

Young Adults with Developmental Dyscalculia Do Represent and Process Number Magnitude

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Abstract

The mental representation of numbers in long-term memory was compared in university students diagnosed with developmental dyscalculia with minimal comorbidity and healthy control participants. The participants were selected based on their performance in MATAL - a standard computer-based test battery for the diagnosis of learning disabilities in students in tertiary education in Israel. All participants performed a numerical size comparison task and a physical size comparison task of numbers differing in their physical and numerical size. Both groups showed normal intentional processing of numerical magnitude as marked by regular distance and size effects. Furthermore, both groups did not differ in automatic processing of numerical size as indicated by the normal and equally increasing (with intra-pair distance) size congruity effect and the equal space-number association of response codes effect. The implications of these findings for understanding the source of dyscalculia are discussed.