



PROSTHETIC & ORTHOTIC UPDATE

Celebrating 37 Years of Excellence

A Publication of Nobbe Orthopedics, Inc.

No. 33

Auto-Locking Knee Offers Secure Mobility for Polio, Stroke Patients

For decades, orthotists and other rehabilitation professionals have sought a reliable, safe and effective way of automatically locking and unlocking an orthotic knee joint during ambulation. Preventing knee flexion during stance phase while permitting it from heel-off through swing phase portends substantially improved and more energy-efficient gait for individuals recovering from knee surgery, polio survivors, stroke patients, and others affected with lower-limb paralysis.

Now, thanks to technology developed at NASA, a novel self-locking orthotic knee joint offers patients the ability to bend their knee while walking and to retain the security of a locked joint in weight-bearing. The Stance Control Orthotic Knee Joint (SCOKJ), developed over the past eight years from engineering research at the Marshall Space Flight Center in Huntsville, Ala., is being built into new adult and pediatric KAFO (knee-ankle-foot orthosis) designs now coming on the market.

Existing KAFO designs typically lock the knee in a rigid, straight-leg position, or at a preset position of flexion or extension for safety reasons. Drop locks or bail locks can be manually actuated to allow knee flexion for sitting and other purposes, but these are not intended to be actuated while walking. Moreover, they require the orthosis to be worn over clothing to allow ready access to the locking mechanisms.



Stance control knee joints up close.

The new design, which allows the KAFO to be worn under clothing, incorporates a tough thermoplastic push-pull rod parallel to the side bar and attached to the joint lock-release mechanism at one end and to a heel stirrup at the other. Displacement of the stirrup as weight is applied at heel-strike locks the knee joint in extension, where it remains until releasing automatically just after heel-off when weight transfer allows the stirrup to return to its normal position.

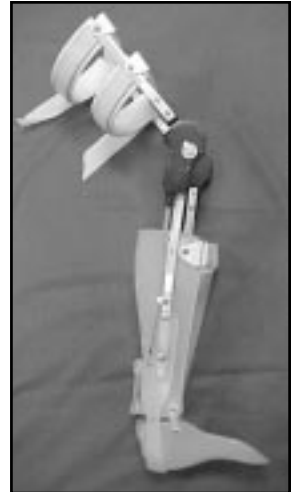
The new KAFOs generally incorporate twin medial and lateral joints and push-pull rods actuated by the same stirrup. In addition

to the automatic mode, the joint may be set for free motion or continuously locked.

In a recent test group of patients, most of whom had worn a locked-knee KAFO for years, all were able to walk successfully in parallel bars in just a few hours using the new joints. By the

second day, many were walking outdoors, and some were willing to try uneven surfaces, slopes and rough terrain. Their gait appeared much more normal, and they reported less effort was required to walk...not surprising since the gait of the affected leg much more closely matches that of the contralateral limb. The reflections of one SCOKJ test patient appear on page 4.

This new KAFO design is truly a 21st century product, as it is scheduled to be introduced for widespread market use in 2002.



KAFO incorporating new knee joints.

What's New

Nobbe Orthopedics Inc. is pleased to announce that it has received a three-year re-accreditation award from the American Board for Certification in Orthotics and Prosthetics (ABC). This award represents the highest level of accreditation in the O&P disciplines. Our practice was recognized in all areas of evaluation including organizational management, professional staff, patient care, quality assurance, facilities and safety management.

Nobbe Orthopedics Inc. has been providing orthotic/prosthetic services in Santa Barbara since 1963 and in Santa Maria since 1994. Our comprehensive fabrication capabilities and thoroughly trained staff allow provision of all facets of O&P services.

The ABC, a not-for-profit organization headquartered in Alexandria, Va., has provided credentials for practitioners and organizations since 1948.

For additional information about Nobbe Orthopedics Inc. or the ABC, call our offices in Santa Barbara at (805) 687-7508 or Santa Maria at (805) 925-8290.

Standards of Our Profession — Cr

The term “professional,” regardless of the field, elicits certain expectations—advanced, specialized education; demonstrated skill; proven experience. Professionals are measured by specific standards that help define their capabilities and proficiency for those they serve and with whom they interact. This condition is every bit as true for orthotics and prosthetics (O&P) as for other health care professions.

In 1993, the American Medical Association recognized orthotics and prosthetics as an allied health profession, culminating a steady evolution of the twin disciplines from medical-related craftsman trade to true patient care specialty over the past half-century.



Yet O&P has not been subject to mandatory regulation in the U.S. until recently: During the past decade, eight states have passed licensure requirements, and several more have started down that path. (See page 3.)

Licensure carries the force of law—state agencies determine who may legally provide O&P services to their citizens. In time, many more states may adopt licensure, particularly those with a large elderly population and many O&P practitioners. But for now, the large majority of states does not require a licence to practice this specialty.

For this remainder of the country, the profession’s aggressive self-regulation effort centered around individual and facility credentialing will continue to certify O&P knowledge, competence and experience for physicians, other health professionals, patients and insurers.

