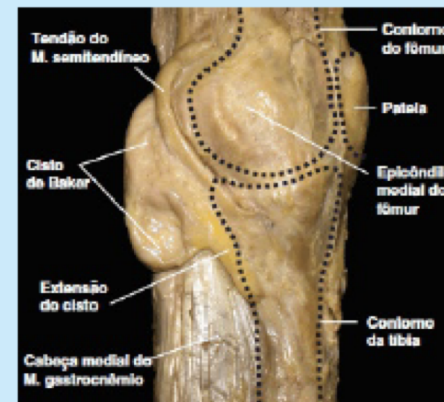


# Atuações do Eng. Biomédico nas áreas de reabilitação

# Patologias/fraturas perdas associadas

- Acidentes automobilísticos, de trabalho, doméstico
- Doenças degenerativas
- Câncer



Vista medial de dissecação do joelho esquerdo

Figura B5.37

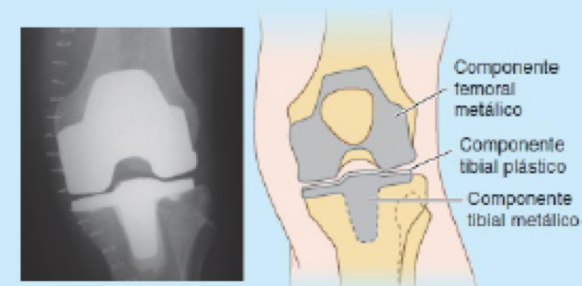


Figura B5.38

# Exoesqueleto

Article

## Exoskeleton for Gait Rehabilitation: Effects of Assistance, Mechanical Structure, and Walking Aids on Muscle Activations

Alice De Luca<sup>1,\*†</sup>, Amy Bellitto<sup>1,†</sup>, Sergio Mandraccia<sup>2</sup>, Giorgia Marchesi<sup>1</sup>, Laura Pellegrino<sup>1</sup>, Martina Coscia<sup>3</sup>, Clara Leoncini<sup>2</sup>, Laura Rossi<sup>2</sup>, Simona Gamba<sup>2</sup>, Antonino Massone<sup>2</sup> and Maura Casadio<sup>1</sup>

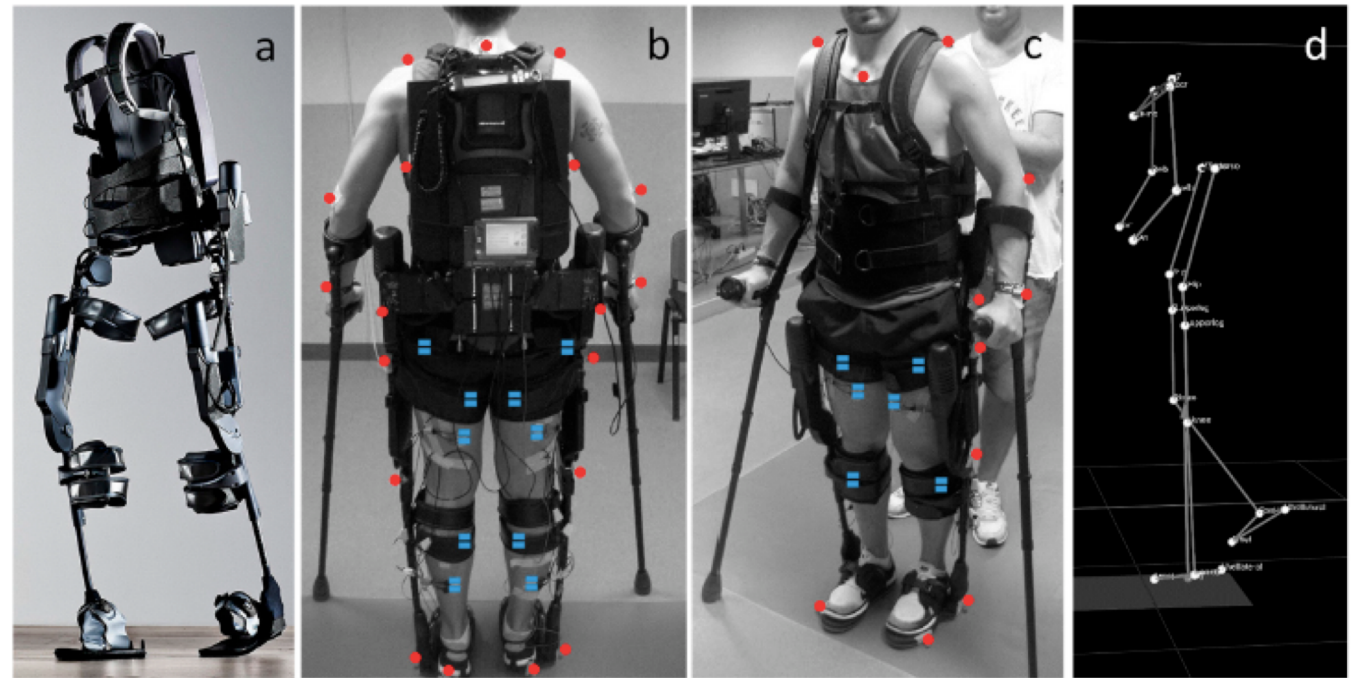
<sup>1</sup> Department of Informatics, Bioengineering, Robotics and System Engineering, University of Genoa, 13-16145 Genoa, Italy

