**From wheelchairs to exoskeletons: embodiment and social categorization of subjects with spinal cord injury.**

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The young paraplegic Brazilian who struck the first kick of the 2014 FIFA World Cup while wearing an exoskeleton was a powerful image of the psychological and emotional experience of standing and walking again. The next decade will see the increased use of robotic exoskeletons and wearable robots. However, despite the notion that only biologically inspired robots will alter the field of rehabilitation, there are few attempts to increase the inclusion and assimilation of exoskeletons as corporeal structures as well as on their social acceptance. Wheelchairs, or for that matter all prosthesis, immediately and profoundly impact on how people perceive and emotionally react toward others. While technology might be crucial to return to daily live activities in society, it might impede a satisfying connection with able-bodied individuals due to stigmatization and impaired self-perception. However, scientific research so far has given little attention on how self-perception and reaction of individuals could be modified. We recently addressed these issues by analyzing body perception, motivation, mood in wheelchair and exoskeleton users as well in professional involved with rehab training of individuals with SCI. We measured the attitudes toward wheelchair users and examined whether personal interactions with such an individual would affect these attitudes. Overall data suggest that people differentiate themselves from others through visual social symbols. Mere awareness of these attitudes is insufficient to remove and extinguish such social categorization. However, social interaction is not only sensitive to the presence of prejudices and stereotypes, but also permeable to changes in the relationship between the self and out groups. Furthermore, preliminary evidence indicates that already few hours of exoskeleton usage are capable of modifying self-body representation. Biologically mechanism sustaining body representation and emotion/empathy among individuals are critical aspects that need to be addressed to improve acceptance and usability of all new tools developed to sustain a better living of individuals with SCI.

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