The American Board for Certification in Orthotics and Prosthetics (ABC)

After extensive limb-loss and -injury casualties in World War II lit a fire under what had been a slow-developing field in the U.S. for most of the 20th century, a group of concerned orthotists, prosthetists and orthopedic surgeons in 1948 joined forces to create a credentialing organization to protect the public against unqualified practitioners.



The stated mission of the American Board for Certification in Orthotics & Prosthetics (ABC) is to:

- encourage and promote the highest standards of professionalism in the delivery of O&P services;
- advance the competency of practitioners;
- promote the quality and effectiveness of orthotic and prosthetic care; and
- maintain the integrity of the profession.

ABC administers exacting credentialing programs for individual practitioners (certification) and facilities (accreditation).

Certification. ABC’s practitioner credentialing process is open to orthotists, prosthetists and technicians who meet well-defined educational and experience requirements. To earn the ABC credential of C.O. (certified orthotist), C.P. (certified prosthetist) or CPO (certified prosthetist-orthotist), a practitioner must first have earned a baccalaureate degree in O&P or a baccalaureate degree in any major and one-year postgraduate education certificate in O&P. These requirements are recognized by both the AMA and CAAHEP, the Commission on Accreditation of Allied Health Education Programs.

Candidates must then pass a rigorous written examination, written simulation, and three-day clinical exam designed to evaluate their understanding of anatomy, physiology, biomechanics and

kinesiology and their competence in clinical assessment, patient management, technical implementation, practice management, and professional responsibility.

Every five years, ABC-certified practitioners must renew their credentials by meeting continuing education requirements, through which they demonstrate knowledge of the latest developments in technology and patient management.

Certification Requirements—A Comparison

COMPONENTS	EDUCATIONAL REQUIREMENTS	REQUIRED EXPERIENCE
ABC Path 1	Baccalaureate degree in orthotics or prosthetics from a program accredited by CAAHEP*	12-month NCOPE-accredited residency program
	Baccalaureate degree in orthotics or prosthetics from a program accredited by NCOPE**	1900 hours (one year) clinical experience supervised by an ABC-certified practitioner
ABC Path2	Baccalaureate degree in any major, plus an orthotic and/or prosthetic certificate from a CAAHEP-accredited program	12-month NCOPE-accredited residency program
	Baccalaureate degree in any major, plus an orthotic and/or prosthetic certificate from a NCOPE-accredited program	1900 hours (one year) clinical experience supervised by an ABC-certified practitioner
www.opoffice.com		
BOC	Bachelor’s degree with major in orthotics/prosthetics, OR Associate degree in a related field, OR Two or more years of O&P education, training and/or supervised work experience including intensive study.	Documented minimum two years (3800 hours) of additional experience providing orthotic-prosthetic services to patients
www.bocusa.org		

* Commission on Accreditation of Allied Health Education Programs ** National Commission on Orthotic and Prosthetic Education

Credentialing and Licensure in O&P

In addition, certificants must adhere to ABC's detailed Canons of Ethical Conduct.

ABC administers a separate credentialing program for prosthetic and orthotic technicians.

Accreditation. ABC's facility accreditation program evaluates candidate practices against standards relating to governance, administration, staff qualifications, patient care, quality assessment, facility management, and safety. Notable accreditation requirements include a full-time certified orthotics-prosthetics practitioner on staff and adherence to safety and cleanliness standards.



The Board for Orthotist/Prosthetist Certification (BOC)

ABC remained the sole source for O&P credentialing in America until the 1984 founding of the Board for Orthotic Certification, later to become the Board for Orthotist/Prosthetist

Certification. Both programs are respected in the industry, but ABC is generally regarded to have the more demanding certification requirements. Most states with O&P licensure laws require ABC certification or passing ABC examinations to qualify.



Like ABC, the BOC both accredits facilities and certifies practitioners. Its individual credentials include BOC orthotist, BOC prosthetist, COF (certified orthotic fitter), and CMF (certified mastectomy fitter). Requirements for entry into the BOC program differ for each credential, but all require specified education and experience levels. (See table for orthotist-prosthetist requirements.)

Testing for BOC certification includes a multiple choice exam, clinical simulation, and video practical exam to test applicants' working abilities. The BOC, like ABC, adheres to a strict Code of Ethics/Enforcement and requires continuing education credits.

Our Position

A primary tenet of our O&P practice is the critical importance of professionalism in every aspect of our day-to-day operation. We actively support credentialing and are proud to offer the services of board-certified practitioners to our patients, referral sources and third-party payers. We further recognize the role of state licensure in protecting the public against unqualified O&P providers.

For further information, including specifics of our staff credentials, we invite you to call

O&P Licensure Inching Forward...State by State

The only difficulty with board credentialing programs is that they are voluntary.

For the great majority of O&P practitioners, the benefits and respect earned from certification far outweigh the time, effort and cost of the process. But for the non-motivated provider, bypassing any form of certification is still a viable option in 42 states.

