

THE BACK TO YOUR BEST REHAB  
PROGRAM

# ACL REHAB PROGRAM

(SURGICAL & NON-  
SURGICAL)

**SCOPE**  
SPORTS INJURY & EXERCISE CLINIC

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# The Author

HELLO!

Thank you for downloading this ebook, what you are about to read is exactly what our ACL rehab clients receive when they join our rehab program.

This ebook was written to give ACL rehabbers all the information they need to have a successful rehab and return to doing whatever it is they love, pain free and with full confidence.

My name is Daniel Rothenberg, I am a Sports Chiro and a Strength & Conditioning coach. I am obsessed with working with people who require long term rehab from injury or chronic pain. My passion stems from my own personal experience with Chronic lower back pain and the lack of support, guidance and progression I received at that time. My chronic back pain lit a fire in me to help those with chronic issues return back to living a life without pain or hinderance from their injury. ACL rehab is one of my favourite injuries to work with and I hope to be able to help you make your full recovery and get back to your best!

**If you have recently joined our program, congratulations! I cant wait to see you get back to your sport! If you are considering our program, please dont hesitate to reach out to find out if this is right for you! You can also see more specifics about the program [HERE](#)**

# THE BACK TO YOUR BEST REHAB PROGRAM

A Fixed Fee, All Inclusive Rehab Program That Provides You With Everything You Need To Successfully Rehab Your Injury So You Can Get Back To Your Best Pain Free!

## What's Included

- **Weekly treatment and assessments** to keep you on track
- **Individualised rehab & strength program** to ensure you make a full recovery
- **Coached small group rehab classes** so you always have the support and right technique
- **Field and running sessions** to make sure you get back to your sport quicker
- **Regular testing and reporting** to ensure you are making great progress
- **24/7 Clinician support** so you never feel like you are on your own with your recovery
- **Private Health Rebatable**
- **Access to open gym time** so you can always find time to get your rehab done

[CLICK HERE TO  
FIND OUT MORE](#)

**\$165pw for the duration of your program\***

Private Health Rebatable | Sports Insurance Accepted | DVA Accepted\*

# Introduction

# INTRODUCTION

In Australia, ACL injuries are on the rise. The number of ACL injuries for both Males and Females are growing and over the last 20 years have significantly increased. The rise in ACL injuries is one of concern due to the significance of the recovery process which is typically recommended to take 10-12 months. With the sharp rise in frequency of this injury it is becoming more and more important for those who have sustained the injury and wish to return to sports or other meaningful tasks to be provided with evidence based approaches to treatment and recovery. Unfortunately, there is still a lot of poor information, education, advice and treatments being provided which may result in re-injury. Therefore the purpose of this ebook is threefold;

- 1: To provide you with an evidence based and simple to understand framework for ACL rehabilitation**
- 2: To highlight the various stages and phases of a well structured and goal orientated ACL rehab program**
- 3: To provide tips and support to help equip you for the journey ahead.**

A personal note;

The journey ahead will be filled with ups and downs and the amount of time and energy you put into this is significant. However, I am a strong believer that if we take on these challenges with the right mindset, if we focus our attention to what is within our locus of control and if we stick to the gameplan you will come out stronger, more confident and more resilient than ever before. I believe that there is a gift from injury. That gift is the opportunity to turn a weakness into a strength and be very proud of the results you'll achieve.

You've got this!

Dan

CHAPTER 1

# Myths, Facts & 4 Essential Tips

## MYTHS

You cant function without an ACL

ACL injuries always require surgery

ACL injuries are lifelong

You will never regain full function

## FACTS

Function without an ACL is possible. In fact emerging evidence suggests that the ACL can re-heal after injury by itself

Current evidence suggests non-surgical options may be a viable option for some people

With a well structured program you can return to full function, including competitive sport

The body is highly adaptable and can make a full recovery with the right approach and amount of time



