

Jointli



Jointli ACL Reconstruction Return to Sport Guide

A progressive rehabilitation and reconditioning process to regain physical capability, increase resilience and enhance sport-specific performance.

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Return to Sport ACL-R Roadmap

PRE-OP



SURGERY



ACUTE POST-SURGERY



REHABILITATION



ACUTE STAGE TEST



RECONDITIONING



TRANSITION STAGE TEST



ATHLETICISM



PERFORMANCE STAGE TEST



PERFORMANCE



ACL Return to Sport Guide

Whether you compete or are just involved in social or recreational sport, facing the uncertainty of rehabilitation after rupturing your ACL can be overwhelming. Having clarity on the process ensures you have a good understanding of the requirements and paves the way for a successful return to sport. This guide was developed to provide an overview of the rehabilitation journey following anterior cruciate ligament (ACL) reconstruction, with the goal of achieving a successful return to sport (RTS).

Once an ACL injury has been diagnosed and surgical management has been planned, understanding your goals will help identify the most appropriate strategy to get back to play, train and compete in your desired sport.

Your progress depends on a range of factors, including the type of injury, the surgical procedure performed, and your consistency in performing the rehabilitation exercises. Returning to previous levels of performance following ACL injury requires dedication and effort. Jointli RTS program is designed to be your guide along this process by providing you with best practice rehabilitation and training, as well as ensuring motivation, accountability and enjoyment levels remain high.

Routine objective measures are of significant help for you, your surgeon and the rehabilitation professionals you are working with. In conjunction with the Knee Institute and the Sydney Orthopaedic Research Institute, Jointli developed a battery of tests measuring clinically important outcomes associated with good function and successful return to sport. Having well-defined milestones can help you to navigate along the journey by providing clear direction and acting like a compass to adjust your route.

Jointli RTS protocol is organised in 6 stages, each defined by a range of recommended activities, desired goals, and progression criteria.

- Pre-Op Preparation
- Acute Post-Surgery
- Rehabilitation
- Reconditioning
- Athleticism
- Performance

ACL Rehab:

Goal Oriented Approach



STAGE:

1.

PREPARING FOR SURGERY



STAGE:

2.

HEAL AND ACTIVATE



STAGE:

3.

REGAIN CAPABILITY



STAGE:

4.

REGAIN FUNCTIONALITY



STAGE:

5.

REGAIN COMPETENCE



STAGE:

6.

RETURN TO EXCEL

Pre-Op Preparation

Surgery preparation

The time between your ACL injury and surgery is of significant importance, as evidence shows the better condition of your knee before the operation, the better success post-surgery.

Achieving minimal swelling, full knee extension, a comfortable walking pattern and good quadricep activation are associated with increased long term success post-surgery.

Your program in this brief time will progress in parallel with the clinical condition of your knee. This phase will ensure you become familiar and comfortable with the set of exercises you will commence after your surgery.

Recovery from the knee trauma:

- Eliminate the swelling in your knee
- Regain full knee extension range of motion
- Reduce muscle inhibition and keep the knee strong
- Establish a comfortable gait pattern and even weight-bearing
- Eliminate the risk of further injury to the knee

Preparation for knee surgery:

- Regular icing of the knee to reduce pain and swelling
- Active assisted range of motion exercises
- Quadriceps, Hamstrings and Glute muscle activation exercises
- Low impact aerobic activity such as a stationary bike

Avoid:

- Running, jumping, and changing direction quickly due to the knee's decreased stability at this time.



Pre-op Stage

PREPARING FOR SURGERY

Important Goals

Eliminate the swelling in your knee



Regain full knee extension



Reduce muscle inhibition & keep the knee strong



Acute Post-Surgery

Heal and activate

After your ACL reconstruction, the focus is to recover from the acute trauma of the surgery itself. This is similar to the process of letting the original injury settle and to achieve a 'quiet' knee.

The knee will respond best to light movement, in conjunction with your prescribed pain relief strategy. Re-activating the muscles early is vital to reduce swelling and re-establish confidence with weight bearing and walking. The most important focus is to regain full knee straightening.

