

Biological effects of dosing aerobic exercise and neuromuscular electrical stimulation in rats.

Stefania Dalise^{1,6*}, Loredana Cavalli^{1,6*}, Harmanvir Ghuman^{1,2*},
Brendon Wahlberg^{3*}, Madeline Gerwig⁴, Carmelo Chisari⁶,
Fabrisia Ambrosio^{1,2,5}, Michel Modo^{1,2,3, CA}

University of Pittsburgh, ¹McGowan Institute for Regenerative Medicine, ²Department of Bioengineering, ³Department of Radiology, ⁴Department of Neuroscience, ⁵Department of Physical Medicine and Rehabilitation, Pittsburgh, Pennsylvania, USA; ⁶ University Hospital of Pisa, Department of Neuroscience, Unit of Neurorehabilitation, Pisa, Italy.

* contributed equally

Corresponding Author:

Dr. Mike Modo

University of Pittsburgh

McGowan Institute for Regenerative Medicine

3025 East Carson St

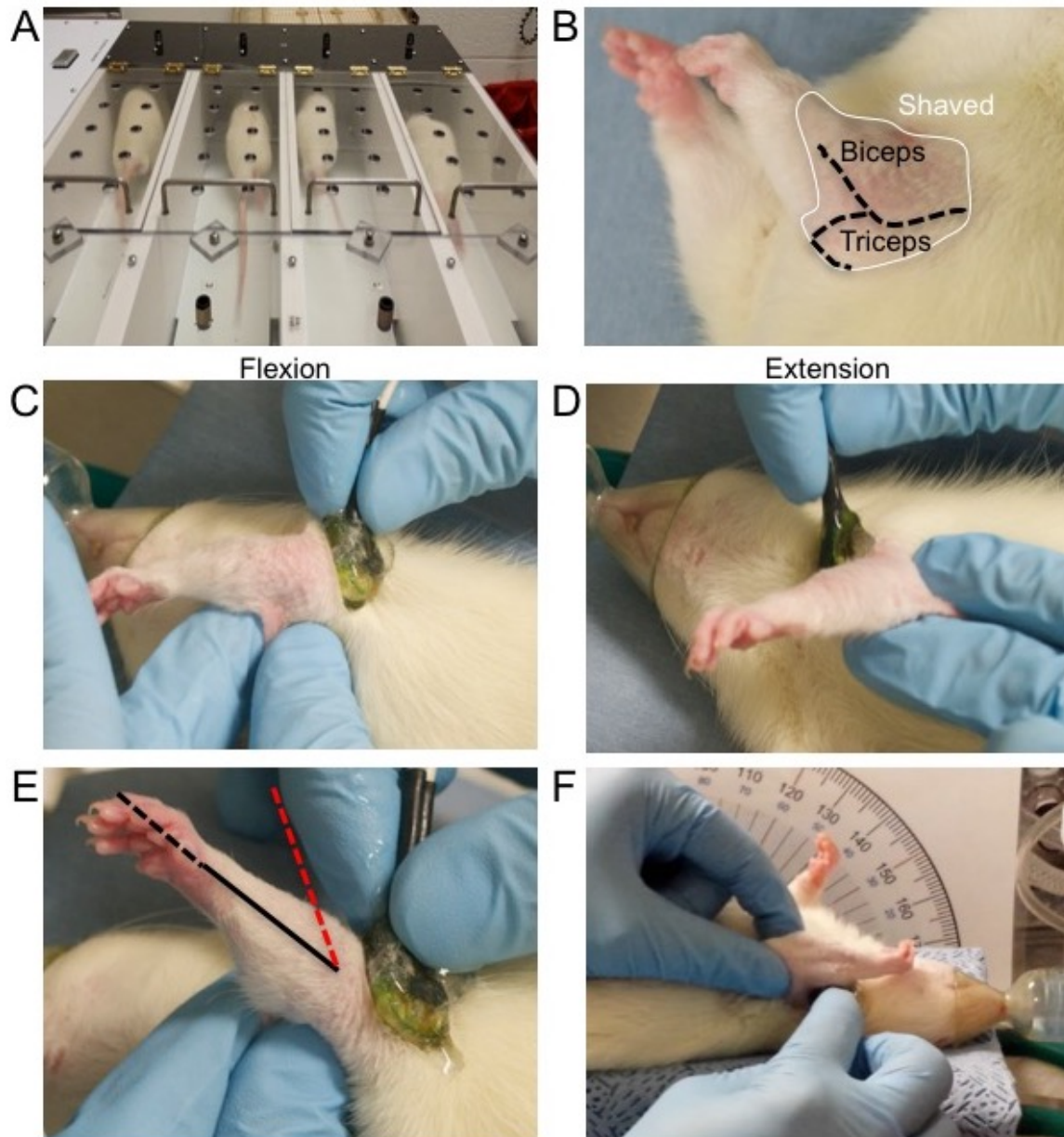
Pittsburgh, PA 15203

USA

+1 (412) 383 7200

e-mail: mmm154@pitt.edu

Supplementary Figures



Supplementary Figure 1. Aerobic exercise (AE) and neuromuscular stimulation (NMES). **A.** AE was administered using a treadmill that afforded the running of 4 rats simultaneously. The same apparatus was used to evaluate maximum performance capacity of animals. **B.** For NMES, the biceps and triceps were individually stimulated after exposure of the skin by trimming the overlying hair. **C.** Stimulation of the biceps resulted in a flexion of the forelimb. **D.** In contrast, stimulation of the triceps produced an extension of the forearm. **E.** A 30° extension and flexion of the forearm was considered a successful administration of NMES. **F.** A goniometer was used to determine if an appropriate extension and flexion was achieved.