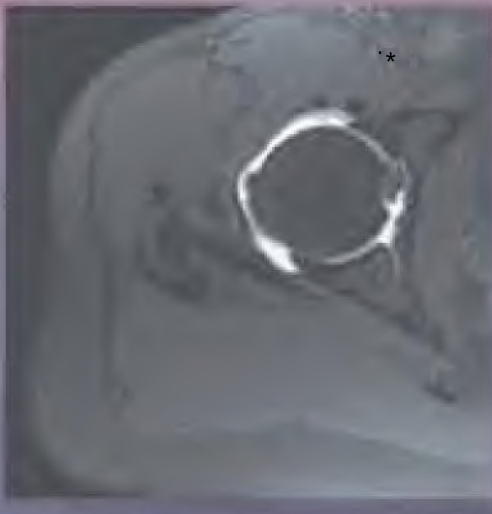
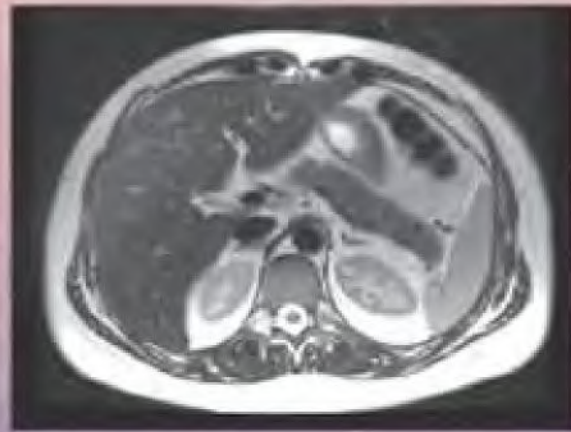
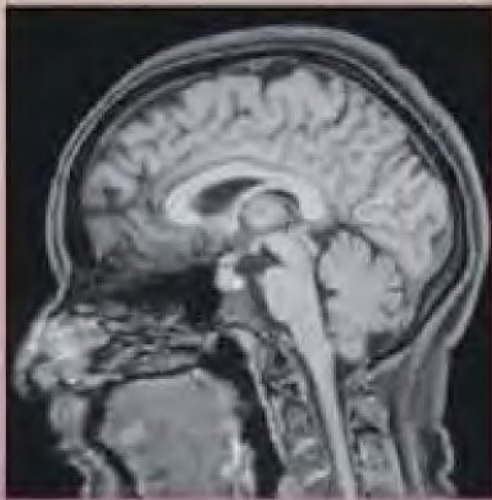


5th Edition

Enhanced
DIGITAL
VERSION
included

SECTIONAL ANATOMY

by MRI and CT



MARK W. ANDERSON
MICHAEL G. FOX
NICHOLAS A. NACEY



Any screen. Any time. Anywhere.

Activate the eBook version
of this title at no additional charge.



Elsevier eBooks+ gives you the power to browse, search, and customize your content, make notes and highlights, and have content read aloud.

Unlock your eBook today.

1. Visit <http://ebooks.health.elsevier.com/>
2. Log in or Sign up
3. Scratch box below to reveal your code
4. Type your access code into the “Redeem Access Code” box
5. Click “Redeem”

It's that easy!

For technical assistance:
email textbookscom.support@elsevier.com
call 1-800-545-2522 (inside the US)
call +44 1 865 844 640 (outside the US)

Place Peel Off
Sticker Here

Use of the current edition of the electronic version of this book (eBook) is subject to the terms of the nontransferable, limited license granted on <http://ebooks.health.elsevier.com/>. Access to the eBook is limited to the first individual who redeems the PIN, located on the inside cover of this book, at <http://ebooks.health.elsevier.com/> and may not be transferred to another party by resale, lending, or other means.

SECTIONAL ANATOMY

by MRI and CT

5th Edition

SECTIONAL ANATOMY

by MRI and CT

MARK W. ANDERSON, MD

Harrison Distinguished Teaching Professor of Radiology
Chief of the Division of Musculoskeletal Radiology
Department of Radiology
University of Virginia Health Sciences Center
Charlottesville, Virginia

MICHAEL G. FOX, MD

Musculoskeletal Division Chair
Associate Professor of Radiology
Department of Radiology
Mayo Clinic College of Medicine
Phoenix, Arizona

NICHOLAS C. NACEY, MD

Associate Professor
Department of Radiology and Medical Imaging
University of Virginia Health Science Center
Charlottesville, Virginia



Elsevier
1600 John F. Kennedy Blvd.
Ste 1800
Philadelphia, PA 19103-2899

SECTIONAL ANATOMY BY MRI AND CT, FIFTH EDITION

ISBN: 978-0-323-93448-0

Copyright © 2025 by Elsevier Inc. All rights are reserved, including those for text and data mining, AI training, and similar technologies.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission in writing from the publisher. Details on how to seek permission, further information about the Publisher's permissions policies and our arrangements with organizations such as the Copyright Clearance Center and the Copyright Licensing Agency, can be found at our website: www.elsevier.com/permissions.

This book and the individual contributions contained in it are protected under copyright by the Publisher (other than as may be noted herein).

Notice

Practitioners and researchers must always rely on their own experience and knowledge in evaluating and using any information, methods, compounds or experiments described herein. Because of rapid advances in the medical sciences, in particular, independent verification of diagnoses and drug dosages should be made. To the fullest extent of the law, no responsibility is assumed by Elsevier, authors, editors or contributors for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions, or ideas contained in the material herein.

Previous editions copyrighted 2017, 2007, 1995 and 1990.

Senior Content Strategist: Melanie Tucker
Senior Content Development Specialist: Rishabh Gupta
Content Development Manager: Ranjana Sharma
Publishing Services Manager: Shereen Jameel
Project Manager: Haritha Dharmarajan
Design Direction: Brian Salisbury
Third World Compiler: Sigfrido Ernesto Garcia

Printed in India

Last digit is the print number: 9 8 7 6 5 4 3 2 1



Preface

With the explosion of cross-sectional imaging, the accessibility of a high-quality anatomic atlas has become essential, and it is with great pleasure that we introduce the fifth edition of this classic atlas.

Since it was first published in 1990, it has become a standard anatomic reference source. The first three editions were masterfully edited by Drs. Georges El-Khoury, Ronald Bergman, and William Montgomery, and we are honored to be able to continue the tradition of excellence that they established.

This new fifth edition includes additional chapters on head CT, brain MRI, and cervical spine MRI. The corresponding online

version also allows for easy access anytime/anywhere and provides scroll and zoom functions that should further enhance the user's experience.

We hope that you will find this new edition to be an integral and valuable addition to your practice.

Mark W. Anderson, MD
Michael G. Fox, MD
Nicholas C. Nacey, MD

Acknowledgments

We are indebted to Drs. Georges El-Khoury and Ronald Bergman for their prior efforts in producing and improving this text and for allowing us to continue along the path of excellence they established. We also would like to thank Rishabh Gupta and Melanie Tucker from Elsevier for helping to bring this project to fruition. Thanks as well to our fellow Matthew Schmidt for his assistance. Dr. Anderson would like to thank all the residents and fellows who have made him a better radiologist, and his wife Amy whose sacrifice and support have made it all possible. Dr. Nacey would like to thank his wife

Mary as well as his children Ollie, Annie, Emmie, and Zach for all their support. Dr. Fox would like to thank his family (Katherine, Marie, Elizabeth, Michael Jr., and Jonathan) for their love and encouragement. Without their invaluable assistance, it would not have happened!

Mark W. Anderson, MD
Michael G. Fox, MD
Nicholas C. Nacey, MD

Contents

Preface, v

Acknowledgments, vi

SECTION I BRAIN, 1

Chapter 1 CT of the Brain, 3

Chapter 2 MRI of the Brain, 18

SECTION II THORAX, 33

Chapter 3 CT of the Thorax, 35

Chapter 4 MRI of the Heart, 53

SECTION III UPPER EXTREMITY, 65

Chapter 5 MRI of the Pectoral Girdle and Chest Wall, 67

Chapter 6 MRI of the Shoulder, 98

Chapter 7 MR Arthrography of the Shoulder, 130

Chapter 8 MRI of the Arm, 154

Chapter 9 MRI of the Elbow, 178

Chapter 10 MRI of the Forearm, 208

Chapter 11 MRI of the Wrist, 235

Chapter 12 MRI of the Hand, 261

SECTION IV SPINE AND BACK, 285

Chapter 13 MRI of the Cervical Spine, 287

Chapter 14 MRI of the Thoracic Spine, 296

Chapter 15 MRI of the Lumbar Spine, 309

SECTION V ABDOMEN, 323

Chapter 16 CT of the Abdomen, 325

Chapter 17 MRI of the Abdomen, 345

SECTION VI LOWER EXTREMITY, 371

Chapter 18 MRI of the Hip, 373

Chapter 19 MR Arthrography of the Hip, 402

Chapter 20 MRI of the Thigh, 419

Chapter 21 MRI of the Knee, 446

Chapter 22 MRI of the Leg, 473

Chapter 23 MRI of the Ankle, 500

Chapter 24 MRI of the foot, 534

SECTION VII PELVIS, 561

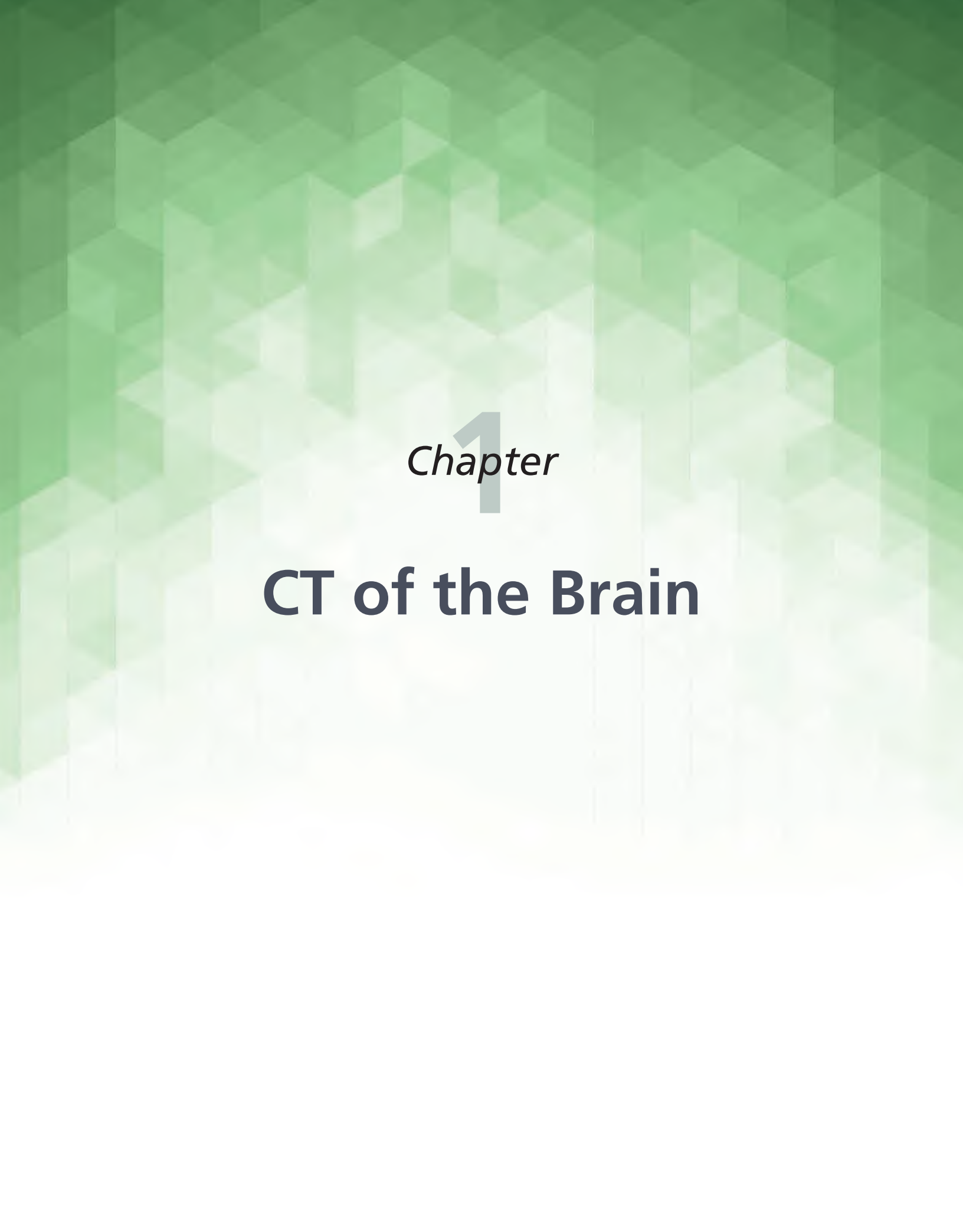
Chapter 25 CT of the Male Pelvis, 563

Chapter 26 CT of the Female Pelvis, 579

Chapter 27 MRI of the Male Pelvis, 594

Chapter 28 MRI of the Female Pelvis, 613

Index, 627

The background of the slide features a complex, repeating pattern of green hexagons and triangles, creating a 3D effect. The colors range from a light, pale green to a darker, forest green.

