Hays Medical Center

ACL Injury – Non-Operative

General Principles:
This protocol was designed to provide the rehabilitation professional with a guideline of care. It should be stressed that this is only a protocol and should not be a substitute for clinical decision making regarding a patient's progression. Actual progression should be individualized based upon your patient's physical examination, progress, and presence of any complications.

The non-operative protocol will be used also for pre-operative treatment of ACL injuries.

PHASE I: (Immediate)

Week 1

Orthotics-
1. Knee immobilizer only as needed
2. Discontinue knee immobilizer as tolerated and progress to functional knee brace when it is fitted and as swelling allows
3. Functional brace at all times for daily activity and exercises with 10 degree extension stops.

Weight Bearing-
1. Full weight bearing as tolerated
2. May discontinue crutches/assistive device when gait is normal

Modalities (PRN)-
1. Ice, Electrical Stimulation
2. Compression and elevation as needed for control of pain and swelling
3. Ice for 10-20 minutes following exercises throughout protocol
4. May use Electrical stimulation if needed to assist with Quad firing

ROM-
1. Progress active and passive ROM as tolerated

Exercises-
1. Quad Sets, Hamstring Sets
2. Straight Leg Raises (All planes)
3. Heel Slides, Wall Slides to progress ROM
4. Hamstring Stretching, Towel Calf Stretching, Prone Hangs
5. Straight Leg Raises in all planes (May use knee brace if needed)
6. Stationary Bike, Nu Step

PHASE II: (Intermediate)

Week 2-4

Orthotics-
1. Functional brace with 10^{o} extension stop at all times for exercise and ADL's.

Weight Bearing-
1. Full weight bearing as tolerated

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Modalities (PRN)-
1. Continue Phase I modalities as needed.

ROM-
1. Progress ROM as tolerated to full

Exercises-
1. Progress Phase I exercises as tolerated
2. After reaching 0 – 90^{o} AROM may initiate closed-chain strengthening:
    a. Shuttle – Bilateral knee ext. & toe raises as WB allows. Progress to Unilateral as tolerated.
    b. Seated toe raises – progress resistance as tolerated
    c. Chair scoots
    d. Mini-squats, Step Ups, Lunges
3. Isometric Quads
    a. 60^{o} and 90^{o} of Flexion
4. After reaching 0 – 100^{o} AROM may:
    a. Biodex, Eccentric/Concentric Hamstring (sub-maximal)
5. Proprioceptive Exercises as weight bearing increases.
    a. Bilateral progressing to Unilateral
    b. BAPS vs. KAT
6. Pool activity: See Aquatics Protocol
    a. Cycling
    b. Flutter Kicks
    c. Walking
7. May add resistance to Prone Hangs if having difficulty maintaining full extension.
8. When AROM full, may progress to full arc hamstring isotonics, progress resistance as tolerated.

PHASE III: (Strengthening)

Week 5-8

Orthotics-
1. Continue Week 2-4 recommendations.

Modalities (PRN)-
1. Continue only as needed.

Exercises-
1. Progress Phase II exercises as tolerated
2. Initiate resisted walking in all planes
    a. Avoid pivoting / rotation

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3. May begin open chain quads
    a. Limit extension 10-20 degrees
    b. Progress to weight stations as tolerated
4. Start Isokinetics
    a. 240 to 300 degrees/second
    b. Limit extension 10-20 degrees

PHASE IV: (Advanced Strengthening)

Week 9-12

Orthotics-

1. Continue previous recommendations.
2. May discontinue brace for daily activities only with physician approval

Modalities (PRN)-

1. Continue only as needed.

Exercises-

1. Progress Phase III exercises as tolerated
2. Progress Isokinetics
    a. 180 to 300 degrees/second
    b. Limit extension 10-20 degrees
    c. Monitor patella-femoral precautions
3. After physician approval, may initiate straight-ahead jogging
    a. Must have no pain or swelling

Week 13+

Orthotics-

1. Continue functional brace for high risk activity and exercise until notified by physician.

Exercises-

1. Progress Phase IV exercises as tolerated
2. Initiation of light sports activity
    a. Plyometrics
    b. Shuttle Bounding
    c. Sport specific agility
    d. See Interval Golf and Interval Running programs
    e. DIME warmup
3. Criteria to be released for return to sport
    a. Isokinetic test at 180, 240, and 300 degrees per second for physician review (Goal: 90% strength or better)
    b. Lower extremity functional tests at 90% or better (See Lower extremity functional test protocol and form)

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