

NEUROSPORT

PHYSICAL THERAPY

Concussion Return to Play Protocol

Once patient is symptom free for 24 hours, he/she may begin the return to play process. Please note that while there are 5 stages listed below, the process may take longer than 5 days. Should symptoms occur during any stage, the patient should return to rest and begin the RTP process over again once he/she is symptom free for 24 hours.

Stage 1: **Target Heart Rate: 30-40% of maximum exertion** = $(\text{Max HR} - \text{Rest. HR} \times .30) + \text{Rest. HR}$

- Recommendations: exercise in quiet area (treatment rooms recommended); no impact activities balance and vestibular treatment by specialist (ATC); limit head movement/position change; limit concentration activities; 10-15 minutes of light cardio exercise.
- Focus on: Very light aerobic exercise, sub-max isometric strengthening and gentle isotonic exercises, ROM/Stretching, and low level balance activities.

Stage 2: **Target Heart Rate: 40-60% of maximum exertion** = $(\text{Max HR} - \text{Rest. HR} \times .40) + \text{Rest. HR}$

- Recommendations: exercise in gym areas recommended: use various exercise equipment; allow some positional changes and head movement; low level concentration activities (counting repetitions); 20-30 minutes of cardio exercise.
- Focus on: Light to moderate aerobic exercise, light weight PREs, initiate active stretching, moderate balance with head position changes. Include stage 1 exercises where appropriate.

Stage 3: **Target Heart Rate: 60-80% of maximum exertion** = $(\text{Max HR} - \text{Rest. HR} \times .65) + \text{Rest. HR}$

- Recommendations: any environment ok for exercise (indoor, outdoor); integrate strength, conditioning, and balance/proprioceptive exercise; can incorporate concentration challenges (counting exercises, MRS equipment/visual games).
- Focus on: Moderately aggressive aerobic exercise, strength exercises (80%), active stretching, plyometrics, challenging proprioceptive and balance exercises with position changes. Include stage 2 exercises where appropriate.

Stage 4: **Target Heart Rate: 80% of maximum exertion** = $(\text{Max HR} - \text{Rest. HR} \times .80) + \text{Rest. HR}$

- Recommendations: continue to avoid contact activity, but resume aggressive training in all environments.
- Focus on: non-contact physical training, aggressive strength exercises, impact plyometrics, sport specific activities. Include stage 3 where appropriate.

Stage 5: **Target Heart Rate: Full exertion**

- Recommendations: Initiate contact activities as appropriate to sport activity; full exertion activities for sport activities.
- Resume full physical training activities with contact. Sport specific activities. Full practice.