

Early-Stage and Middle-Stage Knee Rehabilitation Strength Training

ACL, PCL, MCL, and Meniscus
Exercise Rehabilitation Techniques for the
Sports Knee Specialist



Be more confident with your rehabilitation for agility-sport athletes with knee soft tissue injury or surgery

Course Description

The 'early' and 'middle' stages of knee rehabilitation are the most important stages of the knee rehabilitation process. This is because the early and middle stages of knee rehabilitation can be the most psychosocially challenging for patients and because they lay a solid foundation for the safe and effective implementation of late-stage rehabilitation techniques (e.g. plyometric training). Inappropriate or 'rushed' early- and middle-stage knee rehabilitation can negatively affect patients' quality-of-life and outcome-expectations, increase the risk of failed late-stage rehabilitation because of re-injury or new injury, as well as potentially increase the risk of early-onset knee osteoarthritis. The early and middle stages of knee rehabilitation are often seen by clinicians and patients as 'boring' and 'simplistic'. However, the knowledge and clinical reasoning underlying the planning of psychosocial interventions and the implementation of the correct rehabilitation exercise for the correct injury at the correct point-in-time is far from simplistic. Different knee injuries and surgeries present very different psychosocial challenges for patients and also require the application of very different rehabilitation strength training techniques and exercises. Furthermore, the evidence-base that guides the scientific design and strategic clinical implementation of early- and middle-stage knee rehabilitation exercises has undergone major expansion and evolution in recent years. Modified versions of both open kinetic chain (OKC) and closed kinetic chain (CKC) exercises must now be used for safe, effective, and thorough rehabilitation of all types of knee injury.

The purpose of this theory and highly practical course is to present you with advanced concepts in a biopsychosocial approach to exercise rehabilitation for ACL, PCL, MCL, and meniscus injury and surgery using OKC and CKC rehabilitation strength training. Emphasis is placed on presenting you with advanced knowledge and understanding of psychosocial factors, neurological mechanisms, exercise biomechanics, clinical outcomes research, and advanced clinical reasoning that form the foundation for you to become a specialist in exercise rehabilitation for agility-sport athletes with knee soft tissue injury or surgery. As you participate in this course, you'll experience enhanced learning and interactive education techniques known to help you rapidly acquire the knowledge and skills to confidently make decisions about your athletes' early- and middle-stage knee rehabilitation.

Past course delegates have included clinicians from the British National Health Service (NHS), private practice, professional rugby union, professional football, elite netball, the British Army, and the Royal Navy. Course content is aligned with multiple Sports Physiotherapist core competencies. The course is a British Association of Sports Rehabilitators and Trainers (BASRaT) Approved Continuing Professional Development Course.

Course Aim

To present you with the scientific information and rehabilitation strength training techniques necessary for you to have knowledge and understanding of advanced concepts in a biopsychosocial approach to early- and middle-stage knee rehabilitation, so that you're always able to design an athlete-centred, collaborative, clinically-reasoned, evidence-informed, and justifiable exercise rehabilitation programme for your agility-sport athletes with ACL, PCL, MCL, and meniscus injury and surgery.

Past course delegates have included clinicians and strength and conditioning coaches from:

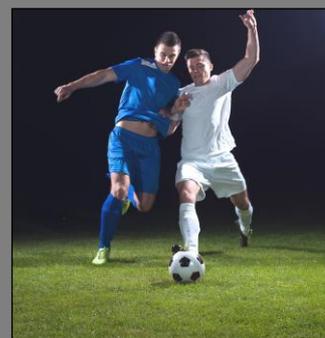
Manchester United Football Club, UK

Arsenal Football Club, UK

Liverpool Football Club, UK

Saracens Rugby Union Football Club, UK

Wasps Rugby Union Football Club, UK



"Course was great, Nick. Wish we had more time... Will have an instant impact on our clinical practice... Highly recommend Nick's knee CPD course... A huge evidence-base and highly clinical-based delivery"

Chris Morgan.
Former Head Physiotherapist,
Liverpool Football Club;
Head Physiotherapist,
Arsenal Football Club,
England, UK.



