

# A tool to enhance Upper Limb Prosthesis fabrication



## Design of a Diagnostic Forearm for Transradial Prostheses

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### Background

Current upper limb prostheses fabrication practices rely heavily on trial-and-error approaches, and the suitability of the design is not determined until the final device is made. This can lead to an **increased number of clients visits, dissatisfaction or disuse of the prosthesis**, as well as greater clinical time and resources.



### Research Objective

This study aimed to develop a clinical tool to assist prosthetists during the design of an upper-limb prostheses and simulate the appearance and function of the final device. The device will guide and simulate the following parameters:

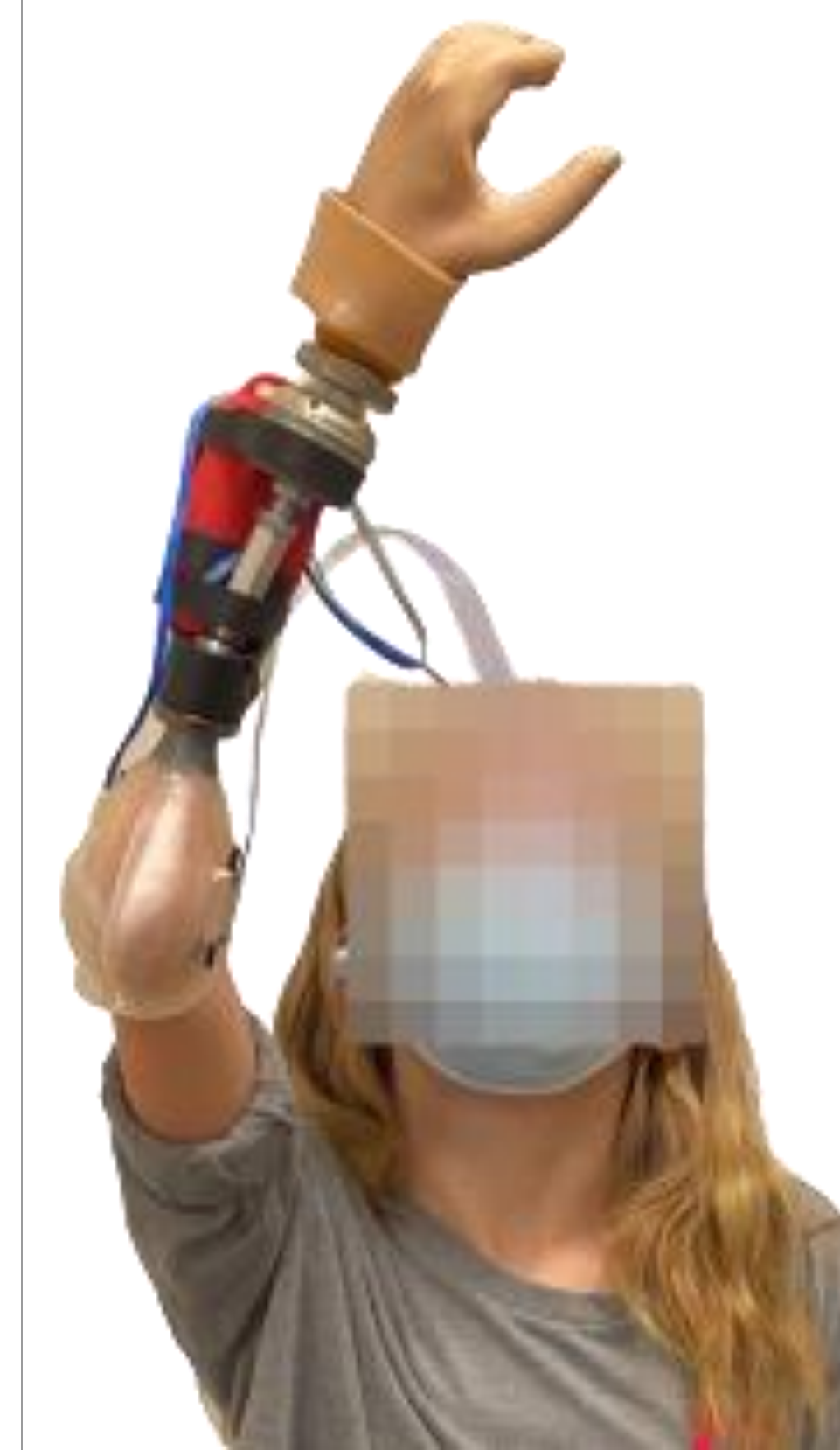


### Methods

- Develop design requirements through co-creation
- Iteratively produce prototypes
- Receive feedback from clinicians
- Test and fit with clients

### Results

The iterative design process resulted in a final prototype that was tested during a clinical appointment with an upper limb prostheses user. The device successfully implemented features like **adjustable length, weight and angle, and connection to distinct terminal devices**.



### Next Steps

With the feedback received during the clinical trial, improvements will be implemented:

- Adding alignment adjustment features
- Reducing device's size
- Simplifying the current design



Patient using the current method



Patient using the final prototype

Qualitative feedback gathered from the appointment included better patient experience and inclusion within the design process.