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Dr Charles Preston's Patellofemoral Dislocation Rehabilitation Protocol

This evidence based and soft tissue healing dependent protocol is designed to help patients return to activity as quickly and safely as possible.

Phase I: 0-2 Weeks	**Acute Phase**
Goals	• Minimize knee joint effusion • Gently increase range of motion per tolerance • Encourage quadricep function • Gradual progression of therapeutic exercise for strengthening, stretching, and balance • Normalization of gait pattern
ROM	• Week 0-1: 0 degrees of extension • Week 1-2: Gradually increase based on tolerance. Full range of motion by 4-6 weeks.
Weightbearing/Brace	• Weightbearing as tolerated with knee immobilizer. Switch to lateral patellar stabilizer when there is good quadriceps control
Modalities	• Cryotherapy 15 minutes, 3 times per day • IFC for pain and effusion as needed • NMES for quadriceps if needed

Treatment Recommendations (Based on Tolerance)	• Active warm-up through range of motion (high bike seat)
	• Gentle stretching to increase range of motion. Emphasis on full return of knee extension as soon as possible with gradual improvement for knee flexion range of motion based on patient tolerance.
	  ○ Low load long duration stretching for extension with heat if needed
	  ○ Patellar mobilization only if needed, avoiding lateral patellar glides
	  ○ AROM/AAROM/PROM
	• Flexibility exercises for hamstring, gastroc/soleus, ITB, iliopsoas if indicated
	• Gentle strengthening exercises, pain free. Respect patellofemoral joint reaction forces. Initiate functional closed kinetic chain exercises with strengthening from terminal extension to mid range flexion
	• Isolate gentle sub-max open kinetic chain exercise from mid range flexion to 0 degrees and light isotonic open kinetic chain exercises 90 degrees to 45 degrees.
	  ○ Adductior squeezes, SLR, closed kinetic chain knee extension, multiangle isometrics at 20 degree increments
	  ○ Gentle short arc 0 degrees to 30 degrees for quadriceps
	  ○ Light isotonic open kinetic chain exercises 90 degrees to 45 degrees
	  ○ Closed kinetic chain exercises of weight shifting, partial wall squats
	  ○ Hip 4-way
	  ○ Gastroc/Soleus strengthening
	• Balance/proprioception exercises, double leg progressing to single leg
	• Core stability and upper body exercises
	• HEP

Phase II: 2-4 Weeks	**Minimal Protective Phase**
Goals	• Minimize knee joint effusion • Return to full range of motion • Improved muscle strength and endurance • Progression of therapeutic exercises for strengthening, stretching, and balance
ROM	• Gradually progress range of motion with goal of full range of motion by 4-6 weeks
Weightbearing/Brace	• No limitations • Normalization of gait pattern if not already achieved • Continue with patellar stabilizing brace for long distance ambulation
Modalities	• Cryotherapy 15 minutes 1-2x per day • IFC for pain and effusion as needed • NMES for quadriceps as needed

Treatment Recommendations (Based on Tolerance)	• Active warm-up: Bike, elliptical, treadmill walking
	• Stretching for full range of motion
	  o Low load long duration stretching with heat if needed
	  o Patellar mobilization only if needed, avoiding lateral patellar glides
	  o AROM/AAROM/PROM
	• Flexibility exercises for hamstring, gastroc/soleus, ITB, iliopsoas if indicated
	• Strengthening and endurance exercises, pain free. Progression to full range of motion exercises per tolerance. Respect patellofemoral joint reaction forces that increase with knee flexion angles during closed kinetic chain exercises
	• Incorporate total leg strengthening exercises, avoiding dynamic valgus angles during strengthening and functional activities.
	  o Focus on hip abductor and external rotator strengthening
	  o Adductor squeeze, SLR, closed kinetic chain knee extension
	  o Quadricep open kinetic chain isotonic short arc with progression to full range of motion
	  o Hamstring isotonics
	  o Closed kinetic chain exercises: progress from mid-range of motion to full range of motion: leg press, step ups, partial lunge progress to full lunge, lateral step overs, side step with theraband, partial squats progress to 90 degree squats
	  o Hip 4 way strengthening
	  o Gastroc/Soleus strengtheing
	• Balance/proprioception
	• Cardiovascular conditioning, core stabilization
	• Ice
	• HEP

Phase III: 4+ Weeks	**Return to Activity Phase**
Goals	• Progress muscle strength, endurance, and balance activities • Progress to higher level activities depending on functional demands and physician approval
Brace	• Patellar stabilizing brace only for sport or strenuous work activities until week 12
Modalities	• Cryotherapy 15 minutes, once a day or after strenuous activities
Treatment Recommendations	• Active warm-up: bike, elliptical, treadmill walking • Stretching and flexibility exercises as needed

(Based on Tolerance)	• Strengthening and endurance exercises: advance as tolerated with emphasis on functional strengthening
	• Avoid dynamic valgus during strengthening and functional activities, focusing on hip abductor and external rotator strengthening
	  o Total leg strengthening
	  o Hip strengthening
	  o Heel raises
	  o Hamstring full range of motion isotonics
	  o Quadricep isotonics in range of motion with chondrosis
	  o Isokinetic quadriceps and hamstring in range of motion without chondrosis
	  o Closed kinetic chain exercises: leg press, multidirectional lunges, squats, step-ups, side steps with theraband
	  o Gastroc/Soleus strengthening exercises
	  o Stairmaster
	• Dynamic balance exercises
	• Impact activities if patient has 75% strength on closed kinetic chain testing
	  o Running program
	  o Agility drills
	  o Plyometrics
	• Sport specific activities
	• Cardiovascular conditioning
	• Core strengthening

Testing at 4-6 Weeks	• Linear closed kinetic chain testing • Functional testing when appropriate • BioSway
Return to Sport/Work Guidelines	• Based on physician approval, minimal pain at rest or with activity, no knee joint effusion, full range of motion, isokinetic strength and functional testing at 90% compared to uninvolved or normative data, adequate performance on sport specific drills • Anticipated return to full activity between 8-24 weeks

Gundersen Lutheran Sports Medicine. *GundersenLutheran,* 10/2007. Web. 3 May, 2013.