



## TT Fibular Hemimelia

**Age:** 32 yrs

**Sex:** Male

**Weight:** 165 lbs

**Amputation Level:** TT - no fibula

**Previous Socket Design:** Rigid trans-tibial socket

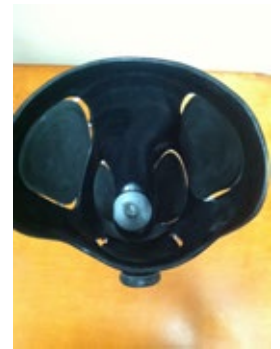
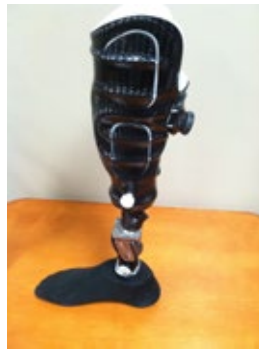
**Additional Information:** The patient is a chef who is on his feet for 8-10 hours a day in a hot environment.

**Patient Challenges:**  
(anatomical, physical, mental)

The patient experiences massive water loss during work shifts. It is difficult for him to stop work to add socks, and the volume loss increased socket instability in the medial/lateral (M/L) and anterior/posterior (A/P) directions. Tibial levering was an issue, as well as M/L stability. Global compression.

**Protocol & Design:**

Use traditional gel liners, pin-lock suspension, and double-carbon lamination to create the new socket. Address M/L instability with high trim lines and proximal and distal M/L panels. Use one RevoFit™ dial to control proximal M/L. Address A/P with a second RevoFit™ dial controlling distal medial and posterior panels to help reduce A/P levering. A third dial controls the distal lateral panel.



**Patient Outcome:**

The patient's ability to adjust the socket reduced his sock usage by 75%. The M/L compression panels increased lateral stability. The posterior and medial flare panels decreased levering and distal tibial pressure.

**Key Learnings:**

Placing three dials on five tubes is a fabrication challenge. Clearly define all tube paths, panel edges, and trim lines. Reinforce the frame with unidirectional carbon along struts or pre-preg fabrication. The five-panel design created a bone lock for the tibia and a feel of global compression to the patient.

