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Glossary of Technical Terms

Abrasion - Wearing away of the skin through rubbing or friction. **Accredited** - When a governing body, in our case the American Board for Certification in Orthotics and Prosthetics and the state of California, has established standards for the facility itself and the facility has complied with these standards. These standards include requirements for the physical plant, staff, quality assurance programs, compliance with the Americans with Disabilities Act and OSHA. ABC certification involves physical on-site visits and compliance with very stringent standards.

ADL's - Aids for daily living which are tools and devices modified for disabled people

Adduction - The act of moving the hip (and residual limb) toward the midline of the body.

Adult scoliosis - Scoliosis of any cause which is present after skeletal maturity.

AFO - An ankle-foot orthosis.

AK - An above-the-knee, or transfemoral, amputation

Alignment - How the components in an artificial leg line up in relation to each other

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

A certifying body whose duty is to examine the educational and experiential prerequisites of candidates taking the examinations in orthotics and prosthetics as well as to administer the practical and written examinations for these disciplines. This body also acts to monitor the continuing education of its certified Orthotists an/or Prosthetists. In addition, it upgrades its examination process to reflect changes and advances in the practice of Orthotics and Prosthetics.

American Orthotic and Prosthetic Association - A national trade association dedicated to upholding standards of quality patient care. AOPA represents more than 1,200 member companies whose practitioners' custom-make and fit prosthesis (artificial limbs) and orthoses (braces) or manufacture components for prostheses and orthoses.

Americans with Disabilities Act - Enacted July 26, 1990, it provides comprehensive civil right protections to individuals with disabilities in the areas of employment, public accommodations, state and local services and telecommunications.

Amputation - Surgical removal of a limb.

Anterior - The front side.

Atrophy - The shrinkage of muscle tissue due to change in function.

Assistive/Adaptive - Devices that assist in performance of mobility, including ramps and bars, changes in furniture heights, environmental control units and specially designed devices.

AFO - Ankle-Foot Orthosis; device that encompasses the lower leg and foot.

Beta Site - An initial testing location for new devices and/or componentry.

Bilateral Amputee - An amputee missing both arms or both legs

BK- A below-the-knee, or transtibial, amputation

Bulbous - Refers to the residual limb being larger in circumference at the end than at the top.

CAD/CAM - (Computer-Aided Design/Computer Aided Manufacture) the use of computer technology in the making of artificial limbs.

Cerebral Palsy - Bilateral, symmetrical, non progressive paralysis resulting from developmental defects in brain or trauma at birth. (Source: Taber's Cyclopedic Medical Dictionary)

Certified Orthotist (CO) - (quoted from the ABC Book of Rules, Sept., 1993)

The term for the practitioner, who provides care to patients with disabling conditions of limbs and spine by evaluation, designing, fabricating, fitting and aligning those devices known as orthoses. At the request of and in consultation with physicians, the certified orthotist assists in formulation of prescriptions for orthosis, and examines and evaluates the patient's orthotic needs in relation to their disease entity and/or functional loss. In providing the orthosis, the orthotist is responsible for: formulating its design including selection of materials; making all necessary casts, measurements, model modifications, and layouts; performing fittings, including static and dynamic alignments; evaluating the orthosis on the patient; instructing the patient in its use; and maintaining patient records; all in conformity with the prescription.

The title of Certified Orthotist (C.O.) is awarded to the practitioner who successfully completes the [board] examination in this discipline.

Certified Pedorthist (C.Ped) - A patient-care practitioner who evaluates, designs and fabricates pedorthic devices for the prevention of painful and/or disabling conditions of the foot and ankle. A Certified Pedorthist, or C.Ped, is a specialist who by education and examination meets the criteria established by the Board for Certification in Pedorthics (BCP)

Certified Prosthetist (CP)- (quoted from the ABC Book of Rules, Sept., 1993)

The term for the practitioner, who provides care to patients with partial or total absence of a limb by evaluating, designing, fabricating, fitting and aligning devices known as prostheses. At the request of and in consultation with physicians, the certified prosthetist assists in formulation of prescriptions for prostheses, and examines and evaluates the patient's prosthetic needs in relation to their disease entity and functional loss. In providing the prostheses the prosthetist is responsible for: formulating its design, including selection measurements and model modification; performing fittings, including static and dynamic alignments; evaluating the prosthesis on the patient; instructing the patient in its use; and maintaining patient records; all in conformity with the prescription. The prosthetist is expected to keep abreast of new developments concerning prosthetic patient care, and is responsible for the functions and activities related to the development of prostheses.

The title of Certified Prosthetist (C.P.) is awarded to the practitioner who successfully completes the [board] examination in the discipline.

