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Integrum collaborating with Chalmers to develop new artificial joint to restore wrist-like movements to forearm amputees

A new artificial joint restores important wrist-like movements to forearm amputees, something which could dramatically improve their quality of life. A group of researchers led by Max Ortiz Catalan, Research Director at Integrum and Associate Professor at Chalmers University of Technology, Sweden, have published their research in the journal IEEE Transactions on Neural Systems & Rehabilitation Engineering.

“Depending on the level of amputation, you could still have most of the biological actuators and sensors left for wrist rotation. These allow you to feel, for example, when you are turning a key to start a car. You don’t look behind the wheel to see how far to turn – you just feel it. Our new innovation means you don’t have to sacrifice this useful movement because of a poor technological solution, such as a socket prosthesis. You can continue to do it in a natural way,” says Max Ortiz Catalan.

The new artificial joint works with an osseointegrated implant system developed by Integrum AB. An implant is placed into each of the two bones of the forearm – the ulna and radius – and then a wrist-like artificial joint acts as an interface between these two implants and the prosthetic hand. Together, this allows for much more naturalistic movements, with intuitive natural control and sensory feedback.

Read the paper ‘[Restoring Natural Forearm Rotation in Transradial Osseointegrated Amputees](#)’ published in the journal IEEE Transactions on Neural Systems & Rehabilitation Engineering.

- [Full Chalmers press release \(in English\)](#)
- [Full Chalmers press release \(in Swedish\)](#)
- [See a video of the joint in action here](#)

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About Integrum

Integrum provides innovative solutions for bone-anchored prostheses. Integrum’s OPRATM implant system improves quality of life for amputees through higher prosthetic functionality, improved comfort and improved mobility. With 20 years’ experience from 500 surgeries in 13 countries, Integrum is a global leader in bone anchored prostheses. The company’s share (INTEG B) is listed for trading on Nasdaq First North in Stockholm with Erik Penser Bank as Certified Advisor. Learn more at <http://integrum.se/>