Chapter 1

CT of the Brain

AXIAL

Figure 1.1.1

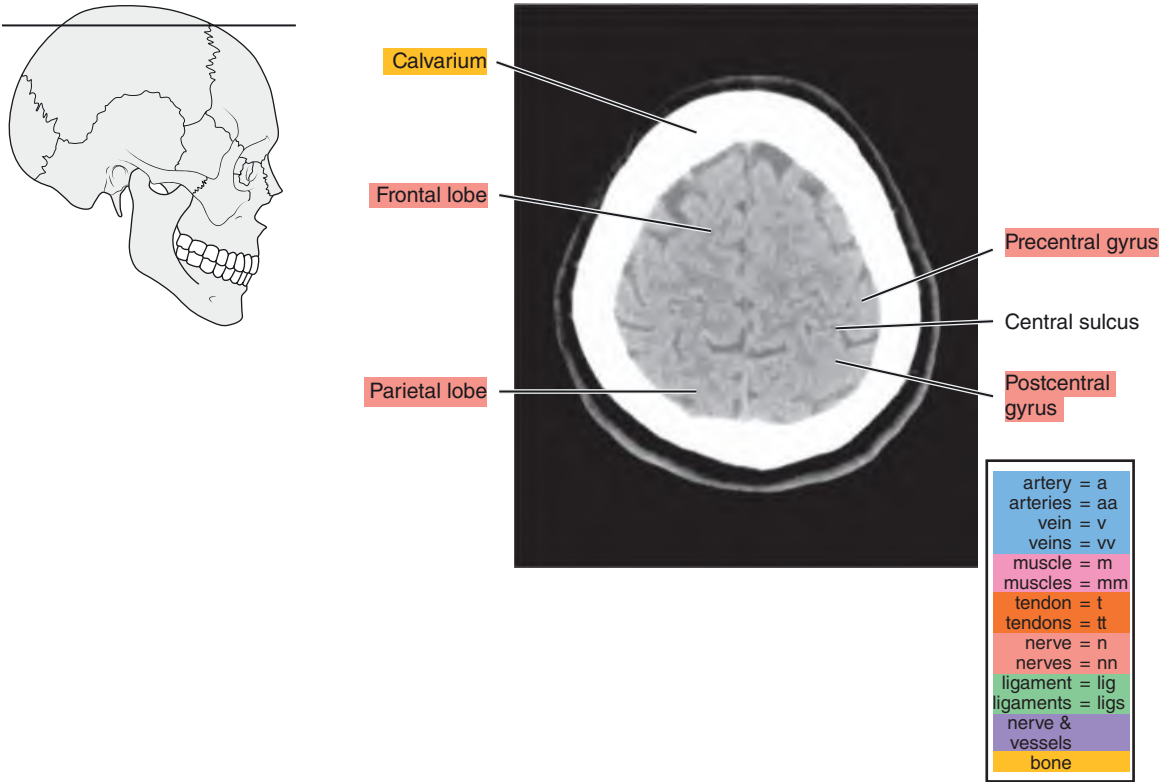


Figure 1.1.2

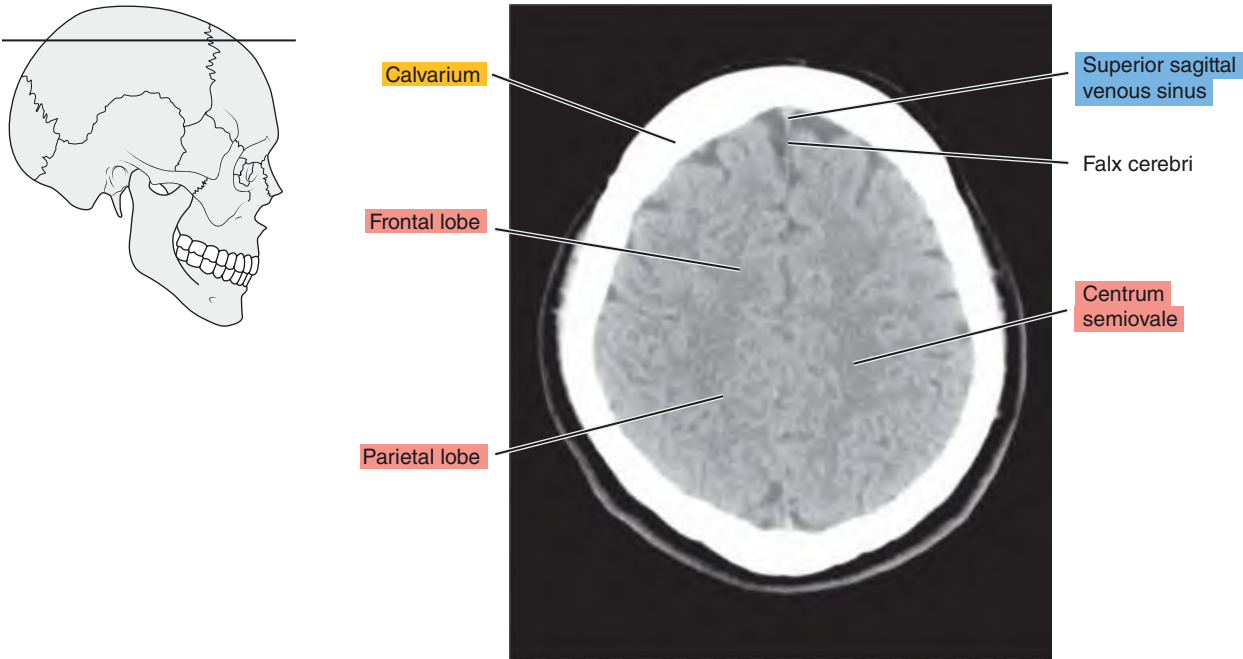


Figure 1.1.3

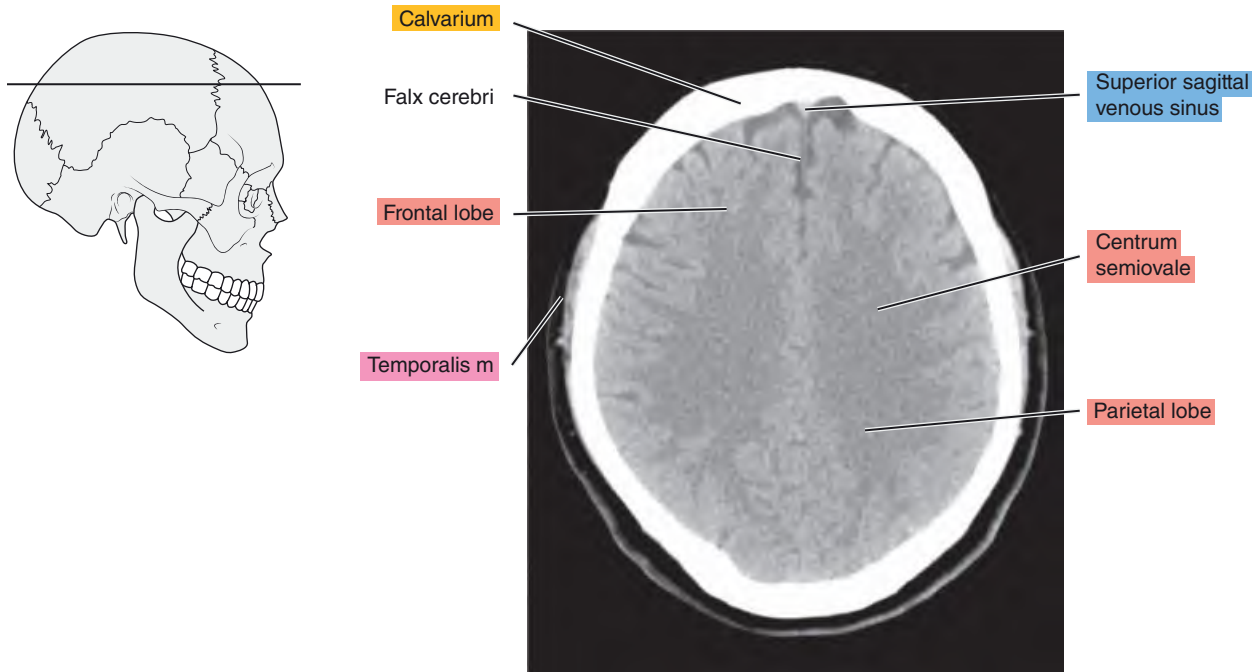


Figure 1.1.4