Certified Prosthetist-Orthotist (CPO) -

A prosthetist-orthotist is one whose responsibilities and functions conform to those of both the orthotist and prosthetist, as defined above.

The title of Certified Orthotist-Prosthetist (C.P.O.) is awarded to the practitioner who successfully completes the [board] examination in both these disciplines.

Cervical - Pertaining to the neck

Check Socket - A temporary plastic socket formed over the plaster model to assist in the fitting process.

Congenital Amputee - Refers to an amputee who was born missing limb(s)

Contracture - Tightening of muscles around a joint which causes restriction in the range of motion.

Control cable - Steel cable used to move and lock mechanical joints and to operate body-powered prostheses.

Corset - Lumbar brace made from textile material

Cosmesis - Cosmetic (aesthetic) appearance of an artificial limb

Custom Fabricated Orthosis - Orthosis which is individually made for a specific patient. Created using an impression generally by means of plaster or fiber cast, a digital image using computer-aided design-computer aided manufacture (CAD-CAD) systems software, or direct form to patient. Also referred to as molded-to-patient model.

CVA-cerebrovascular accident - A general term most commonly applied to cerebrovascular conditions that accompany either ischemic or hemorrhagic lesions. These conditions are usually secondary to arteriosclerotic disease, hypertension, or a combination of both.

Decompensation - In scoliosis, this refers to loss of spinal balance when the thoracic cage is not centered over the pelvis

Definitive Prosthesis - An artificial limb designed for long term comfort, fit, alignment, function, cosmetic appeal and durability (to replace temporary/preparatory first fitting)

Desensitization - The process of making the residual limb less sensitive to touch by massaging, tapping, using a vibrator or rubbing with a terry cloth.

Disarticulation - An amputation through a joint - the hip, knee, ankle, elbow, wrist or shoulder.

Discectomy - Removal of all or part of an intervertebral disc (the soft tissue that acts as a shock absorber between the vertebral bodies).

Distal - Farthest from the center (for example, the foot is the distal part of the leg)

Doffing - Taking off a prosthesis

Donning - Putting on a prosthesis

Double curve - Two lateral curvatures (scoliosis) in the same spine. Double major curve describes a scoliosis in which there are two structural curves which are usually of equal size. Double thoracic curve is a scoliosis with a structural upper thoracic curve, as well as a larger, more deforming lower thoracic curve, and relatively nonstructural lumbar curve.

Dystrophy - Pathologic loss of muscle mass.

Edema - Swelling of tissue

Endoskeletal Prosthesis - Has a soft outer shell (supported by an internal skeleton of a pylon, etc.) - component: are lightweight and require fewer adjustments

Energy-storing feet - Prosthetic feet with plastic springs of carbon fibers designed to help move the prosthesis forward

Exoskeletal Prosthesis - Hard outer shell - generally heavier but more durable than endoskeletal. The components last longer and are more suitable for recreational activities.

Extension - The act of moving the hip (and residual limb) backward or to the rear of the body.

Fabrication - Procedure of mechanically creating a device.

Fitter-Orthotics - Person who is trained and qualified to participate in the fitting and delivery of pre-fabricated orthotic devices and/or soft goods.

Flexion - Joint motion, flexing or bending a joint.

Flexion contracture - Shortening of the muscles at the affected joint. This can be avoided by exercising the limb and keeping it straight.

FO - (Foot Orthosis) is worn below the ankle, it encompasses any part of the foot; most commonly arch supports.

Frame - Outer supportive, stiffening element

Functional Level - Degree of function a disabled patient still achieves.

Gait - Manner of walking - everyone has an individualized one.

Gait Training - Professional training to achieve a natural gait (manner of walking)

Hemivertebra - A congenital anomaly of the spine caused by incomplete development of one side of a vertebra resulting in a wedge shape.

HKAFO - Hip-Knee-Ankle-Foot Orthosis; device that encompasses the hip and leg.

Hook Device - A terminal device, operated by body movement which provides a good grasping function.

Hypertrophy - Increase in the size of muscle tissue due to use.

Idiopathic scoliosis - A structural spinal curvature for which cause has not been established.

Immediate Post-Operative Prosthesis (IPOP) - Application of a cast/rigid dressing immediately after surgery and gradual weight bearing on a preparatory prosthesis two or three days after surgery.

Inclinometer - An instrument used to measure the angle of thoracic prominence referred to as angle of trunk rotation (ATR).

Infantile scoliosis - A curvature of the spine that develops before three years of age.

ISPO - International Society for Prosthetics and Orthotics.

Juvenile scoliosis - Scoliosis developing between the ages of three and ten years.

