

Stage of Rehabilitation	Physical Therapy Program	Recommended Exercises
<p>Stage 1</p> <p><u>Target Heart Rate : 30-40% of maximum exertion</u> *(Max HR- Rest. HR X .30)+Rest. HR <u>Recommendations:</u> exercise in quiet area (treatment rooms recommended); no impact activities; balance and vestibular treatment by specialist (pn); limit head movement/ position change; limit concentration activities; 10-15 minutes of light cardio exercise.</p>	<p>-Very light aerobic conditioning</p> <p>-Sub-max isometric strengthening and gentle isotonic</p> <p>-ROM/ Stretching</p> <p>-low level balance activities</p>	<p>Stationary Bike; Seated Elliptical; UBF; Treadmill walking: (10-15 min)</p> <p>Quad sets; Ham sets; (UE) light hand weights; resistive band rowing; (LE) SLR's, Resistive bands ankle strengthening</p> <p>Cervical ROM exercise, Trap/LS stretching, Pec stretching, Hamstring stretching, Quad stretching, Calf stretching</p> <p>Romberg exercises (feet together, tandem stance, eyes open-closed), single leg balance</p>
<p>Stage 2</p> <p><u>Target Heart Rate : 40-60% of maximum exertion</u> *(Max HR- Rest. HR X .40)+Rest. HR <u>Recommendations:</u> 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. (stage 1 exercises included, as appropriate)</p>	<p>-Light to Moderate aerobic conditioning</p> <p>-Light weight PBE's</p> <p>-stretching (active stretching initiated)</p> <p>-Moderate Balance activities; initiate activities with head position changes</p> <p>-Moderately aggressive aerobic exercise</p>	<p>Treadmill; Stationary Bike; Elliptical (upright or seated); UBF; (20-25 min)</p> <p>Light weight strength exercise (Nautilus style equipment); resistive band exercises (UB/LE); wall squats, lunges, step ups/downs</p> <p>Any stage 1 stretching; active stretching as tolerated (Lunge walks, side to side groin stretching, walking hamstring stretch)</p> <p>Romberg exercises; VOR exercise (walking with eyes focused with head turns); Swiss ball exercises; single leg balance exercises</p>
<p>Stage 3</p> <p><u>Target Heart Rate: 60-80% of maximum exertion</u> *(Max HR- Rest. HR X .65)+ Rest HR <u>Recommendations:</u> any environment ok for exercise (indoor, outdoor); integrate strength, conditioning, and balance/proprioceptive exercise; can incorporate concentration challenges (counting exercises, MRS equipment/ visual games) (stage 1&2 exercises included, as appropriate)</p>	<p>-All forms of strength exercise (80% max)</p> <p>-active stretching exercise</p> <p>-Impact activities running, plyometrics (no contact)</p> <p>-Challenging proprioceptive/ dynamic balance (integrated with strength and conditioning); challenging positional changes.</p> <p>-Non-contact physical training</p>	<p>Treadmill (jogging); Stationary Bike; Elliptical (upright or seated); UBF (25-30min)</p> <p>Resistive weight training including free weights; MRS/Functional Squat; Dynamic Strength activities</p> <p>Active stretching (Lunge walks, side to side groin stretching, walking hamstring stretch)</p> <p>Initiate agility drills (zig zag runs, side shuffle, ect...); Jumping on tramp/blocks.</p> <p>Higher level balance activities: ball toss on plyo floor, balance discs, trampoline; squats and lunges on BOSU ball</p>
<p>Stage 4 (Sport Performance Training)</p> <p><u>Target Heart Rate: 80% of maximum exertion</u> *(Max HR- Rest. HR X .80)+ Rest HR <u>Recommendations:</u> continue to avoid contact activity, but resume aggressive training in all environments</p>	<p>-Aggressive strength exercise</p> <p>-Impact activities/ plyometrics</p> <p>-Sport Specific Performance Training</p>	<p>Program to be designed by Sport Performance Trainers</p> <p>Graded Treadmill testing</p> <p>Interval training</p> <p>Sport Specific drills/training</p>
<p>Stage 5 (Sport Performance Training)</p> <p><u>Target Heart Rate: Full exertion</u> <u>Recommendations:</u> Initiate contact activities as appropriate to sport activity; full exertion activities for sport activities</p>	<p>-Resume full physical training activities with contact</p> <p>-Continue Aggressive strength/ conditioning exercise</p> <p>-Sport specific Activities</p>	<p>Program to be designed by Sport Performance Trainers</p> <p>Practice and game intensity training</p> <p>Sport specific activities</p>

* Target Heart Rates calculated by Karvonen's equation : Max HR (220-Age) – Resting HR X Target Percentage + Resting HR