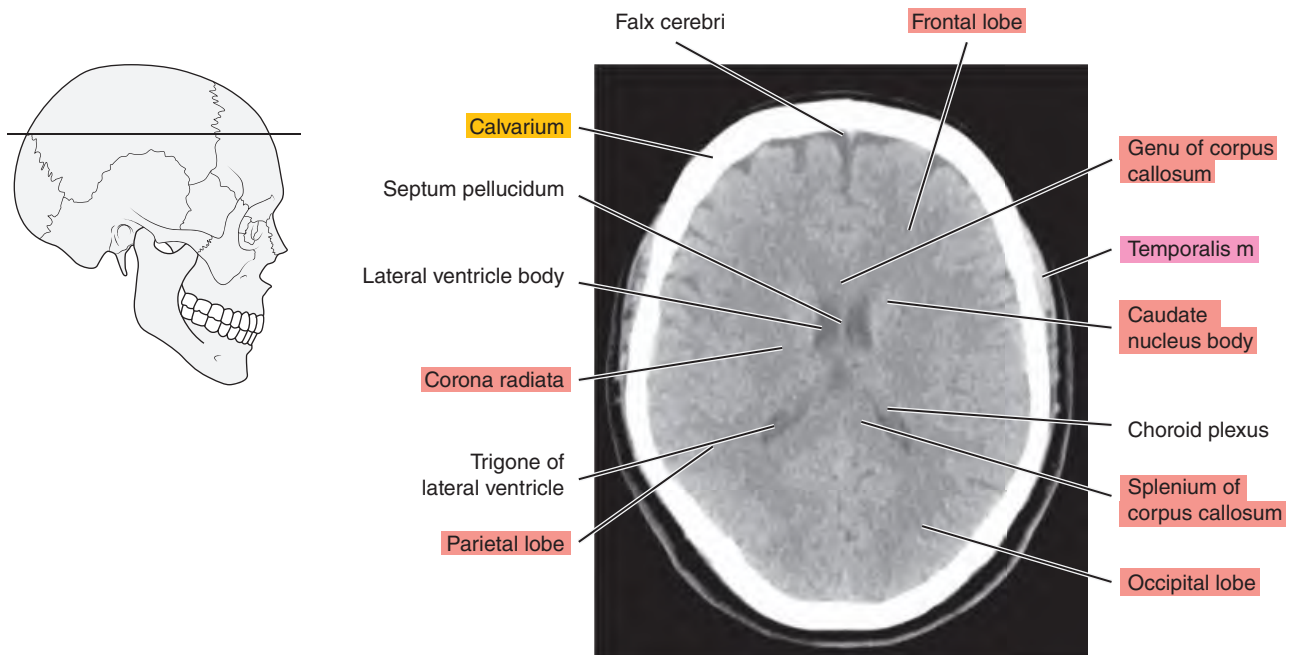


Figure 1.1.5

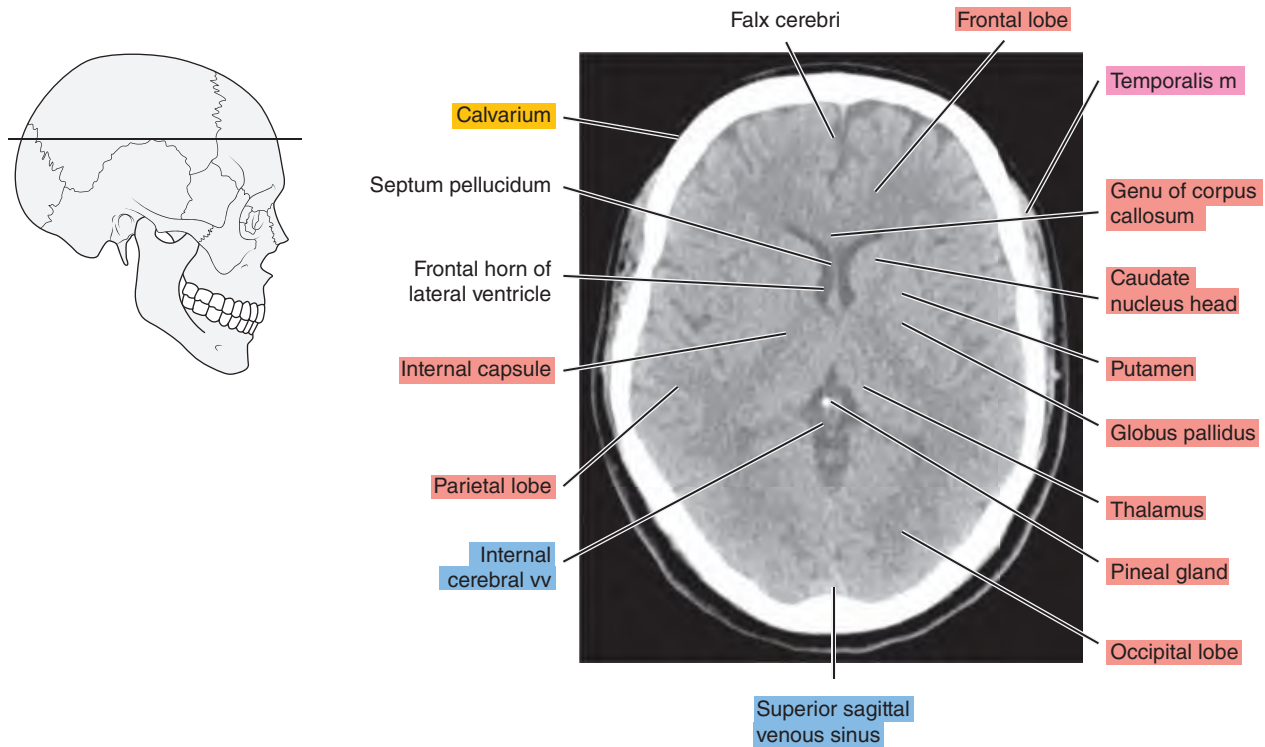


Figure 1.1.6

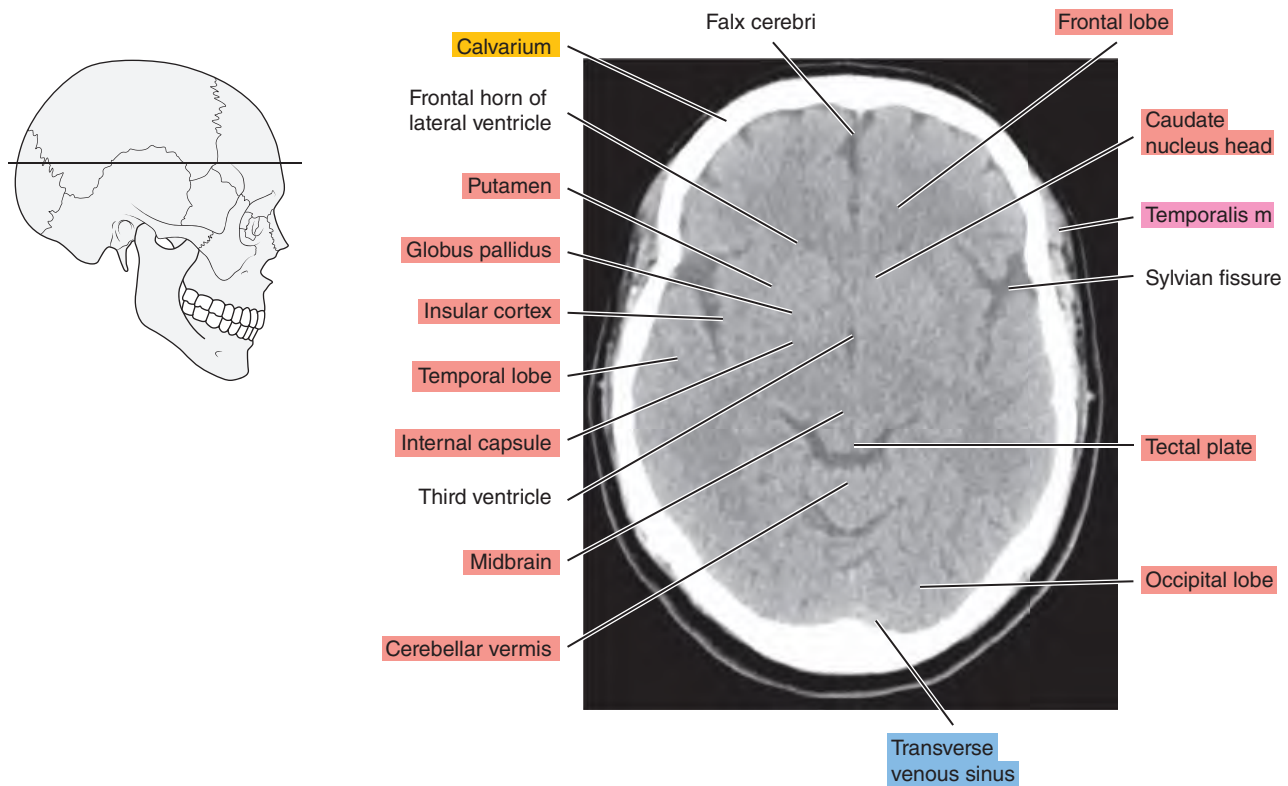


Figure 1.1.7

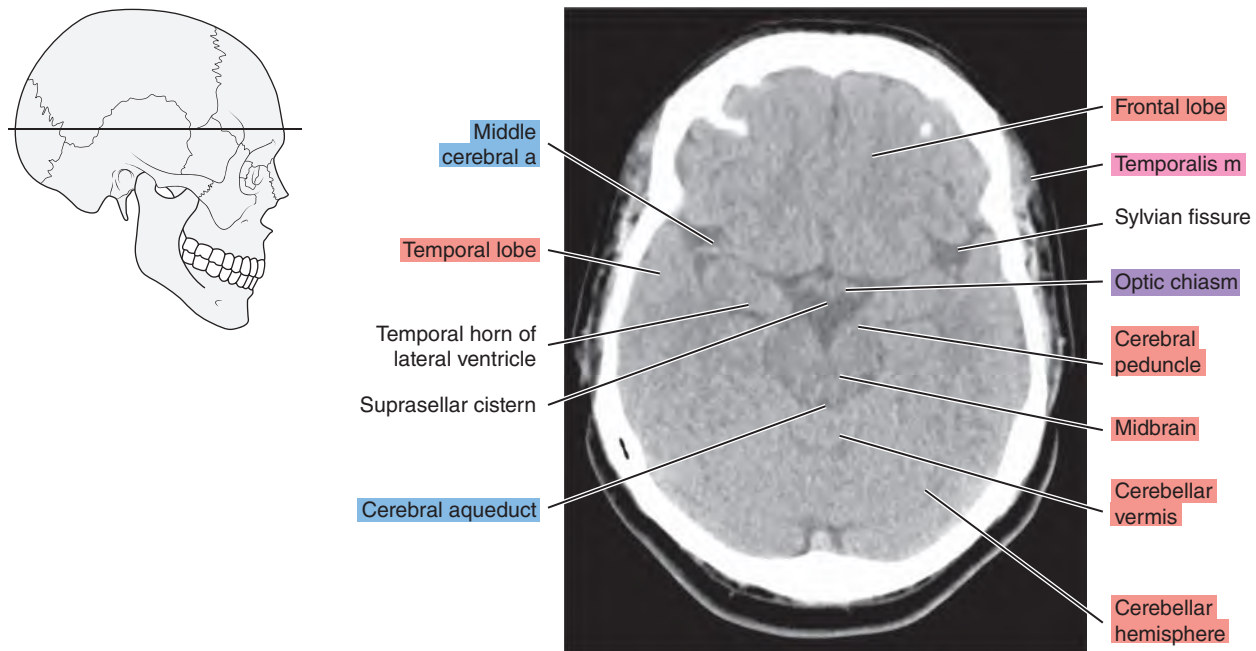


