

A detailed anatomical dissection of a human foot and ankle, showing the underlying muscles, tendons, and ligaments. The dissection is performed on a cadaveric specimen, with various structures exposed and held in place by surgical clips and sutures. The image is set against a dark background, highlighting the intricate details of the anatomy.

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CORE ANATOMY ILLUSTRATED

PHOTOGRAPHY BY ADRIAN NEWMAN

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CORE ANATOMY ILLUSTRATED

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Dedications

To my dear wife, my family and my friends who have supported me unfailingly throughout the ups and downs of this project. Also to my colleagues past and present, anatomical, educational, technical and secretarial without whom I would not have learned enough to get past the first page.

Ian Parkin

To Angie James, for bringing me back to life, and to my son Robert Logan.

Bari Logan

To my dearest wife, Lucy and my wonderful children Madelyne, Joseph and Oscar. I also dedicate this book to the loving memory of my father, Anthony McCarthy.

Mark McCarthy

Foreword

It is incontrovertible that, in recent years, most undergraduate and postgraduate medical curricula in this country and elsewhere have been so designed as to result in a progressive and significant reduction in the time allocated to the study of topographical anatomy. In large measure this has been due to the competing demands exercised by a variety of other disciplines and the consequent need to reassign educational priorities.

Traditional textbooks of anatomy, with their emphasis on topographical details and their relative lack of clinically-pertinent information are thus largely inappropriate to present-day undergraduate medical curricula.

The publication of **Core Anatomy – Illustrated** is therefore a timely and valuable intervention. The book addresses the requirements of the new curricula in a most effective manner.

Taking advantage of their vast experience in teaching and examining medical undergraduates and postgraduates, the authors have, in my view, struck a very satisfactory and harmonious balance between the amount of topographical anatomical information on the one hand, and its clinical relevance on the other. In so doing they have succeeded in defining the scope of core anatomical knowledge.

The book is well-organized and the layout is exemplary. The text is written in an admirably lucid and concise style, making the subject matter readily assimilable. The plentiful illustrations (in particular, the photographs of dissections) are of superlative quality and do much to enhance the book.

Professor Parkin and his colleagues Messrs Logan and McCarthy are to be generously applauded for their imaginativeness in conceiving of this volume, and for presenting the subject matter in an unambiguous manner.

I believe that the primary readership for whom this book is intended, namely undergraduate medical and dental students, postgraduate surgical trainees and students in paramedical fields, will benefit considerably from this very readable and useful book.

I wish the book every success.

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Preface

Since the early 1990s, major changes have taken place in the way human anatomy is taught within educational institutions throughout the world.

Essentially these changes may be attributed to the fact that much of the new and exciting, ground breaking research in topographical anatomy was done two hundred to four hundred years ago. Anatomists have moved away from dedicated gross anatomical research and teaching roles towards the scientific disciplines of genetics or cellular, molecular and neuro-biology, and development. This wealth of new knowledge that is equally essential to the effective practice of any health professional, has led to a substantial reduction in course curricula hours dedicated to the learning of anatomy.

In parallel, there has been a long over due re-appraisal of teaching and learning methodology culminating in an unfortunate and widespread abandonment of practical, cadaver dissection classes in favour of the use of prosections, but with the exciting inclusion of small-group and problem-solving tutorials, or interactive multimedia computer-aided learning. Medical and paramedical education must no longer be divided into undergraduate and postgraduate sections, but seen as a continuum which builds and reinforces knowledge as it is required in practice.

The mainstay of these educational developments has been the notion of 'core' courses, usually supplemented by additional, student-selected course components. 'Core' is considered to be a course content offering the most essential, relevant basic knowledge required for safe practice. However, 'core' is open to interpretation and opinion, from institution to institution, and between different academics. Consequently, with our combined experience of teaching and assessing gross human anatomy, and of providing highly detailed anatomical material for both practical classes and museum study, we have created this book of what we consider to be 'core anatomy': the relevant, basic but essential, anatomy required for safe, effective clinical practice, whether as a student or as a junior, postgraduate trainee.

The book intends to be brief, concise and very much to the point. Although the text contains only the anatomy that is felt to be functionally or clinically important, it is at sufficient depth to facilitate understanding and, therefore, deeper learning. Its concentration may be overwhelming to the first-time reader, but its aim is to review anatomy in preparation for all aspects of clinical work. The content has been designed to fit with, and relate to the spread of illustrations opposite. Therefore it follows a tight regional and 'visible' pattern that may appear at odds with a more systemic or systematic approach.