Here's some of what you'll learn about:

Psychosocial Elements of the Biopsychosocial Model in Early-Stage Knee Rehabilitation: focuses in on specific psychosocial elements in early-stage knee rehabilitation in a way that describes five critical behaviours and seven questions you can use in order to better understand all of your athletes and create a deeper and stronger therapeutic alliance that optimises early-stage clinical outcomes -- when you hear about these five behaviours and seven questions, you'll be able to more confidently address critical psychosocial elements necessary for creating your best athlete-centred, holistic, and collaborative exercise rehabilitation programmes

New Concepts in Open Kinetic Chain and Closed Kinetic Chain Exercise: walks you through the 10 differences in defining and classifying open and closed kinetic chain exercise in a way that shows you how to clearly understand the effects of knee rehabilitation exercises on ligaments, grafts, and cartilage so that you can select the best exercise for a specific knee injury at the correct point in time -- when you see how these 10 differences will affect your clinical reasoning in exercise selection, you'll be able to communicate with athletes and colleagues more effectively and justify your treatments in all clinical situations with greater confidence

Discover the critical neuromuscular and biomechanical differences between seven types of rehabilitation squat exercise

Advances in Understanding Knee Functional Joint Stability: illustrates the nine components of knee functional joint stability in a way that passes you a clear understanding of 'giving way' episodes and builds a solid foundation for how you can accurately diagnose the cause of any knee collapse -- when you grasp how these nine components fit together, you'll know when to start rehabilitation exercise and when to consider referring your athletes for a surgical opinion more than 95% of the time

Prehabilitation and the Five Stages of Sports-Specific Knee Rehabilitation: describes the five stages of knee rehabilitation in a way that hands you the evidence-informed model for how to best combine traditional and advanced functional rehabilitation methods so that you can safely and effectively progress all types of knee ligament, meniscus, or cartilage injury -- when you hear about these five research-proven stages of knee rehabilitation, you'll know how and when to progress all of your knee-injured athletes from acute injury or surgery to return-to-play

Critical Considerations in Knee Functional Rehabilitation: shines a spotlight on three neuromechanical principles in closed kinetic chain exercise in a way that shows you how incorrect functional rehabilitation techniques can leave the knee vulnerable to re-injury and future new injury so that you can design an appropriate and effective basic and advanced knee functional rehabilitation programme -- as you hear about these three critical principles, you'll discover how to design both basic and advanced knee functional rehabilitation programmes that safely build a solid foundation for your athletes' return to sports-specific training and competition

Past course delegates have included clinicians and strength and conditioning coaches from:

Royal National Orthopaedic Hospital NHS Trust, England, UK

Chelsea and Westminster Hospital NHS Foundation Trust, England, UK

Royal Infirmary of Edinburgh NHS Lothian, Scotland, UK



"What was most interesting to me was the clinical reasoning regarding the safe application of exercises following ACL/PCL-reconstruction, as well as how to progress the exercises and avoid aggravating the injury/operation site... What I enjoyed the most was the evidence-based theory and clinical reasoning to support rehab progressions and structure... I would recommend the knee course to all clinicians from all spectrums, and particularly those involved in elite sport if they want to justify rehab progressions"

Martin Cunningham.
Elite Development
Physiotherapist, Glasgow
Warriors Rugby Club,
Scotland, UK

Past course delegates have included clinicians and strength and conditioning coaches from:

Infantry and Armoured Regiments, British Army

Parachute Regiment, British Army

Royal Marines Commando Training Centre, Royal Navy

Defence Medical Rehabilitation Centre (DMRC) Headley Court



"I wanted to increase my awareness and understanding of the clinical reasoning and methodology which underpins knee rehabilitation... I enjoyed the balance of practical and theory sessions and would recommend Nick's knee courses to anyone involved in rehabilitation... they'll make you better at assessing and rehabilitating your patients"

Major David Wilson.
Officer in Command –
Physiotherapy Outpatients,
British Army, Tidworth
Garrison Primary Care
Rehabilitation Facility,
England, UK.



