Elective amputation and bionic substitution restore functional hand use after critical soft tissue injuries

Oskar C. Aszmann^{a,b,*}, Ivan Vujaklija^c, Aidan D. Roche^b, Stefan Salminger^{a,b}, Malvina Herceg^f, Agnes Sturma^{b,d}, Laura A. Hruby^b, Anna Pittermann^a, Christian Hofer^e, Sebastian Amsuess^e & Dario Farina^c

^aDivision of Plastic and Reconstructive Surgery, Department of Surgery, Medical University of Vienna, Währinger Gürtel 18-20, 1090 Vienna, AUSTRIA

^bChristian Doppler Laboratory for Restoration of Extremity Function, Medical University of Vienna, Währinger Gürtel 18-20, 1090 Vienna, AUSTRIA

^cInstitute of Neurorehabilitation Systems, Bernstein Focus Neurotechnology Göttingen, University Medical Center Göttingen, Georg-August University, Von-Siebold-Str. 6, 37075 Göttingen, GERMANY ^dMaster Degree Program "Health Assisting Engineering", University of Applied Sciences FH Campus Wien, Favoritenstraße 226, 1100 Vienna, AUSTRIA

^eOtto Bock Healthcare Products GmbH, Brehmstraße 16, 1110 Vienna, AUSTRIA

Supplementary Information

Supplementary Video 1 Functional outcomes observed in Patient 2 pre- and post- intervention as well as during the hybrid fitting

Supplementary Video 2 Post-intervention follow up of Patient 1 fitted with the advanced prosthetic system using simultaneous and proportional control

^fDepartment of Physical and Rehabilitation Medicine, Medical University of Vienna, Währinger Gürtel 18-20, 1090 Vienna, AUSTRIA