

Postgraduate Orthopaedics

Viva Guide to the FRCS (Tr & Orth) Examination

Second edition





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Second edition

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Contents

List of Contributors vii Preface ix Acknowledgements xi List of Abbreviations xii Interactive website xviii

Section 1 — The FRCS (Tr & Orth) Oral Examination

- 1 **General guidance** 1 David Limb
- 2 Candidate guidance 9
 Firas Arnaout and John Davies

Section 2 — Adult Elective Orthopaedics and Spine

- 3 **Hip** 17 Jeya Palan and Paul A. Banaszkiewicz
- 4 **Knee** 67 John Dabis and Deiary F. Kader
- Foot and ankle 96N. Jane Madeley and Stan Jones
- 6 **Spine** 121 Prasad Karpe
- 7 **Shoulder** 158Aravind Desai
- 8 **Elbow** 168 Terence Savaridas

Section 3 - Trauma

 General principles and fracture biomechanics 181
 Roger Walton and Paul A. Banaszkiewicz

- 10 **Lower limb trauma I** 209 Rajarshi Bhattacharya and Khaled Sarraf
- 11 **Lower limb trauma II** 230 Will Eardley, Mohammed Al-Maiyah and Patrick Williams
- 12 **Upper limb trauma I** 265 Matthew Nixon and William Marlow
- 13 **Upper limb trauma II** 281 Sarah Kleinka and Matthew Jones
- 14 **Pelvic trauma** 293
 Paul Middleton and Gunasekaran Kumar
- 15 **Spinal trauma** 311 Jonathan A. Clamp and David J. Bryson
- 16 Paediatric trauma 332John Davies and Clare Carpenter

Section 4 — Children's Orthopaedics/ Hand and Upper Limb

- 17 Hand and upper limb 351John W. K. Harrison and Kim Weng Chan
- 18 Children's orthopaedics 379Mohamed Hafez and Sattar Alshryda

Section 5 – Applied Basic Sciences

19 Anatomy and surgical approaches 429Tom Symes and Kiran Singisetti



Contents

20 Structure and function of connective tissue 452

Paul A. Banaszkiewicz

- 21 Design of implants and factors associated with implant failure (wear, loosening) 532 Kiran Singisetti and Paul A. Banaszkiewicz
- 22 Orthotics and prosthetics 559 Firas Arnaout
- 23 Pain, analgesia and anaesthesia 567 Christopher Watkins and Bodil Robertson
- 24 Musculoskeletal oncology 586 Tomas B. Beckingsale and Kanishka Milton Ghosh
- 25 Tribology and biomaterials 598 Iain McNamara and Majeed Shakokani
- 26 Biomechanics 617 Nick Caplan and Paul A. Banaszkiewicz

- 27 Genetics and cell biology 639 Stan Jones and Paul A. Banaszkiewicz
- 28 Diagnostics 650 Rajesh Kakwani and Simon Freilich
- 29 Clinical environment 681 Jeevan Chandrasenan and Fazal Ali
- 30 Statistics and evidence-based practice 689 Munier Hossain and Sattar Alshryda
 - Section 6 Drawings for the FRCS (Tr & Orth)
- 31 Drawings for the FRCS (Tr & Orth) 713 James Widnall, Catherine McCauley and Lyndon Mason

Index 736



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vii



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viii



Preface

With the first-edition viva book we were keen to write a viva book to complement our main orthopaedic textbook.

We had a reasonable surplus of material available that we had been unable to fit into the second-edition book. We were keen to go into a more detailed, structured answer to use in the viva situation rather than just going ahead with revision bullet points. We were attempting (but perhaps not realizing at the time) to provide examples of higher-order thinking and judgement for candidates to use in their exam preparation.

We had already published two books previously and so were experienced in the 'know how' of 'how to get a book done'. Like any new book it was certainly more difficult writing from scratch, but there was no great master plan of what we wanted to achieve.

