



## TOOL 2.1: Physical Examination

All patients presenting with a suspected acute concussion in the emergency department or office setting should undergo a complete physical examination that includes a neurological examination and cervical spine examination, as well as examination for any other traumatic injury. Depending on the patient's presenting or prolonged symptoms, supplementary physical examination tests can be considered. This also depends on the healthcare professional's experience in performing and interpreting these objective tests.

### Core physical examination: neurological and cervical spine examination

#### Neurological examination

- Glasgow Coma Scale (GCS) scoring
- Vital signs (resting heart rate, blood pressure)
- Screen for signs of orbital trauma or calvarial or basilar skull fracture signs (raccoon eyes, battle sign, hemotympanum)
- Screening for other trauma
- Cranial nerve examination (fundoscopy, pupillary function, visual acuity, visual fields, extra-ocular movements, facial sensation and motor function, hearing, palate symmetry, trapezius strength, tongue movements)
- Pronator drift, motor function, and tone/bulk
- Sensory function
- Reflexes
- Cerebellar testing (finger-to-nose, rapid alternating movements)
- Balance (tandem stance, one leg stance, Romberg)
- Gait (tandem gait)
- Cognitive screen (concentration, immediate, and delayed recall components of the SCAT5 and Child SCAT5 can be considered)

#### Cervical spine examination

- Palpation of cervical spine and posterior and anterior paraspinal musculature (tenderness or reactive muscle guarding)
- Range of motion

## Supplemental tests

Healthcare professional experience and comfort with these tests may vary. If a child/adolescent develops prolonged post-concussion symptoms, consider referring to an interdisciplinary concussion team.

For patients with prolonged dizziness, vertigo, postural imbalance or motion sensitivity

- Dix-Hallpike test (to assess for benign paroxysmal positional vertigo)
- Head thrust test (to assess vestibulo-ocular reflex)
- Balance Error Scoring System (for balance)

For patients with prolonged blurred vision, difficulty focusing, headaches with visual stimulation, and motion sensitivity

- Cover/Uncover test
- Convergence
- Accommodation
- Horizontal and vertical saccades
- Smooth pursuits
- Head thrust testing

The healthcare professional should also note if performing these tests significantly recreates or exacerbates the patient's symptoms.

For patients with jaw/temporo-mandibular joint pain or discomfort

- Inspection of jaw alignment and occlusion
- Observation of active movements
- Palpation of the jaw and the temporo-mandibular joints
- Otoscopic examination