

Glossary For Prosthetists

EDITOR'S NOTE: *This brief glossary was obtained from Mr. Steven Purka, Clerk in the New York City office of the Prosthetic and Sensory Aids Service, Veterans Administration. The Glossary was compiled from a number of sources. Readers will recall that Mr. Purka was the compiler of "Good Reading for Growing Technicians", which appeared in the JOURNAL of OALMA, August, 1951, 33-36.*

GENERAL

Anatomy—The science of the *structure* of the body and relation of its parts.

Biomechanics—The science which deals with *forces* which act on the body.

Kinesiology—The study of muscular and joint *movements*.

Physiology—The science of the *functions* of the body and its parts.

Rehabilitation—The restoration to useful activity of individuals who have been injured so as to suffer from physical or emotional disability, such restoration including treatment of the disability and training to fit the individual for occupation in industry.

Therapy—The science that deals with *diseases and remedies*. *Occupational therapy* is the use of an occupation or training in an occupation for remedial purposes. *Physical therapy* is the treatment of disease by physical means.

ANATOMICAL

Abduction—The withdrawal of a part from the axis of the body; of the foot—rotation of the foot outward, on its own axis. To move away or to be away from the mid-line of the body. (For a part to be further away from the mid-line than normal).

Adduction—Any movement whereby a part is brought toward another or toward the median line of the body. A part of the body is nearer the mid-line of the body than normal when in adduction.

Acromion—The lateral projection of the spine of the scapula forming the point of the shoulder.

Anterior—Situated in front of or in the forward part of.

Arm—The portion of the upper extremity between the acromion and the epicondyles.

Axilla—The armpit.

Cervical Vertebra—7th—The most prominent of all the vertebrae. When the head is bent forward, the 7th cervical vertebra is the prominent bulge at the back of the neck.

Clavicle—The collar bone.

Condyle—A prominence or swelling of a bone at a joint, especially when occurring in pairs. Condyles of the tibia ordinarily take bearing in a prosthesis for amputation below the knee.

Distal—Remote, farthest from the center, origin, or point of attachment. (Opposite: Proximal).

Dorsal—Pertaining to the back or to the posterior part of an organ or of the body.

Epicondyles—The bony prominences of the distal end of the humerus.

Eversion—A turning outward. Eversion of the foot, turning the sole away from the mid-line of the body.

Extension—A straightening out, especially the muscular movement by which a flexed limb is made straight.

Femur—The thigh bone.

Fibula—The outer, smaller bone of the leg below the knee.

Flexion—The act of bending; the condition of being bent.

Forearm—The portion of the upper extremity between the epicondyles and the styloids.

Humerus—The bone of the upper part of the arm.

Hyperextension—Excessive extension. Hyperextension of the knee is that beyond 180° as by stretching of the hamstrings in the normal knee or by compression of a bumper in an artificial knee.

Inferior—Lower. Also toward the feet.

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Inferior Angle of the Scapula—The angle of the lower point of the scapula.

Inversion—The act of turning inward.

Ischium—The lower and rearmost of the principal bones in either half of the pelvis; the seat bone. In ischial bearing, the weight of the body is supported on the rear wall of the top of the prosthesis as on a bicycle seat.

Lateral—Toward the outside. (Opposite: Medial).

Medial—Toward the inside or center. (Opposite: Lateral).

Neuroma—The new growth made up of nerve cells and nerve fibers found at the end of cut nerves.

Normal Limb—A remaining, unamputated limb.

Palmar—Pertaining to the palm of the hand.

Patella—The knee cap.

Plantar—Pertaining to the sole of the foot.

Posterior—Placed behind or to the back of a part; behind.

Pronation—The act of turning the palm of the hand downward. (Opposite: Supination).

Proximal—Nearest to the body, or center, or some other point considered as the center of a system.

Radius—The shorter, thicker bone of the forearm.

Residual—Remaining in the stump, refers to motion, function, etc.

Rotation—Movement about an axis.

Sagittal—Pertaining to the anteroposterior median plane of the body (sagittal plane), the median vertical plane of the body dividing it into right and left halves.

Styloid of the Ulna—The bony prominence at the lateral side of the wrist when the palm is turned down.

Superior—Higher, denoting the upper of two parts. Also towards the head.

Supination—The turning of the palm of the hand upward. (Opposite: Pronation).

Tibia—The inner, front, larger bone of the leg below the knee.

Transverse—Crosswise; at right angles to the longitudinal axis of the body.

Trochanter—Bony prominence at the top of the femur.

Ulna—The inner, longer bone of the forearm.

ABBREVIATIONS

AE—Above-elbow.

AK—Above-knee.

BE—Below-elbow.

BK—Below-knee.

CKJ—Effective center of rotation of knee joint, about $\frac{3}{4}$ " above the joint space.

EB—End-bearing. Also Elbow-bearing. (Disarticulation by analogy).

KB—Knee-bearing. (Disarticulation.)

