The Leading experts
Aims of our ACL service

We at the Sports Surgery Clinic have a lofty ambition. We want to reduce the rates of ACL re-injury. This is what our ACL service is all about.

By giving you and your physio an accurate idea of your progress to date, where that sits compared to others and what areas you need to continue to work on, we aim to make this the last time you have the injury.

To achieve this, we need to learn more, which we do through our research. All the information we collect in the service is used to help us understand what we can do to help reduce the risk of re-injury and then, hopefully, help people to stop it happening in the first place.

In order to deliver this service we have put together a team of highly experienced and motivated Biomechanists, Physiotherapists and Strength and Conditioning coaches and housed them in a 14,000 sq ft state of the art facility. We have equipped it with gold standard testing equipment to give you as detailed a picture of your rehabilitation as possible to guide you back towards a safe return to play.

To aid in developing the service, our team of postdoc and PhD researchers analyse the data to improve the advice and feedback you are given. We then share our findings with the world through peer reviewed publication and presentations all over the globe.
Why use our ACL review service?

ACL re-injuries do happen. With feedback and regular testing throughout your rehabilitation, the re-injury rates we have seen at the Sports Surgery Clinic are much lower than have been reported elsewhere.

We see over 750 patients who have had ACL reconstructions each year and so we have a good understanding of the common pitfalls in rehab and what the important areas to work on with your physio are.

We use a 3D biomechanics lab, force plates, inertial sensors and isokinetic dynamometers to give reliable measures of how you are doing.

We have a team of experienced strength and conditioning coaches, physiotherapists and biomechanists taking you through your testing and advising you on what areas you and your physio could focus on next.

What is our ACL service?

It consists of 6 areas:

1. Your pre-operative session will be your opportunity to learn more about the surgery and go through your training program to prepare you to be in the best shape prior to surgery and to take on your rehabilitation. The better shape you are in going into the surgery, the better shape you will be in to start your rehab.

2. Post-operative inpatient physiotherapy will start you on the road to recovery. It will equip you with the skills to negotiate the very early stages prior to seeing your physiotherapist in the first 7-10 days.

3. At around the 3-month stage comes your first opportunity to measure your progress and see how well you’re doing. Your strength and power will be tested.

4. The 6-month tests have an eye towards getting you back to being on pitch. These will involve change of direction tests in the 3D lab and highlight any areas of your technique that you can develop to make you even more robust.

5. The 9-month test is your final, and most important set of tests. By this stage, the aim is to help you understand what areas will need continued focus as you get back into your sport and keep you away from re-injury.

6. The 1 year and 2 year follow-up questionnaires help us to understand how successful your rehab has been in the long term. It allows us to learn and refine the service to further reduce the risk of those that follow from suffering a re-injury.

Rehab testing sessions:

- 3-month (1 hour) - Isokinetic dynamometer strength testing will highlight any strength difference between legs and the ratio between your quads and hamstrings. The countermovement jumps, drop landings and drop jumps are all performed on our force plates with inertial sensors and help us to monitor your power qualities and track your movements highlighting the key areas that you need to work on through to your next testing.

- 6-month and 9-month tests (3 hour) - For the jump, land and change of direction tests 24 reflective markers will be placed on your body. These allow us to capture you in 3D during a countermovement jump, a hurdle hop, drop jump, broad jump, and decision and indecision change of direction. Your quad and hamstring strength will also be tested again on the isokinetic dynamometer to see how you have progressed from last time.
At each testing session, your results will be used to build a comprehensive summary of the physical areas to concentrate on going forward that will limit risk on your return. You and your physio will receive these results, an explanation of what they mean and where they sit relative to our return to play criteria. We will also go through the exercises that, in our experience, best improve those areas you have left to work on.

ACL Lab
Optimising an athlete’s peak performance to deliver

ACL Rehab Tests

Isokinetic Dynamometer
Strength Test – This is used at each testing session. You will be sat in a large leg extension machine and, following a warm up, be asked to straighten and bend your leg as hard as you can. This is a maximum strength test and is quite challenging. It is also very safe, even at the early 3-month stage. The dynamometer can read how much force you create giving a measure of your quads and hamstrings strength on both sides. The difference between legs and the ratio of your quads to your hamstrings are vitally important measures here and form the foundation of your rehabilitation.

Countermovement jump – In this test you will stand up tall and perform a fast squat and jump as high as you can on a set of force plates on 1 and both legs. It will give an idea of any large differences between legs in absorbing and producing force and if you are guarding the operated leg. Large differences between legs can lead to you loading one leg more than the other which can affect performance and increase injury risk. You will do this at each testing session.

Drop landing – You will be stood on a small box and asked to hop off and land on one leg onto a force plate. We will measure how fast you are able to decelerate and your technique on landing. This is important as being able to decelerate quickly is important for returning to high levels of performance. This test will also allow us to highlight any large differences between legs for you to work on to reduce risk of re-injury. This test will be done at each session.

