INTERVIEW// MATTHIAS ROLLER

Wearable technology driving patient compliance

There is a booming market for wearable devices. Health conscious consumers from as young as ten years old are quite happy to wear the likes of a Fitbit to track their heart rate, steps and calorie intake.

There is a huge opportunity for technology developers to go beyond devising cool gadgets and to create wearable devices that can have a positive impact on the neediest patients' lives. But how do you track patient compliance?

Here, Lucy Mason talks to orthopaedic technician Matthias Roller about his Orthotimer, the first electronic wearing time system for the assistive equipment market that thoroughly documents the wearing time of the device for outpatients.

Q: What is your background?

After starting my career as an orthopaedic technician, I worked for three years in Boston, America, in the field of high performance sports and as a market developer.

I had a chance to go to Germany as product manager for a company in the orthopaedic industry then studied for my master's in Neuro-Orthopaedics – Disability Management in Austria.

Since 2013, I've been researching the patient compliance of diabetes and scoliosis as a PhD candidate at the University of Groningen, in the Netherlands.

Q: Why did you develop a wear time measurement system?

My favourite teacher once told me that 'only a brace that is worn can actually fulfil its function'. For years, doctors haven't known whether their patients are actually wearing their prescribed devices. I found it incredible that there were hardly any everyday measurement systems. This knowledge is so important and it's no secret that the wear time has an influence on the course of treatment.

By making use of a wear time monitoring system, the wear time can be planned and evaluated in a more discriminating manner. A stronger base of verified data would do both the patients and the treatment team a world of good.

While searching for an answer, I bumped into the right technologies and people and we teamed up to develop a system for the measurement of the wear time for the field of orthopaedic technology.

Q: Who would benefit from the technology?

A cost-effective time measurement system can be particularly helpful when it comes to clinical work dealing with time-critical assistive equipment, such as scoliosis, diabetes and supportive head braces. With a system like this, doctors can quickly determine any possible weariness for therapy and speak technically and informatively with the patients about any issues.

www.orthotimer.com

Q: How does it work?

It's very simple to use. The device has three components. The heart is a sensor a bit smaller than a penny. This sensor can be easily integrated and built into all orthopaedic assistive equipment. A reading device controls the sensor and serves to provide a wireless transfer of the data to the analysis software located on the computer.

This sensor records the time of day, date and temperature once every 15 minutes and then saves this information on a data storage band. You can see exactly when the patient has worn the equipment – or not. Raw data can also be easily generated for further scientific processing in an Excel file.

Q: Who is using the technology?

I'm delighted that it's being used in 30 countries around the world as well as a number of universities, research institutes, clinics and medical stores are already using the Orthotimer.