

**Aaron J. Casp, MD**

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## Knee Osteochondral Allograft/Autograft Transfer Protocol

Phase/ Goals	Immobilization	ROM	Therapeutic Exercises
<b>Phase 1 (0-2 weeks)</b>  Goals: <ul style="list-style-type: none"><li>● Decrease swelling</li><li>● Gain full extension</li><li>● Quad control</li></ul>	Hinged knee brace x 6 weeks  NON weightbearing x 2 weeks  Brace locked at 0 until quad strength returns	<ul style="list-style-type: none"><li>● Brace 0-90 x 6 weeks</li><li>● CPM x 4 weeks: 0-70 degrees, (start at 0-30 and increase until at 70 degrees) 4-6 hrs/day</li><li>● Avoid forced flexion</li><li>● Patella mobs</li><li>● Full extension important</li></ul> Modalities: <ul style="list-style-type: none"><li>● NMES if unable to perform SLR without lag</li><li>● Cryocuff/Game Ready Compression/ Ice</li></ul>	<ul style="list-style-type: none"><li>● Quad recruitment, NMES as needed</li><li>● Quad, glute, core strengthening</li><li>● Quad sets/SLR in brace locked at 0 (assist as needed)</li><li>● SLR in all planes with assist until no lag</li><li>● Gastric/soleus stretch</li><li>● No resistance bike OK starting week 4</li><li>● Terminal knee extension</li></ul>
<b>Phase 2 (2-6 weeks)</b>  Goals: <ul style="list-style-type: none"><li>● No effusion</li><li>● Maintain full extension</li><li>● Hip, quad, HS, calf strength</li></ul>	Continue brace unlocked 0-90  50% partial weightbearing until 6 weeks postop (can begin walking in aquatic therapy if wound healed)	<ul style="list-style-type: none"><li>● 0-90, may use bike</li><li>● Restore full ROM</li></ul> Modalities: <ul style="list-style-type: none"><li>● Scar STM when incision healed</li><li>● Patellar mobs all directions</li><li>● Gentle prone quad stretch/knee flex</li><li>● Manual assist extension/passive stretch</li></ul>	<ul style="list-style-type: none"><li>● Bike for ROM</li><li>● Water/aquatic walking, marching in at least waist-deep water</li><li>● Leg press with maximum 50% BW</li><li>● Leg extensions – light weight</li><li>● Leg curls – light weight with ROM restrictions</li><li>● Quad sets/glut sets, clams/mini-hydrants/glut pushes</li><li>● Calf raises on leg press</li></ul> <b>Starting Week 8</b> <ul style="list-style-type: none"><li>● Single leg press</li></ul>

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			<ul style="list-style-type: none"><li>• Treadmill walking (forwards and backwards) starting</li><li>• Unilateral step-ups</li><li>• Chair/wall squats – keep tibia perpendicular to floor</li></ul>
<b>Phase 3 (6-10 weeks)</b>  Goals: <ul style="list-style-type: none"><li>• Full ROM</li><li>• Full weightbearing</li><li>• Discontinue brace</li><li>• Normal gait</li></ul>	Full weightbearing – unrestricted ROM  May wean from brace	<ul style="list-style-type: none"><li>• Full A/PROM</li></ul> Manual: <ul style="list-style-type: none"><li>• Joint mobs PRN for full flex and ext ROM</li><li>• Patellar mobs/ Scar STM with extractor</li></ul> Modalities: <ul style="list-style-type: none"><li>• Ice/stim PRN</li></ul>	<ul style="list-style-type: none"><li>• Bike, elliptical, stair master</li><li>• Step ups/lateral step over’s- progress to faster pace</li><li>• Single leg press</li><li>• Treadmill walking (forwards and backwards) starting</li><li>• Unilateral step-ups</li><li>• Kettlebell deadlift</li><li>• Lateral walks with sport cord</li><li>• SLS dynamic surfaces</li><li>• Advance strengthening as tolerated</li><li>•</li></ul>
<b>Phase 4 (10-18 weeks)</b>  Goals: <ul style="list-style-type: none"><li>• Introduce jumping/jogging</li></ul>		<ul style="list-style-type: none"><li>• Full A/PROM</li></ul>	<ul style="list-style-type: none"><li>• Continue everything in phase 3</li><li>• Initiate walk-jog progression to easy pace, add incline if tolerates</li><li>• Muscular power – squads, split jumps, sled drags</li><li>• Add plyometrics for speed and power after week 12</li></ul>
<b>Phase 5 (18+ weeks)</b>  Goals: <ul style="list-style-type: none"><li>• Full activity</li></ul>		<ul style="list-style-type: none"><li>• Continue Full A/PROM</li><li>• Modalities PRN</li></ul>	<ul style="list-style-type: none"><li>• Figure 8 running patterns/running progression</li><li>• Sport-related strengthening Gym-program activities</li><li>•</li></ul>

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