

Supplementary Appendix 1. Inclusion criteria used to identify eligible patients with a chronic vestibular syndrome

Question	Inclusion	Exclusion
How would you describe your symptoms?	1. A sensation of motion of self when no motion is present, or an altered sensation of motion when motion occurs. The motion sensation may be rotary, translational, or tilt. 2. A vestibulovisual symptom that causes a similar sensation of motion of the environment. 3. A disturbed or altered sensation of spatial orientation without false or altered movement.	Balance symptoms related to maintenance of postural stability, occurring only while upright (seated, standing, or walking) without any vestibular symptom described as 1, 2 or 3.
Are the symptoms exacerbated or triggered by head movements?	Yes	No relationship with head movements (e.g., symptoms only provoked by arising from a lying or sitting position)
Have you experienced these symptoms in the last three days?	Yes	No
Have the symptoms been present for more than one month?	Yes	No
Is the head movement intolerance always present or do you have prolonged periods of time in between where you can move your head without experiencing symptoms?	Always present to some degree.	Prolonged periods of time in between without symptoms.

Supplementary Appendix 2. Content of Vertigo Training

Description of weekly sessions	
Session number	Summary content
<i>Session 1</i>	➤ Welcome to Vertigo Training and overview of session content
	➤ Vestibular symptoms and the balance system
	➤ Intro to VR exercises—working mechanism and contraindications
	➤ Planning exercises
	➤ Exercise demonstration videos of core exercises (personalised to male or female)
	➤ Timed exercise scoring test (long version)
	➤ Exercise ‘prescription’ for the following week
	➤ Dealing with side effects
<i>Session 2</i>	➤ Session recap and access to main menu.
	➤ Welcome to session 2 and overview of session content
	➤ Tailoring of exercises to current capabilities (i.e., review of last week’s exercises)
	➤ Information about how to deal with possible difficulties with exercises
	➤ Timed exercise scoring test (option to do short or long version)
	➤ Exercise ‘prescription’ for the following week
	➤ Stress and vestibular symptoms—exacerbation of symptoms
	➤ Introduction to symptom control techniques: controlled breathing
<i>Session 3</i>	➤ Session recap and access to main menu
	➤ Welcome to session 3 and overview of session content
	➤ Tailoring of exercises to current capabilities
	➤ Timed exercise scoring test (option to do short or long version)
	➤ Exercise ‘prescription’ for the following week
	➤ Increasing difficulty of exercises
	➤ Symptom control techniques: relaxation
<i>Session 4</i>	➤ Session recap and access to main menu
	➤ Welcome to session 4 and overview of session content
	➤ Tailoring of exercises to current capabilities
	➤ Timed exercise scoring test (option to do short or long version)

	<ul style="list-style-type: none"> ➤ Exercise ‘prescription’ for the following week ➤ Visual environments and vestibular symptoms—exercises and techniques to help ➤ Symptom control techniques: stress management ➤ Session recap and access to main menu
<i>Session 5</i>	<ul style="list-style-type: none"> ➤ Welcome to session 5 and overview of session content ➤ Tailoring of exercises to current capabilities ➤ Timed exercise scoring test (option to do short or long version) ➤ Exercise ‘prescription’ for the following week ➤ Everyday situations/activities and dizziness—exercises and techniques to help ➤ Symptom control techniques: thought control ➤ Session recap and access to main menu
<i>Session 6</i>	<ul style="list-style-type: none"> ➤ Welcome to session 6 and overview of session content ➤ Tailoring of exercises to current capabilities ➤ Adding general movement exercises to VR ➤ Maintaining a healthy balance system ➤ Session recap and access to main menu.

Core vestibular rehabilitation exercises	
<i>Exercise 1- Shake</i>	Turn your head from right to left and back again 10 times in 10 seconds. Twist your head round as far as it will go comfortably when you do this, and look in the direction your head is pointing. Wait 10 seconds after you have performed 10 complete turns, and then do 10 more turns.
<i>Exercise 2- Nod</i>	Nod your head up and down and back again 10 times in 10 seconds. Tip your head as far as it will go comfortably when you do this, and look in the direction your head is pointing. Wait 10 seconds after you have performed 10 complete turns, and then do 10 more turns.