Focus Goals:

- Allow the surgical wounds to heal
- Decrease swelling and manage pain effectively
- Regain full knee extension and 90 degrees of flexion
- Good patellar mobility
- Establish a comfortable gait pattern and even weight bearing
- Activate the quadriceps muscles to gradually return to daily tasks and avoid muscle atrophy

Exercise and Activities:

- Use cooling and compression several times per day to decrease swelling
- Begin moving the knee with assistance before progressing to active movement on its own
- Stretch the calf for pain relief (quadriceps and hamstring stretching will depend on the surgery and graft type)
- Immediately begin light muscle activation exercises of quads, hamstring, calf and glutes
- Start weight shifting exercises to the operated side. Once able, begin balance exercises
- Increase quality of walking supported by walking aides
- Use the stationary bike to assist improving range of motion

Avoid:

- Walking unassisted (without crutches) too early. Use this valuable time to master good gait patterns

Target Outcome Measures:

- Knee range of motion - AROM 0° - 90°
- Swelling - Stroke test 0-1
- Quadricep activation - Straight Leg Raise test 0 (No Lag)



Acute Post-Surgery Stage

HEALING AND ACTIVATION

Important Goals

Allow surgical wounds to heal and manage pain effectively



Achieve quality walking with crutches



Regain full knee extension



Rehabilitation

Regain Capability

Exercises now progress to more difficult weight bearing positions with added load. This increase in load can cause episodes of temporary swelling which must be managed before progressing again. Your physiotherapist will help you to build a good understanding of how to interpret pain and swelling during this phase, to ensure you keep progressing in the right direction.

Focus Goals:

- Ongoing management of pain and swelling
- Prioritise maintenance of knee extension and improve knee flexion range of motion
- Quality walking without crutches
- Good balance, muscle activation and control in single leg exercises
- Improve leg strength and quadricep activation
- Minimise loss of muscle mass

Exercises and Activities:

- Continue cooling after your sessions as needed
- Mobility and stretching of quadriceps, hamstrings, and calves
- Progress balance, proprioception, and gait exercises
- Strengthening exercises for the lower limb musculature to increase work capacity and force production
- Load acceptance exercises to improve your movement capabilities
- Trunk strengthening and work capacity
- Stationary bike for metabolic conditioning

Avoid:

- Walking with incorrect patterns

Towards the end of this stage, around the 2 months mark, you will perform Jointli's RTS Test – Acute Stage.

Target Outcome Measures:

- Knee range of motion - AROM 0° - 125°
- Swelling – Stroke test 0-1
- Single Leg Balance test >45s (eyes open) and >9s (eyes closed)
- Single Leg Sit to Stand test at 90° of knee flexion >10



Rehabilitation Stage

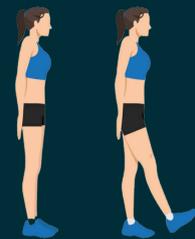
REGAIN CAPABILITY

Important Goals

Improvement of knee extension and knee flexion



Quality walking without crutches



Good balance, muscle activation and control



Reconditioning

Regain Functionality

Reaching this phase, your knee should have full extension and your gait should have no compensatory movements. There is now a significantly increased focus on building strength and improving dynamic control of your knee. Being thorough through this phase is vital to preventing re-injury of the knee and establish quality movement patterns that will shape the rest of the rehab program. You will add load and test the knee with more difficult plyometric drills that will lead to a return to straight line running. Load absorption exercises will be progressed to low impact landing and plyometric exercises to ensure the knee can absorb and produce force without increase in pain or swelling before you can run.

Focus Goals:

- Maintain knee extension and improve flexion range of motion
- Manage increases in swelling post exercise
- Achieve full control during single leg dynamic tasks
- Maximise strength and mass to achieve good limb symmetry
- Develop sound landing capabilities
- Develop good load tolerance in low intensity plyometrics
- Gradually introduce running activities

Exercises and Activities:

- Stretching and mobility
- Cooling as needed to manage swelling and pain
- Progressive landing and plyometric exercises
- Strength training targeting general leg strength and isolated muscles
- Trunk strength and work capacity
- Running-specific motor control exercises
- Continue using the bike for metabolic conditioning until you have reached good load tolerance for running activities

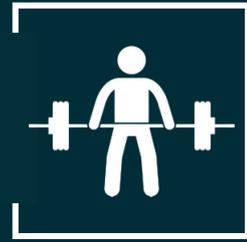
Avoid:

- Running before you have achieved a quiet knee, strong quads and hamstring , as well as single leg hop and landing
- Sudden increases in running volume and intensity

Towards the end of this stage, around the 6 months mark, you will perform Jointli's RTS Test – Transition Stage.

