

Your News

News from around the University Campus



A device to help with stroke rehabilitation

New options for stroke rehabilitation

Devices which could be used to rehabilitate the arms and hands of people who have experienced a stroke have been developed by some of our researchers.

Dr Geoff Merrett, a lecturer in electronic systems and devices worked with Dr Sara Demain, a lecturer in physiotherapy and Dr Cheryl Metcalf, a researcher in biomechanics, to develop three 'tactile' devices which generate a realistic 'sense of touch' and sensation - mimicking those involved in everyday activities.

Dr Demain says: "Most stroke rehabilitation systems ignore the role of sensation and they only allow people repetitive movement. Our aim is to develop technology which provides people with a sense of holding something or of feeling something, like, for example, holding a hot cup of tea, and we want to integrate this with improving motor function."

Three tactile devices were developed and tested on patients who'd had a stroke and on healthy participants. The devices were: a 'vibration' tactile device, which users felt provided a good indication of touch, but did not really feel as if they were holding anything; a 'motor-driven squeezer' device, which users said felt like they were holding something, a bit like catching a ball; and a 'shape memory alloy' device which has thermal properties and creates a sensation like picking up a cup of tea.

Dr Merrett adds: "We now have a number of technologies, which we can use to develop sensation." Dr Metcalf concludes: "This technology can be used on its own as a stand-alone system to help with sensory rehabilitation or it could be used alongside existing health technologies such as rehabilitation robots or gaming technologies which help patient rehabilitation."

A copy of the paper can be accessed at: <http://eprints.ecs.soton.ac.uk/>