

Case Report: Jaime Perkins

Jaime Perkins is a 40-year-old right-handed male who works full-time running his family business in construction.



History of Condition

While working in 2020, Jaime experienced a traumatic injury to his left hand. His left index finger was amputated at the middle phalanx, and left middle, ring, and small fingers were amputated at the proximal phalanx.

The injury was caused by a jointer machine, unexpectedly left running in a noisy environment.

Subjective

Jamie reports he had immediate grief because he knew there was no chance there would be restoration of his fingers due to the nature of the machine. He states, "There were no fingers to pick up and take with" on the way to emergency care.

In addition to losing the ability to earn income as the breadwinner of his family, Jaime's wife had just given birth to their third child.

Objective

During his first course of therapeutic care, Jaime achieved roughly 40° of MCP motion. Although he was motivated to continue making further progress, the plan of care was closed as "achieving maximal medical improvement". Determined to continue improvement, he pursued

	Spring 2021 <i>Initial evaluation for prosthetic candidacy</i>	Summer 2023 <i>after ~2 years with a 3-digit MCPDriver device</i>
quickDASH	29% Functional Disability	16% Functional Disability



"I'm a happy guy, I still don't have fingers, but I can do almost everything I ever did. It is also in great thanks to the Naked Prosthetics device. I was overwhelmed in that initial moment of feeling [a reliable grasp on a tape measure] being restored to me. It reopened my future for being able to continue to do what I love."
– Jaime Perkins

continued therapy and achieved over 90° of flexion at the MCPs of all involved digits.

Although faced with many challenges, Jaime was driven to return to full function in his occupation in construction.

After returning to work with modifications and adaptations, Jaime learned about available partial-hand prosthetic options and sought possible improvement in function.

One of the aftereffects of his injury was shallow spaces between the digits, limiting individual finger flexion and abduction / adduction. This raised webspace meant he was not a candidate for current body driven designs for partial-hand amputation.

Jaime pursued an evaluation for revision surgery and experienced being denied care because he had an uncommon health insurance. He even considered travelling 8 hours out of the state to find a surgeon who would evaluate possible further medical intervention. After pleading with the local clinic which initially refused to evaluate him, Jaime's referral was accepted. He underwent revision surgery, it was successful, and he was fit for a Naked Prosthetics body driven device.

Notably, this patient chooses not to wear a prosthesis on his index finger but finds full achievement of desired function with MCPDrivers on digits 3-5.

With optimal fit, his prosthetic device allows the return of many essential grasp patterns and functions of the hand.



Plan

Functional ergonomics, overall joint protection, and early intervention of newly developed symptoms are recommended to maintain optimal health status for the patient. Plan yearly therapeutic progress evaluation alongside lifelong prosthetic care.

Case Report Written by Haley Van Escobar, MOTR/L, CHT, PMP.

To see Jaime's full journey, visit the [@PerkinsBuilderBrothers](#) YouTube channel and select "The Accident... The Recovery" playlist.

Assessment

This patient possesses incredible resilience and determination, demonstrated during the rehabilitation journey after a life-changing, traumatic partial-hand amputation. Despite denials from the healthcare system and psychosocial demands, including caring for a newborn, Jaime relentlessly pursued functional independence. His fingers have continued distal end sensitivity, but this is well-controlled by the protection offered by the exoskeleton design of his prosthesis.

An additional concern is related to compensatory motions and adaptive body posture due to the changes in shape and function of his digits. Considering research has found as much as 50% of persons with upper extremity amputation experience overuse injuries, Jaime was provided education on effective posture and prevention strategies (Jones & Davidson, 1999; Whelan et al., 2014).

Jaime's function subjectively improved within days, and his independence score (*quickDASH*) improved from 29% functional disability to 16% after about 2 years of regular prosthetic use. Specific improvements were reported in the work limitations and pain symptoms categories. His work limitations rating improved from 'moderate limitation' to 'not limited at all' and pain symptoms reduced from 'moderate' to 'none'.

This case demonstrates an excellent match of hand presentation, prosthetic device capability, and functional goals resulting in improved occupational engagement.



Jones, L. E., & Davidson, J. H. (1999). Save that arm: A study of problems in the remaining arm of unilateral upper limb amputees. *Prosthetics and Orthotics International*, 23(1), 55-58. doi:10.3109/03093649909071611

Whelan, L., Flinn, S., & Wagner, N. (2014). Individualizing goals for users of externally powered partial hand prostheses. *Journal of Rehabilitation Research and Development*, 51(6), 885-894. doi:10.1682/jrrd.2013.08.0181