We hope the book will be well used and enjoyed. It is not 'set in stone', we expect the debate on 'core' to continue and look forward to comments from our anatomy colleagues on what we should have left out, and what we should have included. We will listen to, and take heed of these, but hope that our efforts overall are seen to be contributing a positive move towards supporting and continuing the teaching of human gross anatomy.

Ian Parkin, Bari Logan and Mark McCarthy
2007

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How to use this book

The most effective method of learning any subject is to see its relevance, to work with it and to apply it. This book invites the reader to work with the anatomy, cross-referencing between the text page and the accompanying illustrations, or vice-versa. Each section should be seen and used as a whole entity.

Throughout the book the anatomical illustrations are shown on the right-hand page of each double-page spread, with an explanatory key beneath. Numbering in the key is coloured according to the importance of each anatomical structure. Core anatomical structures are shown with a coloured number, and the first reference to them in the text is also highlighted in colour. When a number is given in black in the key, this indicates a non-core anatomical structure; these are illustrated in order to provide the reader with more detailed reference or orientation points. Underneath this key is a list showing which illustration(s) each number appears on. Clinical information is highlighted in the text by a sans serif font with a pointing-hand icon in the margin as a simple but effective method to draw the reader's eye.

Where possible groups of muscles have been combined functionally and the nerve supply to the whole group is given at the end of the appropriate paragraph or section. The root value of the major or clinically important nerves appears in parentheses after the nerve. For example, this sentence follows the paragraph on quadriceps: 'The femoral nerve (L2,3,4) supplies all these muscles (knee jerk L3,4).' Where such grouping is not possible, the nerve supply (and root value if considered relevant) follows each muscle.

When referring to vertebral levels or to the spinal nerves that contribute to peripheral nerves (i.e. the root value), the accepted abbreviations have been used: cervical (C); thoracic (T); lumbar (L); sacral (S). Therefore, although 'C6' can refer to the sixth cervical vertebra or to the sixth cervical spinal nerve the context will make the choice completely obvious. Cranial nerves are indicated by the usual practice of Roman numerals.

Orientation symbols have been placed in a corner of each illustration, indicating Superior (S), Inferior (I), Right (R), Left (L), Posterior (P), Anterior (A), Medial (M), Lateral (Lat), Dorsal (Dor), Plantar (Plan), Distal (D), Proximal (Prox) and Palmar (Pal).

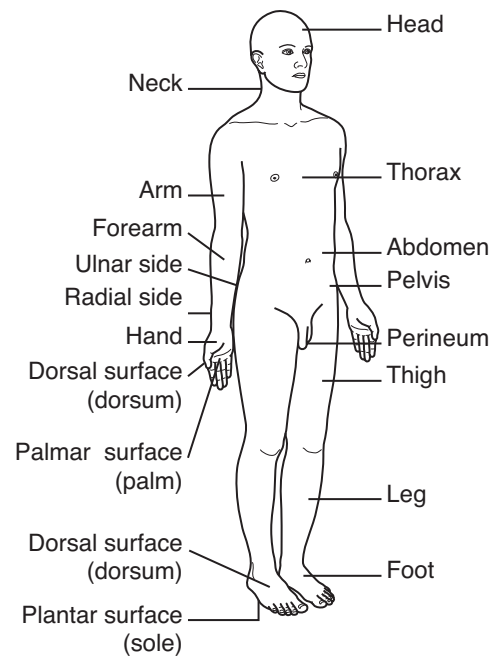
Terminology

Terminology normally conforms to the International Anatomical Terminology – Terminologia Anatomica – created in 1998 by the Federative Committee on Anatomical Terminology (FCAT) and approved by the 56 member Associations of the International Federation of Associations of Anatomists (IFAA). However, the text is for medical students and junior doctors who will be working alongside clinicians who may, themselves, be using a more familiar terminology. Therefore, such terminology has been included, and where it is shorter and easier to read it has become the primary one. The textboxes include both terminologies. Similarly, eponymous terminology has been included if in common use.

