



# PROSTHETIC & ORTHOTIC *Innovations*

## A 'Stimulating' Orthotics Advance

**A** new modality has taken up residence in the orthotics discipline, broadening rehabilitation horizons for many patients with neuromuscular dysfunction and/or chronic pain. This technology amplifies, and in some cases replaces, conventional orthotic management with neuromuscular electrical stimulation (NMES) to offer restored function, pain relief and other benefits to patients with paralysis or other deficit secondary to stroke, head or spinal cord injury, cerebral palsy, multiple sclerosis, or other conditions producing upper motor neuron pathway disruption.

In many central nervous system disorders, although the brain or spinal cord is damaged, the peripheral nerves connecting the cord to the muscles remain viable and thus responsive to electrical stimulation. NMES and its cousins FES (functional electrical stimulation) and TENS (transcutaneous electrical nerve stimulation) are not new. However, recent improvements in miniaturizing and packaging componentry now allow stimulation devices to be worn effectively and comfortably on a patient's anatomy, much like a mechanical orthosis.

These components, variously termed neuroprosthetic or myo-orthotic devices, are being successfully applied to accomplish many traditional orthotic objectives, notably to...



**Wearable therapy  
electrode garment**

*Courtesy Bioflex Electromedicine Inc.*

- replicate normal muscle function
- enable standing and ambulation
- alleviate chronic pain
- reduce spasticity
- provide therapeutic exercise
- improve circulation and organ function
- increase joint range of motion
- re-educate voluntary muscles and
- reverse muscular atrophy.

NMES directs small electrical impulses to excite the nerves that supply paralyzed muscles. Electrodes may be applied on the skin surface, inserted deep into the muscle with a needle (percutaneous) or surgically implanted.

Today's orthotic electrical stimulation strategies generally seek to maximize the effectiveness of surface applications, which are generally easier on the patient and thus advantageous in the long run.

Electrical stimulation for standing and ambulation may be used in a hybrid system in conjunction with traditional mechanical support, such as an AFO, walker, or elbow canes. However, in new devices developed for managing basic foot drop the stimulation unit may be used without auxiliary support.

Contraindications for using NMES include a history of cardiac or respiratory problems, seizure disorders, long bone stress fractures, osteoporosis or joint disease; irreversible contractures; Guillain-Barré Syndrome; pregnancy; skin disease or a fracture/dislocation near the stimulation site; morbid obesity; recent surgery; and use of certain types of pacemakers or implants.

Articles on pages 2 and 3 discuss three products producing excellent results in the management of foot drop and a unique approach to securely surface electrodes on almost any part of the body. We welcome you inquiries and referrals.



**WalkAide® FES  
system for addressing  
foot drop**

*Courtesy Innovative  
Neurotronics Inc.*

### *Orthotics Today*

### *The Utmost in Patient Care*

All Tech is committed to quality and professional patient care of the highest level. Whether we come to you or we see you in our offices, we believe that each patient can reach his or her maximum functional level through our goal- and team-oriented licensed practitioners.

Each patient is independently evaluated to determine special goals and needs. This approach allows us to provide the proper medical device, so that each patient can potentially improve his or her daily living and quality of life. Our state-licensed practitioners are dedicated to not only enhancing the lives of our patients but also to helping our patients, their families, and the community understand the world of prosthetics and orthotics together.

We believe in building life-long relationships, and we expect to provide outstanding patient care services.

***New location opening soon...  
DeSoto/Duncanville***



# Navigating the O&P Insurance Maze

Patients receiving a prosthetic or orthotic device for the first time may experience confusion and frustration at the often lengthy and mysterious process of obtaining insurance approval for the prescription their doctor has written for them.

In what some remember as the “good old days” of private indemnity insurance, delivery of orthoses and prosthetic limbs was seldom delayed by third-party intervention. The insurance company paid for the device the doctor prescribed minus any deductibles specified in the policy. That was then. Today, we operate under a whole new “alphabet soup” of insurance plans with different and detailed rules and requirements.

The net result is that doctors and prosthetist-orthotists no longer fully determine what prosthetic or orthotic device a patient will receive under insurance coverage...the ultimate decision-maker in many cases has become the insurance carrier. Particularly in situations involving newer high-tech componentry, the prescription is more of a recommendation to be submitted up the line for approval (unless the payment is coming from private funds). Obtaining that approval is not always easy or expeditious.

When we receive a referral for orthotic or prosthetic services, we initially verify the patient’s coverage, normally a quick and simple process. Then, after an initial patient evaluation based on the doctor’s prescription, we compile an authorization request to the insurer for services we intend to provide, using a series of “L-codes” established by the Centers for Medicare & Medicaid Services (CMS) and used by all U.S. payers and providers. Generally each insurer will follow CMS coverage parameters, amplified by its own policy limitations and exclusions.

While we can usually fabricate and fit, repair or enhance a brace or replacement limb in a timely fashion, we normally cannot begin the process until we can be certain the services will be reimbursed by the insurer. The review process varies by insurance company and sometimes results in a denial (which we may appeal) or a request for additional information...and time passes.

## The Financial Side

Prosthetic and orthotic coverage definitions in many policies may be vague and thus open to interpretation as to whether requested items or services are “medically necessary.” Coverage is also generally limited to the item or service deemed the “least costly most functional alternative,” also often undefined. As a result, we are many times required to justify each of the components and services we intend to provide with numerous back-and-forth communications between our staff and the case manager...and the clock keeps ticking.

Eventually, we are usually able to provide a satisfactory prosthetic or orthotic solution for the patient’s needs. It’s an imperfect system, but we strive to help all concerned navigate the O&P insurance maze.

If you have a specific question about Medicare or private insurance coverage, contact our office.

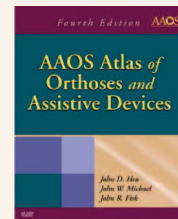
## New AAOS Othotics Atlas Arrives

The fourth edition of the *AAOS Atlas of Orthoses and Assistive Devices* is now available. Working in conjunction with the American Association of Orthopaedic Surgeons (AAOS), authors John Hsu, M.D.; John Michael, CPO; and John Fisk, M.D. have significantly revised the Atlas content and added a helpful two-color format.

The 672-page edition contains new chapters on cranial orthoses and orthoses for persons with post-polio syndromes. Each chapter includes sidebars with personal perspectives and tips from well-known physiatrists.

Existing, revised chapters cover orthotic prescription, strength and materials, normal and pathologic gait, and biomechanics of the spine, upper limb, hand, and lower limb. The chapters on spinal and upper- and lower-limb orthoses include new evidence-based recommendations for prescription.

The revised Atlas was recently priced at \$159.20 at Amazon.com.



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Opening soon...  
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