, which allows easy visual inspection of the areas of contact and voids within the orthosis.

The helmets are modified throughout the treatment program to accommodate growth, promote symmetry and improve proportion.



Treatment, which must take place in an FDA-approved site, generally takes 3-4 months but varies depending on the patient's age and severity of cranial asymmetry.

SureStep SupraMalleolar Orthoses (SMO)

Children with low muscle tone who have trouble with stability due to pronation when standing or walking, display a general instability when pulling to stand and during cruising, have developmental delays and are late in learning to advance beyond cruising, have shown improvement with the use of the SureStep SMO.



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The SMO, constructed of thin, flexible plastic, employs the concept of compression to maintain stability of the foot, instead of the more traditional concept of wedging the foot into one static position. As a result, the intrinsic musculature can continue to develop, resulting in less dependency on bracing, and a much more natural development of balance reactions.



The SureStep system straps and trimlines have a different appearance than other orthoses. SureStep fits correctly in length when the trimline on the inside of the foot is behind the ball of the foot. This unique trimline allows children to squat, jump and run. With the SureStep, alignment improves immediately and as pronation is reduced, balance and stability also improve, resulting in a more efficient gait.



S.W.A.S.H.® - Standing, Walking and Sitting Hip Orthosis

The S.W.A.S.H.® - Standing, Walking and Sitting Hip Orthosis from Allard USA is a hip stabilization and sitting orthosis offering controlled

variable abduction. It is engineered with a complex series of angles to maintain good hip alignment as the uprights follow the pathways of motion of the femurs. While standing or walking, S.W.A.S.H. provides just enough abduction to prevent scissoring and medial femoral rotation. As the hips are flexed to assume the sitting position, it automatically further abducts the hips to create a tripod base for enhanced sitting stability and more upright posture.

Dynamic Ankle Foot Orthoses (DAFO)

Dynamic AFO (DAFO) is a thin, flexible, contoured brace for children with pronation, supination, inconsistent ankle modulation and knee hyperextension. The products use a precision-molded double shell (one nested inside the other) for both wrap-around control and extra heel stabilization.

Cascade DAFOs include:

The DAFO 2 is a hinged brace for inconsistent ankle modulation, excessive plantarflexion-toe walking, and hyperextension.



Features wrap-around foot control; hinged ankle control blocks plantarflexion and allows full dorsiflexion. The DAFO 3 is for smaller/younger patients (birth to three years).

The DAFO 9 is an adjustable stretching-positioning brace. Calf muscles and tendons are gently stretched to increase range of motion while maintaining foot and ankle alignment. The DAFO 9 may be used for limited daytime use and/or as part of a night-stretching program.

Fast Fit® Chipmunk® Sub-Malleolar Prefabricated Orthosis is for the moderately-pronated pediatric foot. Its advanced design

offers separate internal alignment and external stability, allowing each of these components to function well without compromise. For such a low profile, this sub-malleolar solution provides an unprecedented degree of support.

Tami2 is ideal for active ambulators who would benefit from additional medial-lateral support due to strong excess pronation or supination.



For patients having trouble with drop foot during swing phase, the design can include dorsi-assist joints.

The JumpStart products are intended for patients with pronation, supination, inconsistent ankle modulation and knee hyperextension. The products use a precision-molded double shell for both wrap-around control and extra heel stabilization.

Reciprocating Gait Orthosis (RGO)

Reciprocating Gait Orthosis (RGO) is for children with spina bifida, muscular dystrophy and related disorders. It consists of a pair of



KAFOs with solid ankles, locking knee joints, leg and thigh straps. Each leg of the brace is attached to a pelvic unit with a hip joint, supporting hip flexion and extension. A steel cable assembly joins the two hip joints to limit step length. An RGO gives patients the ability to ambulate in a more natural and efficient way.

PEDIATRIC PROSTHESES

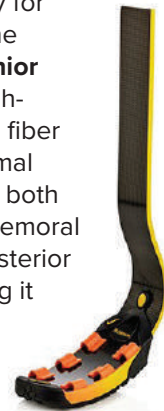
Children with limb loss are not just mini adults. A pediatric patient is constantly growing and developing so practitioners must constantly evaluate and adjust the prosthesis to accommodate the ever-changing child.

Feet

Highly active children can benefit from the **Össur Flex-Run™ Junior**. Its vertical compliance and efficient energy return are must haves for highly active children. Designed to be the most flexible of the running feet, the Flex-Run Junior offers increased cushioning and lower-frequency dynamic makes this foot ideal for transfemoral and transtibial users. The Nike sole is designed to offer increased stability and smooth natural rollover.



