Orthopaedic Examination Techniques
Orthopaedic Examination Techniques

A Practical Guide

Edited by

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To Gill, Reza, Sara, for your everlasting support. And my parents for believing in me.

To Becky, Lucy, Rosie, Molly, Jack and our two Ridgebacks Atilla and Odin, a constant source of strength.
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Preface to 3rd edition

Since the second edition was published, we have received numerous positive comments and reviews on how this book has helped the reader. There have also been suggestions for improvement, all of which have been taken on board. This has resulted in some distinct changes to the content and layout of this third edition. Despite that, it is essential that this book will continue to teach the reader clinical examination in a systematic manner, which was the strength of the previous edition.

The summary has been brought to the beginning of the chapter to help the more junior reader understand the subject. For other readers an “Advanced Corner” has been added at the end of the chapter. Also, wherever relevant, the anatomical basis of each test has been described within the chapter.

Virtually all the pictures demonstrating clinical examination techniques have been changed, with an emphasis on diversity. More than 50 new illustrations have been included and 5 chapters have been added which comprise more than 80 clinical case examples showing how clinical examination will help in the assessment and management of various conditions. This includes a chapter on orthopaedic conditions in the developing world which we hope will be useful for our international readership.

The Covid-19 pandemic has had both a positive and negative effect on this book. For an entire year it provided me with periods of ‘self-isolation’ and living apart from the rest of my family where I could dedicate the hundreds and hundreds of hours needed to completely revise this book. Conversely, social distancing made it difficult to obtain the photographs demonstrating the clinical examination techniques. Fortunately, most of these were taken 3 weeks before the first lockdown in the UK. For the remaining photos I had to use members within my own family and work ‘bubbles’.

It has been a great honour for me to have Professor Bruce Reider writing the foreword for this edition. I used Bruce’s own book when I was training and it was by reading his book that I was inspired to learn and perfect the art of clinical examination. It has been a privilege to have since met Bruce and to be involved in various projects with him.

Orthopaedic Examination Techniques 3 Ed has been a labour of love, but it is the hope of myself, and Nick Harris, that readers continue to find this book user-friendly and informative and that it helps them throughout their career in orthopaedics.

We have both said this may be the last edition before we ‘hang up our boots’. But let us see what the future brings. In the meanwhile, the hunt is on for us to pass over the baton to the next generation!

Fazal Ali
Foreword to 2nd edition

I am pleased to be asked to write the foreword for the second edition of Examination Techniques in Orthopaedics, coedited by Mr Nick Harris and Mr Fazal Ali. The first edition of this textbook was one of the bestselling orthopaedic books in the United Kingdom for almost a decade. This second edition is likely to at least equal that success. So often in the world of orthopaedic surgery we jump to advanced imaging and forget about the importance of the examination. This is clearly a mistake and has caused many errors in clinical judgement. Therefore, careful review of orthopaedic examination as presented in this textbook is critical for all orthopaedic surgeons, young and old alike. This book provides a complete repository of all examinations, beginning with general principle and proceeding literally from head to toe, to include paediatric examination. This is truly an excellent book and likely will be the gold standard to which examination textbooks are compared. It is my pleasure to write this foreword. I think you will enjoy this textbook and it should stay on your shelf until the third edition is available. I give it my strongest endorsement and look forward to studying it myself.

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Foreword to 3rd edition

Is the orthopaedic physical examination outmoded?
Considering the continued refinement of magnetic resonance and other imaging techniques, an orthopaedic surgeon might be tempted to assume that diagnostic methods that require observing, palpating and manipulating the patient are no longer necessary. Indeed, a colleague of mine reports that many patients who come to him for a second opinion are surprised when he examines them, because the ‘first opinion’ surgeon never did. Apparently, there is a sizable number of practitioners who feel that a modern imaging study is all they need to arrive at a treatment recommendation.

On the contrary, I would propose that the advent of contemporary imaging techniques makes the mundane history and physical examination all the more important. Modern imaging methods are wonderful, but they often uncover findings that may not be clinically relevant. The orthopaedic literature is full of studies that document a plethora of imaging abnormalities in asymptomatic individuals, especially athletes and older folks. In symptomatic patients, multiple imaging abnormalities may be present when only one of them is responsible for the patient’s complaint. An accurate history and physical examination are vital for selecting the correct treatment.

Before the actual examination begins, a clinician must take the time to elicit a complete history from the patient. Most orthopaedic problems have a characteristic pattern that can be discerned by listening to the patient. Even when evaluating trauma, the history is important. Patients may reveal areas of injury that might otherwise be overlooked, and their description of the mechanism of the injury may point out the structures most likely to have been damaged. A good history is the prelude to a focused and fruitful physical examination.