In the states that have not yet adopted legislation regulating O&P practice through licensure, nothing prevents under-qualified individuals from treating patients...and the undesirable outcomes that may follow.

That picture is slowly changing. Eight states—Florida, Illinois, Mississippi, New Jersey, Ohio, Oklahoma, Texas and Washington—have now enacted licensure legislation requiring orthotists and prosthetists to meet state operating standards (although some have yet to implement their laws). In addition, New York has licensure legislation pending, and Alabama, California, Georgia, Louisiana, Massachusetts, Michigan, Pennsylvania, South Carolina, and Tennessee are actively studying the possibility.

While licensure replaces the self-regulation provided by O&P credentialing with mandatory regulation, the requirements for

obtaining an O&P license can be essentially the same. Three states—New Jersey, Mississippi and Illinois—specify ABC certification as a requirement of licensure. The remaining states with licensure maintain contracts with ABC to provide written and/or

written simulation examinations for their applicants.

Licensure also involves questions of grandfathering and reciprocity. Grandfathering allows already-practicing O&P professionals to be licensed without going through the newly instituted qualification process. Most states that allow grandfathering require a practice to have been in operation for at least five years to qualify. Reciprocity refers to a state's willingness to recognize a practitioner license issued by another state.

A problem with licensure is that the cost of administering the licensing program is usually paid by the practitioners themselves through licensing fees, which can become a significant burden in states with small numbers of practitioners to support the resulting bureaucracy.

On the other hand, the opportunity to prevent insufficiently qualified individuals from attempting to provide O&P services, by law, and thereby provide additional protection for consumers, has generated substantial support for licensure within our profession.



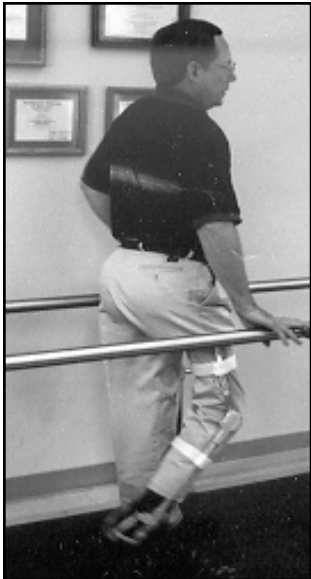
'Without Having to Worry About Falling'

Paul, 56, a polio patient since age 5, wore leg braces in childhood, then resumed wearing a drop lock KAFO in 1996. Having served as a test patient in the development and refinement of the Stance-Control Orthotic Knee Joint (SCOKJ) over the past several years, he has worn and experienced several different prototypes. These are his reflections:

Down to Cases

"I have been wearing the final version of the Stance-Control Knee Joint since June 2001. It took me 3-4 weeks to become fully comfortable with the switching mechanism and to trust the automatic locking position of the knee joint, since it is so foreign to the drop lock hinges I was used to. This brace allows a lot more freedom. In a normal drop lock, you were always taking chances if you left it in unlock (mode). Alternatively, you were safe with it in lock (mode), but you were restricted.

"My favorite feature of the new joint is the ability to lock, unlock, and have automatic locking. This allows me to unlock the knee for gaining access into a vehicle or seat myself comfortably without fear of the knee prematurely locking. With the joint in the automatic position, I am able to walk with a more normal gait, bending my knee, without fear of collapse when placing my foot. The locked position offers total security, as did the original drop lock brace. This (position) is not my favorite choice due to the lack of mobility.



"Having worn the new orthosis for approximately six months, I prefer it hands-down to the old drop lock KAFO; it has everything the old brace had and more, especially secure added mobility, with less energy required than walking with a locked brace.

"I enjoy being able to do the things I couldn't easily do before, like mowing the yard, or walking for long periods of time on concrete, because my knee is now more at ease. I like being able to walk each day without having to worry about falling."

Helping Hands *Spotlighting organizations striving to improve quality of life for people with physical challenges.*

A Sailing Program for Everyone

Sailability is a rapidly growing non-profit organization dedicating to extending the joys and benefits of leisure and competitive sailing to young and old people of all ability levels but with special attention to those with disabilities.



The program began in the United Kingdom in 1986 and is now taking hold in the United States. The principal aim of Sailability is to provide an opportunity for "sailing for everyone," regardless of age, ability, ethnicity, or economics.

An important ingredient in a sailing program for people with disabilities is a boat equipped to accommodate reduced function. Many Sailability programs utilize Access Dinghies, boats specially designed for that purpose. The Access 2.3 is an introductory-level craft normally sailed by one person reclining in a webbing "lazy chair" with legs astride the centerboard case and steered with a joystick located between the sailor's knees.

The Access 303 is a larger, two-sail craft, crewed by one or two people. Both vessels can be equipped with motors to allow profoundly disabled sailors to control the sail and rudder.

Details on Sailability can be found at www.sailability.org.

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