

# Concussion: Office Based Rehabilitation Assessment (COBRA)

Name \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_ Date \_\_\_\_\_

With this injury, was there:

Loss of consciousness? **Yes/No**

Confusion/disorientation/Amnesia? **Yes/No**

Number or prior concussions? \_\_\_\_\_

Past history of learning disability/ADHD/migraine **Yes/No**

Medications? \_\_\_\_\_

## Cognitive problems: Symptoms that might indicate a concussion:

(Circle how you feel now)

Headache	0	1	2	3	4	5	6
"Pressure in head"	0	1	2	3	4	5	6
Neck Pain	0	1	2	3	4	5	6
Nausea or vomiting	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Blurred vision	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6
Sensitivity to light	0	1	2	3	4	5	6
Sensitivity to noise	0	1	2	3	4	5	6
Feeling like "in a fog"	0	1	2	3	4	5	6
"Don't feel right"	0	1	2	3	4	5	6
Difficulty remembering	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
*Feeling slowed down	0	1	2	3	4	5	6
*Difficulty concentrating	0	1	2	3	4	5	6
*Fatigue or low energy	0	1	2	3	4	5	6
*Trouble falling asleep	0	1	2	3	4	5	6
*More emotional	0	1	2	3	4	5	6
*Irritability	0	1	2	3	4	5	6
*Sadness	0	1	2	3	4	5	6
*Nervous or Anxious	0	1	2	3	4	5	6

**Total Symptom score** \_\_\_\_\_ /132

Symptoms worse with light activity? Yes/No Intense activity? Yes/No

## Orientation (1 point for each correct answer)

What month is it?	0	1
What is the date today?	0	1
What is the day of the week?	0	1
What year is it?	0	1
What time is it right now? (within 1 hour)	0	1

**Orientation score of 5** \_\_\_\_\_

## Immediate Memory

				<b>Alternate List</b>			
Elbow	0	1	0	1	0	1	candle
apple	0	1	0	1	0	1	paper
carpet	0	1	0	1	0	1	sugar
saddle	0	1	0	1	0	1	sandwich
bubble	0	1	0	1	0	1	wagon

**Total** \_\_\_\_\_  
**Immediate Memory score total** \_\_\_\_\_ of 15

## Concentration: Digits Backward

List	Trial 1	
4-9-3	0	1
3-8-1-4	0	1
6-2-9-7-1	0	1
7-1-8-4-6-2	0	1
<b>Total of 4</b>	_____	

## \*\*Month in Reverse Order (1 pt. for entire sequence correct)

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan 0 1

\*\*Serial 7's as an alternative or serial 3's if too difficult

**Concentration score** \_\_\_\_\_ of 5

## Oculo-motor examination:

Near point convergence	_____ ( cm)
Saccadic eye movement	Normal/Abnormal
Visual pursuit/EOM	Normal/Abnormal
King Devick assessment	(optional)

## Affective disturbances

(Score 1 for yes, 0 for no)

Responses from symptom scale *	Depression score _____ of 48
Has patient had a prior history of depression?	Yes / No
Any previous other psychiatric diagnosis?	Yes / No
Has patient lost interest in things?	Yes / No
Does patient feel they are letting people down?	Yes / No
Any thoughts of harming themselves?	Yes / No
**Symptoms of PTSD	Yes / No
Total depression score out of 54	_____

## Cervical assessment:

### Canadian C spine rules:

Any high-risk factor that mandates radiography? (Age ≥65 yr or dangerous mechanism or paresthesiae in extremities)	Yes/No
Any low-risk factor that allows safe assessment of range of motion? Simple rear-end motor vehicle collision or sitting position in the emergency department or ambulatory at any time or delayed onset of neck pain or absence of midline cervical-spine tenderness.	Yes/No
Able to rotate neck actively 45° left and right?	Yes/No

Cervical range of motion	Full/Painless/Restricted/Painful
Does it provoke headache or dizziness?	Yes/No
Spurling maneuver painful/provoke headache?	Yes/No
Cervical zygapophyseal joint palpation painful?	Yes/No
Does it provoke headache or dizziness?	Yes/No

## Headache assessment:

Suffer from headaches prior to the concussion?	Yes/No
Does palpation of craniofacial muscles reproduce the patient's headache?	Yes/No
Does palpation of cervical structures reproduce the patient's headache?	Yes/No
Are the patient's headaches migrainous?	Yes/No

## Cardiovascular assessment:

Exercise intolerance/Fatigue	Yes/No
Orthostatic symptoms	Yes/No
Orthostatic vital signs:	
HR and rhythm supine _____	HR standing _____
BP supine _____	BP standing _____

