

Functional Electrical Stimulation Powered Ergometry System (FESPES)

This technology was funded through the New Technology Fundin and Evaluation Program (NTFEP). The NTFEP funds the introduction and evaluation of new technologies that:

- ✓ Are safe and effective
- ✓ Provide better health outcomes
- ✓ Provide value for money
- ✓ Provide greater access to care.

The evaluation findings will inform recommendations regarding the future use and/or investment of the technology within Queensland.



What is the technology?

Functional Electrical Stimulation Powered Ergometry System (FESPES) combines functional electrical stimulation (FES) with motorised exercise (powered ergometry system (PES)). FES is when small electrical pulses are applied to paralysed muscles to restore or improve their function. In the Restorative Therapies RT600, RT300 and RT300-supine, the motor assisted exercise is augmented with FES to allow progressive resistance exercise. Continuous repetitions of muscle contractions provides high intensity strength training and muscle biofeedback in children with Cerebral Palsy, Acquired Brain Injury, Spinal Cord Injury and Spina Bifida.

What were the evaluation findings?



Nearly all children (96%) that used the FESPES equipment tolerated the exercise treatment and there were no significant adverse events.



FESPES allows the muscle to contract at a higher repetition rate than alternative strength training options.



FESPES had a good effect on dystonia (a muscle movement condition) by providing muscle level biofeedback for alternating agonist and antagonist contractions.



For children with Cerebral Palsy and Acquired Brain Injury, the results from using FESPES have exceeded expectations.



FESPES is used mostly for spinal cord injury at other hospitals but at the Lady Cilento Children's Hospital it was used effectively for a wide range of conditions.



FESPES is used in both paediatric rehabilitation, sub-acute and intensive care unit as the RT300-supine allows arm or leg exercise when a patient is restricted to bed.

Where was it evaluated?

Queensland Paediatric Rehabilitation Service (QPRS), Lady Cilento Children's Hospital (2016)

Want more information?

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