

# Attention-deficit/hyperactivity disorder children exhibit an impaired accommodative response.

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## PURPOSE:

Attention-deficit/hyperactivity disorder (ADHD) is one of the most common paediatric neurobehavioural disorders causing multiple functional impairments in children. Based on the relationship between the neural system that controls attention and ocular dynamics, the present study compares the magnitude and variability of accommodation between a group of non-medicated ADHD children and an age-matched control group.

## METHODS:

The magnitude and variability of the accommodative response were objectively measured in 36 children using the WAM-5500 autorefractometer for 90 consecutive seconds at three static viewing distances (500, 40, and 20 cm). Participants were divided into ADHD (n = 18) or control (n = 18) groups based on clinically validated criteria.

## RESULTS:

Children with ADHD exhibited higher lags of accommodation ( $p = 0.024$ ), increasing at closer viewing distances, in comparison to the control group. Marginal statistical differences were found for the variability of accommodation ( $p = 0.066$ ), with the ADHD group showing a trend towards higher variability. Our analysis showed that the magnitude and variability of accommodation did not vary over time between groups ( $p > 0.05$ ).

## CONCLUSIONS:

Our data suggest that children with ADHD have a less accurate accommodative response. These results provide a new ocular index that could help to clarify the relationship between accommodative response and attentional deficits, which could have a direct impact on the academic, cognitive, and visual performance of ADHD children.