# APPENDIX A

Modes of vestibular function and balance assessment

| **Vestibular Function Test** | **Description** |
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| Caloric Test | • Ear-specific<br>• Uses differences in temperature to assess horizontal (lateral) semicircular canal<br>• Takes 20 to 25 mins to complete, can be difficult to tolerate for children as vision is occluded and hearing is temporarily disrupted by irrigation<br>• Affected by middle ear pathology |
| Cervical Vestibular Evoked Myogenic Potential (cVEMP) | • Ear-specific<br>• Assesses ipsilateral saccule function including the vestibulo-spinal tract<br>• Need to be able to independently maintain contraction of the sternocleidomastoid<br>• Cannot be performed if there is concurrent glue ear |
| Ocular Vestibular Evoked Myogenic Potential (oVEMP) | • Ear-specific<br>• Assesses contralateral utricle function |
| Rotatory test (chair) | • Not ear-specific<br>• Assesses horizontal semicircular canal; nystagmus can be recorded<br>• Can be completed regardless of middle ear status<br>• Short testing time (10-15 mins)<br>• Child can sit on parent/carer's lap |
| Video Head Impulse Test (vHIT) | • Ear-specific<br>• Examiner assesses the semicircular canals by accelerating and decelerating the head abruptly<br>• Video goggles provide a quick and objective measure of the vestibulo-ocular reflex (VOR; the reflex to stabilize gaze during head movement).<br>• Not affected by middle ear pathologies |
| Earth Vertical Axis Rotation (EVAR) | • Assesses semicircular canal function measuring the time constant and maximal initial phase of the VOR. |
| Off Vertical Axis Rotation (OVAR) | • Assesses the function of the utricle and saccule including the vestibulo-ocular tract by measuring bias and the modulation amplitude of horizontal and vertical components of the VOR |

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| Subjective visual vertical (SVV) | • Assesses the function of the vestibulo-visual tract (mediated by the utricle)<br>• Measures VOR cancellation + participant's ability to perceive the vertical |
| Clinical Dynamic Visual Acuity (cDVA) | • Tests the integrity of gaze stability and assess the functional use of VOR |
| **Balance Assessment** | **Description** |
| Movement Assessment Battery for Children (Movement ABC) | • Assesses movement and balance in everyday situations in 3-16 year olds |
| Traction Response | • Measures head lag |
| Ghent Developmental Balance Test | • Evaluates balance from moment of independent walking to age 5 years<br>• Inexpensive, quick to administer, easily scored |
| Sensory Organisation Test (SOT) | • Measures static balance and postural control – quantitative assessment of ability to perceive visual, proprioceptive and vestibular cues to maintain postural stability in stance |
| Bruininks-Oseretsky Test of Motor Proficiency, Second Edition (BOT-2) | • Assesses balance, fine and gross motor performance in 4-21 year olds |