Knee components - Devices designed to create a safe, smooth walking pattern

Kyphoscoliosis - A structural scoliosis associated with increased roundback

Kyphosis - A posterior convex angulation of the spine as evaluated on a side view of the spine. Contrast to lordosis.

KAFO - Knee-Ankle-Foot Orthosis; device that encompasses the entire leg.

KO - (Knee orthosis) Encompasses the knee only

Lateral - Towards the side or outside (for example, the outside of the thigh is a lateral part of the leg)

Lordoscoliosis - A lateral curvature of the spine associated with increased swayback

Lordosis - An anterior angulation of the spine in the sagittal plan. Contrast to kyphosis

Lumbar Curve - A spinal curvature whose apex is between the first and fourth lumbar vertebrae (also known as lumbar scoliosis).

Lumbosacral - Pertaining to the lumbar and sacral of the back.

LSO - Lumbosacral Orthosis; device that encompasses the lower torso.

Medial - Towards the mid-line of the body (for example, the inside of the thigh is a medial part of the leg)

Muscle contracture - Shortening of the muscles at the affected joint. This can be avoided by exercising the limb and keeping it straight.

Myoelectric Prosthesis - An advanced prosthetic device operated by battery-powered electric motors that are activated through electrodes by the myoelectric potentials provided by muscles. (Source: Taber's)

NCOPE - National Commission of Orthotic and Prosthetic Education

Neuroma - A ball of nerve fibres that forms on the end of a severed nerve which continues to grow and can sometimes be troublesome and cause pain.

Neuromuscular scoliosis - A form of scoliosis caused by a neurologic disorder of the central nervous system of muscle.

Nonstructural curve - Description of a spinal curvature or scoliosis that does not have fixed residual deformity

Nudge control - A mechanical switch that operates one or more joints of the prosthesis

Occupational Therapy/OT - Evaluation and training to maximize independence and function in daily living.

Occupational Therapist - A person who works with an amputee to teach the amputee how to use a prosthesis and adaptive skills.

Orthopaedic Surgeon - A person who performs surgery on bones or muscles - for example, amputation, hip replacement, stump revision.

Orthosis- Device used to correct malalignment of joints, especially those involved in locomotion. The device is typically either added to the outside of the shoe or placed inside it. (Source: Taber's)

Orthotics - The profession of making and fitting orthopedic supports and appliances. (Arch supports are sometimes incorrectly referred to as "orthotics")

Pedicle - Bony process projecting backward from the body of a vertebra, which connects with the lamina on either side.

PFFD/Proximal Femoral Focal Deficiency

Proximal - nearest point to center or to point of attachment

Phantom Limb Sensation - Sensation that a limb no longer there is still present

Phantom Limb Pain - Pain experienced by an amputee in a limb no longer present

Physiatrist - A doctor of rehabilitation medicine specializing in the comprehensive management of clients with conditions arising from neuromuscular, musculoskeletal and vascular disorders.

Physical Therapist (PT) - A person who works with an amputee in the rehabilitation phase to improve muscle function through exercise and can assist with gait training.

Pistoning - The residual limb slips up and down within the socket

Plaster Impression - The plastic cast that is applied to the residual limb in order to obtain an accurate model during the fabrication process.

Ply - The thickness of stump socks - the higher the number the thicker the sock.

Posterior - Rear, back

Posterior fusion - A technique of stabilizing two or more vertebra by bone grafting.

Prefabricated Orthosis - Orthosis which is manufactured in quantity without a specific patient in mind which may be trimmed, bent, molded, or otherwise modified for use by a specific patient (i.e., custom fitted). A preformed orthosis is considered prefabricated even if it requires the attachment of straps and/or the addition of a lining and/or other finishing work or is assembled from prefabricated components is considered prefabricated. Any orthosis that does not meet the definition of a custom fabricated orthosis is considered prefabricated. Also referred to as custom fitted.

Prehension - To hold, grasp, or pinch

Preparatory (Temporary) Prosthesis - An artificial limb fabricated and fitted soon after surgery, designed to ease the amputee into the use of a prosthesis.

Primary curve - The first or earliest curve to appear.

Prosthesis - An artificial limb.

Prosthetics - The replacement of musculoskeletal extremities (arms, legs etc.) with artificial limbs.

Prosthetic Sock - A sock generally worn with an artificial limb that provides additional padding for bony surfaces.

Prosthetist - A person trained and skilled in the design, fitting and maintenance of prosthetic limbs.

Pylon - A rigid central shaft, usually tubular, that is attached to the socket or knee unit of an endoskeletal prosthesis. The lower end of the pylon is connected to an artificial foot or ankle.