<sup>2</sup> Spinal Cord Unit, Santa Corona Hospital, ASL2 Savonese, 38-17027 Pietra Ligure (SV), Italy

<sup>3</sup> Wyss Center for Bio- and Neuroengineering, CH-1202 Geneva, Switzerland

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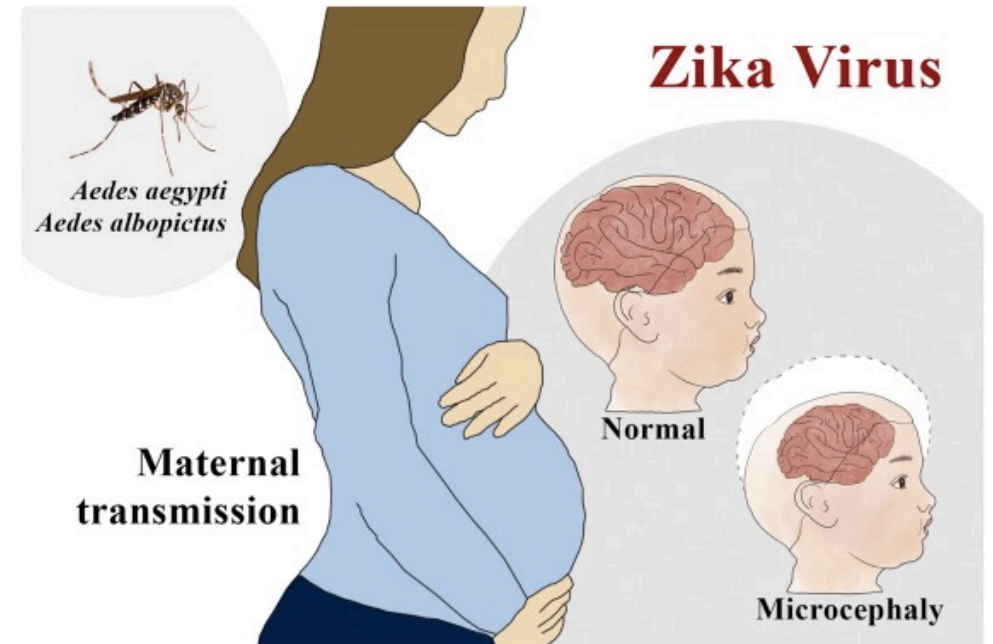
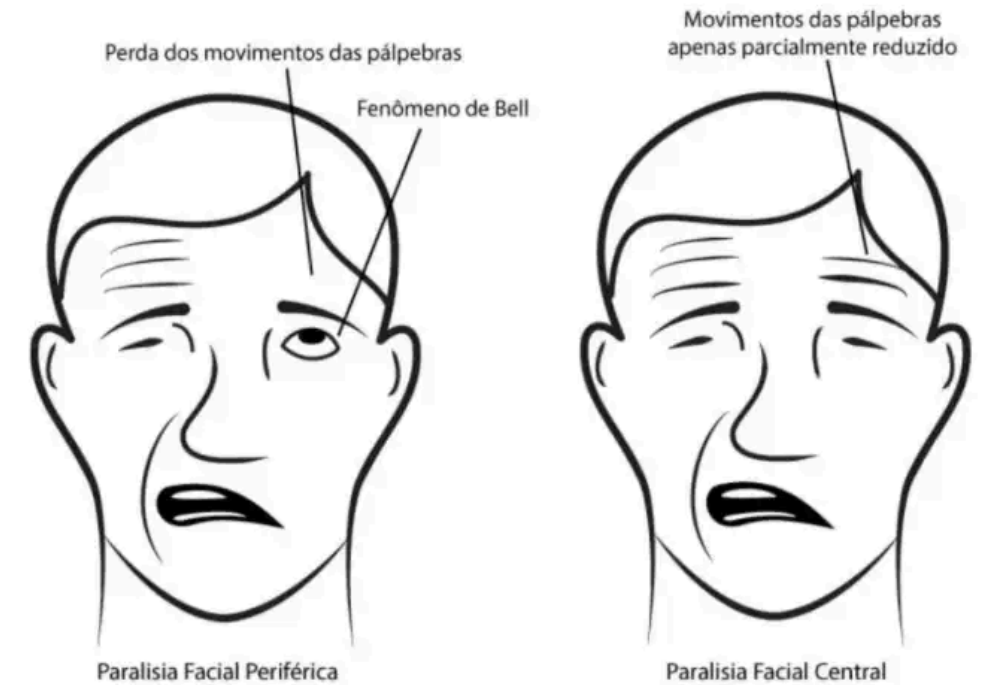
† Indicates equal contribution.