Figure 1.1.8

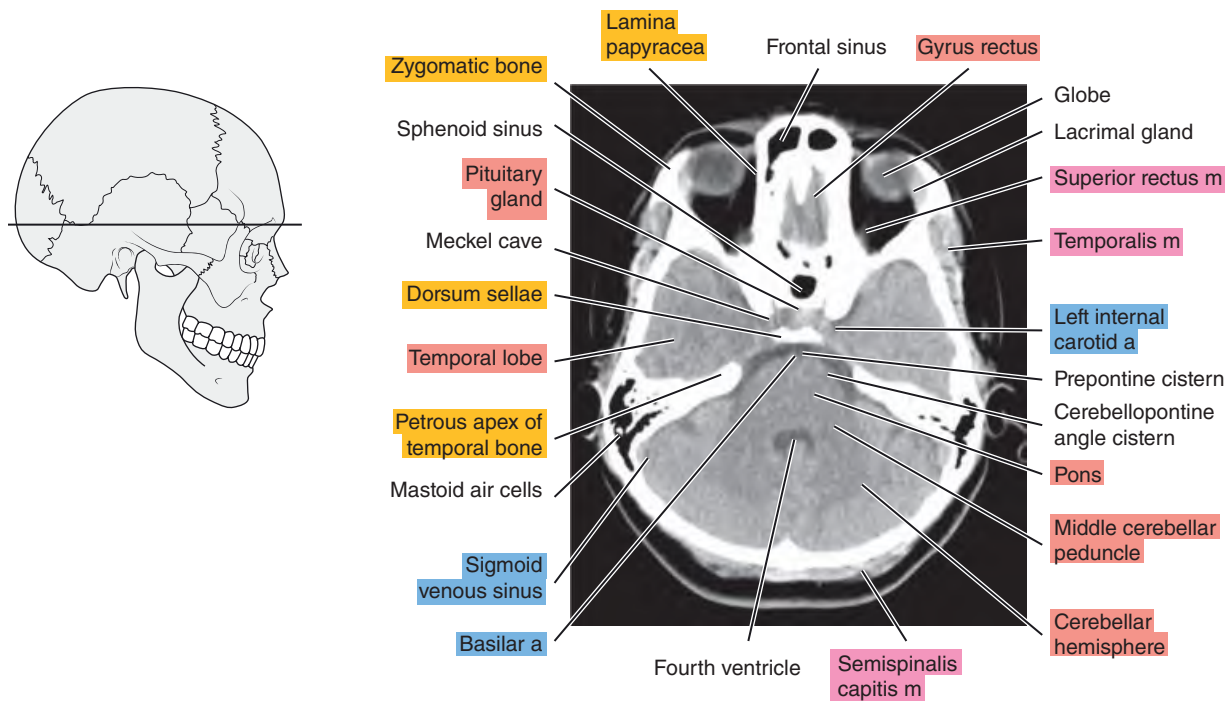


Figure 1.1.9

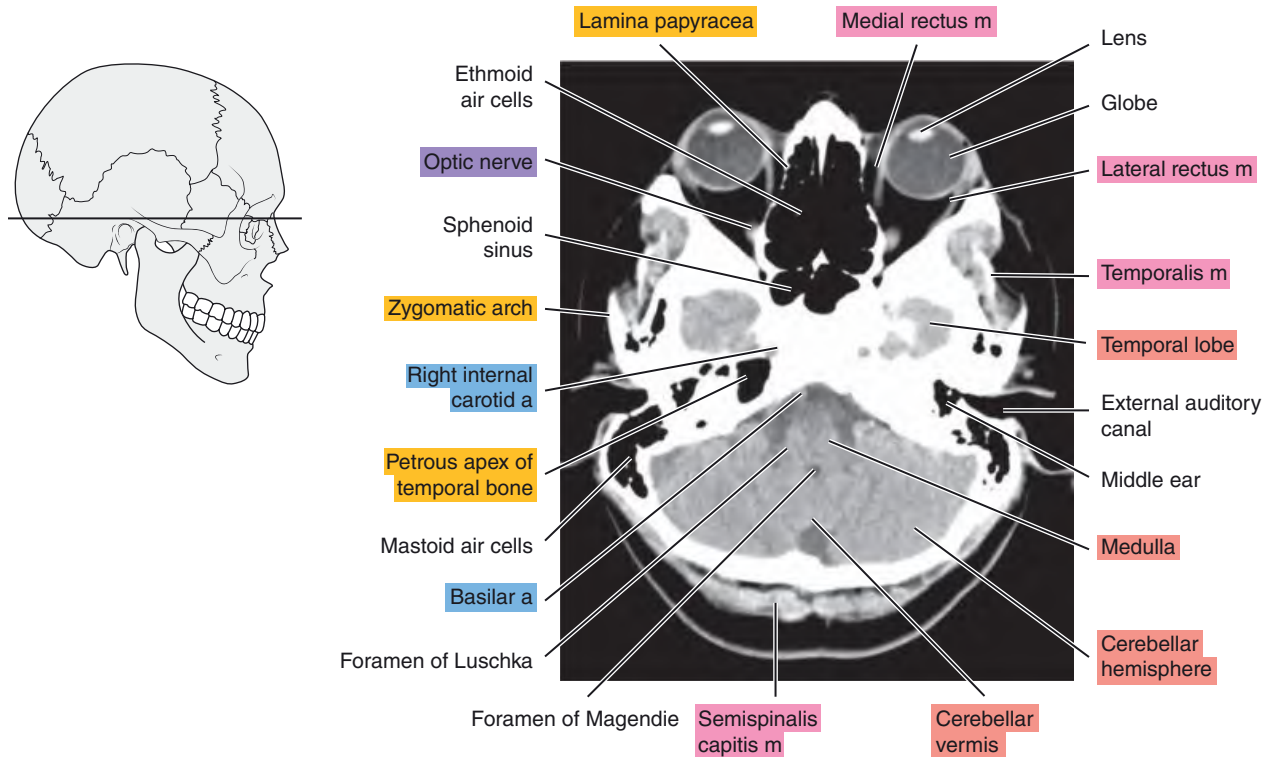


Figure 1.1.10

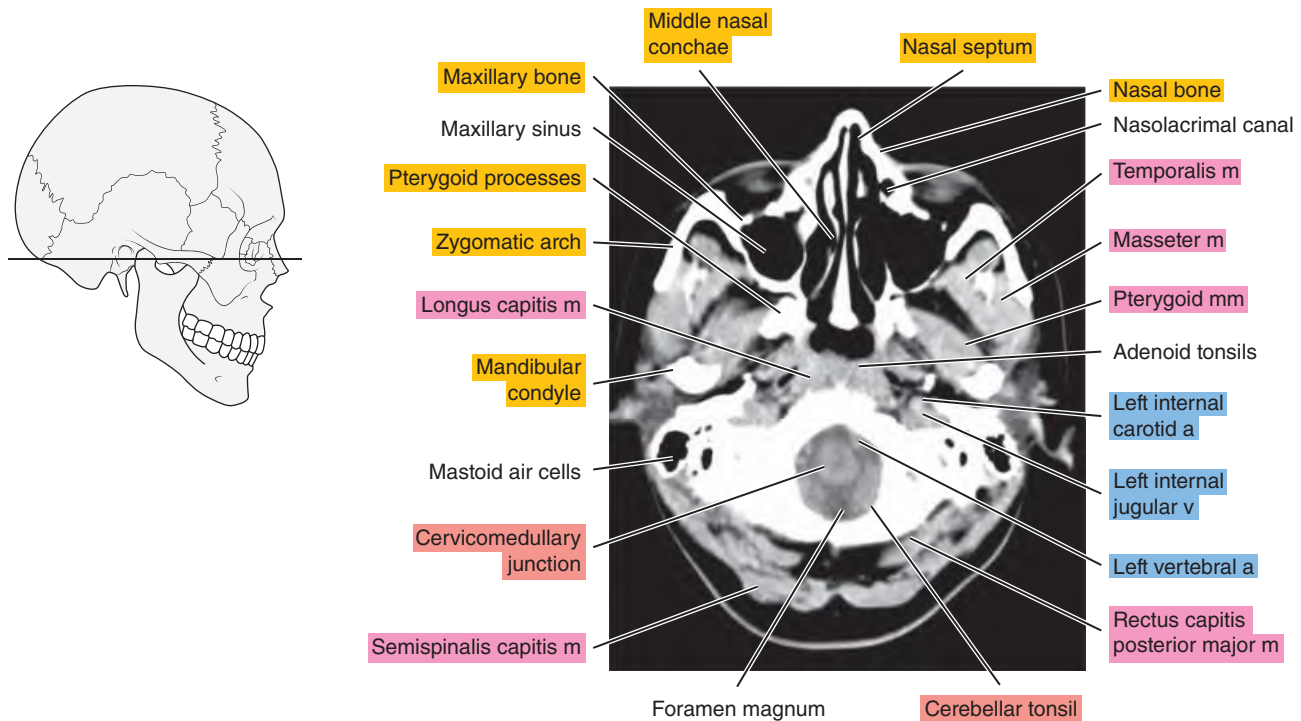
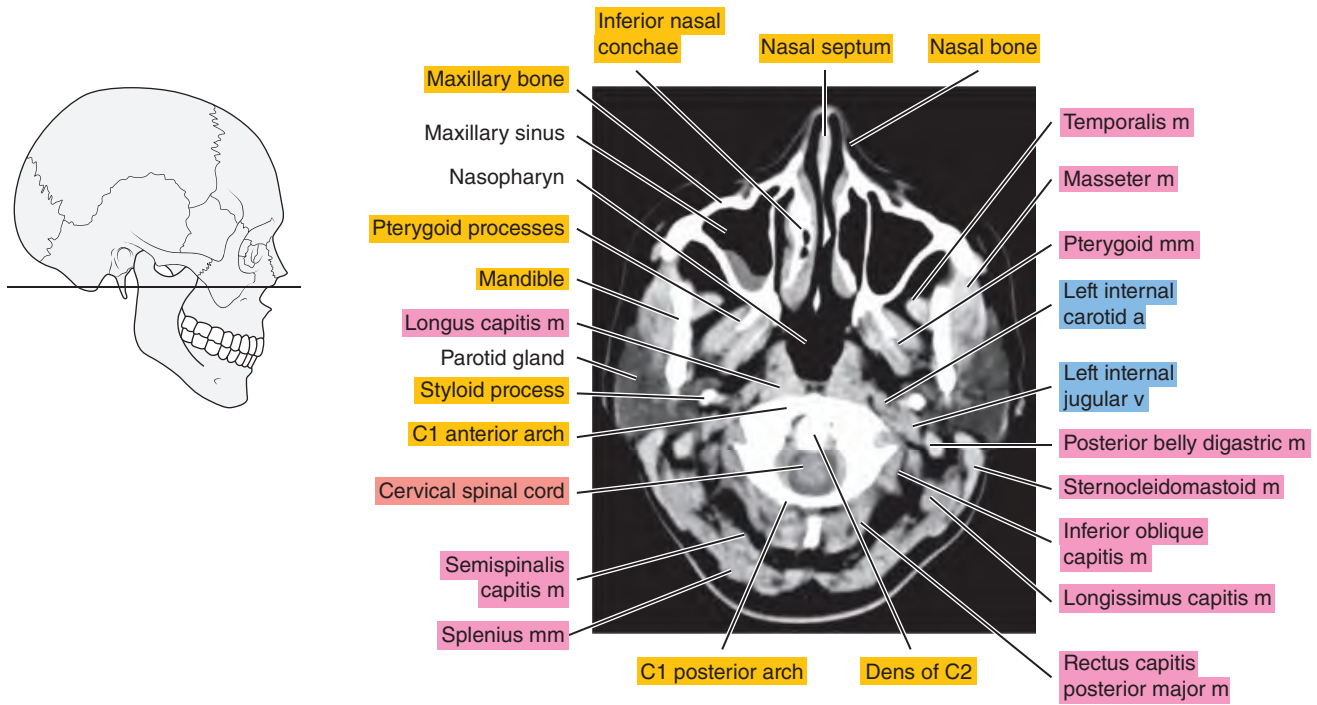