We approached a number of post FRCS (Tr & Orth) registrars who did an excellent job of taking on the task of writing the allocated book chapters. As such, the viva book came together with the minimum of fuss.

The main orthopaedic book had been the first of its kind combining all parts of the FRCS (Tr & Orth) syllabus together in one volume. The viva book was a very different challenge in that there were lots of similar viva-type books already out on the market.

When released, the complexity within some model answers in the viva book took a while to be fully appreciated by our audience. In due course there was a realization that perhaps two or three chapters didn't quite hit our own expected high standards. The book was published very close to similar competing titles that ended up muddying the waters. The book became something of a slow burner, but over time increased in popularity.

The exam format keeps changing, and as time went on the viva book started to age. A decision was needed as to whether to update the book or just let it go out of date. It wasn't a difficult decision as we wanted to improve the quality of the viva book. During the intervening years the standard of FRCS

(Tr & Orth) exam books had significantly improved and we wanted to keep up with the newer titles emerging. We also realized that the vast majority of the book was well written and could be improved even further to do the book its full justice.

The two main areas that we concentrated on were basic science and trauma. Basic science is by and large by far the most difficult subject for candidates to revise and we wanted to significantly raise the bar in this section. Trauma was becoming more subspecialized with the MTC, but candidates still needed a good working knowledge of the material. Diagrams needed to be more professionally drawn.

Although the whole exam is based on the Tr & Orth curriculum, the mechanics of the viva exam are very different to that of the MCQs and clinicals. The viva exam allows for a more formal assessment of communication skills. If you are a gifted, silvertongued candidate with inherit tactical nous in answering viva questions that's great, but most candidates need some guidance.

A standardized method of approach to answering a viva question needs to be learnt and thoroughly practised to avoid mishaps.

We hope the book realizes its aim of moving the material up a level and that it will guide you better in your exam preparation. Again, like all books of the Postgraduate Orthopaedics book series we make no claim to the originality of the material. We are distilling orthopaedic knowledge from the wider orthopaedic community specifically for exam-related subjects. We have attempted to acknowledge our sources wherever possible and our sincere apologies if we have inadvertently missed anyone out.

We thank Cambridge University Press for all their patience and advice with the project, again remembering that the grass is still not greener elsewhere.

Overall, we are generally happy with the end result. We could have continued writing material for another year and still not be finished, as the Tr & Orth curriculum is vast. Some of the chapters are very

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Preface

specialized and candidates may struggle to find similar information on the internet, but this material somehow still gets asked by the ICB. If the basic science or general adult pathology answer to the question is unGoogleable but we have managed to provide for a model answer, then we have mostly succeeded in what we wanted to achieve.

This book was much more difficult to write than the first edition and didn't come together all that easily. We were surprised by this and went through a few Peroni tests to get there! Will we write a thirdedition viva book? Never say never, but probably not!

Paul Banaszkiewicz



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Lastly, a special thank you to Jo McStea, who helps coordinate the Postgraduate Orthopaedics book and lecture programme. This involves a huge amount of behind-the-scenes organization skills and problem solving such that that we couldn't manage without her input.