Drop jump – For the drop jump you will hop off the edge of a low box and immediately jump up as high as you can. It is used to measure your reactive strength. This is a quality that is important for running, jumping and change of direction and is essentially a measure of how much of a rebound effect you can create. If you are low in this measure or have a large difference between legs it indicates reduced efficiency of movement and increased injury risk. You will do this at each testing session.

Hurdle hop – This is one of your 3D tests at the 6 and 9-month testing stage. You will hop sideways and back over the hurdle in order to test your ability control your form in side to side movements which is a key part of change of direction.

Broad jump – Standing on 1 leg, you will jump as far forwards as you can, landing on the same leg. This gives a measure of your horizontal force production which you need in order to accelerate when playing on pitch. This test is done in 3D at both the 6 and 9-month sessions and will let you know how much difference you have in accelerating off each leg.

90° planned cut – Cutting is one of the most common tasks in which people injure their ACL. To reduce this risk, it is important to understand if there are areas in your technique that relate to ACL injury to work on. In this test you will run towards a set of cones and make either a left or right 90° cut. We will look at your technique to see if there are areas in how you decelerate, plant and push off that you can work on to develop performance and reduce injury risk. This test is done at the 6 and 9-month stages.

90° indecision cut – This test is similar to the planned cut except you will have to respond to a set of lights that tell you whether you’re going left or right. This is important as when you play you often have to respond very quickly to something that is happening around you. Having to respond to the lights increases pressure on your cutting technique by reducing the time you have to respond. We look to see if your technique changes as a result and guide you on your technique so that you can develop this during your rehab helping to reduce risk of re-injury. This test is done at the 6 and 9-month stages.
We guide hundreds of athletes a year through their rehab and back to being match fit.

What to expect on the day

First and foremost is a friendly and professional 5-star experience, this part is incredibly important to us and we all work very hard in order to best deliver that for you.

An opportunity to ask any questions that you have about your rehab to date and receive an open and honest response.

None of the tests should cause any discomfort, if you have any concerns you can raise this with your tester on the day or give us a call beforehand.

An impartial, objective view of how you are doing so far. Even those who rehab with us are not tested by their physio or strength and conditioning coach. This helps us to remove bias and give as true a reflection of your progress as possible.

A clear, informative set of performance data that helps to inform the return to play decision making between you, your surgeon and those assisting with your rehab.

Aims for testing sessions

The ACL tests have been picked as they mirror what we look for at each testing session. This is the ideal scenario and certain things such as other injuries in the knee and gaps in training can slow this down.

• At around the 3-month mark we aim for full range of motion, a calm quiet joint, strength work to be started in the gym and some jumping, landing and hopping started.

• By 6-months we aim for running to have been started, strength to be evening up between legs and some change of direction drills to have been started.

• The 9-month stage is often varied depending on the stage of the season but if not back playing already, we would aim for not far after this mark assuming all rehab targets have been hit.
ACL Surgery
Following surgery, you will receive a session of physio starting you on the beginning stages of your return to play.

6 month 3D biomechanics test:
Testing here involves 3D testing of jumping, landing and cutting alongside isokinetic strength testing. Alongside guiding your training based on your power and strength scores, key technique points for you to develop in your jumping and cutting will be highlighted.

9 month 3D biomechanics test:
The same battery of tests is used to help show you the progress you have made to date, what areas you should continue to work on and help to inform you for your return to play decision making.

Pre op assessment:
The aim of your pre-op appointment is to inform you about your surgery and the rehabilitation, answer any questions you may have and give you the exercises to put you in the best possible position to take on the operation.

3 month biomechanics test:
Testing involves isokinetic strength testing, force plate jump assessment and assessment of neuromuscular control. The results from this test can help guide you and your physiotherapist on where to focus your training.

Research and my data
You are playing a huge part in improving outcomes from injury, as have many have done before you. As with any scientific research, full ethical approval was given by the Sports Surgery Clinic ethics board. This means the research team considered the risks, implications and validity of the data collected and the interventions. When you enter the service, you will be taken through the testing process, risks and offered the opportunity to ask any questions. You will then be asked whether you consent to your data being included in our research outcomes. This means your questionnaires, your operative notes and biomechanical data being used for research to further understanding of ACL injury. You can still be tested and rehabilitated without giving your consent and are free to withdraw consent and have your data removed from the research database at any point. All research data that we hold is fully de-identified so that nobody is able link the information to you and we hope you will consent as this data helps us make the program so much better.

The hardest bit of the service
By far the most difficult part, but also the most important for us, is the collection of questionnaires at 1 year and 2 year. Without this, we can’t learn and improve. The questionnaires take 10 minutes to fill out and, although not directly benefitting you, they will help others who go through what you have.

To aid in developing the service, our team of postdoc and PhD researchers analyse the data collected to improve the advice and treatment given.

To aid in developing the service, our team of postdoc and PhD researchers analyse the data collected to improve the advice and treatment given.

Step by Step Guide