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# Create a Cutting-Edge Practice: Build a Concussion Rehab Clinic

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Traumatic brain injury (TBI) patients need help to return to normal activities, and chiropractors are capable of providing the services necessary to treat them effectively. Concussed patients' challenges with balance, sleep, vision, memory, and cognitive and emotional issues can be addressed by adding services in chiropractic clinics to care for these conditions. Here's how to do it.

## Evaluation Strategies

Patient evaluation and progress notes should record concussion symptoms, oculomotor function, physical measurements and assessment of balance skills. Oculomotor function involves cranial nerve testing of eye function as it relates to balance. Physical measurements need to evaluate muscle strength, range of motion, posture and coordination.

Balance testing should reveal center of pressure / balance (COP / COB), sway deviation and reaction time to balance changes. Exam findings should describe how movements such as standing, walking, head rotations and various positions affect symptoms.

Vestibular, visual and/or somatosensory dysfunction are the main causes for balance disorders. Identifying the primary cause helps determine the course of treatment.

Balance can be evaluated using the Balance Error Scoring System (BESS), or using instruments such as a Nintendo Wii balance board or other devices<sup>1-2</sup> to record measurements. Balance training (to be discussed) can be performed using the programs built into the devices and can be combined with balance boards, instability pads, inflatable discs and other balance tools.



## Diagnosis Codes

Most patients with concussion and post-concussion syndrome as their primary diagnosis have concomitant diagnoses that may include lack of coordination (781.3), dizziness (780.4), muscle weakness (728.87), abnormality of gait (781.2), spasm of muscle (728.85), muscular wasting and disuse (728.2), as well as range-of-motion limitations, vision disorders, sleep disorders and fatigue.

Laws, regulations and payer policies concerning reimbursement are complex and change frequently. Providers are responsible for making appropriate decisions relating to coding and reimbursement submissions.

## Therapy Options

Treatment protocols that can be implemented in most clinics include therapies such as balance training, sleep strategies, vision training strategies, electrotherapy biofeedback training, habituation exercises, **canalith repositioning** maneuvers, nutritional support, cardiovascular and strength training, traction, mobility exercises and flexibility training.

*Balance training:* Balance therapy is an exercise-based program designed to help patients learn proprioception, compensation and habituation techniques. It is based on training the brain to normalize neuromuscular integration. Specific exercises can strengthen this ability, and with appropriate therapy, patients can improve their balance and decrease concussion symptoms.

When billing the CPT code 97750 (physical performance test) for balance evaluation, it can be paired with 97110 (therapeutic exercise) or 97112 (neuromuscular re-education). Billing for this service requires the physician to discuss the results of the balance testing with the patient as a part of the evaluation. Therapy sessions vary according to each patient's specific needs, but typically include therapy 1-2 times per week for approximately eight weeks.

*Sleep education:* Sleep strategies involve educating the patient about the importance of sleeping in "the cave." This means they should sleep in total darkness without excess noises and alarms from electronic devices such as a radio, television and/or telephone.

*Vision training:* Strategies to train vision can incorporate a variety of protocols that will track patient progress. Nystagmus, accommodation and tracking are several factors to evaluate and apply training exercises.

*Cardiovascular and strength training* have shown to help the injured brain rebuild new connections, improve memory and cognition.<sup>3</sup> They can also be used as stress coping mechanisms.

*Canalith repositioning:* These maneuvers are necessary tools to use when dealing with traumatic brain injuries. Many TBI patients experience dizziness due to the disturbance of canaliths in the inner ear. The Epley maneuver has been utilized as a standard for many years, but is quickly being replaced with the "half somersault" maneuver developed by Dr. Carol Foster.

*Habituation exercises* include stimulating the vestibular nerves by injecting hot / cold water or air into the ear canal or using the **Dix-Hallpike maneuver**, a positional test designed to illicit and diagnose benign paroxysmal positional vertigo (BPPV).

*Electrotherapy biofeedback training* is aimed at reducing excess cognitive activity.<sup>4</sup> The goal is to return the injured brain to a normal brainwave state of alpha and theta using reward biofeedback therapy. This therapy can be incorporated with isochronic tones, synchronized visual light displays, movie clips and games.

Sensory integration, gaze stability, dynamic balance and gait tasks are utilized to simulate a variety of commonly encountered daily activities.

Strengthening, posture / balance exercises, gait exercises, vestibular stimulation, proprioception tasks, sensory integration are tools that can be incorporated into almost any clinic. With the increasing awareness of concussions, more patients will be seeking care. You can provide the help they need.

### References

1. Goble DJ, et al. Using the Wii Fit as a tool for balance assessment and neurorehabilitation: the first half decade of "Wii-search." *J Neuroeng Rehabil*, 2014;11:12.
2. Chang JO, et al. An alternative to the balance error scoring system: using a low-cost balance board to improve the validity/reliability of sports-related concussion balance testing. *Clin J Sport Med*, 2014 May;24(3):256-62.
3. van Praag H Neurogenesis and exercise: past and future directions. *Neuromolecular Med*, 2008;10(2):128-40.
4. Duff J. The usefulness of quantitative EEG (QEEG) and neurotherapy in the assessment and treatment of post-concussion syndrome. *Clin EEG Neurosci*, 2004 Oct;35(4):198-209.

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