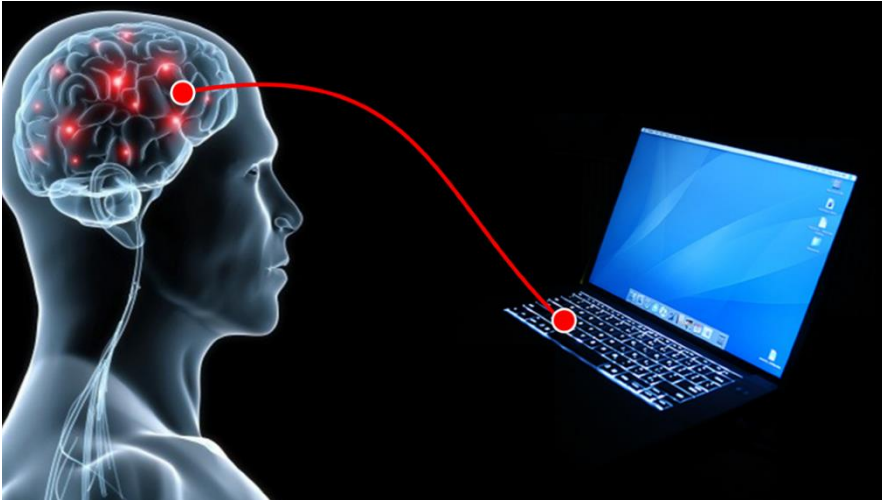


Study of Functional Electrical Stimulation with assistive support driven by a Brain-Computer Interface on the upper limb rehabilitation of chronic stroke patients

Dr. Viviana Versace

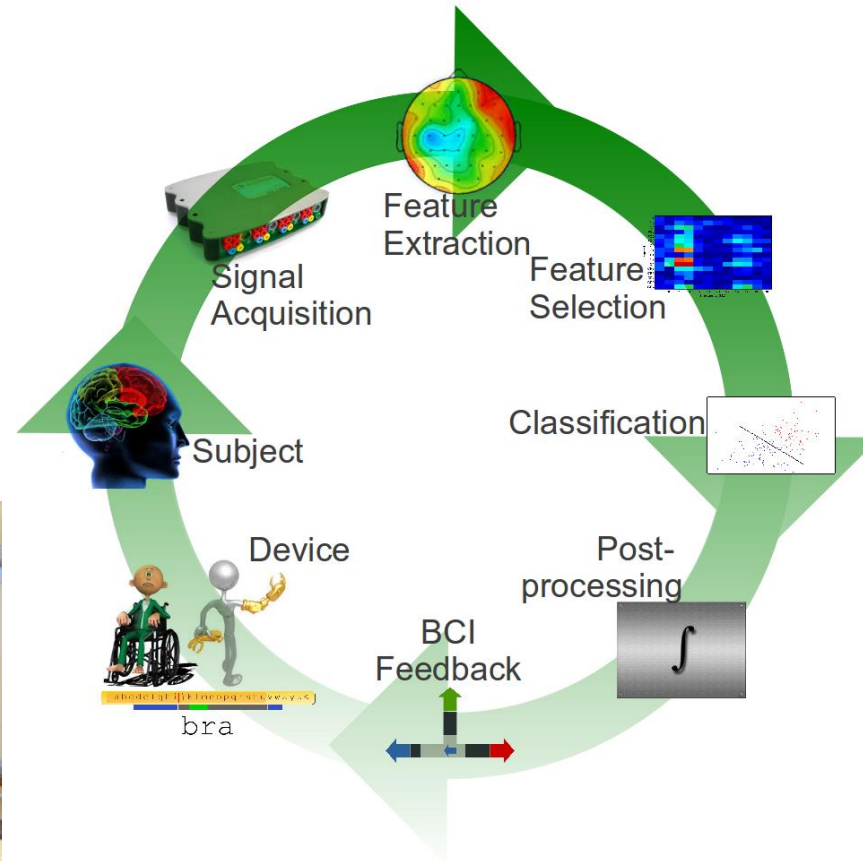
Neurologist,
Clinical and Experimental Neurophysiology Unit,
Department of Neurorehabilitation, Hospital of Vipiteno (SABES-ASDAA), Vipiteno-Sterzing, Italy