Abbreviations

ASE Accident and Emergency ANOVA analysis of variance ACC ACCIDENT ANOVA ANOVA ANOVA AMERICAN CACCIDENT ANOVA ANOV			AM	anteromedial
A&E Accident and Emergency AOVA AOFAS American Orthopaedic Foot and Orthopaedic Surgeons ABC airway, breathing, circulation ABG arterial blood gas ABI ankle-brachial index APB abductor pollicis brevis ABPB axillary brachial plexus block ABPB ANGLE-Brachial Pressure APL abductor pollicis longus ABI Ankle-Brachial Pressure API all polyethylene tibial ACC acromioclavicular ARC ARC autosomal recessive ACDF anterior cervical decompression and fusion ACI autologous chondrocyte implantation ACI acromioclavicular AS ankle Society ACC acromioclavicular ARCO Association Research Circulation Osseous ACI autologous chondrocyte implantation ACI acromioclavicular AS ankle Society ACC acromioclavicular AS anklylosing spondylitis ACC acromioclavicular Joint AS anklylosing spondylitis ACC acromioclavicular Joint AS anklylosing spondylitis ACC American College of ASIA American Spinal Injury ASSociation ADL activities of daily living ATEL anterior talofibular ligament ADL activities of daily living ATL atypical lipoma AFO ankle-foot orthosis ATP adenosine triphosphate AFO ankle-foot orthosis ATP adenosine triphosphate AFO ankle-foot orthosis ATP adenosine triphosphate AFO ancymdrous BASS British Association of Spine Syndrome AIIS anterior inferior iliac spine BDGF bone-derived growth factor AIS Abbreviated Injury Scale AIS adolescent idiopathic scoliosis AISA BHS AIS Abbreviated Injury Scale AIS adolescent idiopathic scoliosis AISA below-knee amputation AIIS anterior longitudinal ligament AIIF anterior lumbar interbody BMD bone mineral density BMD bone mineral density BMD bone morphogenetic protein BMD bone morphogenetic protein BMD bone morphogenetic protein	1,2-ISCRA	1,2-intercompartmental		
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ALVAL asentic lymphocyte-dominated BMU basic multicellular unit	4.7.7			
ALVAL asentic lymphocyte-dominated				
11.1 BUA Brillsh Urthodaedic Association	ALVAL		BOA	British Orthopaedic Association
vasculitis-associated lesions BOA British Orthopaedic Association		vasculitis-associated lesions	-	

