

## Clinical Test of Sensory Interaction on Balance (CTSIB)

- **Purpose:** Often referred to as the "Foam & Dome" test, the CTSIB is used to assess a person's ability to use and integrate the three main sensory systems responsible for balance: **vision**, **somatosensory** (sensation from the body and support surface), and **vestibular** (inner ear balance system).
- **Procedure:** The test involves a series of six conditions, altering visual input (eyes open/closed, visual dome) and surface stability (firm surface/foam surface) to determine which sensory system the patient may be overly dependent on or have a deficit in.
- **Administration:** A modified version (mCTSIB) typically uses four conditions (firm surface/eyes open, firm surface/eyes closed, foam surface/eyes open, foam surface/eyes closed) and each condition is timed for a set duration, often 10 seconds.

CTSIB scoring involves timing how long a person can maintain balance in six different conditions, with a maximum of 30 seconds per condition. The primary score is the total time in seconds, with a maximum possible score of 180 seconds (30 seconds x 6 conditions). Scoring can also include a subjective sway rating from 1 (minimal) to 4 (fall) for each trial.

### Primary scoring method: Timing

- **Measure time:** Use a stopwatch to record the number of seconds a person can maintain the test position for each of the six conditions.
- **Trial end criteria:** A trial ends when the patient falls, opens their eyes (in closed-eye conditions), moves their arms for support, or receives manual assistance.
- **Maximum time:** If the person holds the position for the full 30 seconds, the trial ends and the time is recorded.
- **Total score:** Add up the time from all six conditions. The maximum total score is 180 seconds.

### Secondary scoring method: Sway rating

- **Rate sway:** In addition to timing, a therapist can rate the amount of sway during each trial.
- **Rating scale:** Use a 1-to-4 scale:

- 1= Minimal sway
- 2= Mild sway
- 3= Moderate sway
- 4= Fall

- **Total sway score:** The therapist can add up the total sway score across all trials.

### Interpretation

- **Compare to norms:** Compare the individual's total score to age-specific normative data to determine if their balance is normal or abnormal for their age group.
- **Use for progress:** A higher total score indicates better balance. This is useful for tracking improvement over time, especially with a force plate which can provide more objective data for those who score 30/30 on all conditions.

m-CTSIB Condition	5th	10th	25th	50th	75th	90th	95th
Male (n = 315)							
Eyes Open-Firm	0.23	0.29	0.37	0.48	0.63	0.88	1.06
Eyes Closed-Firm	0.40	0.48	0.58	0.73	0.95	1.20	1.56
Eyes Open-Foam	0.49	0.54	0.66	0.82	1.04	1.33	1.57
Eyes Closed-Foam	1.25	1.47	1.72	2.01	2.39	2.88	3.10
Composite Score	0.71	0.77	0.87	1.05	1.22	1.44	1.59
Female (n = 276)							
Eyes Open-Firm	0.23	0.27	0.33	0.41	0.54	0.77	0.92
Eyes Closed-Firm	0.34	0.41	0.51	0.67	0.88	1.11	1.30
Eyes Open-Foam	0.48	0.52	0.60	0.74	0.89	1.11	1.29
Eyes Closed-Foam	1.25	1.35	1.58	1.86	2.22	2.58	2.73
Composite Score	0.65	0.73	0.82	0.95	1.10	1.26	1.39