# 4 Essential Tips for your rehab

**01**

Maintain A Positive &  
Optimistic Mindset

**02**

Sleep well, eat well, think  
well &  
stay as strong and fit as  
you can

**03**

Stick To The Plan

**04**

Celebrate your wins  
big & small

CHAPTER 2

# Phases, Goals & Testing

# Phases, Goals & Testing

## 1. ACL REHAB PROGRAM PHASES

A well structured ACL program is typically broken down into different phases. Each phase has a specific goal to achieve which usually allows the athlete/patient to progress into the next phase. It is done this way as this allows us to ensure that we 'tick all the boxes' along the way and don't miss any steps. Each phase will have its own goals and as such its own specific testing protocols. Each phase is specifically designed to achieve the goals set out and focuses on exercises and advice to make sure that you are able to progress as quickly as possible.

## 2. GOALS

Goals are set to ensure that you are working towards a very specific outcome. For example, common goals in the early stage are to 1: regain full knee extensions (straightening) equal to the unaffected side. 2: Minimize swelling and eliminate limping. Some of these goals are objective and we are able to measure with specific tools and tests. Others are more observational such as limping and confidence. As the rehab program moves forward, the testing should become more objective as pain and swelling are usually not a significant problem. It is very important you know the specific goals you are working towards so you can focus on what needs to be achieved at each phase.

## 3. TESTING

Testing generally will happen every 2-6 weeks, depending on the phase and goal outcomes. Early on, measuring range of motion changes may be tested weekly (although I usually suggest fortnightly) to ensure early progression is occurring. As you work through to strength development phase (see next page) the testing will move further out as you need time to develop the strength.

Using technology such as dynamometers and forceplates are gold standard testing tools as they can provide us information on your ability to produce force as well as your ability to produce force quickly (rate of force development). These metrics are very important to ensure both strength and the ability to contract your muscles quickly are achieved.

# REHAB PHASES

1

## POST INJURY/PRE-OP

**Primary Goals:** Reduce initial swelling and pain. Regain full knee bend, straightening and muscle recruitment of the quads and hamstrings prior to surgery.

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2

## POST-OP (If Surgery)

**Primary Goals:** Reduce swelling, regain range of motion with a particular focus on extension. Regain quad and hamstring firing.  
**Secondary Goals:** Begin assisted gait training and glute strengthening.

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3

## STRENGTH & CONTROL

**Primary Goals:** Regain single leg balance, gait retraining, quad and hamstring muscle strength and fundamental movement patterns.  
**Secondary Goals:** Introduction to land mechanics, calf strengthening and glute strengthening.

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4

## AGILITY, RUN & JUMP

**Primary Goals:** Progressions for jumping, landing and change of direction training. Integration into return to running program.  
**Secondary Goals:** Squat strength development, advanced hamstring quad and glute strengthening.

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5

## RETURN TO SPORT

**Primary Goals:** Progressive return to sport. Psychological preparedness assessment.  
**Secondary Goals:** Sport specific rehab to support return to sport.

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6

## PREVENTION

**Primary Goals:** Prevention program.

# TESTING CRITERIA

Your testing is critical to progressing you through the program. While time is a factor we do not progress until we can tick off these essential tests.

## PHASE 1: PRE-OP & POST-OP

- Passive Knee Extension - 0
- Passive Knee flexion- 125
- Knee Effusion - 0/-1
- Quad strength lag test - 5"

## PHASE 2: STRENGTH & CONTROL

- All phase 1 testing passed
- Functional Alignment Test - Good
- Single Leg Bridge > 85% LSI
- Single Leg Calf Raise >85% LSI
- Single Leg Squat >85% LSI
- Squat > 1.2-15 x BW
- Side Bridge Endurance > 85% LSI

## PHASE 3: AGILITY, RUN AND JUMP

- Single Leg Hop Test > 95% LSI
- Triple Hop Test > 95% LSI
- Lateral Hop Test
- Single Leg squat test > 95% LSI
- Star Excursion Test > 95%