Xii



List of Abbreviations

BOAST	British Orthopaedic Association	CT	computed tomography
	Standards for Trauma	CTEV	congenital talipes equinovarus
BP	blood pressure	CTGF	connective tissue growth factor
BPBG	bone-patella-bone graft	CTS	carpal tunnel syndrome
BPBT	bone-patella-bone-tendon	CVA	cerebrovascular accident
BPI	brachial plexus injury	CVT	congenital vertical talus
BPN	bisphosphonate	DAIR	debridement, antibiotics and
BPTB	bone-patella-tendon-bone		implant retention
BR	brachioradialis	DASH	Disabilities of the Arm, Shoulder
BSSH	British Society for Surgery of the		and Hand
	Hand	DB	Denis Browne
BW	body weight	DCO	damage control orthopaedics
CAVE	cavus, adductus, varus, equinus	DCP	dynamic compression plate
CC	costoclavicular	DCS	dynamic condylar screw
CCK	constrained condylar knee	DDH	developmental dysplasia of the
CCS	central cord syndrome		hip
CDH	congenital dislocation of the hip	DEXA	dual energy x-ray
CDR	cervical disc replacement		absorptiometry
CEA	carcinoembryonic antigen	DGH	district general hospital
CECI	cauda equina syndrome	DHS	dynamic hip screw
CECI	incomplete	DIP	distal interphalangeal
CES	cauda equina syndrome	DIPJ	distal interphalangeal joint
CESR	cauda equina syndrome	DISH	diffuse idiopathic skeletal
CLSIC	retention	D1311	hyperostosis
CFL	calcaneofibular ligament	DMAA	distal metatarsal articular
		DMAA	
CELL	aalamy fammina unita		amala
CFU	colony-forming units	DMADD _o	angle
CLPE	cross-lined polyethylene	DMARDs	disease modifying
	cross-lined polyethylene compound muscle action		disease modifying anti-rheumatoid drugs
CLPE CMAP	cross-lined polyethylene compound muscle action potential	DRUJ	disease modifying anti-rheumatoid drugs distal radioulnar joint
CLPE CMAP CMC	cross-lined polyethylene compound muscle action potential carpometacarpal	DRUJ DVT	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis
CLPE CMAP CMC CMN	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail	DRUJ DVT ECA	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery
CLPE CMAP CMC CMN CMT	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot–Marie–Tooth	DRUJ DVT ECA ECM	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix
CLPE CMAP CMC CMN CMT CNB	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot–Marie–Tooth central neuraxial block	DRUJ DVT ECA ECM ECRB	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis
CLPE CMAP CMC CMN CMT CNB CNS	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot–Marie–Tooth central neuraxial block central nervous system	DRUJ DVT ECA ECM ECRB ECRL	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus
CLPE CMAP CMC CMN CMT CNB	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological	DRUJ DVT ECA ECM ECRB ECRL ECU	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris
CLPE CMAP CMC CMN CMT CNB CNS CNS	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons	DRUJ DVT ECA ECM ECRB ECRL ECU EDB	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis
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CLPE CMAP CMC CMN CMT CNB CNS CNS COC	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus
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CLPE CMAP CMC CMN CMT CNB CNS CNS COC	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus
CLPE CMAP CMC CMN CMT CNB CNS CNS COC	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene chronic obstructive pulmonary	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC EDL EDM	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus extensor digiti minimi
CLPE CMAP CMC CMN CMT CNB CNS CNS COC CoP	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene chronic obstructive pulmonary disease	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC EDL EDM EF	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus extensor digiti minimi external fixation
CLPE CMAP CMC CMN CMT CNB CNS CNS COC CoP COPD	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene chronic obstructive pulmonary disease cerebral palsy	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC EDL EDM EF EGF	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus extensor digiti minimi external fixation epidermal growth factor
CLPE CMAP CMC CMN CMT CNB CNS CNS CoC CoP COPD	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene chronic obstructive pulmonary disease cerebral palsy central post-stroke pain	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC EDL EDM EF EGF EHL	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus extensor digiti minimi external fixation epidermal growth factor extensor hallucis longus
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CLPE CMAP CMC CMN CMT CNB CNS CNS CoC CoP COPD CP CPSP CR CROW	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene chronic obstructive pulmonary disease cerebral palsy central post-stroke pain cruciate retaining Charcot restraint orthotic walker C-reactive protein	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC EDL EDM EF EGF EHL EIP EJS	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus extensor digiti minimi external fixation epidermal growth factor extensor hallucis longus extensor indicis proprius effective joint space
CLPE CMAP CMC CMN CMT CNB CNS CNS CoC CoP COPD CP CPSP CR CROW CRP	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene chronic obstructive pulmonary disease cerebral palsy central post-stroke pain cruciate retaining Charcot restraint orthotic walker	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC EDL EDM EF EGF EHL EIP EJS EMA	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus extensor digiti minimi external fixation epidermal growth factor extensor hallucis longus extensor indicis proprius effective joint space epiphyseal-metaphyseal angle electromyography
CLPE CMAP CMC CMN CMT CNB CNS CNS CoC CoP COPD CP CPSP CR CROW CRP	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene chronic obstructive pulmonary disease cerebral palsy central post-stroke pain cruciate retaining Charcot restraint orthotic walker C-reactive protein complex regional pain	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC EDL EDM EF EGF EHL EIP EJS EMA EMG	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus extensor digiti minimi external fixation epidermal growth factor extensor hallucis longus extensor indicis proprius effective joint space epiphyseal—metaphyseal angle electromyography extended matching items
CLPE CMAP CMC CMN CMT CNB CNS CNS CoC CoP COPD CP CPSP CR CROW CRP CRPS	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene chronic obstructive pulmonary disease cerebral palsy central post-stroke pain cruciate retaining Charcot restraint orthotic walker C-reactive protein complex regional pain syndrome cannulated screw	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC EDL EDM EF EGF EHL EIP EJS EMA EMG EMIs	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus extensor digiti minimi external fixation epidermal growth factor extensor hallucis longus extensor indicis proprius effective joint space epiphyseal-metaphyseal angle electromyography extended matching items extensor pollicis brevis
CLPE CMAP CMC CMN CMT CNB CNS CNS CoC CoP COPD CP CPSP CR CROW CRP CRPS CS	cross-lined polyethylene compound muscle action potential carpometacarpal cephalomedullary nail Charcot-Marie-Tooth central neuraxial block central nervous system Congress of Neurological Surgeons ceramic on ceramic ceramic on polyethylene chronic obstructive pulmonary disease cerebral palsy central post-stroke pain cruciate retaining Charcot restraint orthotic walker C-reactive protein complex regional pain syndrome	DRUJ DVT ECA ECM ECRB ECRL ECU EDB EDC EDL EDM EF EGF EHL EIP EJS EMA EMG EMIs EPB	disease modifying anti-rheumatoid drugs distal radioulnar joint deep vein thrombosis extensor compartment artery extracellular matrix extensor carpi radialis brevis extensor carpi radialis longus extensor carpi ulnaris extensor digitorum brevis extensor digitorum communis extensor digitorum longus extensor digiti minimi external fixation epidermal growth factor extensor hallucis longus extensor indicis proprius effective joint space epiphyseal—metaphyseal angle electromyography extended matching items

