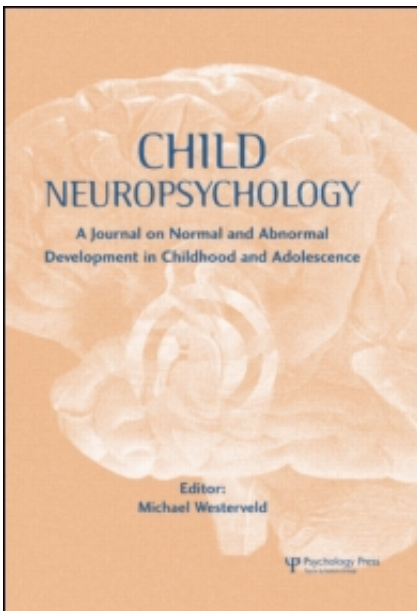


# Naming tests: A study on dyslexic versus average children

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In an article by Zoccolotti, De Luca, Lami et al, published in *Child Neuropsychology*, Rapid Automated Naming (RAN) tests were conducted on 43 average children and 25 with developmental dyslexia. The task involved naming colours, digits, pictures words and word lists displayed multiple times and in discrete form. Participants' response times and error rates were recorded. Dyslexic children not only have trouble identifying strings of letters, but also programming eye movements and synchronizing speech output. Thus reading is a multiple

component task presenting difficulty for dyslexic children. During the article the authors outline the results of the tests and analyse reasons for the differences between the two groups.

Children chosen to participate were comparable for age, gender and IQ. They were required to read a passage aloud for 4 minutes and scores were taken for speed and accuracy. Children were also asked to identify colours and numbers, in both discrete and multiple forms. Finally children were given 5 letter and 7 letter [words](#) to read, both in singular fashion and in lists. Participants were individually tested. Single stimuli tests were conducted on a pc, children requested to name colour, shape or word as fast and as accurately as possible. Multiple stimuli tests were given on paper and children were timed with a stopwatch and errors noted.

In typically developing children, during discrete and multiple naming tests, errors such as hesitation, self-correction and word substitutions accounted for 1.4% and 7.3% of the response. In dyslexic children, equivalent results accounted for 3.3 and 9.5%. In the reading tests, average candidates were significantly faster at reading multiple than single words. Dyslexic participants were slower when reading multiple 7 letter words but showed no speed difference when reading discrete or multiple 5 letter words. The authors have illustrated that in average children, they are able to process the next visual stimulus whilst articulating the current item. Dyslexic children showed sensitivity on word length to speed of reading, hence illustrating that their difficulty integrating eye movements, word decoding and speech synchronisation, increases with tasks presenting a greater challenge.

Previous research has shown that dyslexic children are challenged at word decoding level. Zoccolotti et al via their study have revealed that apart from shortfalls in reading single words, dyslexics also have a further deficit when reading multiple words. During the colour and digit

naming, results for the 2 groups showed a similar pattern. Normal children had overall advantage but dyslexic children showing a larger negative difference for multiple rather than single stimuli. The authors conclude that "*multiple subcomponents of RAN tasks may indeed be critical in mediating the relationship with reading*" hence [children](#) with dyslexia are slower in RAN tests due to difficulty in combining processing of visual stimuli with vocalising words.

**More information:** "Multiple stimulus presentation yields larger deficits in children with developmental dyslexia: A study with reading and RAN-type tasks." Zoccolotti, De Luca, Lami et al. *Child Neuropsychology: A Journal on Normal and Abnormal Development in Childhood and Adolescence*. Volume 19, Issue 6, 2013. [DOI: 10.1080/09297049.2012.718325](https://doi.org/10.1080/09297049.2012.718325)

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