EXPERIENCE WITH ELECTRIC PROSTHESES FOR PARTIAL HAND
PRESENTATION WITH THE THUMB INTACT

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ABSTRACT

Limb deficiency distal to the wrist represents a common and difficult level to treat with a functional prosthesis. Challenges include functional limitations of prosthetic technology, prosthetic interface discomfort, cosmetics and absence of tactile sensation. Until the late 1990s, the lack of acceptable electric prosthetic options as well as concise treatment parameters have limited prosthetic treatment. A new electric partial hand prosthesis design has been developed expanding on the earlier work of Biden and Bush at the University of New Brunswick in the late 1990s.

An externally-powered prosthesis was designed for the individual presenting with partial hand deficiency with the thumb intact. The electric partial hand was preferred as a more functional option. Since the electric partial hand did not require contralateral hand involvement to preposition the fingers and allows active movement of the first and second digits against the thumb, it was observed to allow more spontaneous function.