Target Outcome Measures:

- Y-Balance test - Less than 4cm limb difference
- Single Leg Sit to Stand 90° of knee flexion >22 and 90% symmetry
- Quadriceps and hamstrings peak force symmetry >90% and >85% of target benchmarks



Reconditioning Stage

REGAIN FUNCTIONALITY

Important Goals

Full control during single leg dynamic tasks



Build strength & mass



Sound landing capabilities



Athleticism

Regain Competence

The work on range of motion, strength and neuromuscular control in the previous phases leads to the return to sport specific strengthening, agility, and conditioning. Your program will be designed to replicate your sporting demands. Most importantly, this phase is about building full confidence in your operated knee (and self as a whole) to run, change direction, jump, hop and play the desired role, without re-injury. You will need to practice good form consistently to reinforce good movement patterns.

Focus Goals:

- Strong and symmetrical quadriceps and hamstrings strength
- Hamstring to Quadriceps strength ratio close to 60%
- Achieve above 90% limb symmetry on hop tests
- Develop agility and complex reactive multidirectional skills
- Rebuild confidence
- Prepare for return to team training

Exercises and Activities:

- Stretching and mobility as required
- Maximal strength and power training
- Sport-specific sprint, agility, and conditioning
- Single leg biased plyometrics

You will perform a range of maximal and submaximal testing that will guide intensity prescription and progressions as part of your training.

Towards the end of this stage, around the 9 months mark, you will perform Jointli's RTS Test – Performance Stage.

Target Outcome Measures:

- Quadriceps and hamstrings strength 100% of target benchmarks
- Hamstring to Quadriceps strength ratio >50%
- Achieve above 90% limb symmetry in all hop tests
- Psychological readiness test at satisfactory levels



Athleticism Stage

REGAIN COMPETENCE

Important Goals

Strong, symmetrical quadriceps and hamstring



Competence and symmetry on hop tests



Agility and reactive multidirectional skills



Performance

Return to excel

Once you have received clearance to return to sport, this phase is all about integration with your training and competition constraints – with the overall goals of maximising sport performance and establishing habits to minimise risk factors.

Focus Goals:

- Safely return to competition
- Maintain physical preparedness and resilience
- Maximise performance
- Create habits that will remain an integral part of your sport activities

Exercises and Activities:

- A tailored strength and conditioning program based on your sport demands, constraints, and needs



Performance Stage

RETURN TO EXCEL

Important Goals

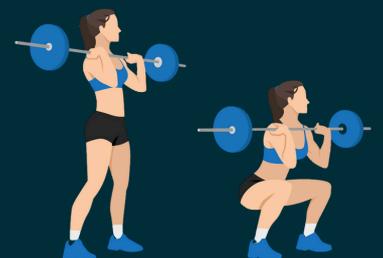
Physical preparedness & resilience

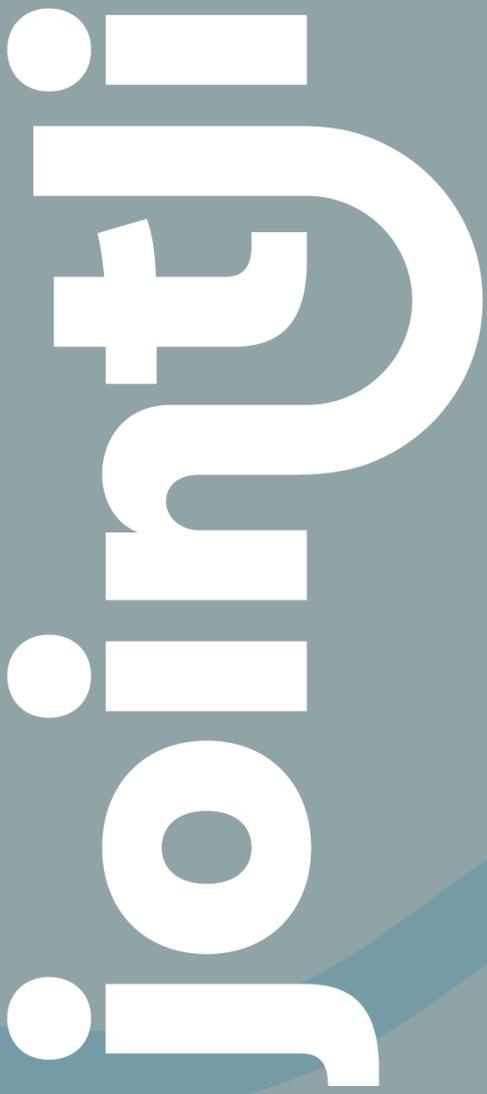


Maximise performance



Create good habits



The logo for Jointli, featuring the word "jointli" in a white, lowercase, sans-serif font. The letters are bold and modern, with a slight shadow effect. The background is a solid teal color with three horizontal, wavy bands of a slightly darker shade of teal.

jointli

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