Figure 1.1.11



SAGITTAL

Figure 1.2.1

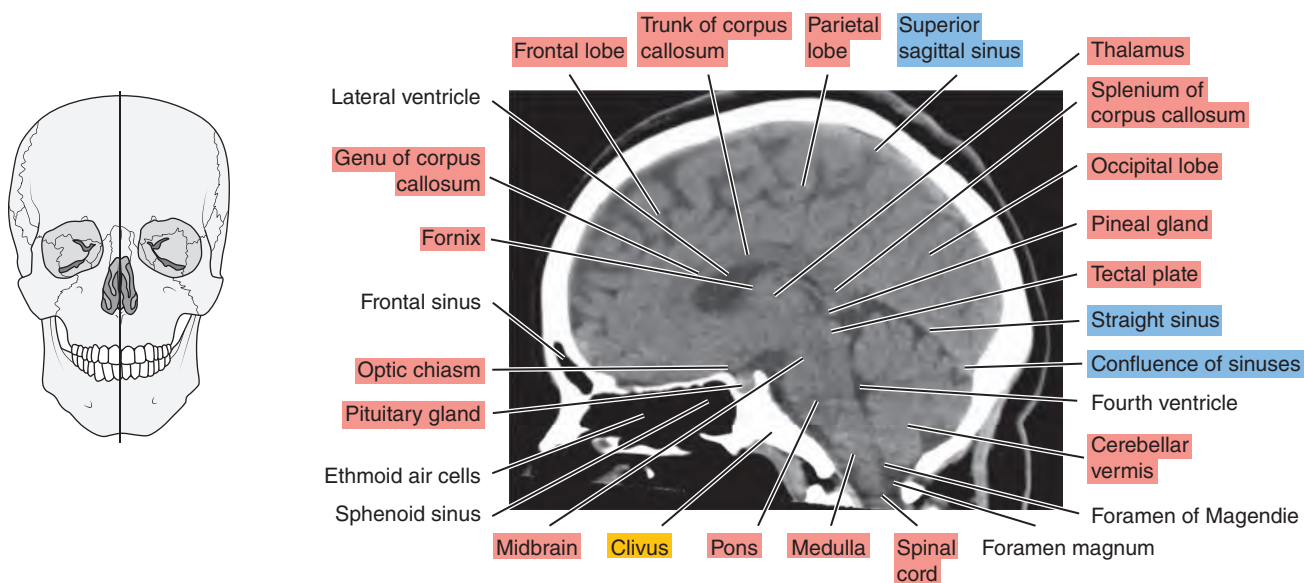


Figure 1.2.2

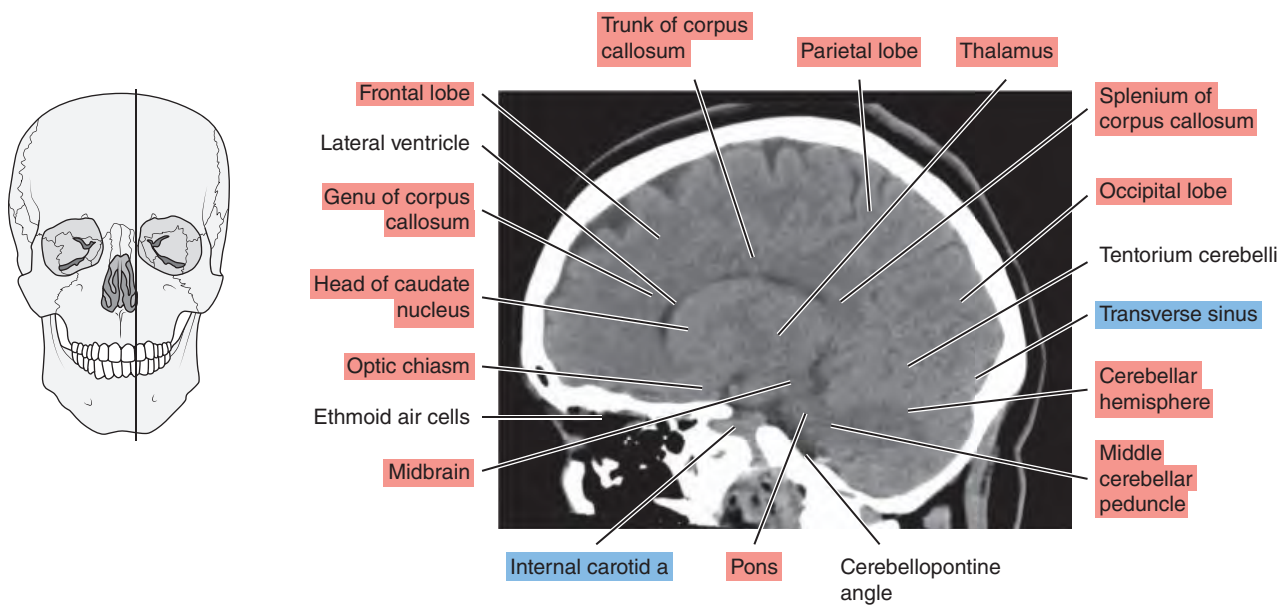


Figure 1.2.3

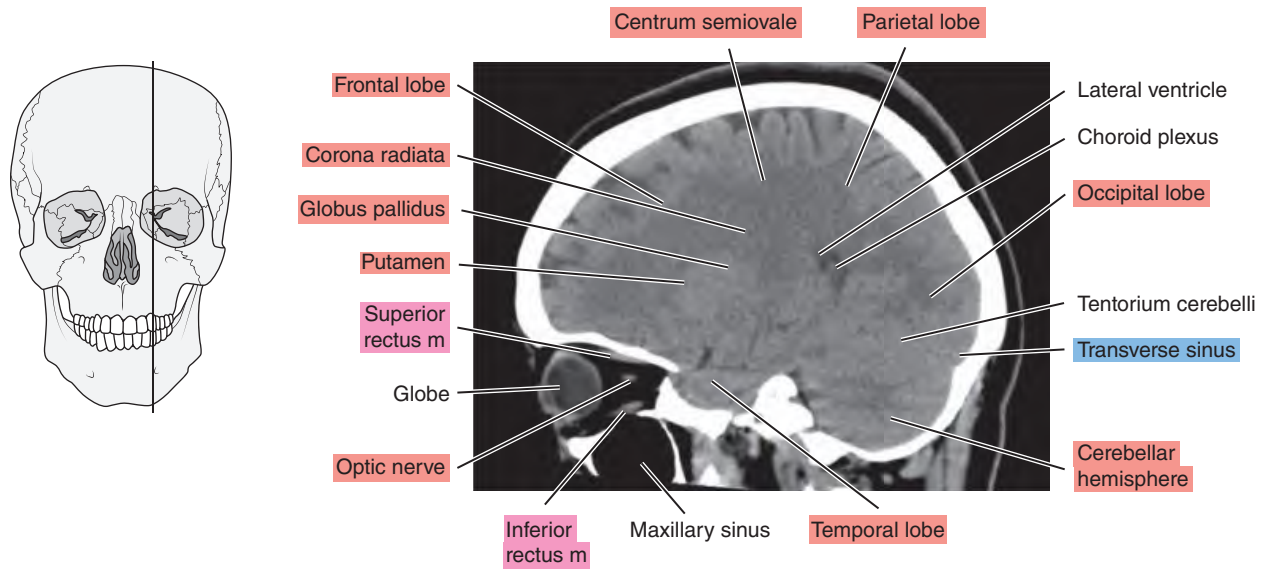


Figure 1.2.4

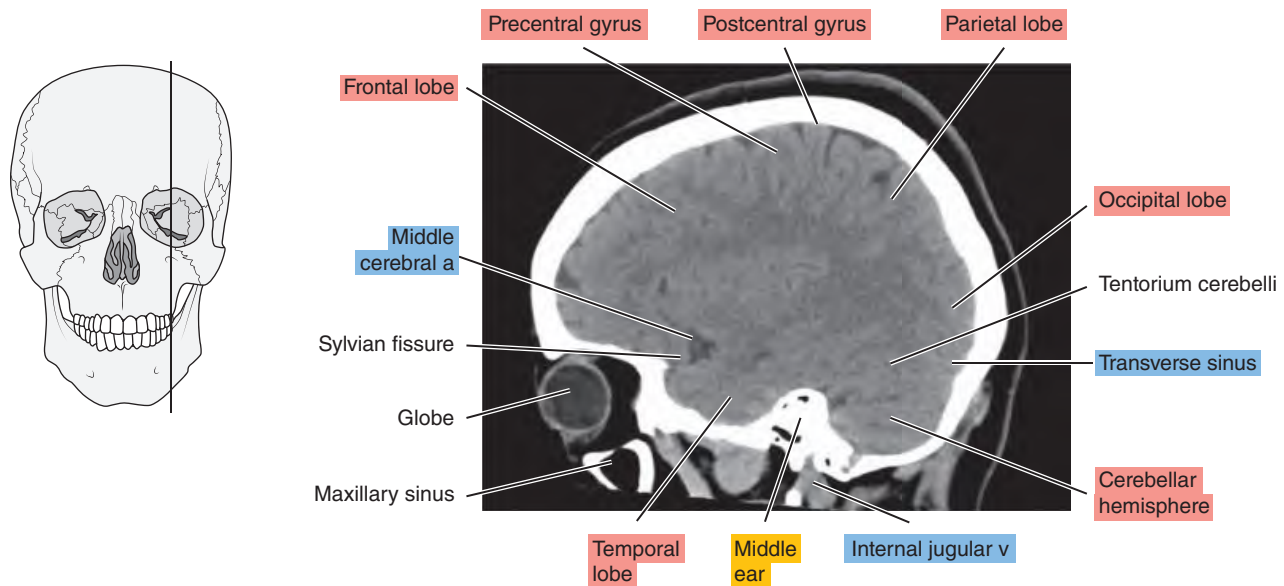


Figure 1.2.5

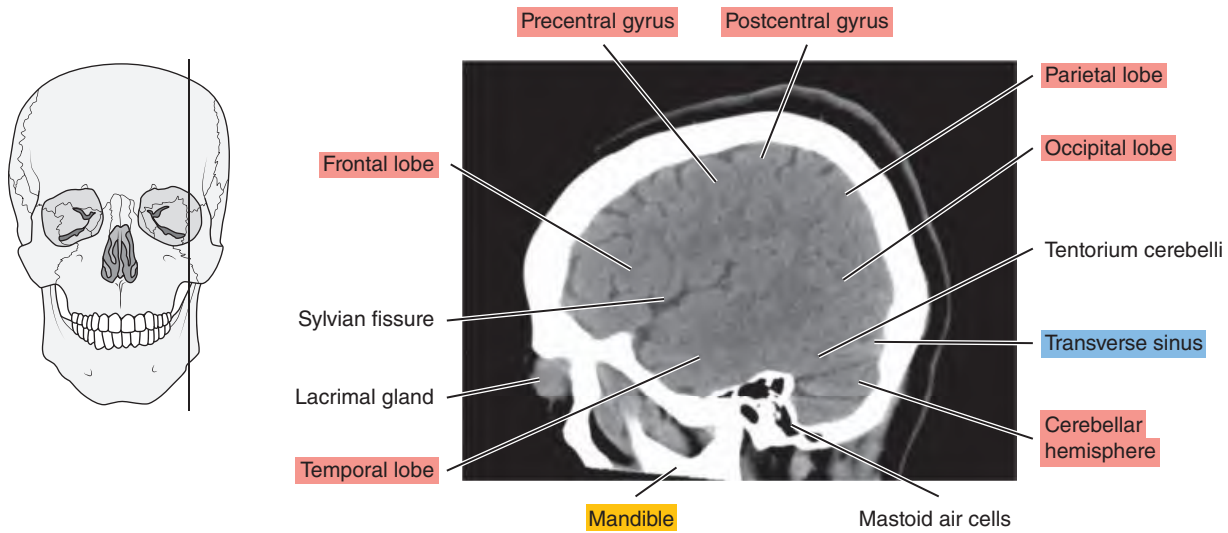
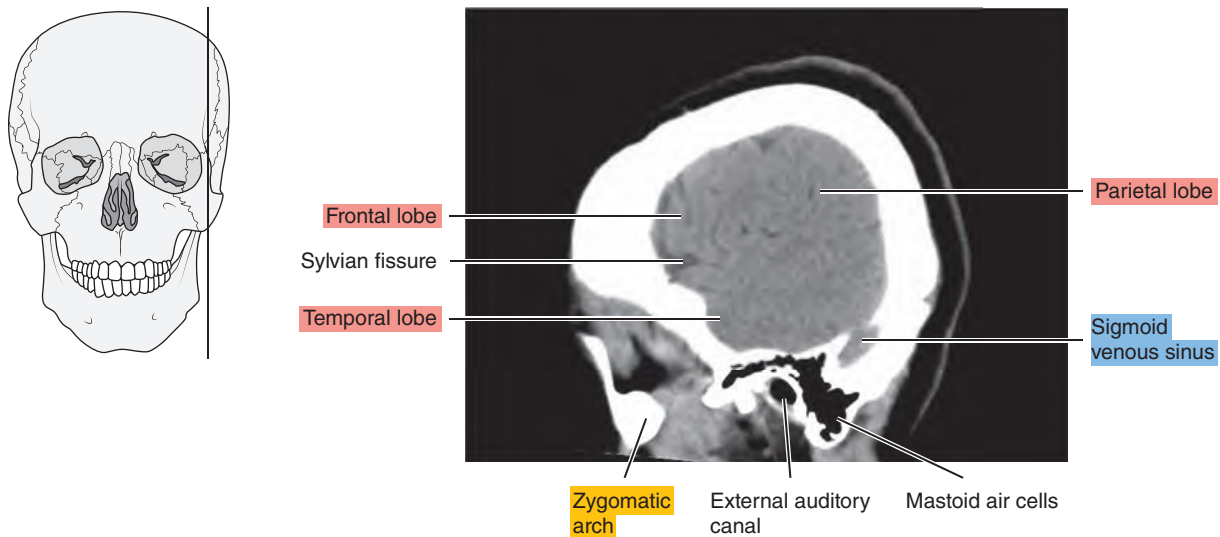


