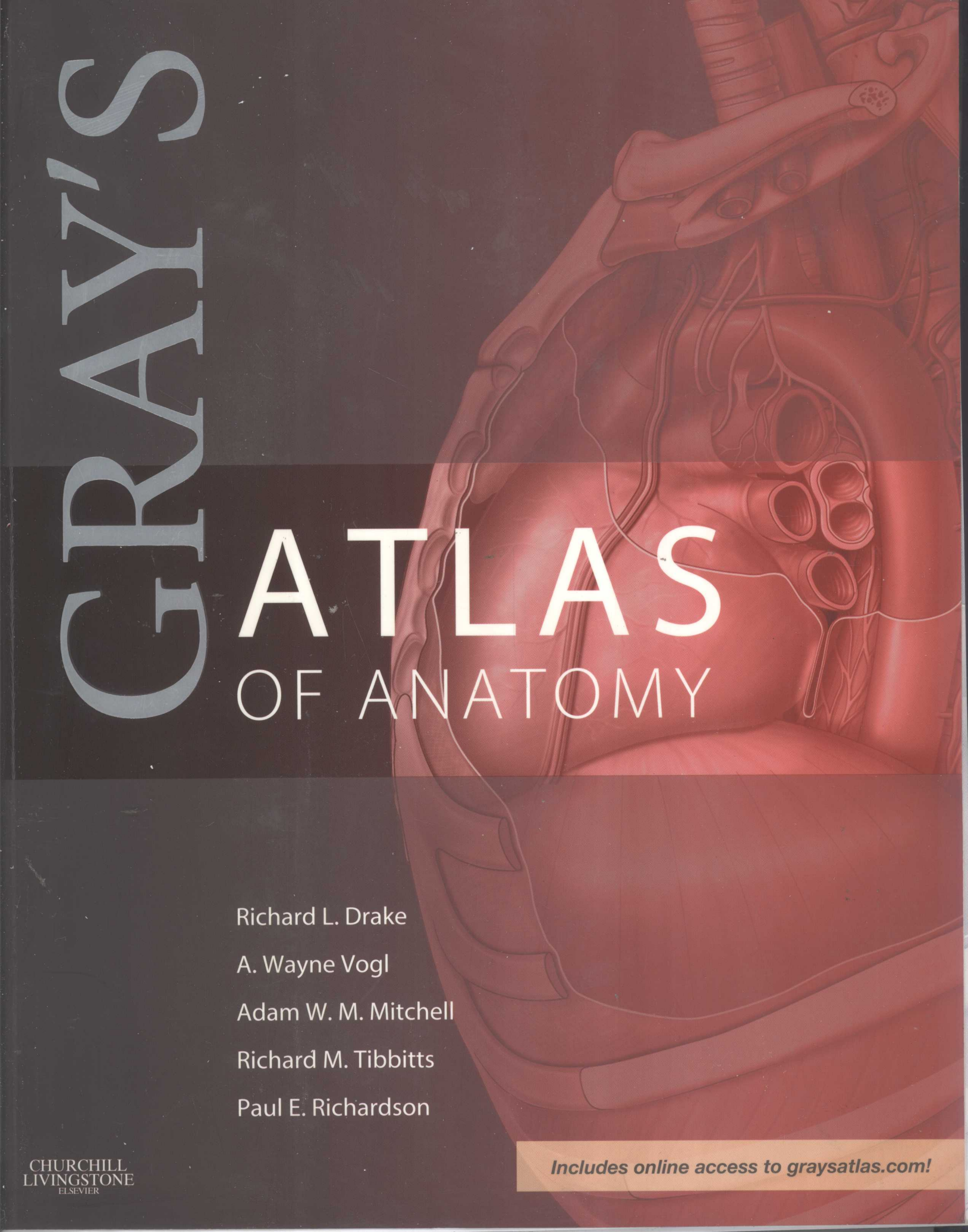
GRAY'S ATLAS OF ANATOMY



Richard L. Drake
A. Wayne Vogl
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To my wife who supports me and to my parents who are always with me.
Richard L. Drake

To my family, to my professional colleagues and role models, and to my students.
Wayne Vogl