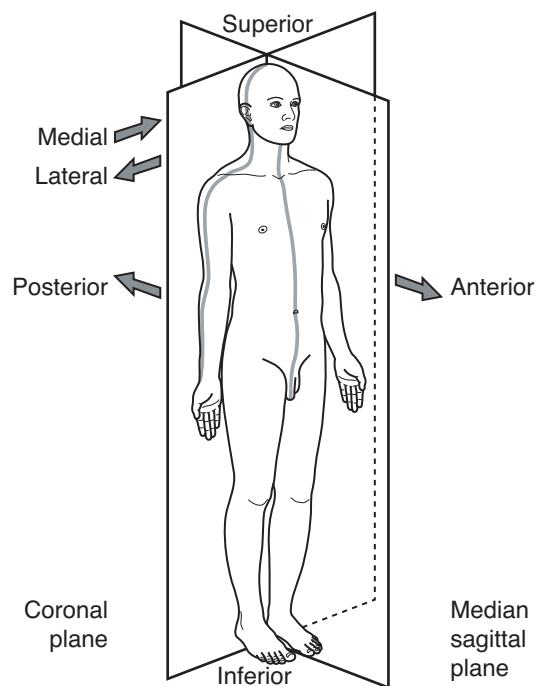
For example: The Greek adjective 'peroneal' is now replaced by the Latin 'fibular' for various muscles, vessels, nerves and structures of the lower limb, e.g. fibularis tertius instead of peroneus tertius; fibular artery instead of peroneal artery; common fibular nerve instead of common peroneal nerve. In this book, the term peroneal is included in parentheses to help identify changes for those referring to other older texts, e.g. common fibular (peroneal) nerve. Also note that flexor accessorius is known as quadratus plantae. The adrenal gland is referred to as suprarenal, but the shorter term vas or vas deferens has been retained instead of ductus deferens.

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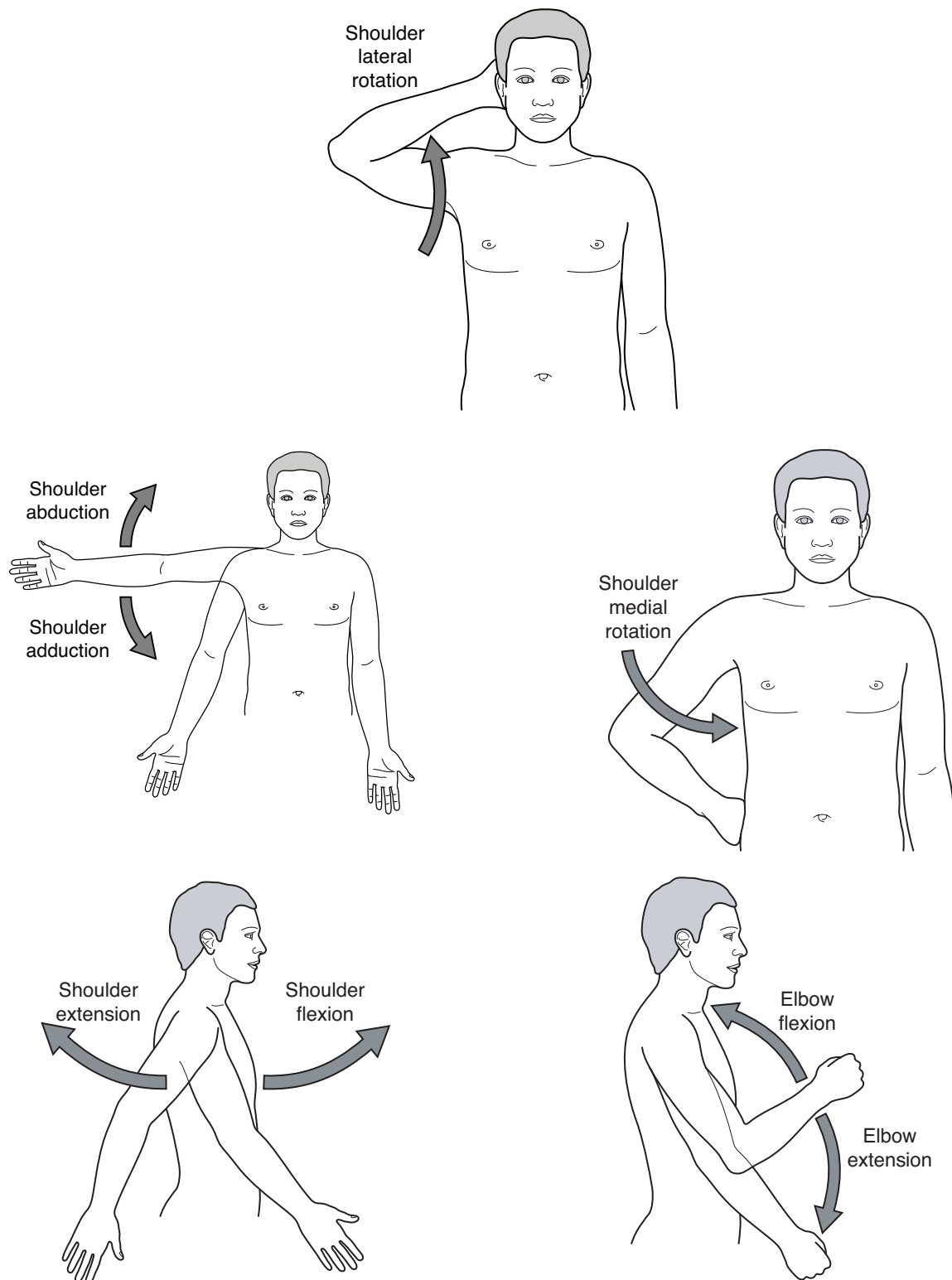
Parts of the body