This excellent volume, now in its third edition, takes the reader through this process one step at a time. The first portion of the book is organized by body part from top to bottom. Each chapter starts with an outline of the entire examination, then proceeds to a section on the important historical points that will allow the examiner to narrow the diagnostic possibilities before the examination begins. It then continues logically through the examination itself, from inspection to palpation to active and passive motion. Finally, the chapter ends with advanced tests that will be of particular interest to the specialist. Throughout, a profusion of detailed photographs supplements the verbal descriptions in the text. References are provided for the reader who wants to learn more about the evidence behind the various examination manoeuvres.

The second portion of the book includes an outstanding variety of clinical cases to illustrate the pathological findings in many orthopaedic and rheumatological conditions. The authors have taken great pains to collect photographs that dramatically document many common and some uncommon abnormalities that a clinician may encounter in the course of practice. The final chapter, ‘Orthopaedic Cases in the Developing World’, is a unique contribution that will prove valuable to clinicians wherever they may practice.

The orthopaedic examination is vast and complex. A newcomer to orthopaedics should not expect to assimilate the contents of this comprehensive text in one read. This is a book to be thoroughly studied and then kept handy for ready reference. As experience accumulates, readers will build their own memory bank and begin to appreciate subtleties that recall cases from prior experience.
I would like to congratulate Messrs. Ali and Harris on the completion of this excellent text. Having written a similar book myself, I can readily appreciate the huge amount of work and meticulous attention to detail that goes into such a volume, which can only be accomplished as a labour of love. It is an honour to have been asked to write this foreword. Fazal and Nick, please accept my best wishes for the success of this magnificent volume.

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Acknowledgements

Firstly, we would like to acknowledge the comments about the second edition, both positive and negative, without which the drive to construct a perfect third edition would not have been as crucial. We thank Nick Dunton, now retired, and Katy Nardoni from Cambridge University Press for guiding us through this process.

We would like to thank Jeevan Chandrasenan, organiser of the Chesterfield, Sheffield and Derby Clinical Examination course and Paul Banaszkiewicz, organiser of the Postgraduate Orthopaedics FRCS Revision courses, for the funds they provided to help pay for the photography session and the illustrations. Without their generosity the production of this edition would have been difficult.

Thank you to Shane Nicoll, Claire Chadwick, Tony Hadfield and Kathryn Whittle for utilising their talents and being our models at the photo shoot. Philip Wagstaff again insisted he modelled for us in his Brachial Plexus chapter. Philip is a legend!

This photo shoot was expertly conducted in our fracture clinic waiting room on a Sunday just before lockdown by Jessica Findlow of Northern Star Photography. Jess had to use all her skills to photograph ‘models’ who were not used to being in front of a camera.

Covid-19 and lockdown meant that because of social distancing rules we were unable to use models for those images we missed on the official photography day. This meant that secretary Leanne Heath within our work bubble had to fill in. In addition, Reza Ali, Sara Ali and friend Louis Govignon were also drafted in. We are hoping that they will all enjoy their new fame!

In this edition we added more than 50 illustrations with the hope that it would enhance the text. For this we thank Surita Devi (www.freelancer.com/u/surita verma) in India who expertly and patiently followed instructions via WhatsApp in order to meet our requirements.

Finally, clinical examination is an acquired skill. Knowledge gained from a textbook is not complete without the guidance of the expert tutor. For this we would like to thank the following consultants and experts in clinical examination who for years have shared their skills and helped refine the techniques in our book. They have lectured and demonstrated these techniques on national courses and throughout the world. This is a great group of highly talented individuals:


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Fazal Ali has a special interest in soft tissue knee problems in the child and adult. He is an Honorary Senior Lecturer at the University of Sheffield and Honorary Secretary of BOSTAA (British Orthopaedic Sports Trauma and Arthroscopy Association). He is an accomplished teacher of clinical examination and has published and lectured on his examination techniques worldwide. He has won numerous regional and national awards for training and is a 'Lifetime Trainer of the Year' for South Yorkshire. He is a senior examiner for the UK and International FRCS Tr&Orth examinations. Fazal Ali also serves on the panel of examiners in developing countries with the view that this would help advance the standard of orthopaedic training and care worldwide.

Nick Harris has special interest in Foot & Ankle Surgery, Trauma and Sports Injuries. He is a Visiting Professor of Sports Medicine at Leeds Beckett University. His current research projects include long term function after achilles tendon rupture, novel amino acid supplements, and ankle syndesmotic injuries in athletes. He has produced over 100 original publications and presentations. He was the Orthopaedic Lead Designer of the mobile-bearing Rebalance Total Ankle Replacement. Approximately 3000 have been implanted globally with 90% survivorship on the Swedish Joint Registry. In 2019, Nick Harris was awarded North of England Surgeon of the Year.