Thanks, to Cathy, Max and Elsa
Adam W. M. Mitchell

To my family – my inspiration, Evi, Zoë, and Nicholas x
Richard M. Tibbitts

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Paul Richardson

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Back	Mark Kayanja, MD, PhD Jeffrey S. Ross, MD
Thorax	Mario Garcia, MD A. Michael Lincoff, MD
Abdomen	Namita Gandhi, MD Michelle Inkster, MD, PhD Brian R. Lane, MD Anand Rao, MD James S. Wu, MD
Pelvis	Matthew Barber, MD, MHS Tommaso Falcone, MD J. Stephen Jones, MD Eunice Moon, MD James S. Newman, MD, PhD
Extremities	Hakan Ilaslan, MD Bradford J. Richmond, MD Joshua Polster, MD
Head and Neck	Todd W. Stultz, DDS, MD J. Martin Paloma, DDS, MSD Cindy McConnaughy Ronald Lemmo, DDS

A working knowledge of anatomy is not an "optional extra" for health care professionals – it is fundamental. Acquiring that knowledge has always challenged even the most motivated students. Over many generations, learning materials that aid the process effectively have been warmly welcomed by students and their teachers (and by patients, who are the ultimate beneficiaries of that knowledge). I remember my own students' response when I first included illustrations from *Gray's Anatomy for Students* in a lecture—afterward, I was asked repeatedly for the source of the marvelous pictures. Looking beyond the "wow" factor that leapt from the pages of the book, it was clear that an enormous amount of thought and skill had gone into producing the artwork.

This atlas contains a series of additional outstanding pieces of anatomical art from the illustrative team of Richard Tibbitts and Paul Richardson that will complement those in *Gray's Anatomy for Students*, combined with relevant clinical pictures, surface anatomy, and images from a range of modern imaging procedures. Of course, anatomy cannot be learned from books and interactive DVDs alone, no matter how excellent they may be. Anatomy is a practical subject, best learned by gaining hands-on experience of the body. Students should spend as much time as they can examining cadaveric dissections (if they do not have the opportunity to dissect themselves) and should always read from screen or page with the appropriate bones in front of them. They need to combine and correlate information from a wide variety of sources in order to gain the working knowledge mentioned earlier.

This atlas will provide a valuable companion to their studies, and I am confident that it will remain in their libraries long after they have completed the early stages of their training.

Susan Standring
Division of Anatomy, Cell and Human Biology
King's College, London

We began working on *Gray's Atlas of Anatomy* in 2005 following the publication of our textbook, *Gray's Anatomy for Students*. We wanted to produce an atlas that would build on themes and concepts established in the textbook and that would couple artistic renderings of "internal" gross anatomy with actual "living" anatomy, as visualized with modern imaging techniques and with surface anatomy. We believe that the final atlas presents a fresh and integrated approach to anatomy that is accessible to entry-level students in anatomy, as well as to students at more advanced levels.

Because an atlas is used in a much different way than a textbook, we could not simply repackage figures used in *Gray's Anatomy for Students* and put them in the atlas. Consequently, most of the figures in the atlas are new and were designed to present structures in a more complete context than in the textbook, even though the color palate and overall look of the figures in both the atlas and textbook are similar. Also, figures in the atlas provide additional detail not included in the textbook and directly correlate artistic representations of anatomy with computed tomography (CT) and magnetic resonance imaging (MRI). Where appropriate, we have included endoscopic, laryngoscopic, and laparoscopic views of the anatomy and have included examples of ultrasound images. In a number of regions, we also have reconstructed the internal anatomy of patients by abstracting specific information from multiple MR or CT images, and we present these reconstructions together with artwork of the same anatomy. Although the artwork was done independently of the reconstructed images, the two types of representations are strikingly similar.

Each page of this atlas was planned prior to beginning work on the figures, and all of the artwork was generated digitally. Most of the figures were created from an extensive digital database created for the textbook. Each figure was reviewed for accuracy and revised accordingly.

We hope that the textbook and atlas used together will provide new and powerful learning tools for students of human gross anatomy.

