

Impact of eye monitoring technique on detection of BPPV and central positional nystagmus

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Introduction

Does the method of monitoring eye movements during positional testing impact the detection of BPPV and central positional nystagmus?

This service evaluation considers direct observation and video-nystagmography (VNG) within the context of a specialist balance clinic.

Method

Sample
50 patients assessed for positional nystagmus in 2025 were reviewed retrospectively.

Recording conditions
Initial assessment in ENT was direct observation with fixation (figure 1a). Audiology assessment was completed 6 weeks later with VNG (Diatec Diagnostic Visual Eyes, figure 1b). Standard operating conditions applied.

Data collection
VNG was used as a gold standard. BPPV was assessed for each semi-circular canal. Presence/absence of central positional nystagmus (CPN) was determined.

Results

An indication of sensitivity and specificity was derived for BPPV and CPN. Specificity was high in both cases.

BPPV sensitivity
44% correct identification of BPPV with direct observation.

	BPPV	No BPPV
Positive test	8	1
Negative test	10	343
Sensitivity	44%	
Specificity	100%	

Table 1: Direct observation sensitivity/specificity for BPPV

Central positional nystagmus sensitivity
4% correct identification of CPN with direct observation.

	CPN	No CPN
Positive test	1	22
Negative test	0	27
Sensitivity	4%	
Specificity	100%	

Table 2: Direct observation sensitivity/specificity for CPN



Figure 2: VNG with fixation removed

Conclusions

Detection of BPPV is challenging with direct observation.

Central positional nystagmus is particularly challenging to detect with direct observation.

Key considerations include:

- Fixation
- Clarity of the eyes
- Playback
- Eye movement analysis software
- Comprehensiveness of test strategy
- Phenotyping criteria

Recommendations

- Recording technique is an important consideration
- VNG should be utilised if available
- Methods for accurate phenotyping are needed, including central positional nystagmus
- This service review indicates further investigation is warranted



Figure 1a: View using direct observation



Figure 1b: View using video-nystagmography