Upper Extremity Prosthetic Rehabilitation: A 20 day plan of therapy, education and coaching.

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Rates of prosthesis rejection continue to remain around 50% despite technological advances in the field [1]. There are a number of factors involved in the whether someone chooses to wear a prosthesis or not [2]. There are also life circumstances that may contribute to not wearing a prosthesis [2]. One of the challenges to successful acceptance of an Upper Extremity prosthesis may be a delay in fitting, inefficiencies in care, and lack of consistent treatment [2,3]. Frequently patients suffering limb loss are seen by providers who have limited experience with this type of injury and are only able to offer patients limited insight into the use of their prosthesis. This presentation proposes a protocol of prosthetic training to ensure consistency and quality of care.

Walter Reed National Military Medical Center (WRNMMC) has received many military members who suffered upper extremity limb loss over the past 20 years. Patients at Walter Reed have had the benefit of exceptionally experienced staff, peer support, funding for new developing limbs, recreation therapy, robust adaptive sports/reconditioning and housing for patients and their families while undergoing rehabilitation. Rates of prosthetic acceptance have been anecdotally better than studies of the civilian populations, but because the programs are so different it requires more study to determine why. Some differences of care are that patients enjoy much more therapy time, insurance support, funding for newly developed devices and a commitment to return patients to a full, active lifestyle involving fitness and adaptive sports. This presentation will serve as an opportunity to look at a

treatment protocol, concepts, education and training that have been hallmarks of the UE prosthesis training program in Occupational Therapy at Walter Reed NMMC.

With a limited opportunity for prosthetic training and acceptance, therapy should focus on facilitating the patient to learn how the device can best assist them in daily life. Attaching anything to a physical body is awkward, and much more so if it is suspended off an extremity. Whether a person chooses to use a prosthesis is entirely up to the individual. What medical professionals can control is helping the patient achieve a high level of proficiency and knowledge of the device. If proficiency is achieved, theoretically the patient will have more autonomy and have a good understanding of how the device may best assist the patient. Medical staff should encourage the patient to take ownership of the device and progress towards some level of embodiment of the device. Patients often have gone through recent physical and emotional traumatic events which need to be counteracted with as much positive and enjoyable circumstances surrounding the prosthesis as possible. Knowledge of activities and how best to adapt them for success with a prosthesis is a vital part in this process.

This proposed treatment plan includes the key components of prosthesis skills, knowledge of the device and how to adapt a task to perform efficiently. Ideally a patient would attend more than 20 sessions but more may not be possible due to insurance or time limitations of the patient. The treatments focus on building a patient's confidence in analyzing efficient performance. Coaching and offering feedback in actual tasks assist the prosthesis user in developing more efficient motor plans. This document will serve as a resource for new therapists to the population and assist them to make sure they have covered all aspects of prosthesis training. This plan will focus on 20 therapy sessions to present a method to progress skills and knowledge across a continuum to achieve acceptance and proficiency with the prosthesis.

References:

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