OrthoArizona

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KNEE OSTEOARTHRITIS (OA) NON-OPERATIVE GUIDELINES

Phase 1: Activity Modification (High Irritability)

PRECAUTIONS

- Avoid end range stretching if hard or empty end feel is present
- Avoid exercises and activities that are painful or increase swelling

TREATMENT RECOMMENDATIONS

- Patient education
    - Nature of the condition, joint health
    - Activity modification/considerations to decrease, eliminate, and control pain
    - Movement strategies
    - Management of pain and swelling
    - Nutritional/weight loss considerations
- Gait training with appropriate assistive device
- Soft tissue and low-grade joint mobilization (e.g., patellar, proximal tibiofibular, tibiofemoral)
- Proximal and distal stretching
- Gentle knee PROM/active assisted range of motion (AAROM)/AROM
- Core stabilization
- Proximal and distal strengthening
- Knee isometric and open kinetic chain strengthening
- Aquatic therapy, if available
- Bracing or taping as needed
- Modalities (e.g., ice, compression, TENS)
- Bicycle with progressive resistance to tolerance

CRITERIA FOR ADVANCEMENT

- Progression of activity
- Pain controlled with a trend towards progression of load tolerance
- Active quadriceps contraction
- No gross swelling at knee
- If while following recommendations patient fails to improve in 6-8 weeks, refer to referring provider

EMPHASIZE

- Patient understanding of condition
- Gait normalization with appropriate assistive device
- Control of pain and swelling
- Trending towards pain-free exercise and activities
- Decrease in irritability defined as decreased duration of symptoms (quicker recovery)

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Phase 2: Addressing Impairments (Moderate Irritability)

PRECAUTIONS
- No end range stretching if hard or empty end feel is present
- Avoid exercises and activities that cause pain or swelling
- Avoid reciprocal stair climbing with pain and compensations
- Avoid premature discharge of assistive device
- Avoid premature increase in activity level

TREATMENT RECOMMENDATIONS
- Patient education for activity modification and movement strategies
- Gait training, weaning off assistive device, if indicated
- Forward step ups starting at 2 inches and progressing as tolerated
- Modalities to manage swelling as needed
- Soft tissue and joint mobilizations to restore motion
- Incorporate foam rolling, if indicated
- ROM and stretching exercises avoiding hard or empty end feel
- Progression of strengthening to include closed kinetic chain exercises in pain-free arc of motion
    - Double leg (DL) exercise first → single leg if tolerated
- Consider Blood Flow Restriction (BFR), if appropriate
- Progression of core strengthening
- Progress to proximal and distal strengthening
- NMES for quadriceps contraction, if needed
- Balance training
- Low impact/low resistance activities to build endurance (e.g., bicycle, swimming and/or aquatic therapy if available)

CRITERIA FOR ADVANCEMENT
- Sit to stand with use of hip strategy, demonstrating symmetry, ideal alignment, and pain-free
- Single leg stance with good alignment and control
- No quadriceps lag

EMPHASIZE
- Improve motion, strength and flexibility while decreasing irritability

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Phase 3: Restoration of Function (Low Irritability)

PRECAUTIONS

- Adjust interventions to meet demands of patient's activities of daily living (ADL)
- Avoid rapid increase in activity volume

TREATMENT RECOMMENDATIONS

- Continue patient education for pain-free activities without compensations
- Functional training
- Gait training, weaning off assistive device if indicated
- Step up and step-down progression
- Continue stretching if indicated
- Advance core strengthening program
- Advance proximal and distal strengthening program
- Body weight strengthening with progression as tolerated from:
    - Double to single leg activities
    - Concentric to eccentric strengthening
    - Static to dynamic activities
- Dynamic balance training and neuromuscular control
- Consider starting aerobic/cardiovascular regimen
- Progress endurance training
    - Elliptical when patient can ascend a staircase and load via a single leg
    - Progression of spinning/cycling to include out of the saddle positions
    - Start a running progression when demonstrates eccentric quadriceps control with forward step down
- Sport-specific training (if applicable)
    - For golf- hip and trunk rotation and single leg exercises/activities (for ball placement)
    - For tennis- deceleration activities
    - Return to sport-specific interval training 2-3x/week

CRITERIA FOR DISCHARGE OR RETURN TO SPORT ACTIVITIES

- Sufficient strength, motion, and flexibility for ADL
- Optimized stair negotiation with good control
- Achievement of functional goals
- Discharge with independent home exercise program (HEP) and return to sport

EMPHASIZE

- Restoration of motion, flexibility, and strength necessary for ADL
- Normalization of gait on all surfaces
- Restoration of patient's ADL with proper movement strategies
- Adherence to HEP