

# Validation of the Bilateral Vestibulopathy Questionnaire in English

## Cross-cultural adaptation and content validation using cognitive interviews

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### Background

Bilateral vestibulopathy (BVP) is characterised by significant loss of vestibular function on both sides, as defined by the Bárány Society criteria<sup>1</sup>. It causes chronic imbalance, oscillopsia and difficulty walking in darkness or on uneven ground. The associated falls risk, limitations in daily activities and emotional or cognitive difficulties can substantially impair quality of life<sup>2</sup>.

Other patient-reported outcome measures (PROMs) do not provide a comprehensive BVP-specific symptom profile. Emerging treatments such as the vestibular implant increase the need to track patient-reported change<sup>2,4,6</sup>

The Bilateral Vestibulopathy Questionnaire (BVQ) was developed in Dutch at Maastricht University Medical Centre+ (MUMC+) in accordance with COSMIN guidelines.<sup>2,3</sup> It assesses four constructs: oscillopsia, imbalance, emotion and cognition. Translation and cross-cultural validation are needed to extend its use to English-speaking populations while preserving the intended meaning and relevance of its items

### Methods

**Aim:** To translate the Dutch BVQ into English and assess its content validity and comprehensibility across English-speaking populations.

**Translation:** Following ISPOR guidance,<sup>5</sup> two native English speakers proficient in Dutch independently produced forward translations (MdK, SS). An expert panel, including the original BVQ developers, reconciled these versions (MdK, DRJ, LvS, SS, RB). Two native Dutch speakers proficient in English then independently back-translated the agreed version, blinded to the original questionnaire (JW, MCG). The panel reviewed the translations with the translators, resolving discrepancies and agreeing wording that preserved the intended meaning.

**Participants:** Fifteen adults meeting Bárány Society criteria<sup>1</sup> for BVP participated: 11 from the UK, 3 from the US and 1 from Australia. UK participants were recruited through Manchester Royal Infirmary Audiology Clinic. International recruitment from US and Australian outpatient clinics was coordinated by MUMC+, with recruitment information disseminated through the Vestibular Disorders Association (VeDA).

**Interviews and analysis:** Two native English-speaking researchers (MdK, DRJ) conducted 60–90 minute think-aloud interviews in person or online, exploring item interpretation, relevance and comprehensibility. The same two researchers then independently coded anonymised transcripts using a deductive framework. All issues which arose were then discussed in detail at two consensus meetings with the original author of the BVQ (MdK, DRJ, LvS).

### Interview findings

Generally, participants valued a condition-specific questionnaire and found the BVQ easy to understand and answer. However, the interviews also identified differences in interpretation.

| Item                                    | Interpretation and cultural observations                                                                                                                                                    | Consensus decision on solution                                                                                                                                          |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recall period.                          | Some participants felt that the one-week recall period was too short to capture symptom fluctuations and infrequent activities, particularly when challenging situations were avoided.      | One-week recall limits recall bias, reflects current status and treatment response, and preserves comparability with Dutch and French versions                          |
| Instructions.                           | US participants preferred “check the box” to “tick the box”, although “tick” was understood.                                                                                                | “Tick the box” retained because this is clear for non-US English speakers, and US participants understood the instruction, despite their local preference.              |
| Vision. Q1, 2, 4 & 5:                   | “Seeing clearly” could evoke visual acuity rather than oscillopsia.                                                                                                                         | Replace “difficulty seeing clearly” with “blurred or bouncing vision” to clarify oscillopsia while preserving the intended symptom focus                                |
| Examples of head movement. Q6           | Crossing the street was sometimes interpreted as the only relevant setting for quick head movements.                                                                                        | Replace “such as” with “for example”, to avoid impression that situation is restricted to crossing the street. “For example” also changed in Q8, 11 for consistency.    |
| Uneven surfaces. Q8                     | UK participants frequently mentioned uneven paving; this did not arise in the Dutch interviews.                                                                                             | Use “the forest, the beach, snow or uneven paving”, incorporating the urban environment and reflecting differences in local environments and terminology.               |
| Emotional and cognitive. Q13, 14, 18–20 | Participants varied in whether their responses were answered in the context of their balance symptoms or their wider life experience.                                                       | No added balance-context reminder. Patients vary in onset, duration and ability to attribute emotional or cognitive effects to BVP; responses reflect their experience. |
| Daily impact and priorities. Q21–22     | These items highlighted the importance of balance-related context. In Q22a, “problem” could mean a symptom, an activity limitation, the balance disorder, vision or another health problem. | To be determined at second consensus meeting 02/10/2026                                                                                                                 |

### Limitations and next steps

UK predominance may limit cultural coverage. Individual language interpretation and the composition of the cohort and expert panel influence the translation. The English BVQ complements Dutch and French versions and wider international translation efforts. This PROM for BVP will be vital in clinical trials for vestibular implants and other devices in the near-future. The English BVQ will be published open access for research use. Future scoring research may quantify clinically meaningful change.