Figure 1.2.6



CORONAL

Figure 1.3.1

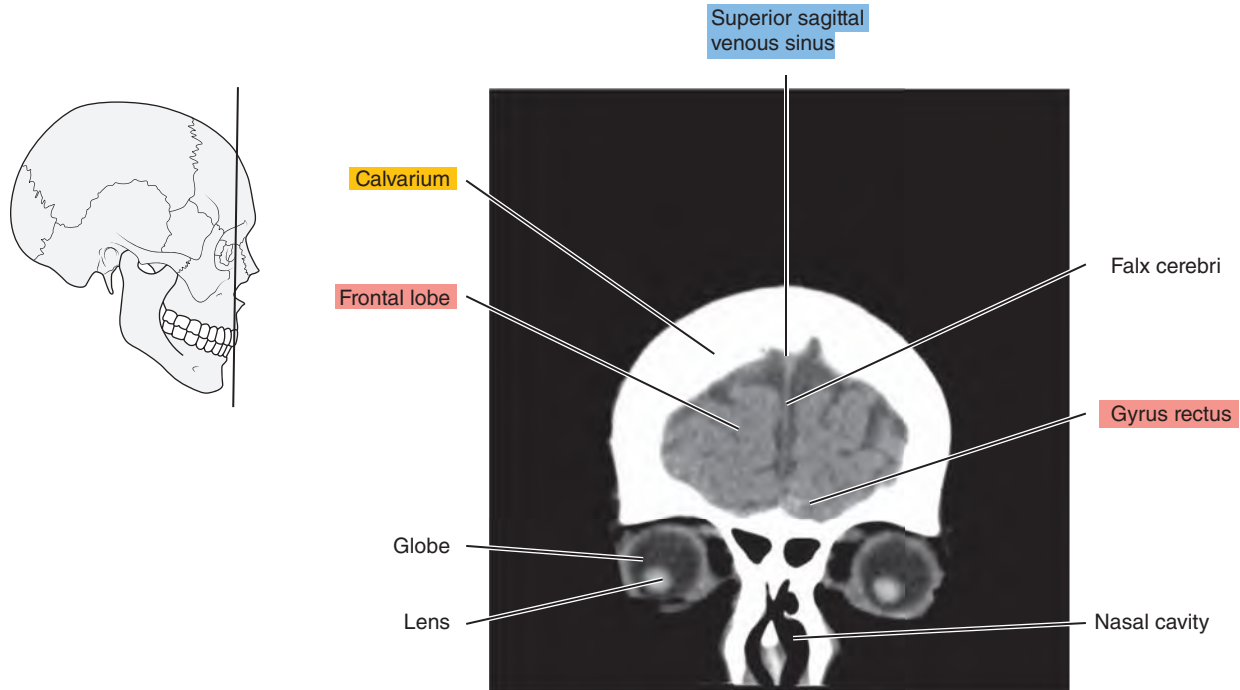


Figure 1.3.2

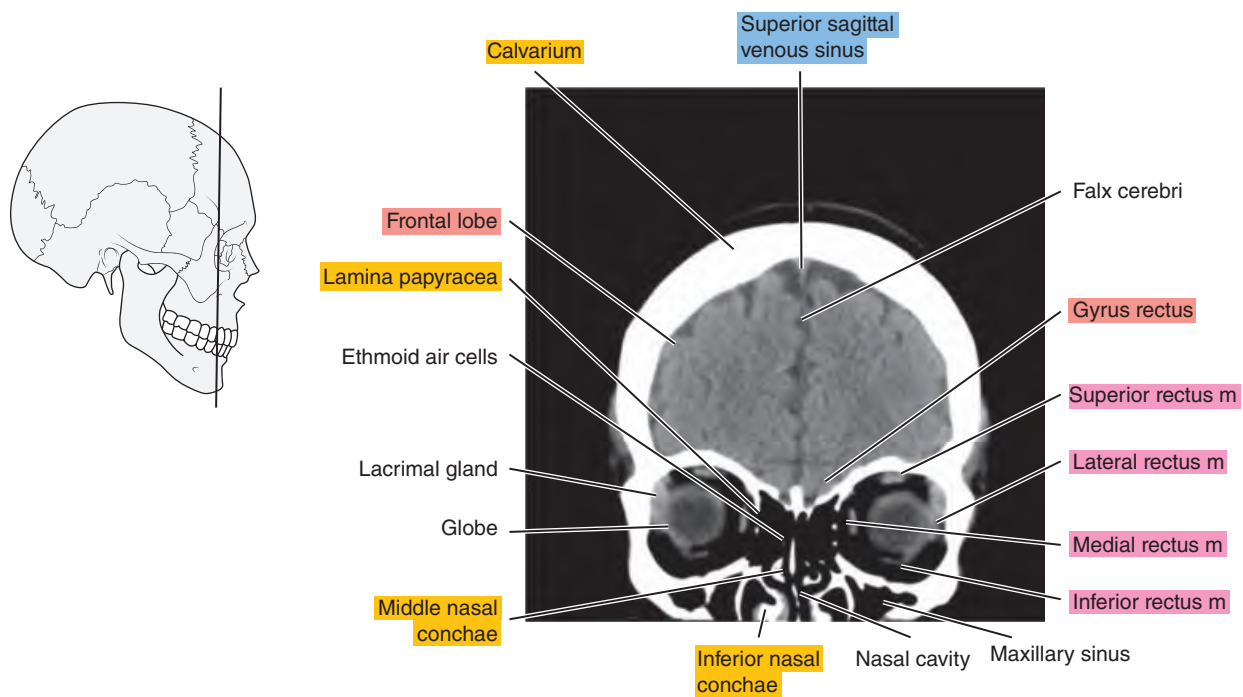


Figure 1.3.3

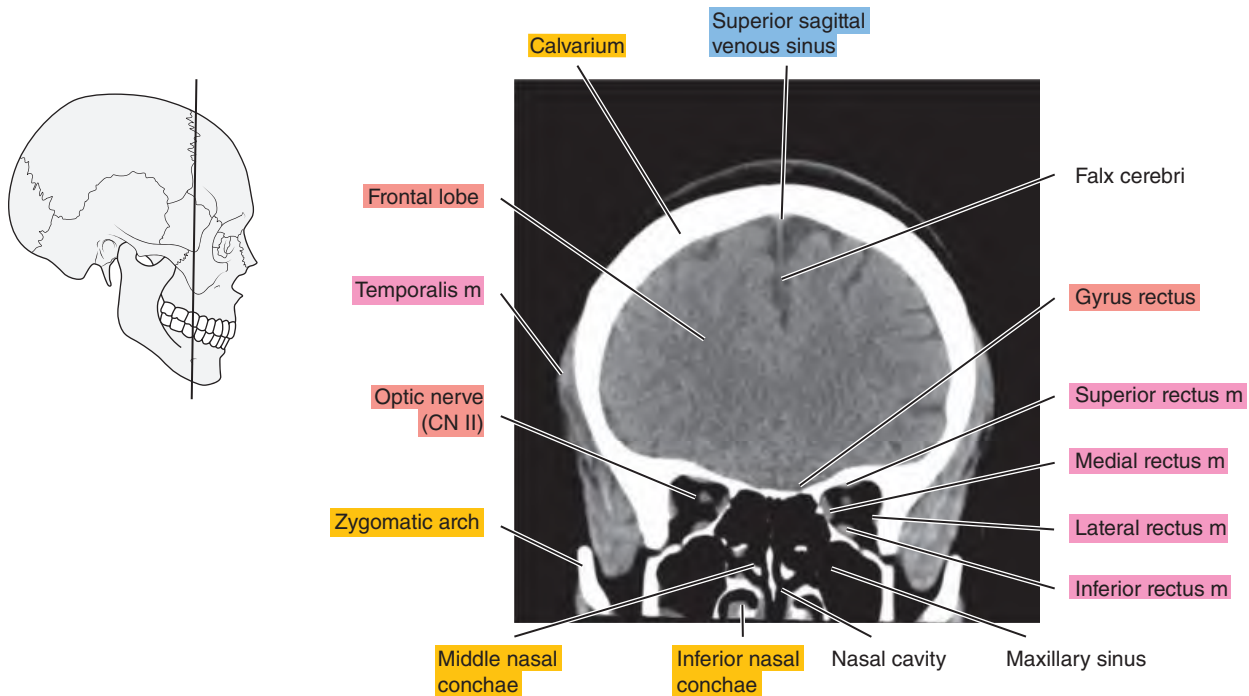


Figure 1.3.4

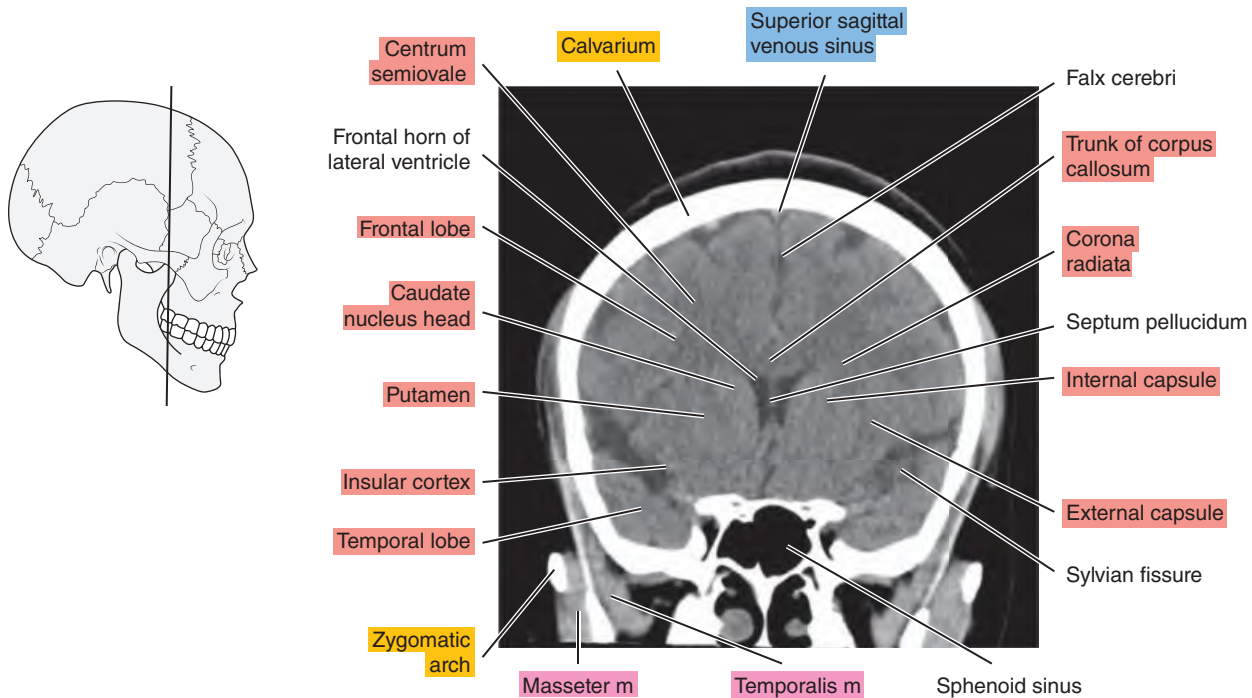


Figure 1.3.5

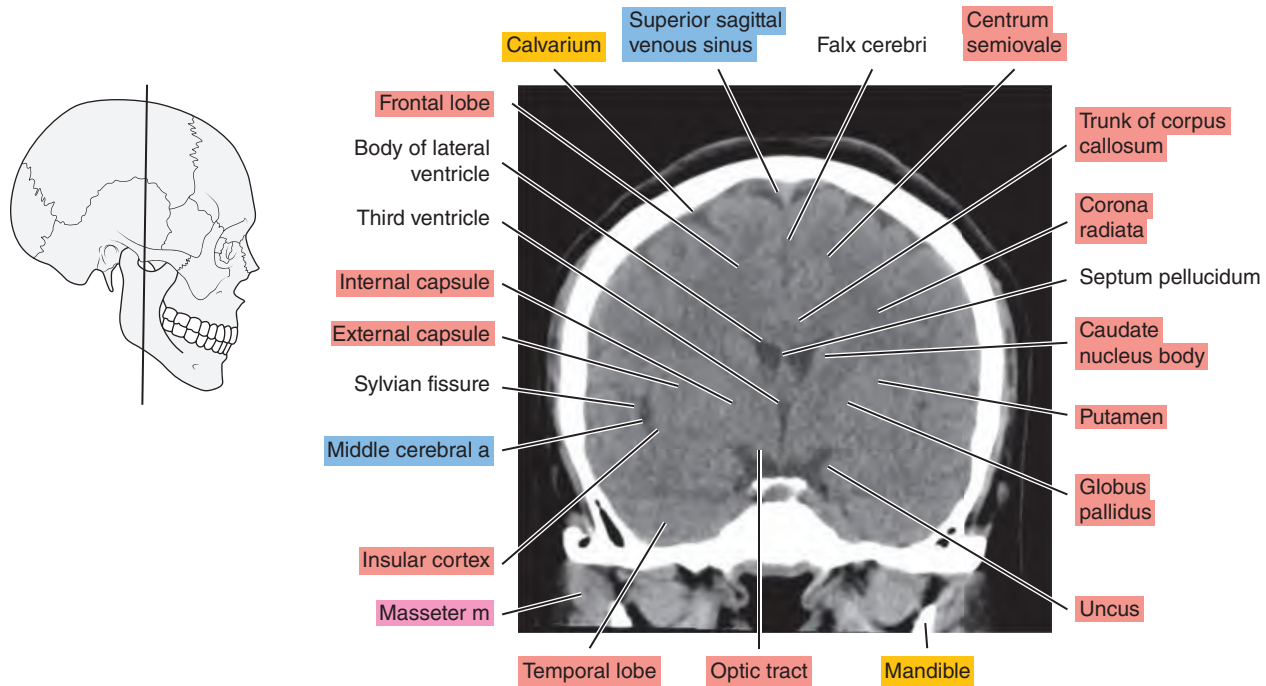


