

# Homonymous Hemianopia in Children and Adolescents: An MRI Study.

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## Abstract

### AIM:

Diagnosing homonymous hemianopia (HH) in children can be difficult due to inability to comply with perimetry. Therefore, HH can often only be suspected by magnetic resonance imaging (MRI) showing lesions to the retrochiasmatic visual pathways. The aim of our retrospective observational cross-sectional study was to improve the radiologic detection of HH.

### METHODS:

MRIs of 21 subjects (5-17 years old) with ophthalmologically confirmed HH (14 complete, 7 incomplete hemianopias) were analyzed. In addition, we asked four questions looking at everyday problems possibly related to the HH. The questions asked for (1) problems in avoiding objects/people, (2) bumping into objects/people, (3) difficulties in judging stairs, and (4) difficulties in grasping objects.

### RESULTS:

We found neuroanatomical correlates of the HH in all 21 participants, with the optic radiation being involved in almost all participants (20/21). Everyday problems possibly related to the HH were reported for all nine patients with postneonatally acquired complete hemianopias. In contrast, no such problems were reported for seven patients with incomplete HH (7/7) and for 3/5 patients with complete hemianopias due to pre-, peri- or neonatally acquired brain lesions.

### INTERPRETATION:

A dedicated radiologic analysis of the retrochiasmatic optic pathway should routinely be performed in children with brain lesions to identify children with HH. Early onset and incomplete HH are predictors for successful compensation.

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