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Virtual reality in rehabilitation for dizziness

Submission date 21/10/2025	**Recruitment status** Recruiting	[_] Prospectively registered [_] Protocol
Registration date 16/02/2026	**Overall study status** Ongoing	[_] Statistical analysis plan [_] Results
Last Edited 01/06/2026	**Condition category** Signs and Symptoms	[_] Individual participant data [X] Record updated in last year

Plain English summary of protocol

Background and study aims
Balance impairment is one of the most important risk factors for falls. The prevalence of disability due to balance impairments increases with age, and older people face considerable problems with independence, participating in society and being physically active. The societal costs for healthcare and social services due to balance impairments and subsequent falls, and dependence on others, are high. Accordingly, more efficient interventions to prevent falls are called for. The purpose of this project is to test the feasibility of a future study on the effect of adding Virtual Reality (VR) to rehabilitation among older people with persistent balance impairment.

Who can participate?
Senior patients (aged 64 years and over) with a diagnosis of multisensory dizziness.

What does the study involve?
One group in the study will watch a VR movie, for balance challenging tasks, such as walking in a grocery store and also ordinary vestibular rehabilitation exercises and balance exercises in the form of a home-based training program. The control intervention will be a home-based training program only.

What are the possible benefits and risks of participating?
The benefit is that all participants receive a very thorough assessment of vestibular function and balance. Another benefit is that, if the Virtual Reality interventions are shown to have an effect, the participants have received effective treatment.

There is a small risk of falls during the Virtual Reality sessions. This is prevented by the physiotherapist standing close to the participants during sessions.

Where is the study run from?
Lund University, Sweden.

When is the study starting and how long is it expected to run for?
April 2025 to December 2027.

Who is funding the study?
1. Lund University, Sweden.
2. Lions Research Foundation Skåne, Sweden.

Who is the main contact?
Prof Eva Ekvall Hansson, eva.ekvall_hansson@med.lu.se

Contact information

Type(s)
Public, Scientific, Principal investigator

Contact name
Prof Eva Ekvall Hansson

ORCID ID
https://orcid.org/0000-0001-7552-6486

Contact details
Forum Medicum Sölvegatan 19
Lund
Sweden
22362
0706398663
eva.ekvall_hansson@med.lu.se

Additional identifiers

Study information

Scientific Title
Virtual reality for optimizing rehabilitation for older people with multisensory dizziness - a pilot and feasibility RCT.

Study objectives
The aim is to study the feasibility of a future randomized controlled trial. The future RCT will study the effect of adding training with Virtual Reality to ordinary vestibular rehabilitation treatment for older people with multisensory dizziness.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 02/04/2025, The Swedish Ethical Authority (Box 110, SE 750 02, Uppsala, 750 02, Sweden; 010-475 08 00; registrator@etikprovning.se), ref: 2024-08582-01

Primary study design
Interventional

Study design
Pilot and feasibility study of a randomised controlled trial

Study type(s)
Other

Health condition(s) or problem(s) studied
Multisensory dizziness

Interventions
People with multisensory dizziness have not responded satisfactorily to treatment with vestibular rehabilitation (TAU). Virtual Reality might offer possibilities to challenge the balance system and initiate a reweighting from vision to other sensory systems.

This study assesses Virtual Reality added to vestibular rehabilitation compared to vestibular rehabilitation alone. The Virtual Reality interventions include watching a Virtual Reality movie for balance challenging tasks, twice a week for 9 weeks and performing vestibular rehabilitation exercises daily at home for 9 weeks. The control intervention includes vestibular rehabilitation exercises daily at home for 9 weeks only.

A physiotherapist will assess all patients, individualize the home exercises and assist during Virtual Reality sessions.

Vestibular rehabilitation is performed by means of home exercises, through a written program with text and figures. Virtual Reality sessions are performed face-to-face.

Assessments and Virtual Reality sessions take place at the balance laboratory at the ENT department at Skåne University Hospital in Lund.

Both groups do home exercises for about 15 minutes every day. The Virtual Reality group watches a Virtual Reality movie twice a week, every session taking about 10-15 minutes. Both interventions are performed for 9 weeks.

Intervention Type
Behavioural

Primary outcome(s)
Feasibility will be assessed by measuring the following using study data at the 9-week follow-up:
1. Retention rate, calculated as a percentage of the individuals who completed the intervention
2. Recruitment rate, calculated as the percentage of eligible individuals who agree to participate
3. The ability to collect outcomes at baseline and follow-up, calculated as a percentage of completed collected data at baseline and follow-up
4. Adverse events, calculated as the number of harmful or negative events that may have influenced the study procedure

Key secondary outcome(s)
The following secondary outcome measures are assessed at baseline and at 9-week follow-up:
1. Postural sway in the anterior-posterior and medio-lateral directions will be measured using a 3-second posturography test with a force plate under eyes-open and eyes-closed conditions
2. Vestibular and central eye-movement will be measured by Video Oculography (VOG) and the Video Head Impulse Test (vHIT)

3. Spatial orientation will be measured using the same device as in the VOG and vHIT tests
4. Vibration sense will be measured using a tuning fork applied to the malleolus, monofilament testing with varying distances between two blunt plastic sticks applied to the toes, and biothesiometer testing with a vibrating plastic stick applied to the toes

Completion date
31/12/2027

Eligibility

Key inclusion criteria
The diagnosis of multisensory dizziness

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
64 Years

Upper age limit
100 Years

Sex
All

Total final enrolment
0

Key exclusion criteria
Not meeting the ket inclusion criteria

Date of first enrolment
01/11/2025

Date of final enrolment
31/12/2027

Locations

Countries of recruitment
Sweden

Study participating centre
ENT deparment, Skane University Hospital in Lund
Lasarettsgatan 21
Lund
Sweden
SE22241

Sponsor information

Organisation
Lund University

ROR
https://ror.org/012a77v79

Funder(s)

Funder type
University/education

Funder Name
Lunds Universitet

Alternative Name(s)
Lund University, Universitas Lundensis, Universitas Gothorum Carolina, Royal Caroline Academy, Regia Academia Carolina, Lund University | Lund, Sweden | LU, Lunds universitet, LU

Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
Sweden

Funder Name
Lions Research Foundation Skåne

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Prof Eva Ekvall Hansson, eva.ekvall_hansson@med.lu.se
• The type of data that will be shared: All secondary outcome measures.
• Timing for availability: After publication of the study
• Whether consent from participants was required and obtained: Yes, consent from participants is required and will be obtained.
• Comments on data anonymization: All data will be anonymized and only data at a group level will be shared.
• Any ethical or legal restrictions: No individual data can be shared.
• Any additional comments: None

IPD sharing plan summary

Available on request