BRAIN-COMPUTER INTERFACE (BCI)

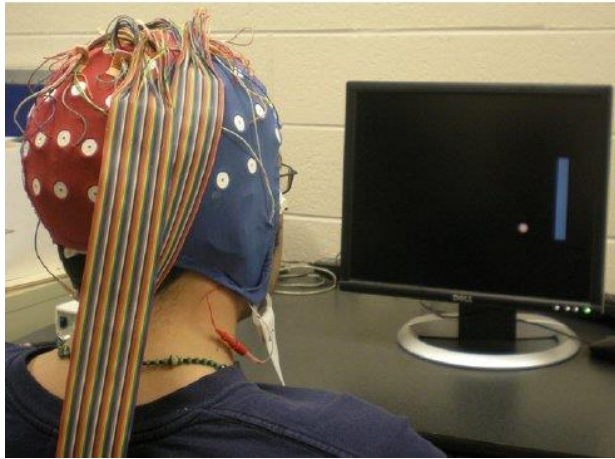


Brain-Computer-Interfaces (BCI) ermöglichen eine direkte Informationsübertragung zwischen dem Gehirn und einem technischen Gerät.

BRAIN-COMPUTER INTERFACE (BCI)



BRAIN-COMPUTER INTERFACE (BCI) IN NEUROREHABILITATION



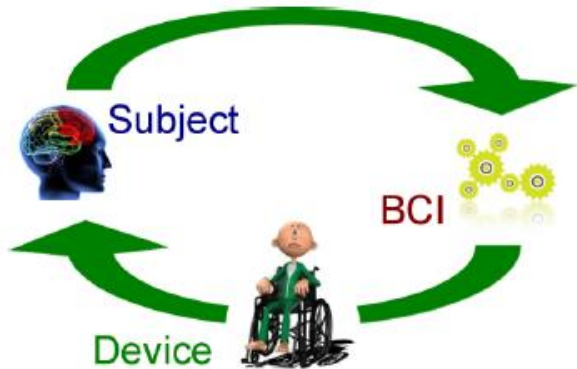
Steuerung eines Cursors



Buchstabierprogramm



Kontrolle von robotergestützten oder prothetischen Effektoren



BRAIN-COMPUTER INTERFACE (BCI) IN NEUROREHABILITATION



REVIEW ARTICLE

Brain-computer interfaces for post-stroke motor rehabilitation: a meta-analysis

María A. Cervera¹ , Surjo R. Soekadar² , Junichi Ushiba³ , José del R. Millán⁴ , Meigen Liu⁵,
Niels Birbaumer^{6,7} & Gangadhar Garipelli⁸ 

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²Applied Neurotechnology Laboratory, Department of Psychiatry and Psychotherapy, University Hospital of Tübingen, Tübingen, Germany

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⁴Defitech Chair in Brain-Machine Interface, Center for Neuroprosthetics, École polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland

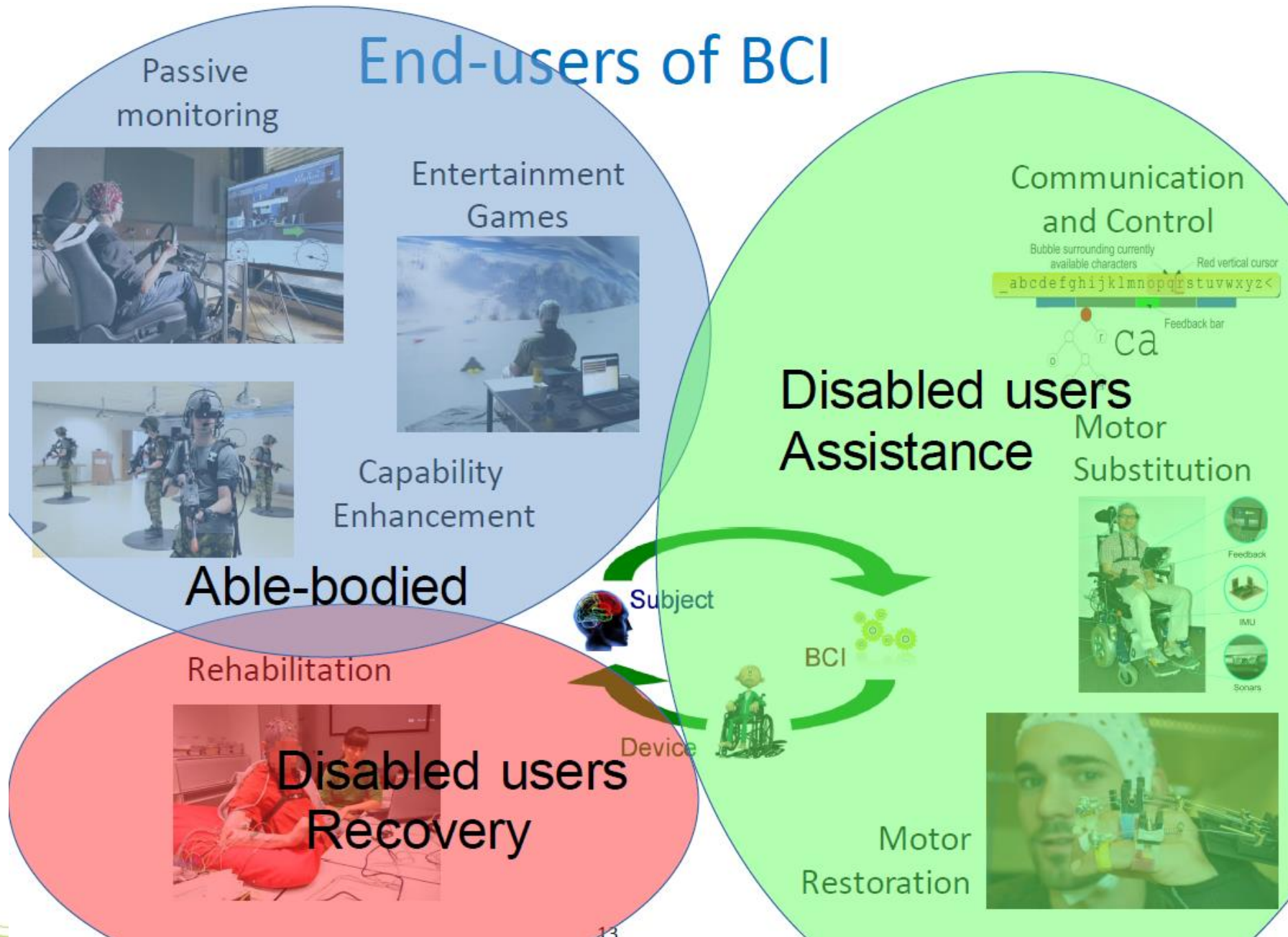
⁵Department of Rehabilitation Medicine, Keio University School of Medicine, Tokyo, Japan

⁶Institute for Medical Psychology and Behavioural Neurobiology, University Tübingen, Tübingen, Germany