## PHASE 4: PHASED RETURN TO SPORT

- All Phase 1 & 2 Testing passed
- Melbourne Return To Sport Score >95

CHAPTER 3

# Exercise Progressions

# Exercise Progressions

Throughout your rehab you will be working through various exercise progressions. We always aim to start with an exercise within your current abilities, set a goal with it and then progress onto a harder variation of the exercise. Sometimes the goal of the exercise will be to increase your available range of motion. Sometimes the goal will be to increase the amount of reps you can do (volume). Sometimes the goal will be to increase the amount of weight you can lift (load) and other goals such as the speed of the movement, balance, timing, co-ordination and reaction time. Below are some of the typical progressions you will encounter in each phase.

It is important to note that everyone progresses at different rates. This is due to many factors such as your prior strength, flexibility and athletic ability, age, severity of injury, type of surgery etc etc. Always remember to not compare yourself to others, only to where you were last week.

The below options are a **general overview of some common options**. By no means are they the only options and the only things that will be performed. You can click on the link below each category for the videos on our youtube channel.



Range Of Motion



Quad Strength Progressions



Return To Squat Progression



Split Squat Progression

# Exercise Progressions

Early To Mid Stage Rehab Progressions





# Other Key Exercises

An important point to note is that we make sure to keep all other areas of the body strong and healthy. Many focus solely on the knee and forget about the rest of the body. As mentioned above, focusing on other areas with a holistic rehab program will ensure your body maintains strength and conditioning for both health reasons as well as return to sport reasons.

Some of the key areas to make sure are trained are;

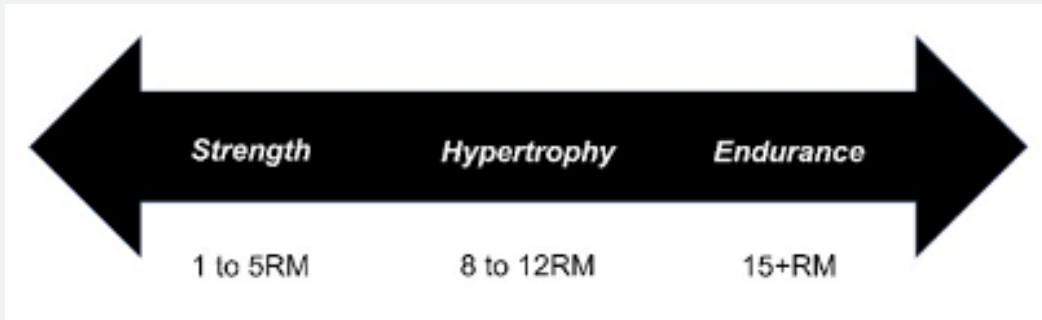
- Glutes
- Calves
- Adductors
- Hip Flexors
- Core
- Lower Back
- Upper Body

## Volume & Loads

Exercise selection is the first step in creating an effective program as this dictates the location and direction of the adaptation. For example a squat is a 'knee dominant' exercise, this means the knee joint is the main joint that will be challenged (of course other regions are involved but the knee take a larger load). Once we have defined which exercise is appropriate, we then need to define how many reps and how much weight to use to elicit a positive change. Too little load or volume will mean minimal to no adaptation. Too much volume or load may cause pain, symptoms or significant muscle soreness causing us to miss rehab sessions.

In the early stages of rehab we may use higher rep ranges (8-20+ reps per set). This is usually because the knee is not in a place to add much load to it. We use these high rep ranges to 'grease the groove' and simply get things moving.

Later on in rehab we will use smaller rep ranges and higher loads to elicit a larger strength stimulus (1-6 reps per set). As a general rule throughout rehab we want to expose the body to the whole spectrum, from lots of reps at a light load to few reps at heavy loads. This ensures we have challenged and prepared the knee through the whole spectrum.



Deciding what weight to use can also be challenging, at our clinic we use 1 of 2 interrelated metrics.

