Title: EXPERIENCES WITH THE OTTO BOCK ERGO ELBOW

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The patient population that elect hybridization of their prosthesis to include an electrical terminal device and body-powered mechanical elbow is limited. The population typically is comprised of transhumeral level amputees. Elbow disarticulation level amputees typically do not possess sufficient space for traditional mechanical elbow units to be utilized without a contralateral limb length discrepancy. Shoulder disarticulation level amputees often have difficulty producing sufficient excursion and/or force to position the elbow or engage the locking mechanism. Other factors that limit utilization of a hybridized approach can be attributed to the lack of integrity of the electrical cable as it crosses the axis of flexion, extension and humeral rotation at the elbow center, and diminished cosmesis that occurs when the electrical cable exits the humeral section, crosses the elbow joint center, and enters the radial section of a prosthesis. Cable damage is quite frequent secondary to exceeding the flexion cycle characteristics of the cable or inadvertent torque placed on the cable.

The Otto Bock ERGO Elbow System offers several enhancements over traditional mechanical or body-powered elbows that address these limitations. A thorough understanding of the design features will allow the rehabilitation team to consider a hybridized approach on a larger patient population while increasing the success rate of those individuals who have already elected this method of prosthetic intervention. The purpose of this paper is to detail the design enhancements of the ERGO Elbow that address many of the challenges that surface when using traditional mechanical elbows for hybrid prostheses.

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