⁷WYSS Center for Bio and Neuroengineering, Geneva, Switzerland

⁸MindMaze SA, Lausanne, Switzerland

End-users of BCI



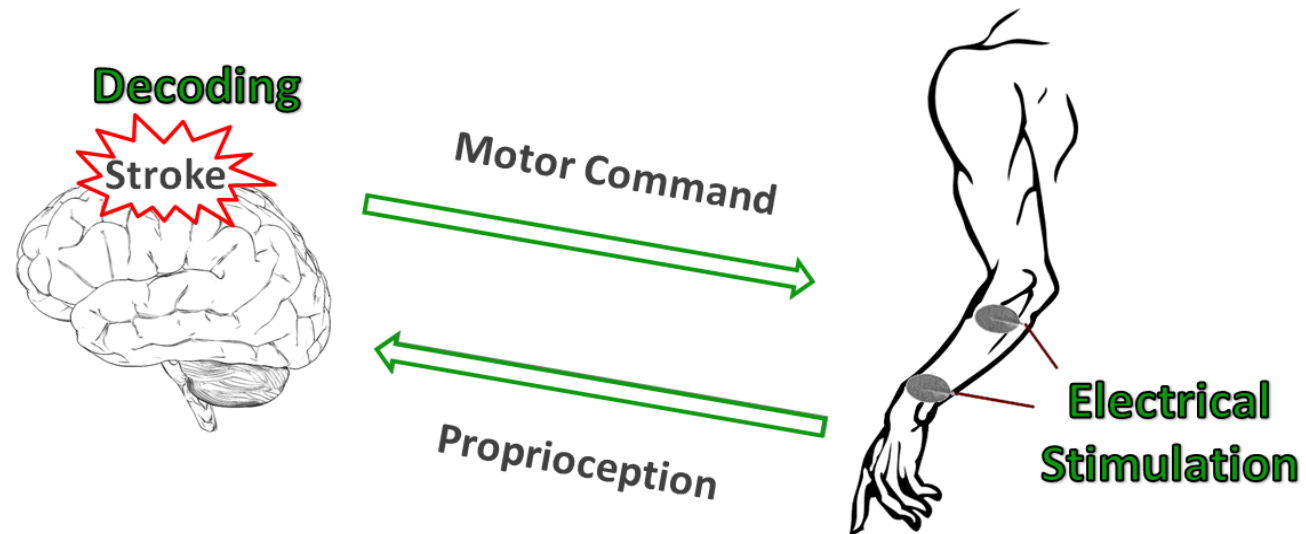
ARTICLE

DOI: 10.1038/s41467-018-04673-z

OPEN

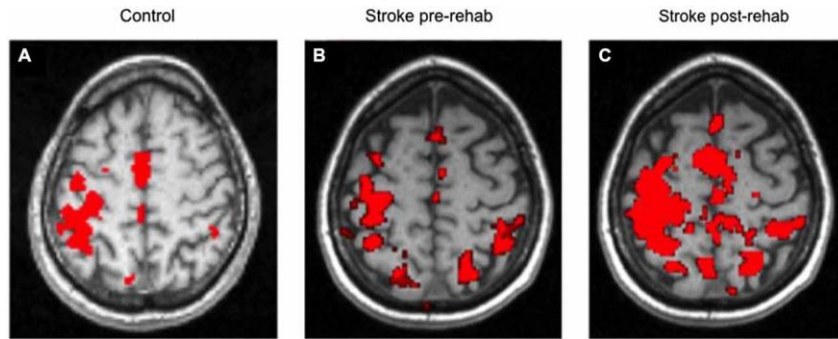
Brain-actuated functional electrical stimulation elicits lasting arm motor recovery after stroke

A. Biasiucci¹, R. Leeb^{1,2}, I. Iturrate¹, S. Perdakis^{1,3}, A. Al-Khodairy⁴, T. Corbet¹, A. Schnider⁵, T. Schmidlin², H. Zhang¹, M. Bassolino², D. Viceic², P. Vuadens⁴, A.G. Guggisberg⁵ & J.d.R. Millán¹

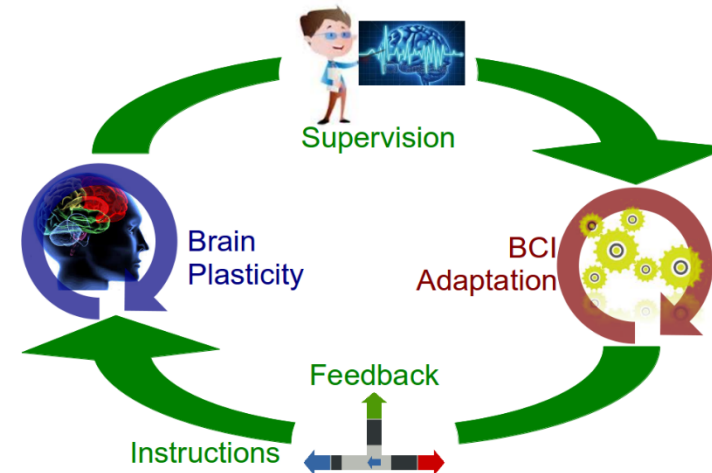


BRAIN-COMPUTER INTERFACE (BCI) IN NEUROREHABILITATION

ASSISTENZ ODER GENESUNG?