The Authors

1 THE BODY

2 BACK

3 THORAX

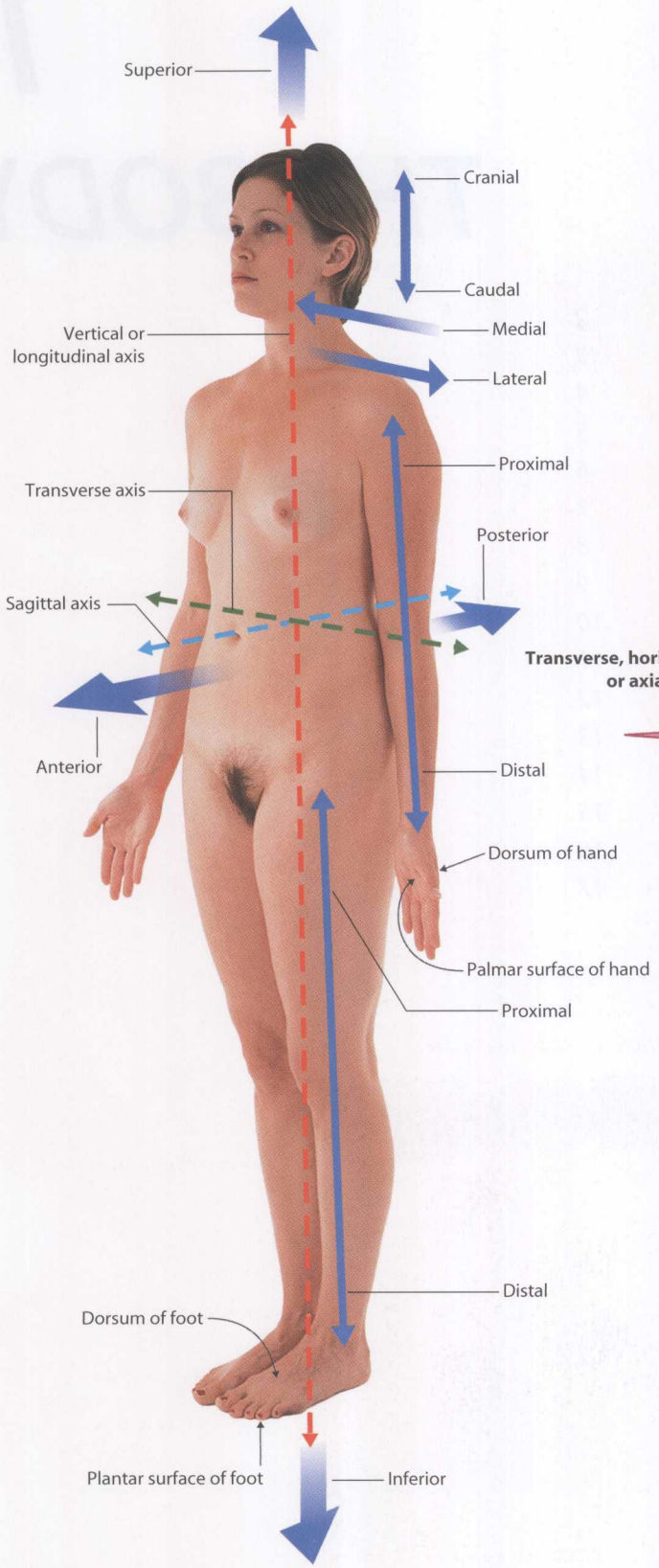
7 UPPER LIMB

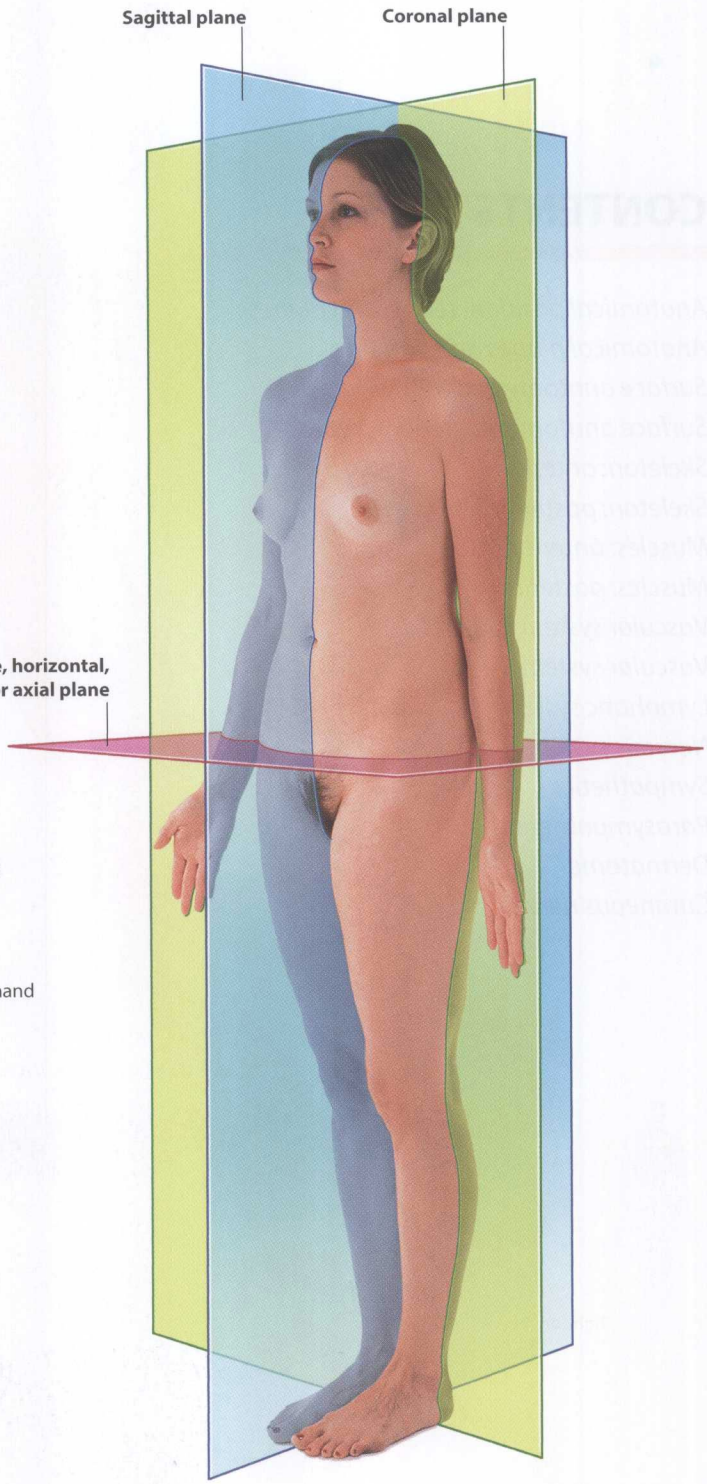
8 HEAD AND NECK

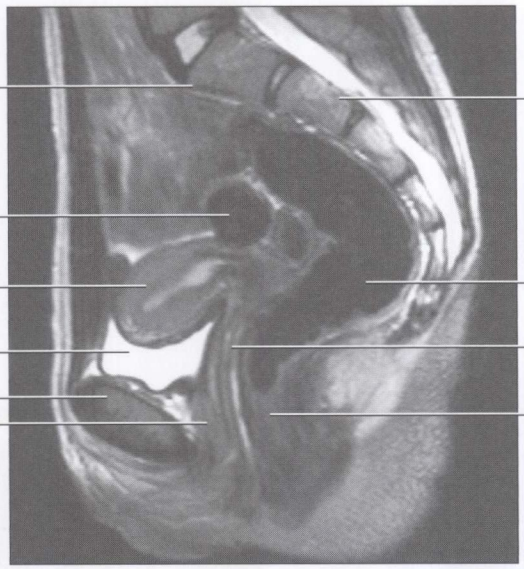
CONTENTS

1 THE BODY

CONTENTS

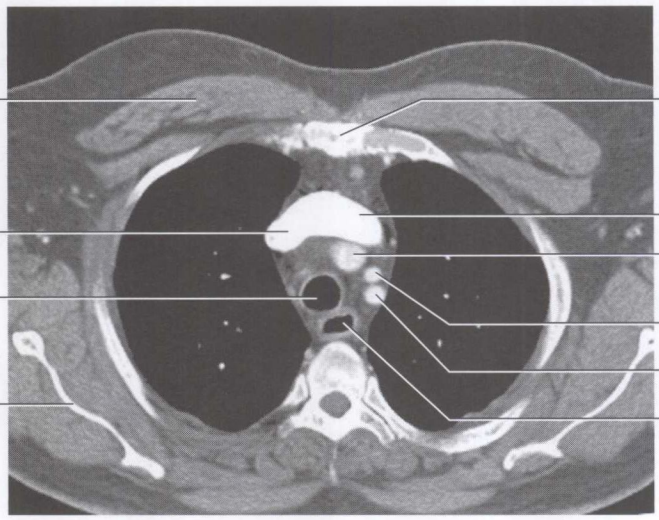

Superior
Cranial
Caudal
Medial
Vertical or longitudinal axis
Lateral
Proximal
Transverse axis
Posterior
Sagittal axis
Anterior
Distal
Dorsum of hand
Palmar surface of hand
Proximal
Distal
Dorsum of foot
Plantar surface of foot
Inferior


Sagittal plane
Coronal plane
Transverse, horizontal, or axial plane



T2-weighted MR image, in sagittal plane

CT image, with contrast, in coronal plane



CT image, with contrast, in axial plane