



# STRATEGIES TO OPTIMIZE THE QUALITY OF LIFE FOR PERSONS WITH HIGH LEVEL UPPER LIMB AMPUTATION

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## INTRODUCTION

This presentation focuses on the broad spectrum of factors influencing optimum patient rehabilitation in complex upper limb amputation cases. The foundation of this approach is based on the experience that our clinical team has developed while providing over 600 unique upper limb prostheses per year. The use of multiple outcome measures identifies challenges and maximizes rehabilitation potential in a complex and highly structured approach. These measures focus on: 1) identifying specific challenges and progress, 2) flexibility to modify the rehabilitation plan 3) use of the collective information received across the organization to identify trends so that the care model is always being optimized. Because most current validated outcome measures lack comprehensive information specific to this patient population, we have developed outcome measures to recognize factors influencing successful prosthetic rehabilitation.

## METHOD

*Subjects:* Persons with upper limb absence, treated in our centers. Our baseline expectation is that the prosthesis will be well fitted, comfortable, well suspended and have optimized control strategies for the patient to control the device.

*Apparatus:* The team incorporates patient goals into a prosthetic care plan that leverages technology to design an innovative prosthesis to meet individual patient needs.

*Procedures:* Industry standard validated measures are administered at intervals to gauge progress and augmented by internally-developed innovative outcome measures, surveys and questionnaires. While not yet validated, the internally developed measures provide a more detailed insight into the factors that affect long-term prosthetic functionality.

*Data Analysis:* Feedback from all forms of outcome tools, inventories and surveys are integrated into a constantly updated treatment plan. These updates include prosthetic modifications, software and control input improvements and therapy modalities and exercises that shift from basic prosthetic management to complex tasks and home/community/work reintegration.

## RESULTS

Our treatment plan builds on the foundation sited under Methods, with a comprehensive team approach throughout the lifetime of the patient care experience. Constant improvements to the evolving treatment plan are based on outcome results, survey feedback and wellness inventories. These tools keep the Center staff focused and cohesive as challenges and progression is managed for the individual patient. Family, household, work-place and community re-integration are factored into all treatment plans. The goal of personal independence is fostered and encouraged with each and every individual throughout each step of the rehabilitation process.

## DISCUSSION

This presentation focuses on the bigger picture of factors beyond a well fitted prosthetic solution to achieve optimum patient rehabilitation in complex high level upper limb amputation cases. Utilizing a collaborative comprehensive team approach throughout the entire patient care cycle is critical in achieving the goal of independence for each individual. Key factors including a highly structured approach, the use of outcome measures, wellness inventories and patient satisfaction surveys are important indicators to assist the rehabilitation team in achieving the constantly evolving goals of the patient.

## CONCLUSION

Clinical expertise in selection of appropriate technology for improved outcomes is essential. Innovative socket interfaces with a combination of components and sophisticated terminal devices maximize function. Concomitant training with therapists knowledgeable in the operation of this technology for optimal prosthesis utilization provides the foundation for patient success.

## CLINICAL APPLICATIONS

Administering outcome tools, wellness inventories and patient satisfaction surveys allows the staff to optimize the rehabilitation experience. Those with advanced skill in treatment of this population can best facilitate patients in overcoming some of the unique obstacles they and their healthcare providers face. Return to independence is the key to success.

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