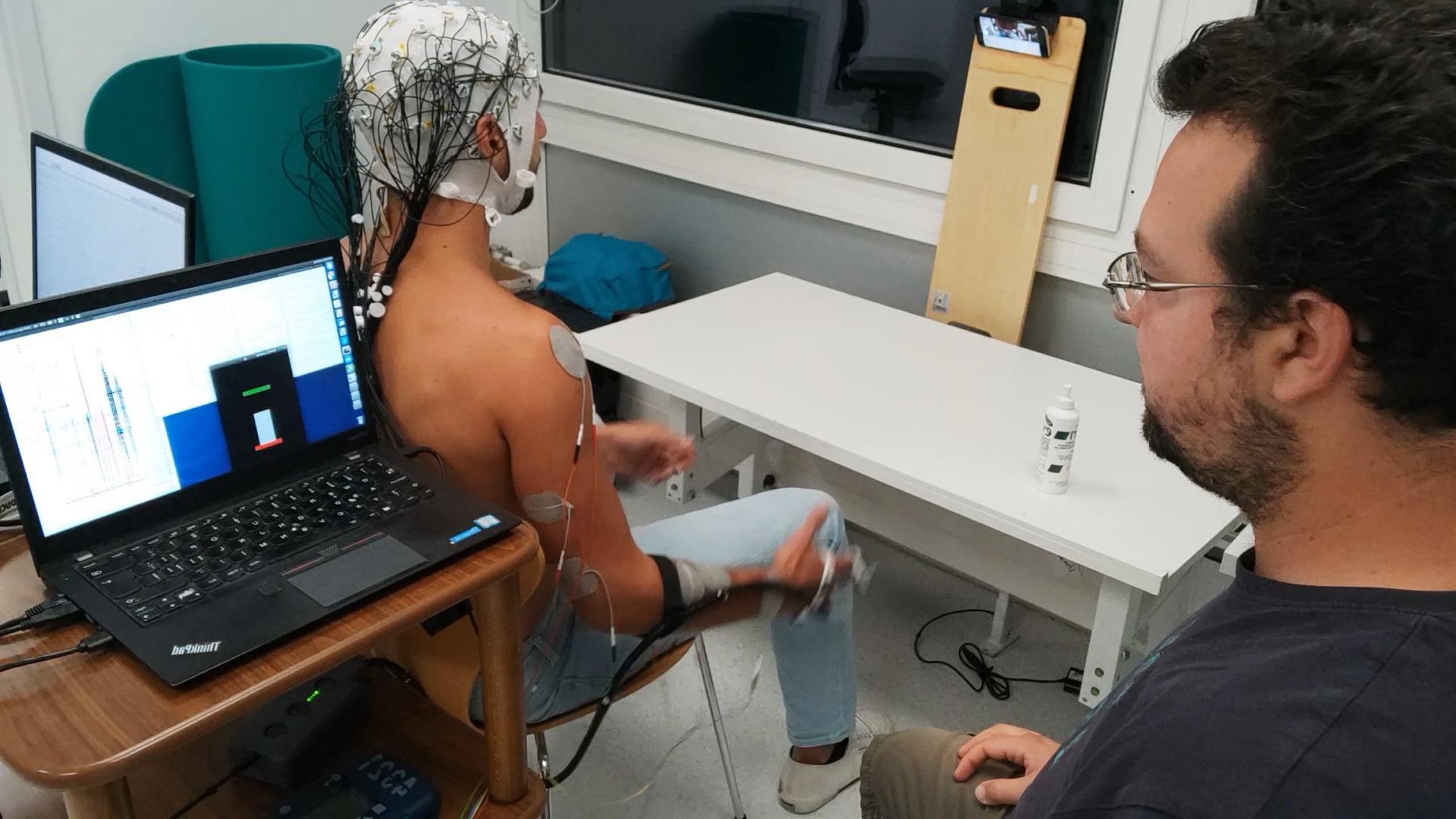
Neuroplastische Effekte begleiten die Genesung



BCI fördert Neuroplastizität



BCI kann aktivitätsabhängige Plastizität und funktionelle Erholung fördern



Danke!
Grazie!