**RPE:** Rate Of Percieved Exertion. Simply a difficulty rating of 0-10 with 10 being your maximal ability.

**RIR:** Reps In Reserve. The amount of reps you are leaving 'in the tank'. For example 3 Reps in reserve (RIR) would mean do an exercise for as many reps as you can until you can only give 3 more reps.

## NUMBER OF REPS IN RESERVE (RIR)

RPE	Number of reps left
10	0 reps left
8-9	1-2 reps left
6-8	2-3 reps left
4-6	3-4 reps left
2-3	5-10 reps left
1	10+ reps left

 The Sports Physio @adammeakins

RPE SCALE	RATE OF PRECEIVED EXERTION
<b>10</b> /	<b>MAX EFFORT ACTIVITY</b> Feels almost impossible to keep going. Completely out of breath, unable to talk. Cannot maintain for more than a very short time
<b>9</b> /	<b>VERY HARD ACTIVITY</b> Very difficult to maintain exercise intensity. Can barely breathe and speak only a few words
<b>7-8</b> /	<b>VIGOROUS ACTIVITY</b> Borderline uncomfortable. Short of breath, can speak a sentence
<b>4-6</b> /	<b>MODERATE ACTIVITY</b> Breathing heavily, can hold a short conversation. Still somewhat comfortable, but becoming noticeably more challenging
<b>2-3</b> /	<b>LIGHT ACTIVITY</b> Feels like you can maintain for hours. Easy to breathe and carry a conversation
<b>1</b> /	<b>VERY LIGHT ACTIVITY</b> Hardly any exertion, but more than sleeping, watching TV, etc

CHAPTER 4

# Return To Running & Sport

# Return To Running & Sport

## 1. JUMPING, HOPPING, SKIPPING AND RUNNING

Returning to running and sport is generally the most important component of rehab for most people. It is by far the most exciting and often a feeling of 'the light at the end of the tunnel' is felt. However, this is also where most athletes and clinicians fall short in preparation. You see, most sports (outside of strength based sports such as Olympic Weightlifting) don't look like what you do in a typical gym session. Most sports require skills such as jumping, hopping, running, change of direction, acceleration, deceleration and reaction time. None of these skills are directly trained (typically) in a general strength program (Hint, in your program at our clinic you will be doing these things very early in your rehab to ensure a smooth transition back into running and sport). This is why jumping back into sport without developing these skills is very risky and why re-injury rates are often so high.

### JUMPING, HOPPING, SKIPPING

Most sports require rapid changes of movement. Jumping, hopping and skipping allow us to prepare the tissues for the 'elastic' components of performance. The ability for our joints to absorb force (like when stopping from a sprint) and then produce force (like when accelerating or jumping) is a huge component of most sports. Using these types of exercises during rehab allows your body to become prepared and more resilient of those forces. Before returning to sport or running we must make sure we have performed these kinds of drills with no pain as well as shown competency in performing the drills.

### CHANGE OF DIRECTION

Changing direction also places a large amount of force on the knee joint. Change of direction (COD) can be trained in 2 broad ways. Planned change of direction and reactive change of direction. In the same way that if we are attacking in a spot, we are typically dictating the direction we are heading and thus we are planning for COD. If we are defending we are responding to our opponent and as such our change of direction is reactive. The main difference here is the brain and neural systems responses. Again, ensuring we are competent in these kinds of drills will mean our knee is better prepared for returning to sport.

# Return To Running & Sport cont.

## RETURN TO RUNNING CRITERIA

ACL REHAB		
RETURN TO RUN CHECKLIST		
Outcome Measure	Goal	✓
Single Leg Squat	>15 reps	<input type="radio"/>
Single Leg Bridge	>20 reps	<input type="radio"/>
Single Leg Calf Raise	>20 reps	<input type="radio"/>
Quad Muscle Symmetry	>70%	<input type="radio"/>
Repeated Forward Hop	>15 reps	<input type="radio"/>
Repeated Vertical Hop	> 15 reps	<input type="radio"/>