Range of Motion - The amount of movement a limb has in a specific direction at a specific joint (hip, knee, ankle, shoulder, elbow, or wrist)

Removable Rigid Dressing (RRD) - A removable cast applied shortly after the amputation in order to control swelling and protect the residual limb.

Rehabilitation - The process of restoring a debilitated person back to a functional life.

Residual Limb - The portion of the limb remaining after an amputation.

Revision - Surgical alteration of the residual limb to improve function or appearance.

Risser sign - Used to indicate spinal maturity, this refers to the appearance of a crecentic line of bone formation which appears across the top of each side of the pelvis.

RGO - Reciprocating Gait Orthosis; special HKAFO that allows paralyzed persons to walk step over step, generally used with crutches for balance

Rotationplasty (e.g. Van Nes Rotation) - A procedure where the lower portion of the leg is rotated 180 degrees and reattached - the ankle acts like a knee joint, providing extra function.

Sacrum - The curved triangular bone at the base of the spine, consisting of five fused vertebrae known as sacral vertebrae. The sacrum articulates with the last lumbar vertebra and laterally with the pelvic bones.

Scoliometer - A proprietary name for an inclinometer used in measuring trunk rotation

Scoliosis - A lateral deviation of the normal vertical line of the spine which when measured by X-ray, is greater than ten degrees. Scoliosis consists of a lateral curvature of the spine with rotation of the vertebrae within the curve.

Soft Orthosis - Orthotic device made from fabric and elastic components (e.g. pressure gradient hose, corset, cervical collars, trusses.)

Sound side leg - Non-amputated limb.

Spondylitis - An inflammatory disease of the spine

Spondylolisthesis - An anterior displacement of a vertebra on the adjacent lower vertebra

Stockinette - Tubular open-ended cotton or nylon material

Structural curve - A segment of the spine that has fixed lateral curvature.

Stump - The part of the limb remaining (aka residual limb)

Stump sock - A wool or cotton sock worn over residual limb to provide a cushion between the skin and socket interface.

Stump shrinker - An elastic wrap or compression sock worn on a residual limb to reduce swelling and shape the limb.

Suction - Provides suspension by means of negative pressure/vacuum in a socket; achieved by forcing air out of the socket through a one-way valve when donning and using the prosthesis

Suspension - Refers to how the orthosis/prosthesis is held on; may include a suction, a strap or belt, a wedge, a neoprene sleeve or other method.

Switch Control - Use of electric switches to control current from a battery to operate an electric elbow, wrist rotator or terminal device.

Symes Amputation (Boyd Amputation) - Named for the surgeon who introduced the procedure - foot is removed, the shin bones are flattened and the heel pad is sewn back in place.

Terminal devices - Devices attached to the wrist unit of an upper extremity prosthesis that provide some aspect of the function (grasp, release, cosmesis, etc)

1. Adaptive devices - Devices for specialized functions (attachment to tools, sporting equipment, utensils etc)
2. CAPP - Body-powered device named for the Child Amputee Prosthetics Project at UCLA where it was designed to promote gross motor functioning and early grasp.
3. GRIP/ADEPT - Body-powered, voluntary-closing terminal devices that close when tension is applied to the cable.
4. Hand/Mitt - either a passive or active (terminal) device used to replace the hand.
5. Split hooks - Terminal devices with two hook-shaped fingers operated through the action of harness and cable systems.

Thoracic curvature - Any spinal curvature in which the apex of the curve is between the second and eleventh thoracic vertebrae.

Thoracolumbar curve - Any curvature that has its apex at the twelfth thoracic or first lumbar vertebra.

Thoracolumbosacral orthosis (TLSO) - A type of brace incorporating the thoracic and lumbar spine.

Total Suction Socket - Allows the artificial limb to be held in place by air pressure only, eliminates the use of belts and straps.

Tracer™ - A computer aided design system for digitizing body segments, thus providing measurements which will be used in the design and fabrication of orthotics and prosthetics.

Traumatic Amputation - An amputation which is the result of an injury, or a surgical amputation due to a medical condition (for example, vascular disease, cancer)

Van Nes Rotation - A procedure where the lower portion of the leg is rotated 180 degrees and reattached - the ankle acts as a knee joint, providing extra function.

Vertebral column - The flexible supporting column of vertebrae separated by discs and bound together by ligaments

Voluntary-closing devices - Terminal devices that are closed by forces on a control cable; grasp is proportional to the amount of pull on the cable.

Voluntary-opening devices - Terminal devices that are opened by body motion and closed by elastic bands or springs.

Wrist unit - Component that allows interchanging or repositioning of terminal devices

WHO - Wrist-Hand Orthosis; device that encompasses the wrist and hand.