Xiii



List of Abbreviations

770			
EPS	extracellular polymeric	HA	hyaluronic acid
	substance	HA	hydroxyapatite
ER	external rotation	HCLPE	highly cross-linked polyethylene
ERAS	enhanced recovery after	HIV	human immunodeficiency virus
	surgery	НО	heterotopic ossification
ERCB	extensor carpi radialis brevis	HSMN	hereditary sensorimotor
ERCL	extensor carpi radialis longus		neuropathies
ESR	erythrocyte sedimentation rate	HTO	high tibial osteotomy
ETO	extended trochanteric	HU	Hounsfield units
	osteotomy	HVA	hallux valgus angle
EUA	examination under anaesthesia	HVI	hallux valgus interphalangeus
EULAR	European League Against	IASP	International Association of the
	Rheumatism		Study of Pain
EWS	early warning score	ICB	Intercollegiate Board
FAOS	foot and ankle outcome score	ICSRA	intercompartmental
FBC	full blood count		supraretinacular artery
FCL	fibular collateral ligament	IGF	insulin-like growth factor
FCR	flexor carpi radialis	II	image intensifier
FCU	flexor carpi ulnaris	IL	interleukin
FDB	flexor digitorum brevis	IM	intramedullary
FDG	fluorodeoxyglucose	IMA	intermetatarsal angle
FDL	flexor digitorum longus	INR	International Normalized Ratio
FDP	flexor digitorum profundus	IP	interphalangeal
FDQ	flexor digiti quinti	IPJ	interphalangeal joint
FDS	flexor digitorum superficialis	ISB	interscalene block
FFP	fresh frozen plasma	ITB	iliotibial band
FGF	fibroblast growth factor	ITOH	idiopathic transient osteoporosis
FGF23	fibroblast growth factor 23		of the hip
FGFR3	fibroblast growth factor receptor	ITU	Intensive Care Unit
	gene 3	IV	intravenous
FHL	flexor hallucis longus	IVC	inferior vena cava
FMDA	femoral metaphyseal-diaphyseal	IVDU	intravenous drug user
	angle	JBJS	Journal of Bone and Joint
FNB	femoral nerve block	, ,-	Surgery
FPL	flexor pollicis longus	JCIE	Joint Committee on
FPPS	farnesyl pyrophosphate	,	Intercollegiate Examinations
1110	synthase	JLCA	joint line convergence angle
FTR	femoral tibial ratio	JRF	joint reaction force
GA	general anaesthetic	KAFO	knee-ankle-foot orthosis
GAGs	glycosaminoglycans	LA	local anaesthetic
GCS	Glasgow Coma Score	LAST	local anaesthetic systemic
GCT	giant cell tumour	Entor	toxicity
GHL	glenohumeral ligaments	LAT	lateral
GI	gastrointestinal	LBP	low back pain
GIRFT	get it right first time	LC	lateral compression
GMC	General Medical Council	LCDCP	low-contact dynamic
GRAFO	ground reaction ankle foot	LODOI	compression plates
51011 0	orthosis	LCL	lateral collateral ligament
GRF	ground reaction forces	LCP	low compression plates
GT	greater trochanter	LCPD	Legg Calves Perthes disease
01	Sieuter trochanter	LOID	1055 Carves I cruies disease