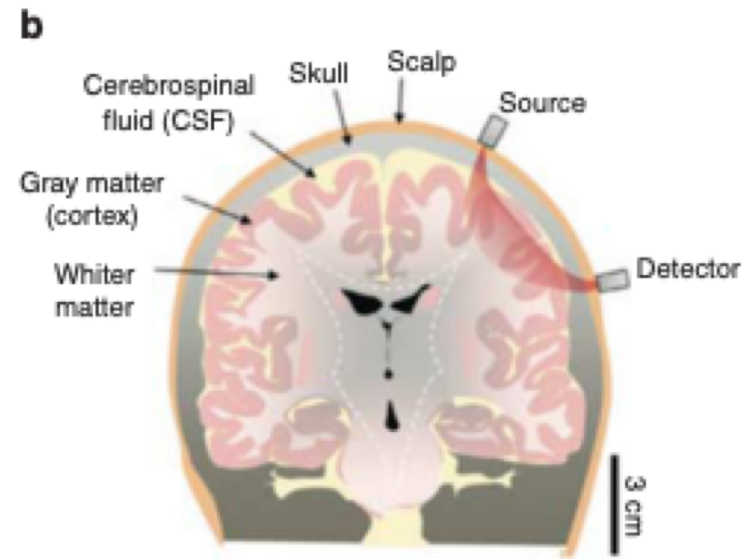
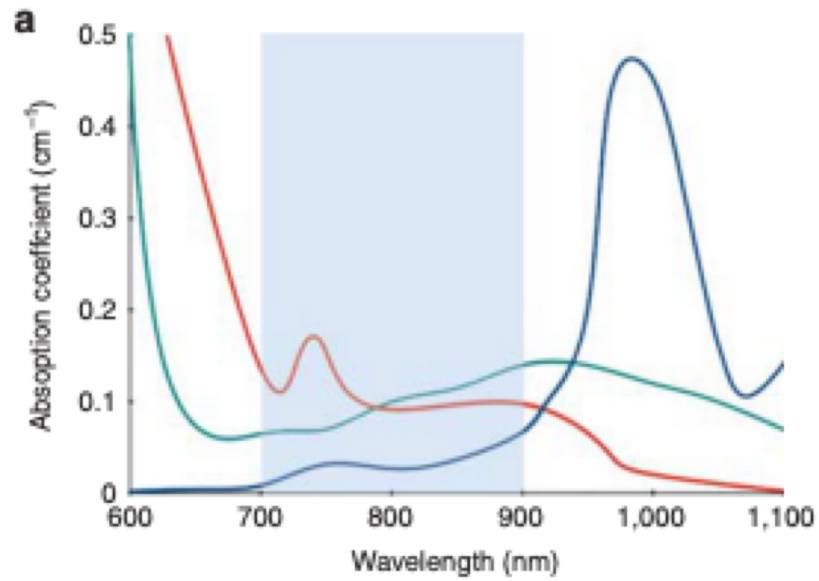


