Inputs to consider:

1. Acellerometers
2. Gyroscope
3. T°
4. Respiratory Rate (from stretch of the bands)

From 1.2 🡪 we need to get area uner the tongue to get SWAY anterior-posterio/ medio-lateral.

The pathologies are divided into: Central and Peripheral.

**Peripheral Vestibular Pathologies**

**1. Benign Paroxysmal Positional Vertigo (BPPV)**

* Description:\* Characterized by brief episodes of vertigo triggered by head movements due to dislodged otoconia in semicircular canals, most commonly the posterior canal.
* Posturography: Studies demonstrate increased postural sway during positional testing, especially in conditions provoking vertigo (e.g., Dix-Hallpike maneuver).
* Reference: https://pubmed.ncbi.nlm.nih.gov/21092670/

**2. Menière's Disease**

* Description: A disorder involving endolymphatic hydrops causing episodic vertigo, tinnitus, and hearing loss.
* Posturography: Patients often show increased sway during attacks and interictal periods, indicating impaired balance.
* Reference: https://www.scielo.br/j/bjorl/a/M9GqNgHLWx6S8QtGXSRzRQS/?lang=en

**3. Vestibular Neuritis / Labyrinthitis**

* Description: Acute unilateral vestibular loss due to inflammation of the vestibular nerve (neuritis) or labyrinth (labyrinthitis), leading to vertigo and imbalance.
* Posturography: Increased sway and instability, especially during the acute phase, with gradual improvement over time.
* Reference: https://pubmed.ncbi.nlm.nih.gov/23952248/

4. **Superior Canal Dehiscence Syndrome**

* Description: Abnormal opening in the superior semicircular canal causing vertigo and oscillopsia with loud sounds or pressure changes.
* Posturography: Patients show abnormal sway patterns, especially with sound or pressure stimuli.
* Reference a review <https://pubmed.ncbi.nlm.nih.gov/37640595/>

**Central Vestibular Pathologies**

**1. Vestibular Migraine**

* Description: Migraine-associated vertigo with episodes of dizziness and imbalance, often with aura.
* Posturography: Increased sway variability, especially under visual or proprioceptive challenge conditions.
* Reference: <https://pubmed.ncbi.nlm.nih.gov/31439532/> / <https://pubmed.ncbi.nlm.nih.gov/29370980/>
* **MdDS – PPPD**

https://encyclopedia.pub/entry/52644

We do not include these in BEqualise

*2. Multiple Sclerosis (MS) affecting Vestibular Pathways*

*- \*Description:\* Demyelinating lesions affecting central vestibular pathways causing vertigo, imbalance, and gaze instability.*

*- \*Posturography:\* Patients often show increased sway and difficulty maintaining balance, particularly in sensory organization tests.*

*3. \*\*Brainstem or Cerebellar Stroke\*\**

*- \*Description:\* Ischemic or hemorrhagic stroke affecting vestibular nuclei or cerebellar regions involved in balance.*

*- \*Posturography:\* Marked instability with difficulty suppressing visual or somatosensory inputs.*

*- \*\*Reference:\*\* S. S. Kalla et al., \*"Posturography in cerebellar stroke,"\* Stroke, 2012.*

*4. \*\*Central Vestibular Neuritis / Stroke\*\**

*- \*Description:\* Central lesions causing vertigo, imbalance, often with additional neurological signs.*

*- \*Posturography:\* Greater sway compared to peripheral lesions, with poor adaptability to sensory conditions.*

*- \*\*Reference:\*\* T. G. Bisdorff et al., \*"Posturography in central lesions,"\* Journal of Vestibular Research, 2009.*

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