Viewing strategy training in children with (cerebral) visual impairment

Published: 22-02-2023
Last updated: 20-06-2024

The current project has two goals: (1) to measure viewing strategies used by children with normal vision, children with ocular visual impairment and children with CVI and (2) to evaluate whether training viewing strategies results in more efficient...

Ethical review	Approved WMO
Status	Pending
Health condition type	Eye disorders congenital
Study type	Interventional

Summary

ID

NL-OMON51667

Source
ToetsingOnline

Brief title
Viewing strategy training

Condition

- Eye disorders congenital
- Vision disorders

Synonym
low vision, visual impairment

Research involving
Human

Sponsors and support

Primary sponsor: Koninklijke Visio, expertisecentrum voor slechtziende en blinde mensen
Source(s) of monetary or material Support: Stichting Novum

Intervention

Keyword: cerebral) visual impairment, Viewing strategies, Visual attention, visual rehabilitation

Outcome measures

Primary outcome

The following parameters will be analyzed:

- The use of a structured viewing strategy (qualitative analysis)

- Saccade amplitudes as measured during reading and visual search

- Fixation behavior (spatial and temporal) during search and reading

- Reading accuracy and speed

- Visual search accuracy and speed

Secondary outcome

The secondary study parameters for the intervention study are:

- WISC-V visual processing speed index

- Tea-Ch Speurtocht

- Gestalt Closure (subtest Kaufman-ABC-II)

- Plaatjes Benoemen (subtest DST-NL)

Study description

Background summary

Viewing strategies are strategies used to process visual information. Many children with visual impairment seem to lack systematic viewing strategies. However, it is unknown how viewing strategies differ between children with normal vision and children with (cerebral) visual impairment. In addition, viewing strategy training is often adopted in clinical practice, but till date there is no scientific evidence about effectiveness of this approach.

Study objective

The current project has two goals: (1) to measure viewing strategies used by children with normal vision, children with ocular visual impairment and children with CVI and (2) to evaluate whether training viewing strategies results in more efficient visual information processing.

Study design

Stage 1) Observational (case control design), Stage 2) Non-RCT.

Intervention

In the second stage of the project, children receive a visual training of viewing strategies (six weeks, 2 times a week, 30 minutes). During the training, children are instructed to use specific viewing strategies (looking in a structured direction which fits the task at hand, zooming in and out / change of visual selective attentional field, visual discrimination). The verbal instructions and exercises are protocol based. A textbook is used to describe the reactions of the children during training.

Study burden and risks

Children with visual impairment will visit Royal Dutch Visio one time for the first study. The measurements are added to the standard orthoptic testing that is performed and will take approximately 20 minutes. Normal controls will be recruited and tested at regular schools and also undergo a short visual exam in addition to five short tasks (three visual taks: the reading and search tasks, and two short verbal tasks (total time 35-50 minutes)).
For the second study, children will visit the centre three times. The pre- and posttest consists of a number of neuropsychological paper-and-pencil tasks and three tasks on the eye-tracker (reading and two search tasks) and will take about 50 minutes. Training sessions will be performed at home or at school under supervision of occupational therapists.

Contacts

Public
Koninklijke Visio, expertisecentrum voor slechtziende en blinde mensen

Javastraat 104
Nijmegen 6525 EN
NL
Scientific

Koninklijke Visio, expertisecentrum voor slechtziende en blinde mensen

Javastraat 104
Nijmegen 6525 EN
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adolescents (12-15 years)
Children (2-11 years)

Inclusion criteria

Inclusion criteria typically developing children with normal vision:
• Age 5-12 years
• linear distant visual acuity of 0.1 logMAR or better
• No (suspicion of) intellectual impairment (e.g. verbal IQ below 70)
• No diagnosis or suspicion of developmental disorders or psychiatric problems like ASS or AD(H)D

Inclusion criteria for children with ocular visual impairment:
• Age 5-12 years
• Children with linear distance visual acuity better <=1.3logMAR and >0.1 logMAR
• Intact central visual field (at least > 30 degrees)
• No (suspicion of) intellectual impairment (e.g. verbal IQ below 70)
• No diagnosis or suspicion of developmental disorders or psychiatric problems like ASS or AD(H)D

Inclusion criteria for children with cerebral visual impairment:
• Age 5-12 years
• Linear distance visual acuity <=0.3 logMAR
• Having the diagnosis CVI (verified by ophthalmologists)
• No (suspicion of) intellectual impairment (e.g. verbal IQ below 70)
• No diagnosis or suspicion of developmental disorders or psychiatric problems like ASS or AD(H)D

Additional inclusion criterion for study 2 (evaluating training effectiveness): children with (cerebral) visual impairment should have an indication for viewing strategy training. Age range study 2: 5-9 years.

Exclusion criteria

• Children with VI: linear near visual acuity >1.0 logMAR
• Children with visual field defect < 30 degrees
• Children with (suspected) intellectual impairment
• Children who attended a form of vision training in the past two years
• Children with (suspected) psychiatric problems like ASS or AD(H)D
• Auditory impairment or language impairments
• Major life events (expected) during training

Study design

Design

Study type:	Interventional
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)

Primary purpose: Treatment

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	06-03-2023
Enrollment:	204
Type:	Anticipated

Ethics review

Approved WMO

Date:	22-02-2023
Application type:	First submission

Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)
Approved WMO Date:	13-03-2024
Application type:	Amendment
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)
Approved WMO Date:	17-06-2024
Application type:	Amendment
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL81584.091.22