XIV



List of Abbreviations

LDFA lateral distal femoral angle NF neurofibromatosis NF-1 liver function rests NF-2 neurofibromatosis type LFTs liver function tests NF-2 neurofibromatosis type LFTs ligament discrepancy NICE National Institute for Health and LP lumbar puncture Clinical Excellence LTT ligament reconstruction tendon non-insulin-dependent diabetes nellitus non-insulin-dependent diabetes nellitus non-insulin-dependent diabetes nellitus non-insulin-dependent diabetes nellitus neuromuscular junction NIDM neuromuscular junction N				
LFTS liver function tests NF-2 neurofibromatosis type 2 neurophil gelatinase-associated limb length discrepancy limb length plant limb length discrepancy limb length length length discrepancy limb length length length length length	LDFA	lateral distal femoral angle	NF	neurofibromatosis
LHB long head of biceps LLD limb length discrepancy LIMWH low molecular weight heparin LP lumbar puncture LRTI ligament reconstruction tendon interposition LUCL lateral ulnar collateral ligament MA metatarsus adductus MAD mechanical axis deviation MCFA medial circumflex femoral artery MCL medial collateral ligament MCP metacarpophalangeal MCSF macrophage-colony stimulating factor MDP methylene diphosphonate MDP methylene diphosphonate MED multiple epiphyseal dysplasia MFC medial femoral condyle MHRA Medicines and Healthcare products Regulatory Agency MMP metall optopythylene MMP medial proximal tibial angle MMR magnetic resonance MMRC magnetic resonance MMRC magnetic resonance maging MMS multiple selorosis MMC metalarpopythalangeal MMP medial proximal tibial angle MMP medial proximal tibial angle MMP medial proximal tibial angle MMRC magnetic resonance MMRC magnetic resonance MMRC magnetic resonance maging MMRC magnetic resonance maging MMS multiple selorosis MMS musuloskeletal Tumor Society MTP metatarsophalangeal MMS Musuloskeletal Tumor Society MTP metatarsophalangeal MTP metatarsophalangeal MTP metatarsophalangeal MTP metatarsophalangeal MTP popophythene MTP metatarsophalangeal MTP metatarsophalangeal MTP popophythene MTP metatarsophalangeal MTP popophythene MTP popophythene MTP posterior distal femoral angle MMS multiple selorosis MMS monomodium urate MTP popophythene MTP popophythene MTP popophythene MTP posterior distal femoral angle MTP popophythene MTP popophythene MTP popophythylene				, <u>, , , , , , , , , , , , , , , , , , </u>
LLD limb length discrepancy LMWH low molecular weight heparin LP lumbar puncture LRTI ligament reconstruction tendon interposition LUCL lateral ulnar collateral ligament MA metatarsus adductus MAD mechanical axis deviation MCFA medial circumflex femoral artery MCL medial collateral ligament MCP metacarpophalangeal MCPS multiple choice questions MCS multiple choice questions MCSF macrophage-colony stimulating factor MDD methylene diphosphonate MDD methylene diphosphonate MDD multiple epiphyseal dysplasia MFC medial femoral condyle MFRA Medicines and Healthcare products Regulatory Agency MIPO minimally invasive plate osteosynthesis MMP metalloproteinase	LFTs			
LMWH low molecular weight heparin NICE National Institute for Health and Clinical Excellence LPT lumbar puncture Clinical Excellence LRTI ligament reconstruction tendon interposition NIDDM non-insulin-dependent diabetes mellitus LUCL lateral ulnar collateral ligament NJR National Joint Registry MAD mechanical axis deviation NOGG National Osteoporosis Guideline MCPA medial collateral ligament NPV negative predictive value MCP metacarpophalangeal NSAIDs non-steroidal anti-inflammatory drugs MCQB multiple choice questions osteoachndral autograft transfer system MCSF macrophage-colony stimulating factor OA osteoachndral autograft transfer system MDA metaphyseal-diaphyseal angle system osteochndral tisissecans MDP methylene diphosphonate OCD osteochndral tisissecans MDP multidisciplinary team OCL osteochndral tesions MFC medial femoral condyle Panel Orford hip score MIPO minimally invasive plate	LHB		NGAL	
LRTI ligament reconstruction tendon interposition mon-insulin-dependent diabetes mellitus	LLD	limb length discrepancy		lipocalin
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	NAI		PE	-
	NCS		PE	pulmonary embolism

