

APPENDIX A \ Concussion Protocol



NFL Head, Neck and Spine Committee's Protocols Regarding Diagnosis and Management of Concussion

Introduction

Concussion is an important injury for the professional football player, and the diagnosis, prevention, and management of concussion is important to the National Football League, its players and member Clubs, and the National Football League Players Association. The NFL's Head, Neck and Spine Committee has developed a comprehensive set of protocols with regard to the diagnosis and management of concussions in NFL players.

The diagnosis and management of concussion is complicated by the difficulty in identifying the injury as well as the complex and individual nature of managing this injury. Ongoing education of players, NFL team physicians and athletic trainers regarding concussion is important, recognizing the evolving advances in concussion assessment and management. The objective of these protocols is to provide medical staffs responsible for the health care of NFL players with a process for diagnosing and managing concussion.

Concussion Defined: For purposes of these protocols, the term *concussion* is defined as (reference McCrory et al BJSM '13): A complex pathophysiological process affecting the brain induced by biomechanical forces. Several common features that incorporate clinical, pathologic and biomechanical injury constructs that may be utilized in defining the nature of a concussive head injury include:

1. Concussion may be caused either by a direct blow to the head, face, neck or elsewhere on the body with an "impulsive" force transmitted to the head.
2. Concussion typically results in the rapid onset of transient impairment of neurologic function that resolves spontaneously. However, in some cases, symptoms and signs may evolve over a number of minutes to hours.
3. Concussion may result in neuropathological changes, but the acute clinical symptoms largely reflect a functional disturbance rather than a structural injury and, as such, no abnormality is seen on standard structural neuroimaging studies.
4. Concussion results in a graded set of clinical symptoms that may or may not involve loss of consciousness. Resolution of the clinical and cognitive symptoms typically follows a sequential course; however, it is important to note that, in some percentage of cases, post-concussive symptoms may be prolonged.

Potential Concussion Signs (Observable)

- Any loss of consciousness;
- Slow to get up following a hit to the head (“hit to the head” may include secondary contact with the playing surface);
- Motor coordination/balance problems (stumbles, trips/falls, slow/labored movement);
- Blank or vacant look;
- Disorientation (e.g., unsure of where he is on the field or location of bench);
- Clutching of head after contact;
- Visible facial injury in combination with any of the above.

Potential Concussion Symptoms (Player reported, following direct or indirect contact)

- Headache;
- Dizziness;
- Balance or coordination difficulties;
- Nausea;
- Amnesia for the circumstances surrounding the injury (i.e., retrograde/antegrade amnesia);
- Cognitive slowness;
- Light/sound sensitivity;
- Disorientation;
- Visual disturbance;
- Tinnitus.

NFL Sideline Concussion Assessment:

The NFL Sideline Concussion Assessment is the standardized acute evaluation that has been developed by the NFL’s Head Neck and Spine Committee to be used by team’s medical staffs to evaluate potential concussions during practices and on game day. This evaluation is based on the Standardized Concussion Assessment Tool (SCAT2) published by the Concussion in Sport Group (McCroly ‘09), modified for use in the NFL in 2011, and consistent with the SCAT3 published in 2013 by the same international Concussion in Sport Group (McCroly ‘13) (Attachment A). The NFL Sideline Concussion Assessment can be used to aide in the diagnosis of concussion even if there is a delayed onset of symptoms. The NFL Sideline Concussion Assessment is also designed for serial testing, which allows it to be used across multiple occasions to track player recovery. Clubs shall maintain all NFL Sideline Concussion Assessment exams and a copy of the same shall be given to both the player and the team medical staff.

Being able to compare the results from the Sideline Concussion Assessment to the baseline information obtained in the preseason improves the value of this instrument. In all circumstances, the Team Physician or other physician designated by the Team Physician (e.g. neurosurgeon or Neurotrauma Consultant) shall assess the player in person. The Team Physician shall be responsible for determining whether the player is diagnosed as having a concussion