

New Developments in the Study of Consolidation of Skill in Health and Disease

May 4

Tuesday, 12:30pm

Live Webinar
via Zoom Conference



Speaker: Leonardo G. Cohen, M.D.
Chief, Human Cortical Physiology and
Neurorehabilitation Section
National Institute of Neurological
Disorders and Stroke NIH
Bethesda, MD

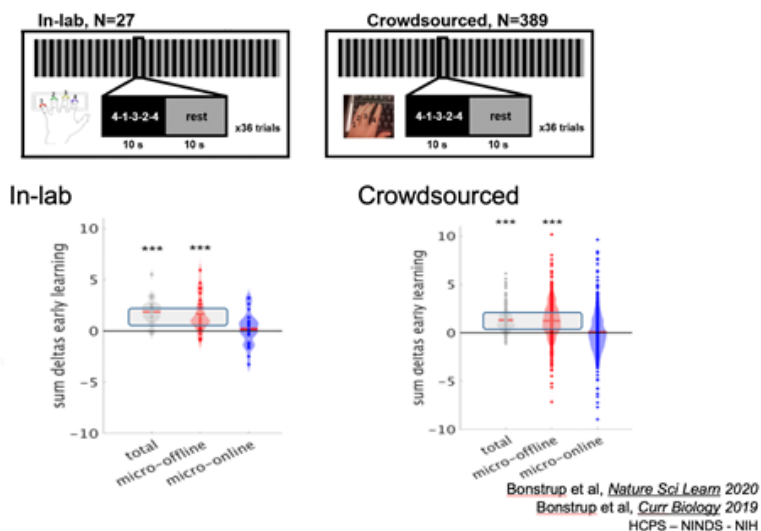
Host: Tomoko Kitago, M.D.

For more information,
please contact
Darlene White
daw9085@med.cornell.edu

Burke Neurological Institute
Academic Affiliate of Weill Cornell Medicine
785 Mamaroneck Avenue
White Plains, NY 10605
burke.weill.cornell.edu

Abstract

Previous work demonstrated that most early procedural learning relies in a rapid form of consolidation with performance improvements developing during rest instead of during practice. These micro-offline gains are unaffected by shortening practice duration and stabilize over time, consistent with a rapid form of consolidation, developing over a faster time-scale than previously acknowledged. MEG activity during waking rest intervals in which consolidation occurs revealed that motor practice elicits wakeful compressed neural replay represented in sensorimotor - medial temporal memory regions. Importantly, this form of human wakeful neural replay Predicts rapid consolidation of skill, crucial for early procedural learning and four times larger than more extensively studied overnight consolidation.



1. Bonstrup, M., et al., A Rapid Form of Offline Consolidation in Skill Learning. *Curr Biol*, 2019. 29(8): p. 1346-1351 e4.
2. Bonstrup, M., et al., Mechanisms of offline motor learning at a microscale of seconds in large-scale crowdsourced data. *NPJ Nature Sci Learn*, 2020. 5: p. 7
3. Buch E et al Consolidation of human skill linked to waking hippocampo-neocortical replay *Cell Reports* (provisionally accepted)