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List of Abbreviations

PET	nositron amission tomography	RDS	voonivotowy dietwood gym drom o
PF PF	positron emission tomography patellofemoral	RF	respiratory distress syndrome rheumatoid factor
PFJ	patellofemoral joint	RHK	rotating-hinge knee
PFO			
PFR	proximal femoral osteotomy	RLN	recurrent laryngeal nerve
	proximal femoral replacement	ROM ROTEM	range of movement
PG	proteoglycan		rotational thromboelastometry
PGE2	prostaglandin E2	RR	relative risk
PHN	postherpetic neuralgia	RTA	road traffic accident
PI	pelvic incidence	SACH	solid ankle cushioned heel
PIN	posterior interosseous nerve	SAR	structures at risk
PIP	proximal interphalangeal	SBA	single best answer
PIPJ	proximal interphalangeal joint	SCA	sickle cell anaemia
PIS	pinning-in-situ	SCB	supraclavicular block
PJI	periprosthetic joint infection	SCD	sickle cell disease
PL	posterolateral	SCFE	slipped capital femoral
PLC	posterior ligamentous complex		epiphysis
PLIF	posterior interbody lumbar	SCH	supracondylar fracture of the
	fusion		humerus
PLRI	posterolateral rotatory	SCI	spinal cord injury
	instability	SCM	sternocleidomastoid
PMMA	polymethylmethacrylate	SD	standard deviation
PMN	polymorphonuclear neutrophil	SER	supination external rotation
PPF	periprosthetic fracture	SERMs	selective oestrogen receptor
PPP	preperitoneal pelvic packing		modulators
PPTA	posterior proximal tibial angle	SI	sacroiliac
PPV	positive predictive value	SIRS	systemic inflammatory response
PQ	pronator quadratus		syndrome
PR	per rectum	SLAC	scapholunate advanced
PROM	patient-reported outcome		collapsed
	measure	SLAP	superior labrum from anterior to
PROSTALAC	prosthesis of antibiotic-loaded		posterior
	acrylic cement	SLE	systemic lupus erythematosus
PRP	platelet-rich plasma	SLR	straight leg raise
PS	posterior stabilized	SMA	second moment area
PSA	posterior sloping angle	SMAC	Standing Medical Advisory
PSA	prostate-specific antigen		Committee
PSF	posterior spinal fusion	SNAC	scaphoid non-union advanced
PSIS	posterior superior iliac spine		collapsed
PT	pronator teres	SNAP	sensory nerve action potential
PTFL	posterior talofibular ligament	SNB	sciatic nerve block
PTH	parathyroid hormone	SOL	space occupying lesion
QAP	questions, answers and	SPECT	single photon emission
	prompting		computed tomography
RA	rheumatoid arthritis	SPN	superficial peroneal nerve
RANK	receptor activator of nuclear	SR	sarcoplasmic reticulum
	factor κβ	SRN	superficial radial nerve
RANKL	receptor activator of nuclear	SRS	Scoliosis Research Society
	factor kB ligand	ST3	surgical trainee year 3
RC	radial collateral	STACIS	Surgical Timing in Acute Spinal
RCT	randomized controlled trial		Cord Injury Study
	John Controlled trial		-514 111,417 51447

