



# ASSESSMENT & MANAGEMENT OF CONCUSSION IN SOCCER

## SUGGESTED RETURN TO PITCH PROTOCOL\*

STAGE	AIM	ACTIVITY
1	Symptom limited	Daily activities that do not provoke symptoms (e.g., walking or light stationary bike)
2	Light aerobic exercise	<p>a. Cardiovascular: Controlled activities of low to moderate intensity on stationary bike (25-40min) including warmup and cool-down</p> <p>b. Body training: Mobility/stretching and balance exercises</p>
3	Soccer specific (non-contact)	<p>a. Cardiovascular: On field training with 10min warmup at moderate intensity with variable running tasks; Interval runs at higher intensity with sufficient rest; 5-10min cool down</p> <p>b. Technical training: 1:1 technical training with the ball; balance and passing; short/long passing; easy shooting on targets</p> <p>c. Body training: No resistance progressing to elastic resistance, mobility and stretching exercises, trunk strength/stabilization exercises (no resistance or explosive movements), basic lower/upper extremity strength exercises (elastic resistance), balance exercises (double and single stance) on unstable surfaces</p> <p>No heavy resistance training or contact activities Goalkeepers: controlled diving activities (not explosive) on foam surface in gym and without a ball</p>
4a	Non-contact soccer training drills	<p>a. Cardiovascular: On field training with 10min warm up at moderate intensity with straight running, direction changes, lateral shuffles, forward/backward and zig-zag running, interval runs at high intensity up to 90%max HR, 5-10min cool down</p> <p>b. Technical training: non-contact with small group of players, small size game, short/long passing, goal/target shooting, plant/cut and dribble with ball, basics: easy soft ball heading with increasing complexity (add balance component) in a controlled setting and limited quantity</p> <p>c. Body training: Elastic resistance, mobility and stretching exercises, trunk strength/stabilization exercises (progressing to free weights), basic lower/upper extremity strength exercises (elastic resistance progressing to free weights), balance exercises (single/double stance) on unstable surfaces</p> <p>d. Strength training: &lt;80%1 RM, no classic weight lifting or exercises with head below the hips (e.g. back extensions on the bench), progressively increase external resistance for multi-joint exercise</p> <p>No contact activities Goalkeepers: controlled diving activities with and without a ball (shots from short/medium range, 1:1 with coach)</p>
4b	Controlled contact soccer training drills	<p>Following medical clearance, controlled contact activities that simulate controlled contact situations (e.g., headers, checks, tackles), progressive increase in intensity, progressing from player with one partner (e.g. medical personnel) to training with small groups, progressing from small playing field (1/3, 1/2) to full field, limited number of headers with regular ball in controlled settings (e.g., thrown ball, heading without opponent)</p> <p>Goalkeepers: controlled diving drills on grass without and with ball catching (shots from short/medium/long range; 1:1 with coach)</p>
5	Full contact team soccer training	<p>Following medical clearance, normal team training participation; Continue</p> <p>c. Cardiovascular training continues</p> <p>d. Body training: Return to routine strength training (unrestricted)</p> <p>e. Assess and assure psychological readiness</p>
6	Return to Soccer	Normal game play

\* Feddermann-Demont N, Chiampas G, Cowie CM, Meyer T, Nordström A, Putukian M, Straumann D, Kramer E, Initial examination, differential diagnosis and management of head injuries in high-level football, British Journal of Sports Medicine (in review)