

New research says muscles buckle when relaxed

November 1 2011, By Matthew Thompson

Multiple sclerosis, cerebral palsy, and other conditions involving muscle spasticity be better understood following the discovery by Australian researchers that muscle fibres buckle when at rest.

Bundles of [muscle](#) fibres, known as fascicles, had been thought to lie in straight lines when passive, but when volunteers flexed and relaxed their [calf muscles](#) for researchers wielding ultrasound devices scanners, they instead found muscles that buckled into wavy loops.

“This contradicts previously accepted models of how muscles work, and has never been observed before,” said Professor Simon Gandevia, a muscle function expert and the foundation scientist at Neuroscience Research Australia.

“This new understanding will allow us to build more accurate models of muscle function,” Professor Gavendia said.

“It may also help us better understand conditions with poor muscle performance due to abnormalities in muscle length, such as spasticity in [cerebral palsy](#) and [multiple sclerosis](#).”

The findings, published today in the [Journal of Physiology](#), point to intriguing new areas of research.

“It would be interesting to investigate if changes in the passive properties of muscles caused by, for example, contracture, exercise-induced muscle

damage, limb growth, or ageing are associated with changes in the distribution of muscle lengths at which fascicles fall slack,” write Professor Gavendia and his co-authors.

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