Figure 1.3.6

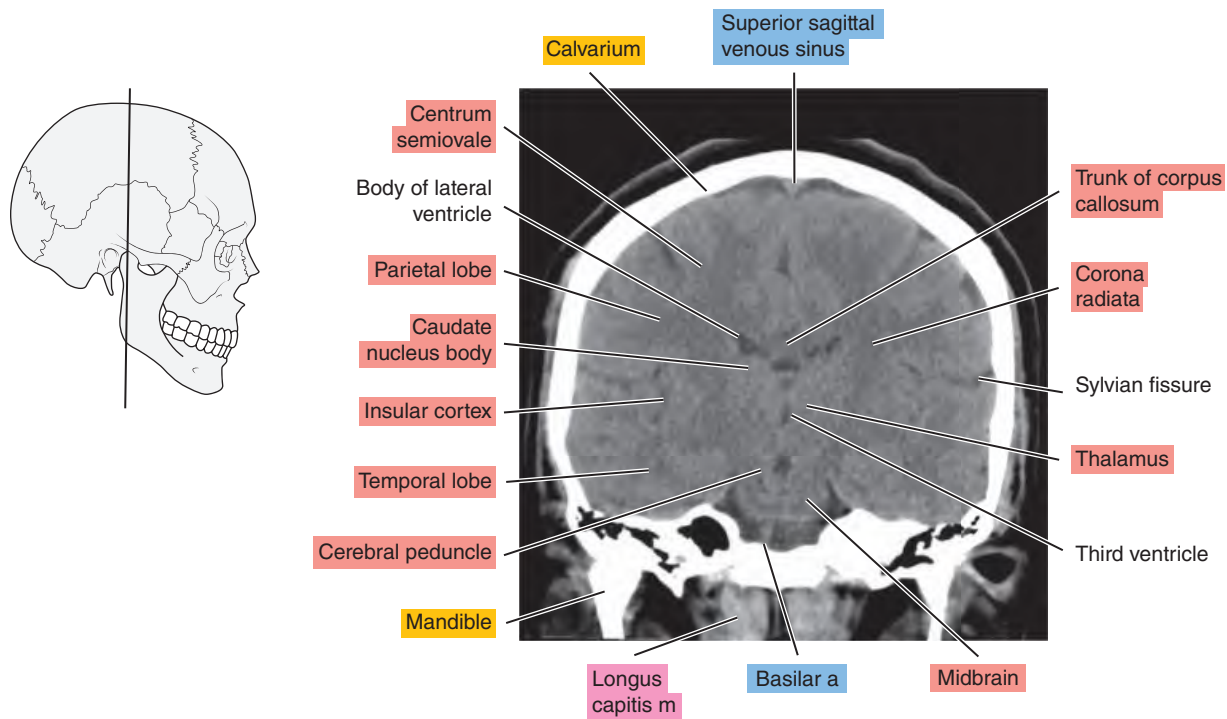


Figure 1.3.7

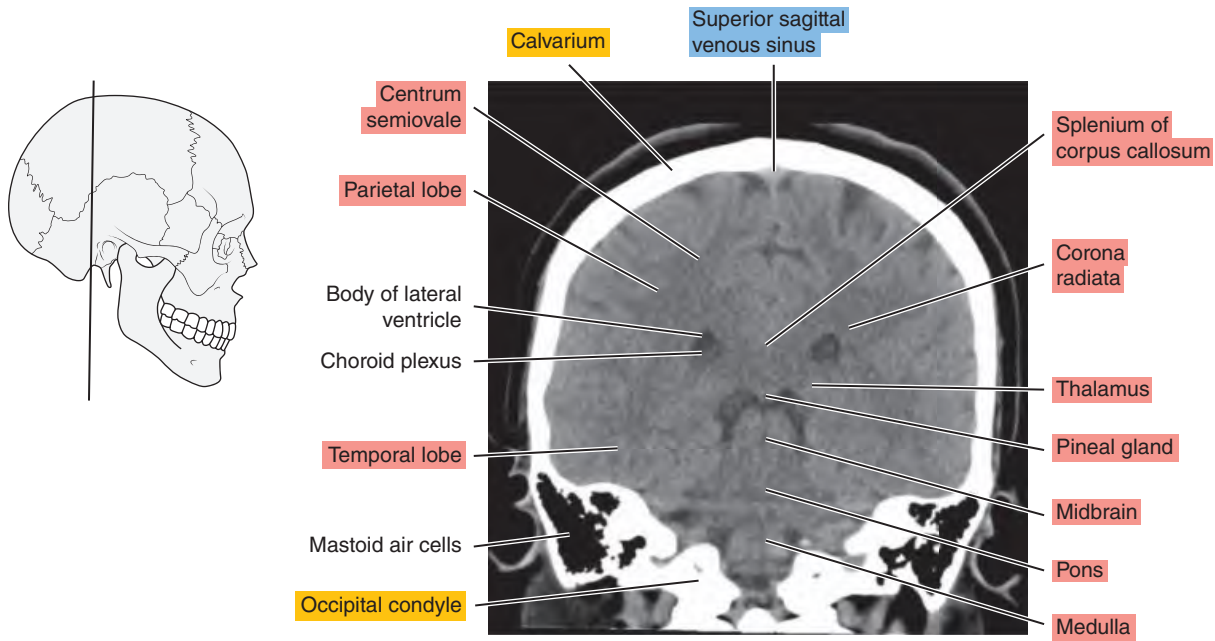


Figure 1.3.8

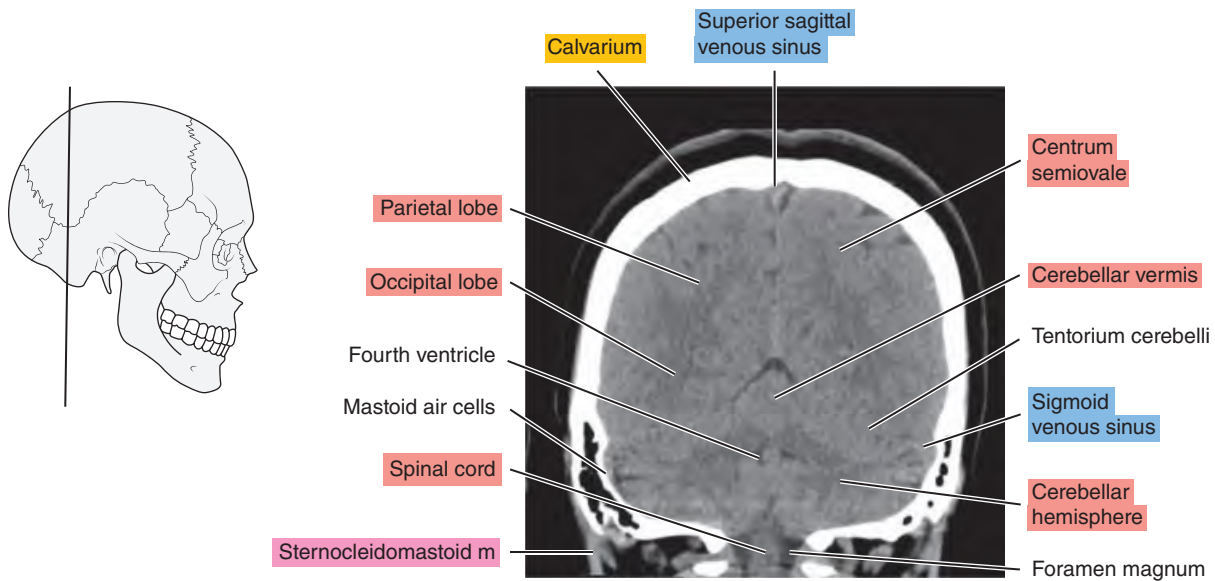


Figure 1.3.9

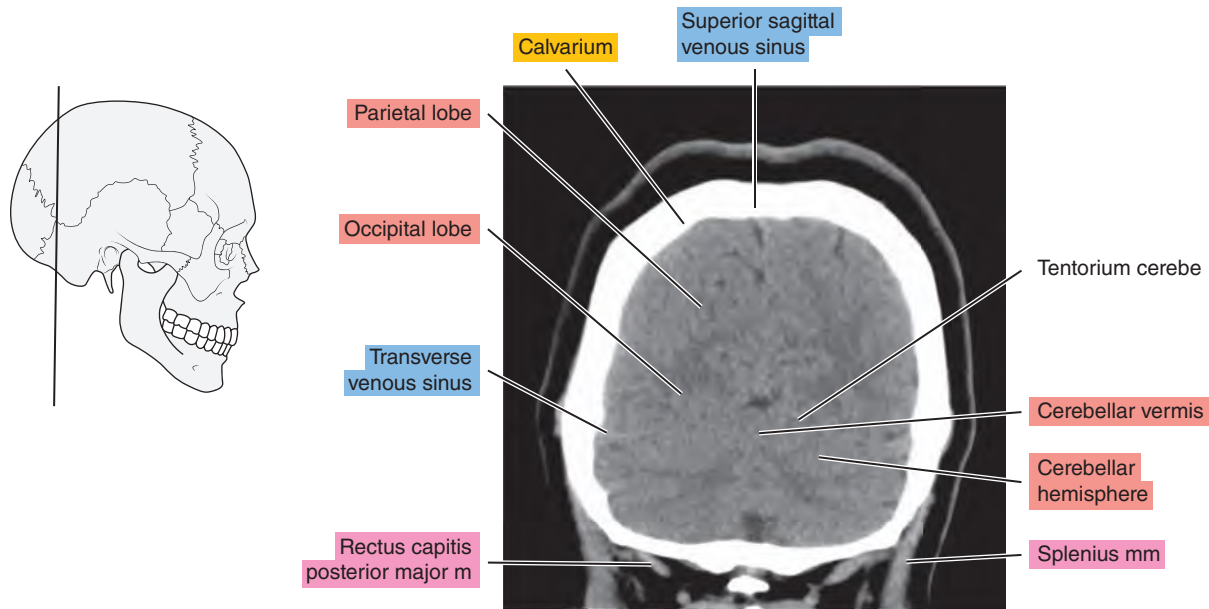
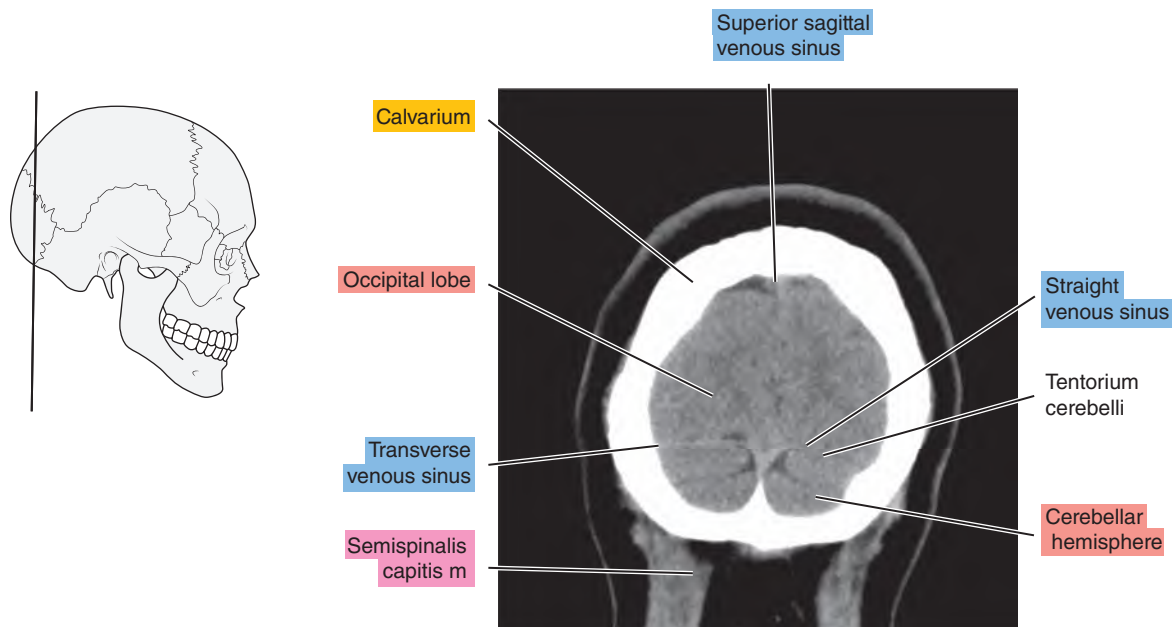