Neurological Concepts in Open and Closed Kinetic Chain

Exercise: introduces five important concepts in proprioception and neuromuscular control in a way that explains how to integrate open kinetic chain and closed kinetic chain exercise so that you build a strong platform for your athletes to gain optimal sensorimotor control of their knee functional joint stability -- when you hear about these five neurological concepts, you'll get a grasp of how to use different types of kinetic chain exercise to trigger the most important neurological mechanisms necessary for your athletes to develop their optimal knee functional joint stability

Disinhibitory Modalities: digs into the theory and practice of quadriceps inhibition after knee joint injury and surgery in a way that shows you how to safely apply five quadriceps disinhibitory modalities at different levels of the central nervous system so that you can clinically reason which disinhibitory modality is most appropriate to apply at the beginning of all of your athletes' individual rehabilitation sessions -- when you see and practice these five disinhibitory modalities you'll discover new interventions that can deter quadriceps inhibition in a way that optimises spinal and supraspinal quadriceps activation and facilitates maximal quadriceps strength gains in every knee rehabilitation strength training session.

Evolution of Knee Rehabilitation Techniques: looks at a brief history of how knee ligament injury rehabilitation has evolved over the last 30 years in a way that describes the origins of many surgeons' and therapists' flawed personal opinions versus objective scientific data so that you know how to make your own best clinical decisions in an informed and balanced way -- as you hear about how knee rehabilitation has evolved in recent decades, you'll also be building yourself a solid foundation of knowledge and understanding to significantly contribute to one-to-one meetings and multi-disciplinary team discussions about your athletes' care

Biomechanics of Knee Ligaments and Human Grafts:

steers you through the two-step process for understanding how human ligaments and grafts really respond to physical loading in a way that shows you how to decide which open and closed kinetic chain exercises are truly safe for different types of knee ligament and meniscus surgery so that you can justify the design of your knee rehabilitation programmes 100% of the time -- as you see this two-step process, you'll learn how to avoid the common confusion in knee rehabilitation and confidently discuss evidence-based knee rehabilitation programme design with all athletes and orthopaedic surgeons

Myths and Misconceptions in Graft Healing and

Remodeling: reveals the truth about human graft healing and remodeling in a way that discusses when it is really safe for you to give your athletes specific exercises to enhance knee neuromuscular control and muscle strength so that you get handle on how to completely eliminate the risk of permanent graft stretch-out and failure during all of your treatment sessions -- when you see this data and evidence-based information, you'll discover simple facts and techniques to modernise your knee rehabilitation methods and never be concerned about a graft weakening again

Indications for and Timing of Knee Ligament Reconstruction Surgery: sounds out the three most critical points in time for ACL-reconstruction surgery in a way that hands you the research-proven science for "if" and "when" surgery should be performed so that you can confidently navigate the post-injury decision-making process -- as you hear about the experience of internationally-respected orthopaedic research groups, you'll discover how to correctly advise your athletes about inappropriate or dangerously premature surgery and discuss with coaching staff how to avoid potentially career-ending post-surgery complications

See how to use proper variations of open and closed kinetic chain exercises for the three different types of MCL injury so that you can correctly implement and safely progress quadriceps and hamstrings rehabilitation strength training

The Hidden Problems with 'Accelerated Rehabilitation': uncovers the five hidden problems with 'accelerated rehabilitation' in a way that illustrates why an injured knee joint is not able to safely tolerate certain loading activities in the early and middle stages of rehabilitation and see how there is an increased risk of re-injury, new injury, and osteoarthritis if you return your athlete to sport in six months or less -- as you hear about these five hidden problems, you'll have a solid understanding of the safest way to progress your athletes' knee rehabilitation programmes and be better equipped to confidently answer questions from and manage expectations of athletes, coaches, and managers about when an athlete will be ready to return-to-play

Clinical Quantification of Knee Joint Loading and Ongoing Load Management Strategies: builds on a three-part technique for quantifying the load imposed on your athletes' knees with each rehabilitation exercise in a way that shows you how to avoid the risk of causing new knee pain so that the design of your rehabilitation programmes keep your athletes moving forwards in the best way possible -- as you walk through this three-part model, you'll have a clear view of exactly why many athletes' knees 'breakdown' and discover how to stop it from ever happening again in your rehabilitation programmes