<i>Exercise 3- Shake, eyes closed</i>	Carry out the shake exercise with your eyes closed. Wait 10 seconds after you have performed 10 complete turns, and then do 10 more turns.
<i>Exercise 4- Nod, eyes closed</i>	Carry out the nod exercise with your eyes closed. Wait 10 seconds after you have performed 10 complete turns, and then do 10 more turns.
<i>Exercise 5- Shake and stare</i>	Hold your finger pointing upwards in front of you and carry out the shake exercise while staring at your finger. Do not let your eyes move from your finger. Wait 10 seconds after you have performed 10 complete turns, and then do 10 more turns.
<i>Exercise 6- Nod and stare</i>	Hold your finger pointing sideward in front of you and carry out the nod exercise while staring at your finger. Do not let your eyes move from your finger. Wait 10 seconds after you have performed 10 complete turns, and then do 10 more turns.

Symptom control techniques in Vertigo Training	
<i>Controlled breathing</i>	Various exercises to learn how to control breathing to help decrease psychological distress during vestibular symptoms.
<i>Relaxation</i>	Progressively tensing and relaxing different muscle groups (extremities, thorax and abdomen, neck and shoulders, face) to gain a better understanding of muscle relaxation.
<i>Stress management</i>	Techniques to handle stress by better planning, efficient time management and selecting activities that are important to you.
<i>Thought control</i>	Various exercises to learn how to control your thoughts by observing your thoughts without judgement, methods of distraction and focusing on positive associations.

Supplementary Appendix 3. Post-hoc analysis for effect modification for primary outcome measure VSS-SF

		<i>p</i> -value of interaction between potential effect modifier, treatment arm and time*	
		Stand alone VR versus usual care	Blended VR versus usual care
Potential effect modifier		<i>N</i> =218	<i>N</i> =224
	Age	1.00	0.89
	Sex	0.05	0.42
	Level of education		
	Low versus middle	0.29	0.18
	Low versus high	0.14	0.29
	Living situation (alone or with partner)	0.48	0.31
	Number of chronic diseases		
	None versus one	0.28	0.37
	None versus two	0.73	0.65
	None versus three	0.19	0.30
	None versus four	-	0.23
	Time since vestibular diagnosis		
	One - six months versus six months- two years	0.33	0.47
	One - six months versus two - ten years	0.67	0.59
	One - six months versus more than ten years	0.95	0.27
	Presence of a panic disorder, generalised anxiety disorder or major depressive disorder at baseline	0.06	0.08

* All participants analysed according to allocation, *p*-value < 0.05 classified as statistically significant.

VR = vestibular rehabilitation; VSS-SF = vertigo symptom scale – short form (VSS-SF), range 0-60, clinically relevant difference 3 points.

Supplementary Appendix 4. Comparison of problematic experiences of therapy scale (PETS) scores between stand alone VR and blended VR, measured at three months follow-up

	Intervention (mean score (standard deviation))*		
	Stand alone VR (N=89)	Blended VR (N=94)	p-value**
Subscale 1: Symptoms too severe or aggravated by therapy (3 items)	2.6 (0.3)	2.6 (0.4)	0.43
Subscale 2: Uncertainty about how to carry out the treatment (3 items)	1.8 (0.8)	1.7 (0.8)	0.27
Subscale 3: Doubts about treatment efficacy (3 items)	2.1 (1.0)	1.9 (1.0)	0.36
Subscale 4: Practical problems (5 items)	2.3 (1.0)	2.0 (0.9)	0.05
Subscale 5: Problems due to lack of support (3 items)	1.7 (0.7)	1.5 (0.6)	0.14

* All items were scored on a scale ranging from 1 (disagree strongly) to 5 (agree strongly). The final score per subscale was calculated by dividing the number of points by the number of items.

**No significant differences ($p < 0.05$) in subscales of self reported perceived barriers to adherence on independent samples *t* test