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#### References

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English translation of Bilateral Vestibulopathy Questionnaire (BVQ)

This questionnaire concerns the symptoms you have experienced **over the past week** due to your problems with your balance organs. Please carefully read the questions and tick the box that best matches your experience. Answer the question as it applies to your personal situation. There are no right or wrong answers. Tick one box per question. When in doubt, tick the box that best describes your situation.

|    |                                                                                                            | Never<br>1 | Rarely<br>2 | Sometimes<br>3 | Often<br>4 | Very<br>often<br>5 | Always<br>6 |
|----|------------------------------------------------------------------------------------------------------------|------------|-------------|----------------|------------|--------------------|-------------|
| 1  | I have difficulty seeing clearly when walking.                                                             |            |             |                |            |                    |             |
| 2  | I have difficulty seeing clearly when travelling (for example by car, bus, train, bike).                   |            |             |                |            |                    |             |
| 3  | When walking, I have to stop to recognise faces or to read street signs.                                   |            |             |                |            |                    |             |
| 4  | I have difficulty seeing clearly when chewing.                                                             |            |             |                |            |                    |             |
| 5  | I have difficulty seeing clearly with quick head movements.                                                |            |             |                |            |                    |             |
| 6  | I struggle with quick head movements, such as looking right and left when crossing the street.             |            |             |                |            |                    |             |
| 7  | I experience imbalance during my daily activities.                                                         |            |             |                |            |                    |             |
| 8  | I experience imbalance when walking on an uneven surface (such as the forest floor, the beach or on snow). |            |             |                |            |                    |             |
| 9  | I experience imbalance in surroundings with reduced light.                                                 |            |             |                |            |                    |             |
| 10 | When walking, I need to pay attention to the ground to prevent me from falling.                            |            |             |                |            |                    |             |
| 11 | I experience imbalance when changing position (such as squatting, bending, reaching or standing up).       |            |             |                |            |                    |             |
| 12 | I have to pay close attention to my balance.                                                               |            |             |                |            |                    |             |
| 13 | I feel lonely.                                                                                             |            |             |                |            |                    |             |
| 14 | I feel like I have control over my life.                                                                   |            |             |                |            |                    |             |
| 15 | I feel unsure when performing daily activities.                                                            |            |             |                |            |                    |             |
| 16 | I feel low.                                                                                                |            |             |                |            |                    |             |
| 17 | I am embarrassed by my loss of balance function.                                                           |            |             |                |            |                    |             |
| 18 | I am forgetful.                                                                                            |            |             |                |            |                    |             |
| 19 | I find it difficult to concentrate.                                                                        |            |             |                |            |                    |             |
| 20 | I struggle with doing more than one thing at a time                                                        |            |             |                |            |                    |             |

1

Insight questions

**21.** To what degree do you feel limited in your daily life?  
The ruler below is numbered from 0 to 100.  
0 means no limitation to daily life.  
100 means severe limitation to daily life.

Draw an X on the ruler to indicate to what degree you feel limited in your daily life.

No limitation in daily life

0102030405060708090100

Severe limitation in daily life.

**22a.** Which problem would you most like to see improve?  
Provide your answer on the line below.

.....

**b.** To what degree does this problem impact your life? (See your answer to question 22a)?  
The ruler below is numbered from 0 to 100.  
0 means no impact on your quality of life.  
100 means severe impact on your quality life.

Draw an X on the ruler to indicate to what degree you feel your quality of life is impacted by this problem.

No impact

0102030405060708090100

Severe impact

**23.** How hopeful are you that you will get better?  
The ruler below is numbered from 0 to 100.  
0 means that you have no hope of getting better.  
100 means you are very hopeful you will get better.

Draw an X on the ruler to indicate to what degree you feel hopeful you will get better.

Not hopeful

0102030405060708090100

Very hopeful

**24.** How would you describe your general health today?  
The ruler below is numbered from 0 to 100.  
0 means you are in poor general health.  
100 means you are in excellent general health.  
Please note: the ruler below has a scale from 'extremely poor' (0) to 'excellent' (100).

Draw an X on the ruler to indicate how you would describe your general health today.

Extremely poor health

0102030405060708090100

Excellent health

2

English BVQ used in the cognitive interviews, before the wording changes below