Squat Exercise Biomechanics and Critical Clinical Modifications: focuses in on seven different types of squat exercise in a way that uncovers the important neuromuscular and biomechanical differences between each exercise so that you can design an optimal closed kinetic chain rehabilitation programme that is truly targeted to your athletes' needs -- as you get a grip of the technique differences across these seven exercises, you'll know which types of squat must be avoided for certain types of knee injury and surgery and which types of squat can be used to safely accelerate your athletes' recovery

"This course has given me more knowledgeable, evidence-based, and factual progressions to my rehab programmes..."

I would recommend this course to anyone that works in physiotherapy and/or strength and conditioning... Outstanding knee course... Will make everyone better at their job and has inspired me"

Brian O'Leary.
Former Team Physiotherapist,
Ospreys Rugby Club,
Wales, UK.
Head of Medical Services,
London Irish Rugby Club,
England, UK.



"Nick explained concepts in a way that was very easy to think of in terms of my practice and it made a lot of sense... I'd recommend Nick's seminars to any health or performance professional in contact with patients with reconstructed ACLs... Great seminar and course"

Barry Sigrist.
Sports Therapist, Watford
Football Club, England,
UK.



"Nick's knee course was very detailed... What I enjoyed most about the knee course was that it was challenging, clear, and justified, and will refine my own thinking... Would recommend a knee course with Nick to anyone who deals with improving the physical function of knee-injured patients... Nick progressed my learning like a good knee rehab – good sequencing to a logical conclusion"

Andrew Pallas.
Osteopath, Private Practice,
Scotland, UK.



"I wanted to do this knee seminar because I see female knee injuries regularly... What was most interesting to me was learning about the effect of the menstrual cycle on musculoskeletal injuries... I'd recommend these knee seminars to any colleague in knee rehabilitation"

Lucy Nottingham.
Senior Physiotherapist,
Nuffield Helath,
England, UK.



Rehabilitation Strength Training Guidelines for ACL Injury and Surgery: looks at up-to-date research from more than 15 leading international research groups and dozens of clinical trials in a way that walks you step-by-step through how quadriceps and hamstrings exercises can be safely performed by athletes with ACL-deficient and ACL-reconstruction knees so that you can design an evidence-based clinically effective ACL rehabilitation programme -- when you see the results of this research, you'll know which open and closed kinetic exercises are really proven safe for your athletes to rapidly recover their knee muscle function and also save time by significantly shortening the rehabilitation process

Find out which knee rehabilitation exercises are truly best for minimising ACL and PCL ligament and graft stress and strain in a way that can reduce the risk for stretch-out and help your athletes rapidly recover their knee muscle function

Rehabilitation Strength Training Guidelines for PCL Injury and Surgery: sums up data from hundreds of participants in worldwide biomechanical research and intervention studies in a way that explains what the critical differences are between PCL and ACL rehabilitation so that you can construct a research-proven rehabilitation programme for athletes with PCL-deficient and PCL-reconstruction knees -- as you hear about the findings of this research, you'll discover how treating PCL injury is more complex than treating ACL injury and learn the quadriceps and hamstrings rehabilitation exercises that can consistently get your best clinical results

Rehabilitation Strength Training Guidelines for the Three Types of MCL Injury and Surgery: reviews current research in a way that translates how open and closed kinetic chain exercises need to be specifically modified for the three different types of MCL-injury and MCL-reconstruction so that you can correctly implement and safely progress quadriceps and hamstrings exercises -- as you get a feel of this research and current clinical recommendations, you'll see how to use proper variations of open and closed kinetic chain exercises for different types of MCL injury and surgery and avoid unknowingly increasing MCL laxity and tibiofemoral instability

