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Understanding visual processing differences using short video tasks in adults with cerebral visual impairment

Submission date
19/05/2026

Recruitment status
Recruiting

Registration date
20/05/2026

Overall study status
Ongoing

Last Edited
20/05/2026

Condition category
Nervous System Diseases

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Cerebral visual impairment (CVI) can affect how people process complex visual information, particularly in busy or moving environments. Some people experience difficulties seeing and integrating multiple visual elements at the same time, often referred to as dorsal stream dysfunction. This study aims to explore how adults with CVI respond to short naturalistic video tasks and compare these responses with adults with typical vision.

Who can participate?
Adults aged 18 years and over with an established diagnosis of cerebral visual impairment may participate. Adults with typical vision may also participate as part of the control group.

What does the study involve?
Participants first undergo a short eye screening assessment, including a structured question inventory used to identify features associated with dorsal stream dysfunction and determine their suitability for participation. Participants then view eight short videos showing everyday environments such as shops, beaches, and driving scenes. While watching the videos, participants describe aloud what they can see. After each video, participants complete a structured question inventory about their experience, including visual difficulty, stress, mental fatigue, and visual fatigue.

What are the possible benefits and risks of participating?
The study may improve understanding of cerebral visual impairment and support future development of assessment approaches and support strategies. Some participants with CVI may find certain visually busy videos tiring or stressful. Participants may pause, take breaks, skip videos, or stop participation at any time.

Where is the study run from?
University of St Andrews (UK)

When is the study starting and how long is it expected to run for?
January 2024 to December 2026

Who is funding the study?
University of St Andrews (UK)

Who is the main contact?
Helen St Clair Tracy, hsct1@st-andrews.ac.uk

Contact information

Type(s)
Principal investigator, Scientific, Public

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Additional identifiers

Study information

Scientific Title
An observational pilot study comparing responses to short naturalistic video tasks in adults with cerebral visual impairment and control participants to investigate visual processing, stress, fatigue, and visual scene extraction

Study objectives

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 25/10/2023, School of Medicine Ethics Committee, University of St Andrews (University of St Andrews School of Medicine North Haugh, St Andrews, KY16 9TF, United Kingdom; +44 (0)1334 463596; medethic@st-andrews.ac.uk), ref: MD17292

Primary study design

Observational

Secondary study design
Case-control study

Study type(s)

Health condition(s) or problem(s) studied
Cerebral visual impairment (CVI)

Interventions
Participants with cerebral visual impairment and control participants with typical vision will undergo ophthalmological screening assessment and structured question inventory assessment prior to participation. Participants will then view eight short naturalistic videos depicting everyday visual environments including shops, beaches, and driving scenes. Participants will describe aloud what they can see while viewing each video. Following each video, participants will complete structured questionnaire measures relating to visual difficulty, stress, mental fatigue, and visual fatigue. Quantitative and qualitative data including questionnaire responses, verbal descriptions, timing measures, and visual instance scoring will be analysed to compare visual processing profiles between adults with cerebral visual impairment and control participants.

Intervention Type
Behavioural

Primary outcome(s)
1. Object identification performance measured using visual instance scoring and verbal scene description during naturalistic video tasks at a single study assessment

2. Self reported visual difficulty measured using post-video Likert questionnaire responses during naturalistic video tasks at a single study assessment

3. Task completion time measured using minutes during naturalistic video task assessment at a single study assessment

Key secondary outcome(s))

Completion date
31/12/2026

Eligibility

Key inclusion criteria
Adults with CVI group:
1. Established NHS diagnosis of cerebral visual impairment
2. Sufficient visual acuity to undertake the video tasks
3. Features consistent with dorsal stream dysfunction based on structured question inventory and ophthalmological assessment

Control group:
1. Correctable typical visual acuity

2. No diagnosis of cerebral visual impairment
3. No evidence of features suggestive of cerebral visual impairment based on structured question inventory and ophthalmological assessment

Healthy volunteers allowed
Yes

Age group
Mixed

Lower age limit
18 years

Upper age limit
120 years

Sex
All

Total final enrolment
0

Key exclusion criteria
1. Significant uncorrected visual impairment preventing participation in the video tasks
2. Inability to complete the structured video viewing and question procedures

For control participants:
1. Any evidence suggestive of cerebral visual impairment or dorsal stream dysfunction based on ophthalmological assessment and structured question inventory

Date of first enrolment
16/01/2024

Date of final enrolment
31/12/2026

Locations

Countries of recruitment
United Kingdom

Scotland

Study participating centre
University of St Andrews
College Gate
North Street

St. Andrews
Scotland
KY16 9AJ

Sponsor information

Organisation
University of St Andrews

ROR
https://ror.org/02wn5qz54

Funder(s)

Funder type

Funder Name
University of St Andrews

Alternative Name(s)
The University of St Andrews

Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated and/or analysed during the current study will be published as supplementary information alongside the results publication. All shared data will be fully anonymised and will include participant transcripts, questionnaire responses, visual instance scoring data, and summary analyses. Audio recordings were deleted following transcription checking and anonymisation. No identifiable participant data will be shared.

IPD sharing plan summary
Published as a supplement to the results publication