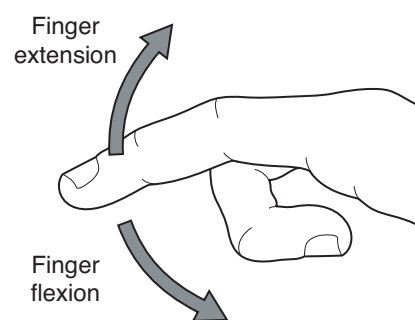
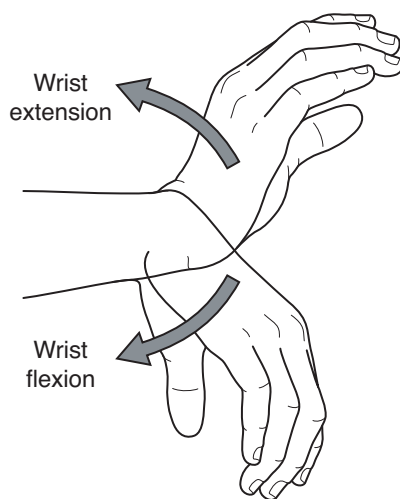
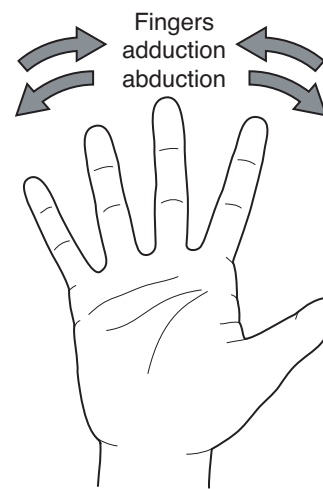
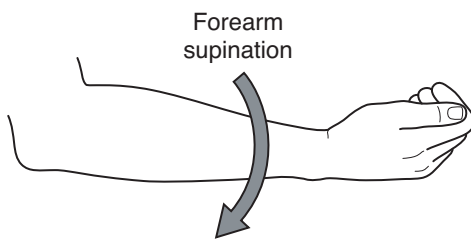
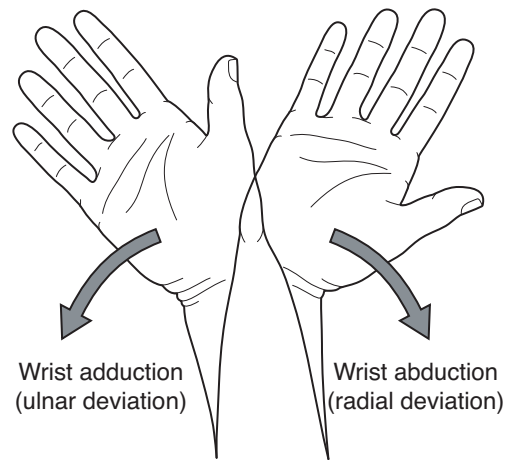
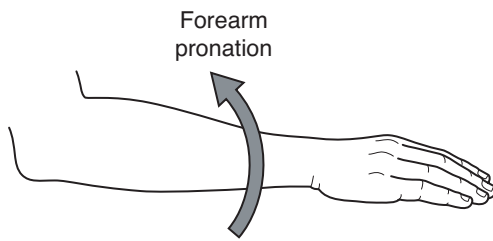


Anatomical planes



Movements of the upper limb





Movements of the trunk and lower limb

