

Case Study Example – Post-op Hip Labral Surgery

21 year-old female collegiate soccer player who underwent a R sided hip labral repair. She plays as a right midfielder and is R-foot dominant. She is currently 4 months post-op, has completed a return to running program and has been cleared to participate in light team, non-contact, field trainings. Her goal is to return to season play as a previous starter in fall which is 4 months away.

Considerations:

- Resistance training program with targeted hip strengthening and developing power with a goal of returning to sprint/acceleration training within 4 weeks
- Develop an aerobic program for her to complete as part of an HEP
- She would be considered to be in off-season training indicating athletic performance goals include increasing overall strength and aerobic capacity

General Outline of Training Phases based on Protocols:

Rehabilitation Phase	Weeks	Precautions*	Protocol Criteria*	Training Emphasis/Aims
Phase I – Protective Phase	0-2	<ul style="list-style-type: none"> • Partial WB Status 20lbs, step-to pattern, 20lbs, foot flat gait with • Hip flexion 0-90 • Hip extension 0 • Hip ER 0-20 • Hip ABD 0-45 • No SLR 	<ul style="list-style-type: none"> • Pain is controlled • Ability to ambulate with minimal antalgic gait without crutches 	<ul style="list-style-type: none"> • Pain Control • Motion • Muscular Endurance
	3-5		<ul style="list-style-type: none"> • Ambulate without antalgic gait and crutches 	<ul style="list-style-type: none"> • Pain Control • Muscular Endurance

Phase II – Stability and Control	6-8		<ul style="list-style-type: none"> • Full AROM/PROM • LSI 70% for hip ABD and extensors • LSI 70% for quad/hamstring 	<ul style="list-style-type: none"> • Improve mobility • Increase muscle size and strength
Phase III – Strength	9-12		<ul style="list-style-type: none"> • LSI of 80% for hip ABD and extensors • LSI of 80% for quad/hamstrings 	<ul style="list-style-type: none"> • Increase hip muscle strength
	13-16		<ul style="list-style-type: none"> • Return to Running Test 	<ul style="list-style-type: none"> • Continued hip strength • Increase power output
Phase IV – Return to Sport	17-20		<ul style="list-style-type: none"> • Return to Sport Testing 	<ul style="list-style-type: none"> • Continued increase in power output • Increase rate of force development
	20+		<ul style="list-style-type: none"> • Return to Cutting/pivoting 	<ul style="list-style-type: none"> • Sport specific activities • Increase peak power

*Based upon protocols from Sanford Health and ATI Physical Therapy

Breakdown of each phase with exercise focus and example exercises:

Rehabilitative Phase	Week	Training Emphasis/Parameter	Example Exercise Selections*
Phase I	0-2	Neuromuscular Reactivation/Muscular Endurance <i>Reps: 20-30</i> <i>Rest: 30-45 seconds</i>	Hip Isometrics Glute Bridge Side planks
	3-6	Muscular Endurance/Stability <i>Reps: 20-30</i> <i>Rest: 30-45 seconds</i>	Clam Shells Banded Walks Lateral Step Downs Box squats
Phase II	6-8	Hypertrophy <i>Reps: 12-15</i> <i>Rest: 45-60 seconds</i>	Leg Press Goblet Squat RDL Lunges
Phase III	9-12	Hypertrophy/Strength <i>Reps: 8-15</i> <i>Rest: 45-60 seconds</i>	Single Leg RDL Deadlifts Back Squat Step Ups Split Squats
	13-16	Strength/Foundational Power <i>Reps: 6-8</i> <i>Rest: 2-3 minutes</i>	Hang Clean Power Clean TrapBar Jumps
Phase IV	17-20	Strength/Power <i>Reps: 6-8</i> <i>Rest: 2-3 minutes</i>	Drop Jump Depth Jump Box Jump Bounding
	20+	Power <i>Reps: 2-3</i> <i>Rest: 3-5 minutes</i>	Lateral Bounding Single Leg Hops Change of Direction Drill

*Exercises are not limited to a specific phase but an indication of progression

Undulating Periodization Example Based on Week:

Load is determined by % of 1 repetition max (1RM). For ways to determine 1RM please refer to *Programming for the Rehab Professional* PowerPoint. All exercises may be performed with a barbell but may be performed with dumbbells or kettlebells dependent on accessibility of equipment, load required, and athlete comfort.

Week 9 Resistance Training			
Monday		Hypertrophy	
Exercise	Sets	Reps	Load
RDL	3	12	60%
Rearfoot Elevated Split Squat	3	10	60%
HS Sliders	3	12-15	BW
Wednesday		Strength	
Exercise	Sets	Reps	Load
Single Leg Box Squat	3	6	80%
B Stance RDL	3	6	80%
Cossack Squat	3	6	70%
Friday		Hypertrophy	
Exercise	Sets	Reps	Load
Back Squat	3	12	60%
Knee Ext	3	15-20	60%
Step Ups	3	10	20% BW

BW bodyweight.

Aerobic Programming Based upon Zone Intensity and Maximal Aerobic Speed (MAS) Calculation:

The athlete's MAS would be calculated upon completion of her return to run program. Other considerations for intensity would be Zone 2. For more information on calculating MAS or Zone Intensities please refer to *Programming for the Rehab Professional* PowerPoint.

Week 16 Aerobic Conditioning					
	Exercise	Reps	Rest	Sets	Intensity
Monday	Air Bike	3 minutes	1 minute	3	90-98% MAS
Wednesday	Continuous Run	20 minutes	-	1	70-90% MAS
Friday	Long Interval Run	2 minutes	1 minute	5	90-98% MAS