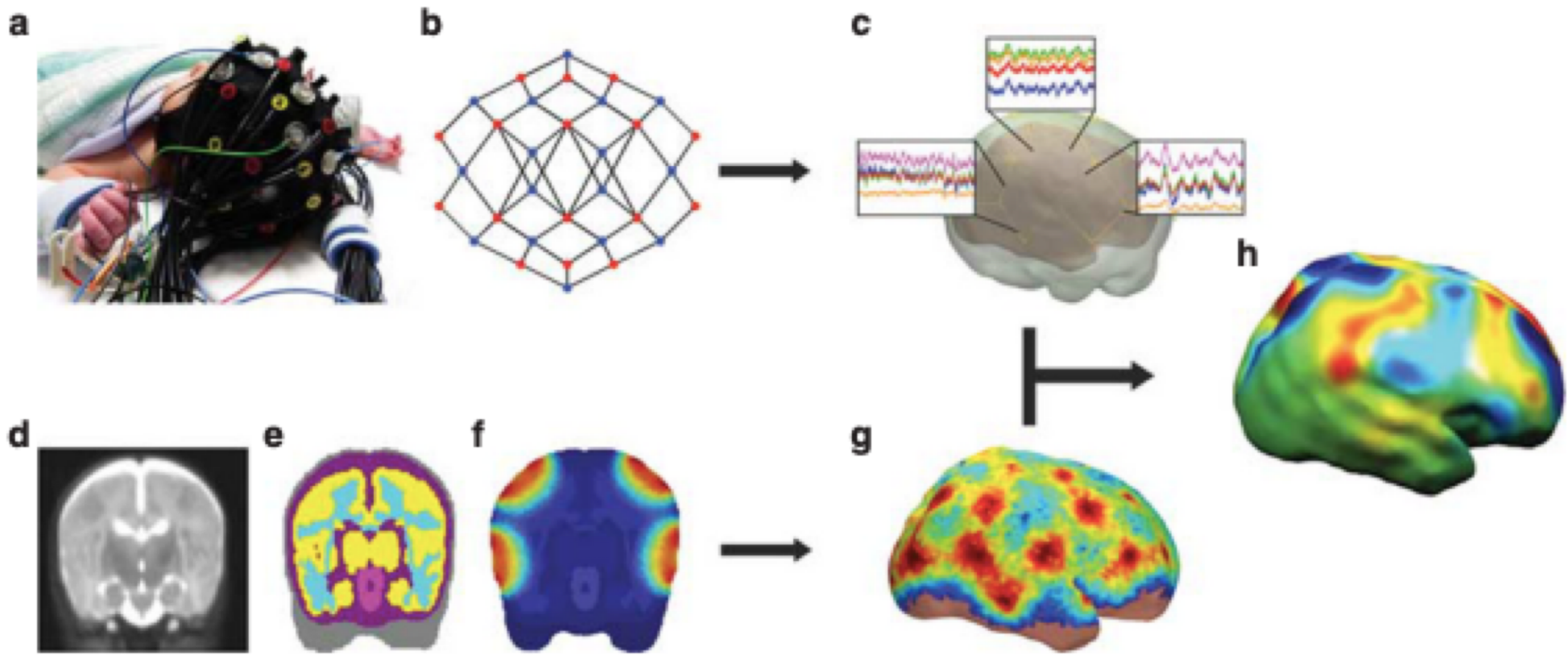
**Figure 1.** (a) Exoskeleton Ekso; (b,c) Participants wearing the Ekso. Red dots indicate the positions of the reflective markers for the motion analysis and the blue rectangles indicate the position of the surface electromyographic (EMG) electrodes. (d) Markers recorded by the motion analysis system (lateral view in the center of the motion analysis lab pathway).

