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GLOBE MAGAZINE · FOCUS

## Therapeutic success thanks to determination and robots

After suffering a severe case of Covid-19, Roger Gassert discovered for himself how important a role rehabilitation plays in recovery. The ETH Professor of Rehabilitation Engineering now plans to waste no time ensuring that patients profit from his developments.

05.12.2023 by [Karin Köchle](#)

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"The doctors were amazed that I managed to pull through." After a severe case of Covid-19, Roger Gassert plans to step up the development of robot-assisted technologies in rehabilitation. (Photograph: ETH Zurich / Markus Bertschi)


Roger Gassert contracted Covid-19 in April 2021, two weeks before he was due to be vaccinated. He subsequently spent nine weeks in a coma, battling paralysis, blood poisoning, pneumonia, cardiac arrest and kidney failure and eventually receiving a liver transplant. "The doctors were amazed that I managed to pull through," he says, two and a half years after his illness. The worst part, he says, was the time he spent confined to a hospital bed, almost completely immobile and unable to speak due to intubation. The turning point came with his liver transplant, which set him firmly on the road to recovery.

After seven-and-a-half months in hospital, Gassert was transferred to the Bellikon Rehabilitation Clinic for a further seven-and-a-half months. There, he made steady progress thanks to his determination and focus: "I fought with all my might, and gradually started to get better". A gait therapy device, developed at ETH and provided to patients by the clinic, was especially helpful in his rehabilitation.

As Professor of [Rehabilitation Engineering](#) at ETH Zurich, Gassert is no stranger to physical therapy and rehabilitation equipment. His work includes researching, assessing and restoring human sensorimotor function after diseases such as multiple sclerosis, stroke and spinal cord injuries. Those who stand to benefit from this research include stroke patients with paralysis on one side of the body, for example, who are often severely limited in their ability to perform everyday activities. Gassert and his team develop robotic devices to train and assess hand and forearm function. Their latest innovations include portable, robotic hand-rehabilitation devices that provide haptic feedback. Patients learn to use these devices in the clinic and can continue using them on their own at home.

Following his experience with Covid-19, Gassert plans to waste no time ensuring that patients profit from the fruits of his research and technological expertise. With hospitals currently facing staff shortages, robot-assisted technologies could help patients achieve better therapeutic results, including through rehabilitation at home. Every step that a patient takes towards greater independence – however small it may be – is important, Gassert says: "As I discovered for myself, every extra thing you can do without someone else's help is a huge bonus!"

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This text appeared in the 23/04 issue of the ETH magazine [Globe](#).

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