## Vestibular assessment

Rhomberg sign:	Positive /Negative
Tandem gait:	Gait for 3 meter/turn _____ sec
Dix Hall-Pike:	Positive /Negative
Vestibulo-ocular reflex	Positive /Negative
Nystagmus	None/Vertical/horizontal
BESS testing	Error score _____
Visual motion sensitivity	normal/abnormal

**Delayed recall score** \_\_\_\_\_ of 5

GCS: _____	
Cranial nerve anomalie?	Yes/No
Cerebellar signs	Yes/No

General Neurological examination summary:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Is this patient fit to drive? Yes/No

**Concentration:**

- If serial 7's and the months backwards are too difficult use:
  - serial 3's or
  - days of the week backwards.
  - spelling "WORLD" backwards

**Oculomotor examination:**

- **Near point convergence:**  
Measured from the tip of the nose and >5cm is abnormal
- **Saccadic eye movements:**  
The examiner can test saccades by holding two widely spaced targets in front of the patient (such as the examiner's thumb on one hand and index finger on the other) and asking the patient to look back and forth between the targets.
- **Vestibular ocular reflex :**  
Tested by holding the eyes open and rotating the head from side to side or up and down
- **Dix Hall-Pike:**  
With the patient sitting, the neck is extended and turned to one side. The patient is then placed supine rapidly, so that the head hangs over the edge of the bed. The patient is kept in this position until 30 seconds have passed if no nystagmus occurs. The patient is then returned to upright, observed for another 30 seconds for nystagmus, and the maneuver is repeated with the head turned to the other side

**Affective:**

- **PTSD:**
  - Traumatic event
  - Re-experience the event
  - Avoidance of stimuli
  - Unable to function > Month
  - Arousal increased

**Headache assessment:**

Is it Cervicogenic migraines/tension /medication induced headaches

**Cardiovascular assessment:**

- **Orthostatic hypotension:**  
diagnosed when, within two to five minutes of quiet standing (after a five minute period of supine rest), one or both of the following is present:  
At least a 20 mmHg fall in systolic pressure  
At least a 10 mmHg fall in diastolic pressure  
**POTS:**  
a sustained heart rate increase of greater than 30 beats per minute  
or an increase to 120 beats per minute or greater within the first 10 minutes of tilt  
There is usually no orthostatic hypotension.

**Children and adolescents:**

**for children <14 years:**

sustained heart rate increase of greater than 40 beats per minute or an increase to 130 beats per minute or greater within the first five minutes of tilt

**children 14 to 19 years:**

sustained heart rate increase of greater than 40 beats per minute or an increase to 120 beats per minute or greater within the first five minutes of tilt  
NB of delayed POTS(<10mnts) and orthostatic hypotension(>5mnts) which can suggest the possibility that this phenomenon may be a milder or earlier form of impairment.

**Cognitive problems:**

Loss of consciousness  
Deteriorating conscious state  
Restlessness or agitation

**Oculomotor examination:**

Loss of visual fields  
Double vision  
Vertical nystagmus  
Pupillary Responses:  
If white light can't be tolerated use green or blue light.

**Affective disturbances:**

Suicidal ideation.

**Cervical assessment:**

Canadian C spine rules  
[http://www.emottawa.ca/assets/documents/research/cdr\\_cspine\\_poster.pdf](http://www.emottawa.ca/assets/documents/research/cdr_cspine_poster.pdf)  
Canadian CT head rules:  
[http://www.ohri.ca/emerg/cdr/docs/cdr\\_cthead\\_poster.pdf](http://www.ohri.ca/emerg/cdr/docs/cdr_cthead_poster.pdf)

**Headache assessment:**

Early morning aggravated with supine position +/- nausea/vomiting.  
Severe or increasing headache

**Cardiovascular assessment:**

Tachycardia with ischemic symptoms.  
Arrhythmia or irregular heart rate.  
Positional syncope

**Vestibular assessment:**

Vertical nystagmus

**General neurological examination**

Seizure or convulsion  
Positive Hoffman's sign  
Positive Babinski sign  
Hyperreflexia  
Increased tone  
Clonus  
Weakness or tingling in extremities

**Safety:**

Do I need to report this patient to Licensing Authority?  
Is the patient safe to be unsupervised?

**Phenotypes of Concussion**

1. Cognitive dysfunction
2. Oculomotor dysfunction
3. Affective disturbances
4. Cervical dysfunction
5. Headache
6. Cardiovascular dysfunction
7. Vestibular dysfunction
8. Neurologic dysfunction