Rehabilitation Strength Training Guidelines for Medial Versus Lateral Meniscus Injury and Surgery: looks at biomechanical and clinical outcome studies from some of the world's most published research groups in a way that categorises critical exercise modifications for the medial versus lateral meniscus so that you can select the correct open or closed kinetic chain rehabilitation exercise for your athletes with medial versus lateral partial meniscectomy or meniscal repair -- when you learn about these critical clinical modifications, you'll be able to confidently discuss biomechanically-sound and research-driven post-surgery rehabilitation recommendations with all of your athletes and orthopaedic surgeons

Your Course Tutor



Dr Nicholas C. Clark, PhD, MSc, MCSP, MMACP, CSCS

Knee Consultant Physiotherapist.
Clinical Specialist Sports & Military Physiotherapist.
Certified Strength & Conditioning Specialist.

Integrated Physiotherapy and Conditioning
Website: www.integratedphysiotherapy.com
Email: enquiries@integratedphysiotherapy.com
Twitter: @DrNickCC

I became interested in the human body more than 25 years ago after I dislocated one of my joints playing football and was admitted to hospital to undergo surgery. I remember being in pain, feeling afraid and wondering if I would ever get back to normal again. Because I wanted to learn about what had happened to me, I got my hands on every anatomy and sports injuries textbook I could find. My interest in the human musculoskeletal system began.

Five years later, I started my physiotherapy degree and began to go on student clinical placements and got very confused very fast. Two patients on the same orthopaedic ward would have the same operation by two different surgeons, and the different surgeons would dictate different rehabilitation programmes for the same operation. I had to be very sure I treated the patients with the correct surgeons' rehabilitation programme. Some Clinical Educators told me an exercise was essential for a specific knee injury, but were then unable to explain why the exercise was so important. As a result of these student experiences, and then as time passed as a newly qualified Physiotherapist, it became more and more difficult for me to know what was best for the individual patient in front of me. I decided to keep an open mind and research things further myself, to form my own opinion grounded in human behaviour, pathology, anatomy, biomechanics, neurophysiology, clinical reasoning, and evidence-informed practice.

As a Chartered Physiotherapist with more than 21 years of clinical experience, I've now practiced in London teaching hospitals, at Saracens Rugby Union Football Club, with the Parachute Regiment and Royal Marines, and in private practice. Past teaching roles have included being a Visiting Lecturer and External Examiner to the MSc Manual Therapy and MSc Sports Physiotherapy degrees at University College London and King's College London, being contracted to teach Exercise Rehabilitation Instructors and Physiotherapists for the Ministry of Defence, and teaching on sports medicine Master's and Doctoral degrees in the United States. Current roles include being a Senior Lecturer and Researcher at a London university, leading the Knee Injury Control and Clinical Advancement (KICCA) Research Group, and supervising PhD students. Other current roles include being a Knee Consultant Physiotherapist in a London private practice and serving as a Manuscript Reviewer for scientific and clinical journals including *The Knee*, *Physical Therapy in Sport*, and *Musculoskeletal Science and Practice*.

To date, I've assembled the most up-to-date and useful research and effective practical techniques into my work. As a result, I can show you how to quickly and easily implement cutting-edge scientific evidence, practical techniques, and clinical systems into your practice tomorrow in a way that can quickly get you your best possible real-world results.

Example Publications

Goff A.J., Page W.S., **Clark N.C.** (2018) Reporting of Acute Programme Variables and Exercise Descriptors in Rehabilitation Strength Training for Tibiofemoral Joint Soft Tissue Injury: A Systematic Review. *Physical Therapy in Sport*. 34, 227-237.

Verhagen, E., van Dyk, N., **Clark, N.C.**, Shrier, I. (2018) Do Not Throw the Baby Out with the Bathwater; Screening Can Identify Meaningful Risk Factors for Sports Injuries. *British Journal of Sports Medicine*. 52, 1223-1224.

Clark, N.C. (2015) The Role of Physiotherapy in Rehabilitation of Soft Tissue Injuries of the Knee. *Orthopaedics and Trauma*. 29, 1, 48-56.

Röjjezon U., **Clark N.C.**, Treleaven J. (2015) Masterclass: Proprioception in Musculoskeletal Rehabilitation. Part 1. Basic Science and Principles of Assessment and Clinical Intervention. *Manual Therapy*. 20, 3, 368-377.

