

## **ENABLING OPTIMAL DAILY HAND FUNCTION FOR CLIENTS WITH FLEXOR TENDON INJURY.**

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### **Introduction**

The goal of flexor tendon rehabilitation is to promote good tendon healing to regain optimal hand function for the execution of daily occupations. Adhesion formation and/or tendon rupture lead to limited hand use. This presentation will describe a theoretical-based protocol that uses optimal load during the process of tendon healing. This protocol will improve tensile strength and tendon excursion after flexor tendon repair for the purpose of minimizing adhesion formation and preventing tendon rupture.

### **Objectives**

The objective of this presentation is to present a protocol specific to flexor tendon injury that will enable the client to regain good hand function and engage in meaningful daily activities.

### **Description/Report**

The presentation will include: the theoretical rationale of the protocol; how to assess function and dysfunction related to tendon excursion and tensile strength; and a discussion of the protocol's application to occupational therapy practice. A case study will be used to illustrate the application of this protocol.

### **Results/Discussion**

The presentation will begin with a discussion of i) the physiological responses and mechanical properties of the tendon, and ii) application of optimal load. Since the tendon is a viscoelastic tissue that displays both stress-relaxation and creep behaviors, the tendon therefore has the capability to change its mechanical properties in response to stress application. Tendons become stronger and stiffer under increased load application (provided the loading is not beyond the failure limit) and tendons appear weaker and less stiff when the stress is decreased. Therefore, the application of optimal load at various phases of tendon healing can ensure that the tendon heals with better strength and excursion.

### **Conclusion**

This guideline includes specific strategies that occupational therapists can apply to all clients with flexor tendon injuries, regardless of the involving zone of the hand, in order to enhance optimal hand outcomes.

### **Contribution to the Practice/Evidence base of Occupational Therapy**

This theoretical-based protocol will guide occupational therapists to use better rehabilitation strategies for the improvement of the client's hand function, so that the client can participate in daily life occupations.