Romberg Test

Description:
- A test of station (i.e., no movement) and not gait and provides information related to the function of the cerebellum and vestibular system.

Indications:
- Part of the complete neurological exam
  - Assessment of the integrity of the dorsal column medial lemniscus (responsible for carrying the afferent input of fine touch and conscious proprioception)
- Cerebellar or vestibular diseases

Technique:
1. Patient should stand with feet together on level ground, arms at their sides, and eyes open
   a. The examiner should stand facing the patient with their arms out, without touching them, to catch the patient if they fall
2. Observe the patient for about 20 seconds
   a. Note any swaying or falling
3. Ask the patient to close both eyes for 30 seconds
4. Note the patient's ability to maintain an upright posture

Results:
- *Negative*:
  - Minimal swaying occurs
- *Positive*:
  - Failure to keep the eyes closed, a loss of balance requiring the feet to move or patient falls. This suggests a problem with conscious proprioception.
  - Able to stand upright with eyes open and minimal swaying

Diagnostic Accuracy:
- Sensitivity: 63% (for detecting vestibular impairment)
- Specificity: >90%

Notes:
- A positive Romberg test indicates ataxia from dorsal column disease and impaired proprioception
- Normally, vision will compensate for the sensory loss
- Cerebellar and vestibular disease is indicated if patient cannot stand with their feet together regardless if their eyes are open or closed
- Diabetic neuropathy, due to lost position sense in the toes, may lead to a false-positive test
- A negative Romberg test does not rule out abnormal vestibular function
- The test is appropriate for patients up to the age of 80 years

References:

1. Bickley LS et al. Bates' Guide to Physical Examination and History Taking. 11th ed. Philadelphia, PA: Lippincott Williams & Wilkins. 2013; 718.
2. Di Fabio RP. Sensitivity and specificity of platform posturography for identifying patients with vestibular dysfunction. Phys Ther. 1995;75(4):290-305.
3. Orient, JM. Sapira's Art and Science of Bedside Diagnosis. 4th ed. Philadelphia, PA: Lippincott Williams & Wilkins. 2010;556-557.