# Patologias/danos associados ao SN

- Traumas mecânicos
- Nevralgia, parestesia, paralisia
- Infecções
- Tumores
- Iatrogenias
- ...

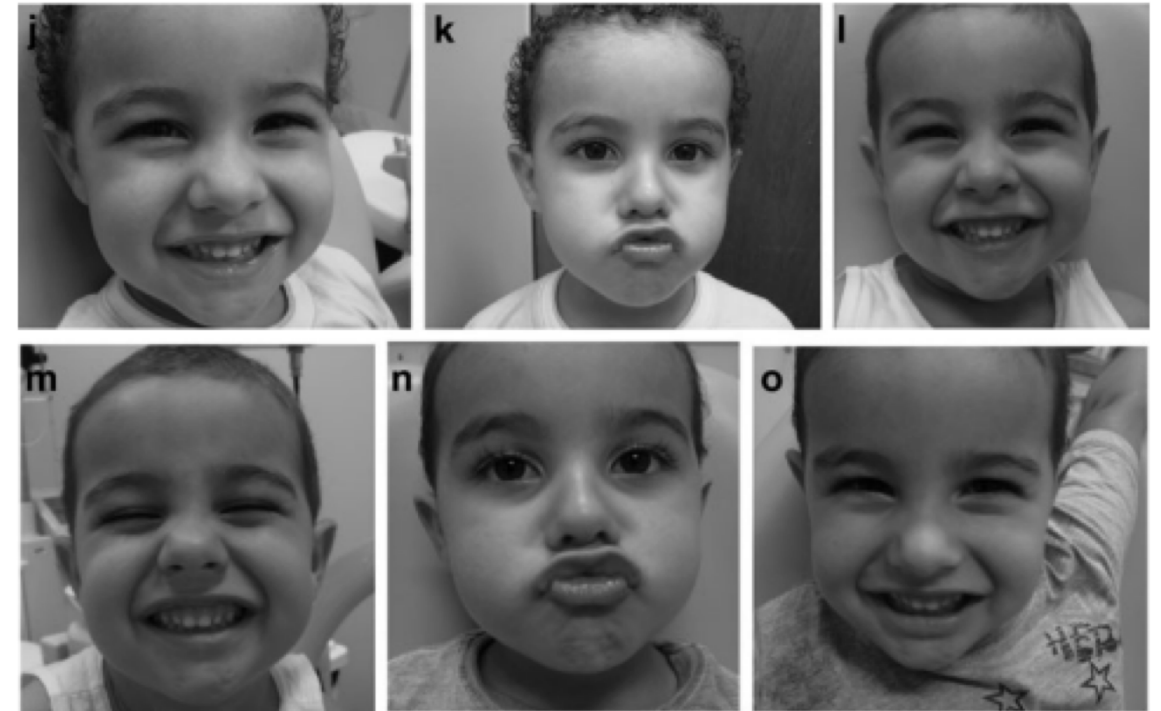






CW Lee et al. Pediatric Res, 2017

## Laserterapia em Paralisia de Bell



CR Fontana & VS Bagnato. J Alternative Compl. Med. 2013

# Próteses robóticas



<https://www.youtube.com/watch?v=PZiQg0wlxQM>