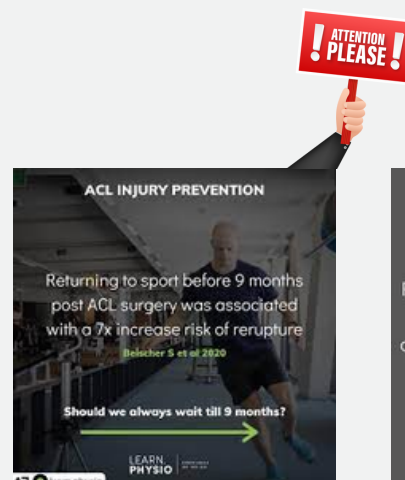
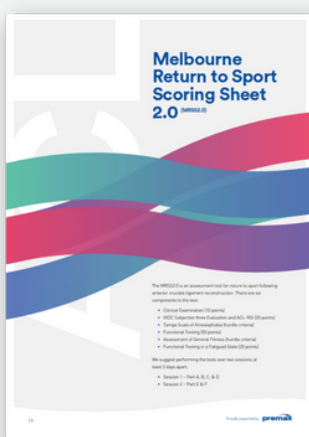
LEARN PHYSIO | KNOWLEDGE ON THE GO

As the loads on the knee are relatively high when running, having testing criteria before your first run back is key. This checklist is what we use, amongst a few other tests before we create the return to run program.

We start our return to running program by first introducing straight line running (generally on a field but sometimes on a treadmill). We then progress to acceleration drills and deceleration drills, followed by curved running, planned change of direction and then reactive change of direction. At this stage we will be integrating back into your desired sport and skill sets required there.

## RETURN TO SPORT CRITERIA

Returning to sport requires a few criteria but most importantly a conversation with you about your confidence return to regular training is key. We want to ensure you have passed all available tests and ensure your progression back to sport is conservative. We utilize the [Melbourne Return To Sport Scoring Sheet](#) to ensure we have covered all basis.



CHAPTER 5

# Prevention

# Prevention

## PREVENTING RE-OCCURANCE

Prevention strategies are key to reducing likelihood of ACL re-injury. The best prevention strategy is of course, ensuring you complete your rehab program to a high standard and delay return to sport as long as possible.

Having a framework for prevention strategies is essential for all athletes after their rehab.

Our rehab program will provide you with a prevention program specific to you, your sport and your goals.

Below is our injury prevention hierarchy. Note that the best way to reduce injury risk is to be healthy. Sleep and stress management in particular are closely related to injury, simply taking care of that will have a significant impact on injury risk reduction

Following general health is making sure you have an appropriate training load. There are many ways to calculate this, however, the main thing to know is that you should avoid peaks and troughs in training. Your training should be consistent and not erratic.

Your next bet bet is having a great strength & Conditioning program. Being physically prepared through strength, flexibility, agility, co-ordination etc etc will keep your body in a great place.

Finally, but definitely not least important is your mental preparedness. This is Psychological preparation for training and events. Have a positive mindset. Reduce negative self talk. These things matter and are very important!



# Conclusion

ACL rehab is a journey, but with the right team, program, mindset and actions will result in a full recovery and life ahead with minimal to no impact on your physical abilities. The current state of rehab for ACL generally is relatively poor (hence the high re-injury rates) and that is what we have set out to change. Regular testing, effective training and goal orientated programming will ensure you have a successful result from your surgery. With that, rehab can sometimes be a lonely endeavour. Doing this in a group environment with other rehabbers going through similar challenges can make the tough times that much easier.

I hope this ebook has given you some guidance and a 'birds eye view' of what to expect through your rehab program.

If you have any questions relating to ACL injuries please don't hesitate to contact me directly at [daniel@scopechiropractic.com.au](mailto:daniel@scopechiropractic.com.au)

Wishing you a strong and successful recovery!

Dan



Mental  
Preparedness

Physical Preparation  
(Being strong, agile &  
powerful)

Appropriate Training Load  
& Recovery

Good Sleep, nutrition & overall  
health