



**HUDSON PRO
ORTHOPAEDICS
& SPORTS MEDICINE**

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**Rehabilitation Guidelines for Knee ACL-Semitendinosus Autograft
Reconstruction**

The rehabilitation guidelines are presented in a criterion based progression program. General time frames are given for reference to the average, but individual patients will progress at different rates depending on their age, associated injuries, pre-injury health status, rehab compliance, tissue quality and injury severity. Specific time frames, restrictions and precautions may also be given to protect healing tissues and the surgical repair/reconstruction.

Special attention must be given to impairments that caused the initial problem. For example if the patient is s/p partial medial meniscectomy and they have a varus alignment, post-operative rehabilitation should include correcting muscle imbalances or postures that create medial compartment stress.

PHASE I (Surgery to 2-3 weeks)

APPOINTMENTS	Meet with physician at 10-14 days post op Begin physical therapy 3-5 days after surgery								
REHAB GOALS	<ol style="list-style-type: none"> 1. Protection of the post-surgical repair 2. Restore normal knee range of motion 3. Normalize gait 4. Eliminate effusion 5. Restore leg control 								
PRECAUTIONS	<ol style="list-style-type: none"> 1. Use axillary crutches for normal gait 2. Avoid impact exercises for the first 4-6 weeks if the articular cartilage was debrided 3. Knee braced locked at 0° for the first 7 days except when performing exercises; use brace while sleeping 								
RANGE OF MOTION EXERCISES	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Knee extension on a bolster</td> <td style="width: 50%;">Patella mobilizations</td> </tr> <tr> <td>Prone hangs</td> <td>Passive knee extension</td> </tr> <tr> <td>Supine wall slides</td> <td>Hamstring/Calf stretching</td> </tr> <tr> <td>Heel slides</td> <td></td> </tr> </table>	Knee extension on a bolster	Patella mobilizations	Prone hangs	Passive knee extension	Supine wall slides	Hamstring/Calf stretching	Heel slides	
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SUGGESTED THERAPEUTIC EXERCISE	<ul style="list-style-type: none"> • Quad sets – NMES as indicated • Full-arc knee extension without weights/ prone hamstring curls • 4 way leg lifts in standing for balance and hip strength • Gait drills 								
CARDIOVASCULAR EXERCISE	Upper body circuit training or UBE Stationary bicycle as indicated								
PROGRESSION CRITERIA	<ol style="list-style-type: none"> 1. Normal gait 2. No effusion 3. Full knee range of motion 								

PHASE II (begin after meeting Phase I criteria)

APPOINTMENTS	Meet with physician at 1 month post op Begin physical therapy 1 x every 1-2 weeks
REHAB GOALS	1. Single leg stand control 2. Good control and no pain with functional movements, including step up/down, squat, partial lunge 3. Full ROM in flexion and extension 4. 60% strength of unaffected limb
PRECAUTIONS	1. Post activity soreness should resolve within 24 hours 2. Avoid post activity swelling
SUGGESTED THERAPEUTIC EXERCISE	<ul style="list-style-type: none">• Non-impact balance and proprioceptive drills• Hamstring strengthening can begin at 6 weeks• Hip and core strengthening• Stretching for patient specific muscle imbalances• Quad strengthening
CARDIOVASCULAR EXERCISE	Non-impact endurance training; stationary bike, Nordic tract, swimming, deep water run, cross trainer, elliptical, stair master
PROGRESSION CRITERIA	1. Normal gait on all surfaces 2. Ability to carry out functional movements without unloading affected leg or pain, while demonstrating good control 3. Single leg balance greater than 15 seconds

Phase III (begin after meeting Phase II criteria)

APPOINTMENTS	Meet with physician at 2-3 months post op Physical therapy 1 x every 1-2 weeks
REHAB GOALS	1. Good control and no pain with impact activities
PRECAUTIONS	1. Post activity soreness should resolve within 24 hours 2. Avoid post activity swelling
SUGGESTED THERAPEUTIC EXERCISE	<ul style="list-style-type: none">• Impact control exercises beginning 2 feet to 2 feet, progressing from 1 foot to other and then 1 foot to same foot• Movement control exercise beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities• Sport/work specific balance and proprioceptive drills May begin plyometrics at 5-6 months post-operative• Hip and core strengthening• Stretching for patient specific muscle imbalances
CARDIOVASCULAR EXERCISE	Replicate sport or work specific energy demands Interval jog/ walk program at 3 months post-operative