OPERATIONS

Chopart—An amputation of the foot consisting of a disarticulation through the tarsal joints, leaving only the os calcis and the astragalus.

Cineplasty—A plastic surgical procedure to produce a muscle motor used to initiate motion of a prosthesis.

Disarticulation—Separation at a joint; amputation through a joint—the proximal part of the joint being left in the stump.

Gritti-Stokes—(For amputation above the knee-joint). The patella is preserved in a long anterior flap, and, having had a thin slice removed from its deep surface, is secured in apposition with the femur, the latter having been deprived of its articular surface by being sewn through the condyles. Stokes—the same as Gritti's operation, except that section of the femur is made above the condyles. Intended to give end-bearing.

Lisfranc—A disarticulation of the metatarsal bones from the tarsus.

Pirogoff—(For amputation through the foot). A partial osteoplastic operation in which the os calcis is sawed through obliquely from above and downward and forward, and the posterior portion is brought up and secured against the surface made by sawing off the lower ends of the tibia and fibula. Intended to give end-bearing stump; formerly used in Europe.

Syme's—Amputation at the ankle joint, the malleoli being sawn through and a flap made with the skin of the heel. Intended to give end-bearing.

Tenoplasty—Plastic surgery of a tendon.

PREFERRED USAGE

Suction Socket—(Preferred to vacuum socket). Socket for limb held to the stump by wearer with atmospheric pressure when the limb is unsupported.

Socket—(Preferred to "bucket"). Any container for amputation stump; may or may not be integral with structural member.

Shank—(Preferred to "shin piece"). Lower portion of an artificial limb, between the knee and the ankle.

PROSTHETIC TERMS

Active Operation—Operation of a device by means of a control attached to the harness without using the other hand. (Opposite: Manual Operation).

Breakout—The hollow, plaster mold which is used to form the plastic socket. (Also called the "slush mold").

Build-Up—The wax or plaster extension which is added to the stump replica to represent the amputated section of the arm or forearm.

Cable—Stainless steel cable, 3/64" in diameter, used for operating prosthetic devices.

Cable Housing—Small diameter, stainless steel wire wound similar to extension spring, through which the control cable passes. The housing which is held in position by retainers, decreases the bending of the cable and thereby increases efficiency and decreases wear.

Cast—The plaster of paris bandage socket which is obtained directly from the stump. Also called the "primary wrap."

Check Socket—A wax or paraffin impregnated stockinette socket which is made over the master mold and then fitted to the stump to determine proper shaping of the master mold.

Dual Control—A control system in which one cable is used for both forearm lift and terminal device operation. A second cable operates the elbow lock.

Fair Lead—A section of cable housing or tubing which serves to guide the control cable smoothly around a bend.

Flexible Hinges or Joints—Non-rigid or non-fixed center hinges for below-elbow prostheses.

Gainer Hinge—A below-elbow hinge which provides a greater amount of motion in the forearm than in the stump socket which drives the forearm. Also called "step-up hinge."

Housing Cross Bar—A small cylindrical metal piece through which cable housing is threaded. The housing cross bar is held in a leather retainer attached to a triceps pad in certain below-elbow harness types.

Insert Hinge—A below-elbow hinge which has a fixed pivot center, but is attached to a leather arm cuff to give slight, independent motion of the forearm with respect to the cuff.

Manual Operation—Operation of a device by means of the normal hand. (Opposite: Active Operation).

Master Mold—The solid, plaster reproduction of the stump which is obtained by pouring the primary wrap full of plaster.

Negative Mold—A form into which plaster is poured to form a male, or positive mold. This may be the Primary Wrap taken on the stump or the split mold from the solid, plaster mold of the stump.

Primary Wrap—The plaster of paris bandage wrap made on the stump as the first step in the fabrication process.

Purchase—The amount of leverage obtained by the stump in the socket.

Retainer—A small brass fitting threaded to receive the cable housing. The retainer swivels in a base plate which is attached to the prosthesis in such a position as to guide the control cable along the most efficient line.

Rigid Hinge or Joint—A steel hinge consisting of forearm and arm sections which have a fixed or constant pivot location and a single plane of motion.

Single Control—The below-elbow control system in which the control cable is used only to operate the terminal device.

Split-Mold—A two-piece mold formed around the solid plaster mold of the stump, which is used to make hollow molds, or "breakouts", the same shape and size as the master.

Torque—The force which causes rotation about a pivot. It is the product of the applied force times the perpendicular distance of that force from the pivot.

Triceps Pad—A below-elbow prosthesis component which is located on the posterior portion of the arm and to which is fastened the harness straps and housing cross bar loop or base plate.

Triple Control—A control system in which three separate control cables are used; one of which operates the terminal device, one the forearm lift, and one the elbow lock.

Voluntary Closing—A device in which the closing is controlled by the amputee through his harness, while springs or other mechanical means control the opening.

Voluntary Opening—A device in which the opening is controlled by the amputee through his harness, while springs or rubber bands control the closing.