Clark N.C., Röjjezon U., Treleaven J. (2015) Masterclass: Proprioception in Musculoskeletal Rehabilitation. Part 2. Clinical Assessment and Intervention. *Manual Therapy*. 20, 3, 378-387.

Akins J.S., Longo P.F., Bertoni M., **Clark N.C.**, Sell T.C., Galanti G., Lephart S.M. (2012) Postural Stability and Isokinetic Strength Do Not Predict Knee Valgus Angle During Single-Leg Drop-Landing or Single-Leg Squat in Elite Male Rugby Union Players. *Isokinetics and Exercise Science*. 21, 1, 37-46.

Hooper D.M., Morrissey M.C., Drechsler, W.I., **Clark N.C.**, Coutts F.J., McAuliffe T.B. (2002) Gait Analysis Six and Twelve Months Following Anterior Cruciate Ligament Reconstruction Surgery. *Clinical Orthopaedics and Related Research*. 403,168-178.

Clark N.C. (2001) Functional Performance Testing Following Knee Ligament Injury. *Physical Therapy in Sport*. 2, 91-105.





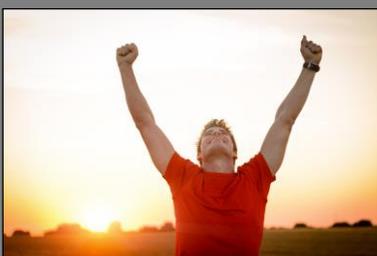
"The guidance on progressions of knee rehabilitation was useful because it was a continuum-based approach as opposed to a strict guideline... I'm confident from the course that the tools I've learned will allow me to be more successful and safe in my practice"

Tracy McAdam.
Senior Sports Physiotherapist,
Scottish Hockey Union, Hearts
Football Academy, Scotland,
UK.



"Nick... Thanks very much for the knee course... The sense of relief that there is a clinician and researcher out there looking at things from such a logical and grounded perspective was enormous... the focus you put on tangible, measureable facts rather than unsupported opinion was inspiring... Thanks again"

James Thomson.
Musculoskeletal Specialist
Physiotherapist, NHS Ayrshire,
Scotland, UK.



Here're the no-cost resources you'll also get:

Course Manual (Value £27.97): an easy-to-read Sports Specialist's Manual with detailed slides, text, tables, templates, and digital pictures, which you can use for quick and easy reference of all material covered in the course and to take additional notes to review clinical tools and techniques whenever you want in your own time at a later date

Clinical Systems Manual - Essential Concepts in Exercise Therapy and Injury Rehabilitation, 2nd Edition (Value £29.97): a new edition that clearly explains the most important principles of injury rehabilitation in a way that's easy to follow so that you can develop a comprehensive treatment approach to rapidly reduce your patients' pain and solve their functional limitations

Clinical Reasoning Compendium and Technique Toolkit - 3rd Edition (Value £15.97): containing Clinical Reasoning Process Templates, Exercise Programme and Weekly Rehabilitation Plan Templates and Guides, exercise progressions, and published journal articles which you can use as another reference resource to practice your clinical reasoning and further refine your new advanced thinking and reasoning skills

Access Instructions For How To Join The New "Sports Knee Specialists" Expert Clinical Group: reveals the specific information you need to join the new Sports Knee Specialists advanced clinical discussion and networking forum -- after you've attended this seminar you'll qualify to join this professional group as one of the few Global practitioners with advanced knowledge in knee injury prevention, injury rehabilitation, and performance optimisation -- this Sports Knee Specialists forum now has members from most of the World's continents and contains access to more downloadable resources you can use for your day-to-day practice

Your Sports Knee Specialists Advanced CPD Certificate: a signed CPD certificate which you can use to demonstrate you have attended and completed this knee rehabilitation specialists' course

Date and Location:

Friday 25th – Saturday 26th October 2019.

Reykjavík, Iceland.

Exact venue to be confirmed.

If you have any questions:

Please contact the course organiser in Iceland.