xvi



List of Abbreviations

STAR	Scandinavian total ankle	TSF	thread shape factor
	replacement	TT	tibial tubercle
STC	Specialist Training Committee	TTO	tibial tubercle osteotomy
STIR	short-tau inversion recovery	TT-TG	tibial tuberosity-trochlea
STT	scaphotrapeziotrapezoid		groove
SUFE	slipped upper femoral epiphysis	U&E	urea and electrolytes
TA	tibialis anterior	UA	uric acid
TB	tuberculosis	UCL	ulnar collateral ligament
TCA	tricyclic antidepressant	UCS	Unified Classification System
TEG	thromboelastography	UHMWPE	ultra-high-molecular-weight
TENS	transcutaneous electrical nerve		polyethylene
	stimulation	UKR	unicompartmental knee
TER	total elbow replacement		replacement
TFA	tibiofemoral angle	UMN	upper motor neuron
TFCC	triangular fibrocartilage complex	URTI	upper respiratory tract
TFL	tensor fascia lata		infection
TGF	transforming growth factor	US	ultrasound
TGF-β	transforming growth factor-beta	UTI	urinary tract infection
THA	total hip arthroplasty	UTS	ultimate tensile strength
THR	total hip replacement	UV	ultraviolet
TIMPs	tissue inhibitory	VACTERL	vertebral, anorectal, cardiac,
	metalloproteinases		tracheal, oesophageal, renal and
TIVA	total intravenous anaesthesia		limb
TKA	total knee arthroplasty	VAS	visual analogue scale
TKR	total knee replacement	VEGF	vascular endothelial growth
TLICS	Thoracolumbar Injury		factor
	Classification and Severity	VFG	vascularized fibular graft
TLIF	transforaminal lumbar	VTE	venous thromboembolism
	interbody fusion	WBC	white blood cell
TLSO	thoracolumbar spinal orthosis	WCC	white blood cell count
TM	trabecular metal	WDL	well-differentiated lipoma
TMT	tarsometatarsal	WHO	World Health Organization
TNF	tumour necrosis factor	WOMAC	Western Ontario and McMaster
TRAP	tartrate resistance acid		Universities Arthritis Index
	phosphatase	ZPA	zone of polarizing activity

xvii



Interactive website

The website to accompany the book:
 www.postgraduateorthopaedics.com
 This website accompanies the textbook series:
Postgraduate Orthopaedics. It includes:

- Postgraduate Orthopaedics: The Candidate's Guide to the FRCS (Tr & Orth) Examination, third edition
- Postgraduate Orthopaedics: Viva Guide for the FRCS (Tr & Orth) Examination, second edition
- Postgraduate Paediatric Orthopaedics

The aim is to provide additional information and resources in order to maximize the learning potential of each book.

Additional areas of the website provide supplementary orthopaedic material, updates and web

links. *Meet the editorial team* provides a profile of authors who were involved in writing the books. There is also a list of Postgraduate Orthopaedics courses available for candidates to fine-tune their examination skills. Details of the next diet of exams are also provided.

There is a link to additional orthopaedic websites that are particularly exam-focused.

It is very important our readership gives us feed-back. Please email us if you have found any errors in the text that we can correct. In addition, please let us know if we haven't included an area of orthopaedics that you feel we should cover. Likewise, any constructive suggestions for improvement would be most welcome.

xviii