

Palmetto Health USC

ORTHOPEDIC CENTER

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PATELLAR PROTECTION PROGRAM

This five-phase program approach can be utilized for both conservative and surgical patellofemoral clients. This systematic approach allows specific goals and criteria to be met; once goals and criteria are attained, the rehabilitation can progress safely. Client compliance is critical.

Ultimate Goal of Program

1. Improve functional status
Normalize biomechanical forces
3. Improve strength/power/endurance
4. Decrease pain/inflammatory status

Low contact pressure activities

- loaded OKC knee ext 90°-50° and 20°-0°.
- CKC with knee in $\leq 50^\circ$ of flex

High contact pressure activities

- loaded OKC from 50°-20°
- CKC with knee $\geq 50^\circ$

Acute Phase - Maximal Protection

GOALS: Relieve pain and swelling
Decrease inflammation
Retard muscle atrophy
Maintain/increase flexibility

Weight bearing as tolerated, crutches may be indicated (normal gait)—brace when indicated

Patient education regarding activities, pathomechanics

Ice, compression, elevation

Anti-inflammatory medicines (Aspirin or nonsteroidal)

Avoidance program

- squatting, kneeling, excessive knee flexion, stairs
- leg extension machine only for isometrics

Patellar glides and Patellar taping

Strengthening exercises—no loaded open chain LAQ

- quadriceps setting (isometric)
- multi angle isometrics (nonpainful) 90°, 60°, 30°
- CKC TKE with theraband, Nautilus or into theraball
- straight leg raises (four planes of motion)

Emphasize hip flexion, hip abduction (not done with lateral compression syndrome)

- Hip rotators and glut med stressed
 - Clamshell with theraband, bridge with leg raise, band walks
- Ball bridge and leg lifts/drops off the ball
- Balance activities—bilateral and single leg progression

-Calf raises and posterior tibialis strengthening

Electrical stimulation (EMS, TNS, HVGS, Biofeedback) - prn

Flexibility

- Hamstrings, IT band, Hip ER and gastroc

Evaluate for orthotics

Subacute Phase - Moderate Protection

Progress to phase two when: pain and swelling reduced
range of motion is increased
strong visible quadriceps contraction

Goals - Increase muscle strength without exacerbation

Strengthening exercises:

- Initiate weights for SLR
- Isotonics, short arc (90-50°) noncrepitus range of motion with ankle weights
- Initiate controlled squats/sit to stand, wallslides (0°-50°) nonpainful range of motion
- Hamstring curls with resistance
- Bicycle (low resistance, seat high)
- Swimming—freestyle and backstroke only (no breast stroke, butterfly or flip turns)
- Pool program for walking/running
- Continue isometrics
- Initiate eccentric exercises as tolerated—start with posterior step downs and advance to lateral and forward as able, clock touches
- lunges onto step or BOSU

Advance balance exercises— SLS 4 way hip theraband

- leg slides (slider)
- BOSU

Continue flexibility exercises

Continue ice therapy, anti-inflammatory drugs

Avoidance program

- squatting, kneeling, stairs, extensive knee flexion,
- leg extension machine—often exacerbates PF symptoms

Chronic Phase - Minimal Protection

Progress to phase 3 when: range of motion and swelling WNL
pain is minimal to none

GOAL: Achieve Maximal Strength and Endurance

- Continue SLR
- Variable resistance isotonic weight training (blocking painful range of motion)
 - continue shortened range knee extension isotonics (90°-50°)
- Squats on wedge (downward)

Emphasis on increased functional activities

- Initiate jump training and agility activities/ladder drills

Ice therapy post exercise

Avoidance program

- squatting, painful ADL's

Maintenance Program

Continue Flexibility Daily (part of warm-up and cool down)

Continue PRE Program 3 times a week

Endurance Training is continued

Continue to be active (walking, swimming, pool running, possible biking)

GOAL: Continue to strengthen without deteriorous affects on patellofemoral joint.