Designed primarily for sporting activities, the **Össur Cheetah® Junior** is a custom-built, high-performance carbon fiber foot. This is the optimal run and play foot for both transtibial and transfemoral users. It attaches posterior to the socket, making it agile, strong and a proven performer for those children who want to practice sports.



The Nike sole is designed to offer increased stability and smooth natural rollover.



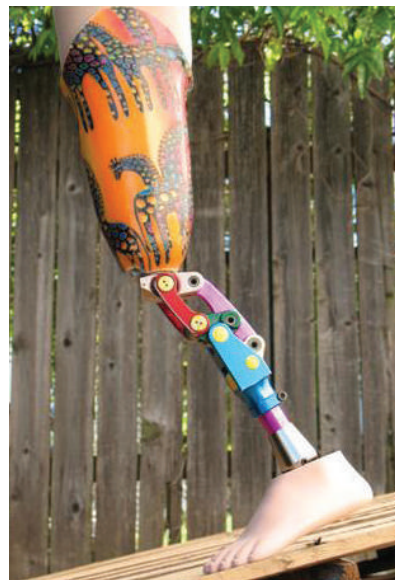
Built kid tough, the **RUSH Kid™** foot can handle running, jumping,

and playing of active kids in mud, water, and sand. Its ultra-low-profile build delivers dynamic energy return and smooth roll-through.



The **College Park TruPer®** foot is a multi-axial, dynamic-response foot and can be fitted to children as young as 3 years old. The TruPer also incorporates a foot shell with a split toe so children can wear shoes and sandals of their choice.

Knees



Össur Total Knee® Junior is made of lightweight, extremely durable aluminum, and weighs only 0.745 lb. The inventor was Finn Gramnas, who was inspired by his six-year-old daughter struggling to walk without falling while wearing a heavy and clumsy prosthesis. He invented the geometric locking

system that offers extra security and stability, even on hills, which is achieved through the knee's seven-axis polyaxial design for children weighing up to 100 lbs.

The **Ottobock 3R38** is the smallest single axis children's modular knee joint. It has an adjustable extension assist to provide additional security and an internal spring mechanism helps swing the lower part of the leg forward when the child takes a step for children weighing up to 99 lbs.



The **Ottobock's 3R67**

prosthetic knee joint meets the everyday demands of children, ages six through twelve, during a myriad of playtime activities. These activities include different walking and running speeds, intuitive kneeling with a flexion angle of up to 150 degrees, and frequent changes of pace while riding a bike or scooter. Thanks to the integrated hydraulics, the prosthetic knee joint functions smoothly in the swing phase. The polycentric four-axis geometry of the joint ensures a high level of stance phase stability and safety. With these features, the 3R67 provides young users with reliable support at any walking speed and enables spontaneous actions. In addition, the prosthesis can be extended as the child grows. With a net weight of just 18 ounces (510 g), the joint offers great freedom of movement.



Especially for running sports, the **Ottobock 3S80-1** fitness knee provides faster flexion and extension for dynamic response to changing running



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pace. It benefits children who generate less force when flexing the knee. It also has a manual lock for standing as well as warm-up and stretching exercises, which the user can engage/disengage quickly.

Endolite Child's 4-bar Knee is a durable, lightweight and low maintenance knee designed for energetic children. It features a polycentric design for stability during stance and an adjustable extension assist spring to provide swing control.



The **MightyMite® Knee** is a core component of the Fillauer and Hosmer MightyMite® Endoskeleton Line. The knee is designed to be rugged and tough enough for active pediatric amputees in a compact lightweight form. Can accommodate weights up to 132 lbs.

The **TruLife Child's Play Knee** is a lightweight polycentric knee, a robust unit, with all the features that would be expected from a child's knee, but with one very useful additional feature. It has the ability to be set up as a semi auto or manual knee

lock. This makes it particularly suitable for a child with bilateral limb loss, or with other functional issues, such as muscle weakness in the sound limb. The lock can easily be removed should the child's ability not require it, or once an appropriate level of rehabilitation has been achieved.

For more information on the products listed here and the pediatric orthotic and prosthetic care our specialists offer, please call 440-988-5770.



Pediatric specialist, John Fabian, CPO/L, has cared for the orthotic and prosthetic needs of our youngest patients for more than 30 years. Here he is with Tia, a sweet little girl who just received her final prosthesis.

More info at www.leimkuehleroandp.com