Title

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Authors

Penner-Wilger, Marcie
Skwarchuk, Sheri-Lynn
Sowinski, Carla
et al.

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Finger Gnosis Predicts Children's Numeracy, Despite Controlling for Visuo-Spatial Memory

Marcie Penner-Wilger
King's University College at Western University

Sheri-Lynn Skwarchuk
University of Winnipeg

Carla Sowinski
Carleton University

Jo-Anne Lefevre
Carleton University

Abstract: Finger gnosis, the ability to mentally represent one's fingers, predicts numeracy in children (Penner-Wilger et al., 2007, 2009) and adults (Penner-Wilger et al., 2014, 2015). It has been argued that the relation may reflect visuo-spatial memory, rather than finger gnosis ability per se. This rival hypothesis was not supported in adults (Penner-Wilger et al., 2015), but here we examined it in children, using both a novel set of Grade 1 participants (N = 119) and a separate set previously reported on (Penner-Wilger et al., 2007, 2009; N=146). In multiple regressions, for each set of participants, finger gnosis significantly predicted numeracy skills, measured using the KeyMath Numeration subtest. Moreover, the relation between finger gnosis and numeracy held for both sets of participants, despite controlling for visuo-spatial memory, measured using a Corsi-block test. These findings suggest that the relation between finger gnosis and numeracy is robust and does not reflect visuo-spatial memory.