

The robots are coming – and they are here to help

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Credit: Hocoma Swizerland

As Europe's population ages, the number of people requiring rehabilitation following neurological diseases such as stroke is expected to rise. Specialist care from physiotherapists and occupational therapists

offers a chance of regaining independence by recovering lost movement.

However, in many countries, [health professionals](#) are already in short supply. To keep up with growing demand, scientists and engineers are turning to robots for help.

For example, instead of two or three [physiotherapists](#) manually supporting an unsteady patient on a treadmill, helping them to move their limbs, robots can provide locomotion training while physiotherapies offer encouragement and feedback .

"This is just the beginning," says Dr Thierry Keller, Director of Rehabilitation at Tecnia Research & Innovation." Robots can also motivate patients through gaming and virtual reality technologies."

These technologies are equally useful in rehabilitating people who have suffered spinal injuries or are losing mobility due to multiple sclerosis . This fast-growing field, in which Europe is a leading player, was the subject of COST TD1006 .

The COST Action identified, for the first time, the diverse range of stakeholders working in this area and set about developing a common language.

"We identified and invited all stakeholders working on neurorehabilitation – doctors, engineers, neuroscientists and experts in motor control – to work with our multidisciplinary network," says Dr Keller who chaired the COST Action.

The Action has put [robot](#)-assisted neurorehabilitation on the map. Network members are finalising guidelines on the use of robots in the assessment of patients , which will be published in leading journals in this field later this year.

The network contributed to the multi-annual roadmap produced by euRobotics for a public-private partnership (PPP) in Horizon 2020, including an agenda for future work in robotic rehabilitation. Members of the Action also offer a European MSc in advanced rehabilitation therapies (ART).

It also supported the foundation of the International Industry Society of Advanced Rehabilitation Technology (IISART) which aims to advance the use of modern healthcare technologies for the benefit of patients and society.

Almost half of the 200 Action participants were early career investigators and members developed strong relationships with SMEs in a market with great potential.

Provided by COST

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