Figure 1.3.10



The background of the slide is a green geometric pattern composed of many small, overlapping triangles and hexagons, creating a 3D effect. The colors range from a light, pale green to a darker, forest green.

Chapter **2**

MRI of the Brain

AXIAL

Figure 2.1.1

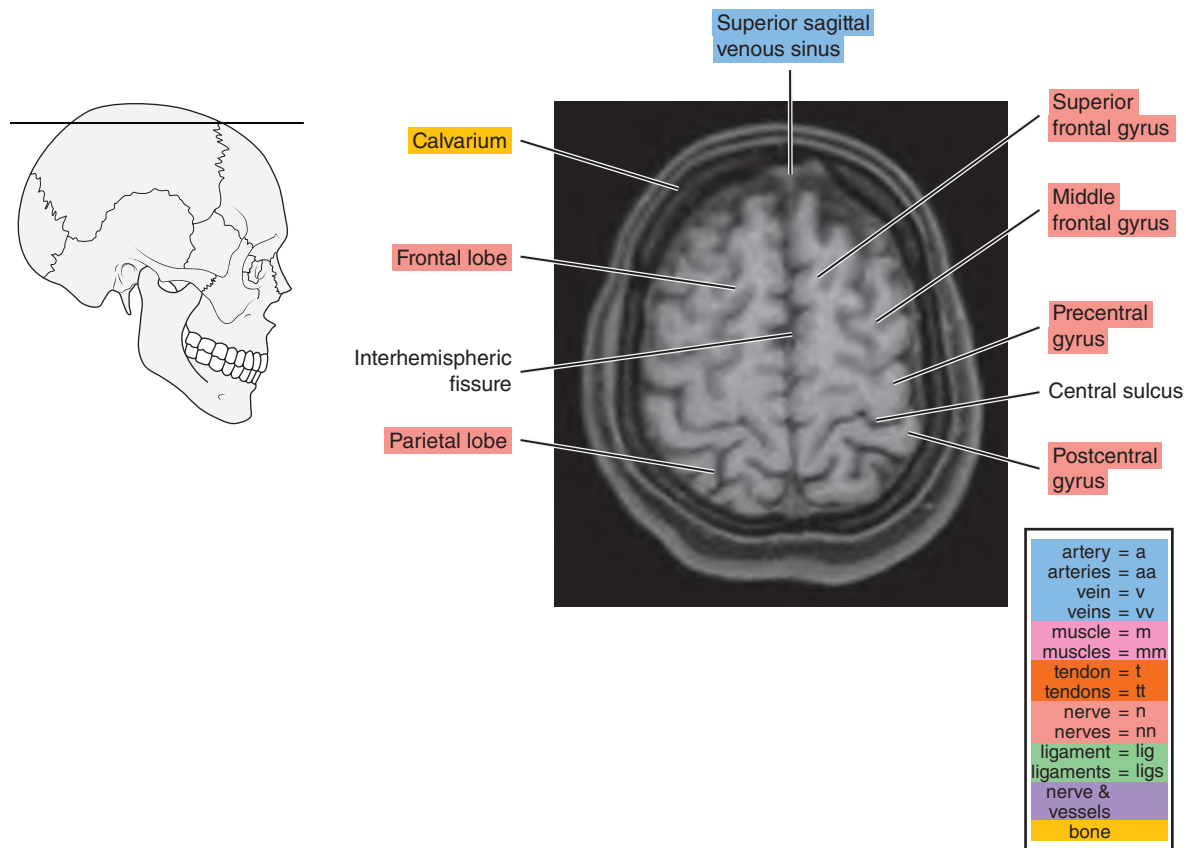


Figure 2.1.2

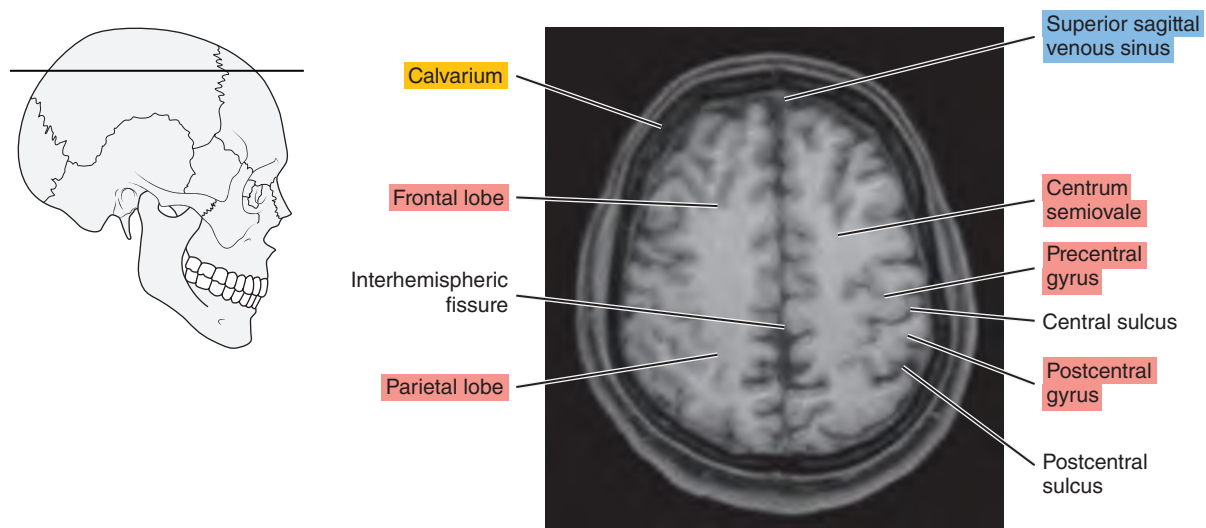


Figure 2.1.3

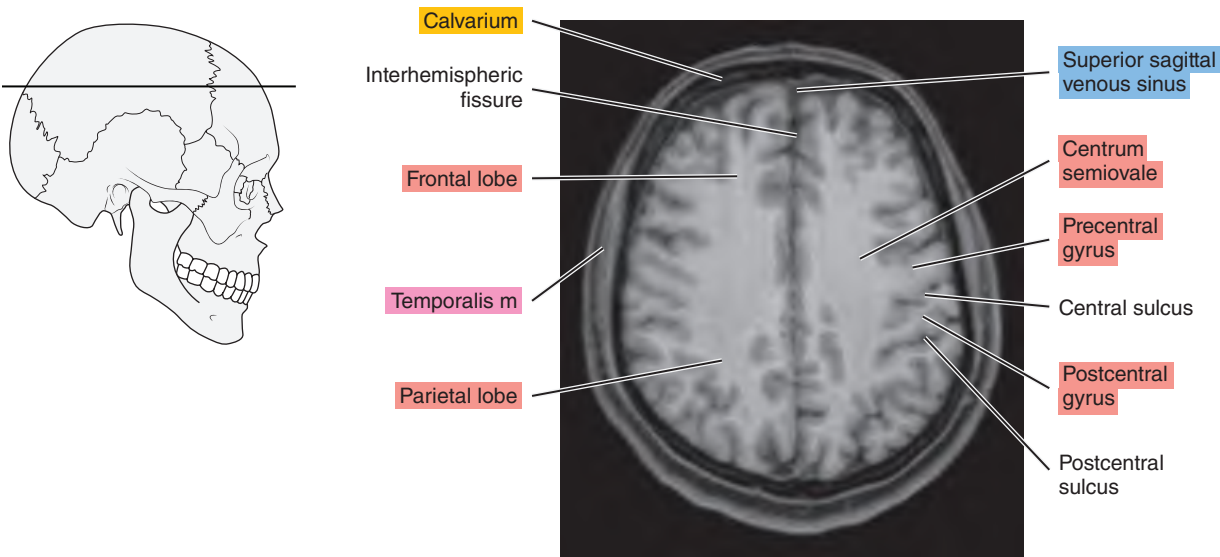


Figure 2.1.4

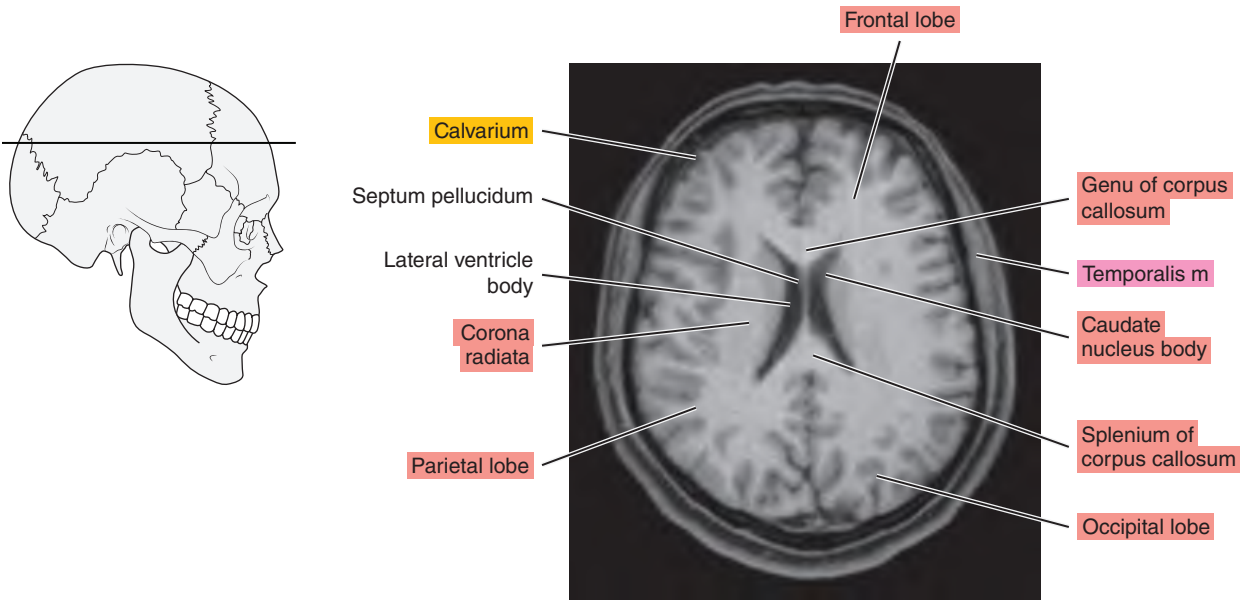


Figure 2.1.5

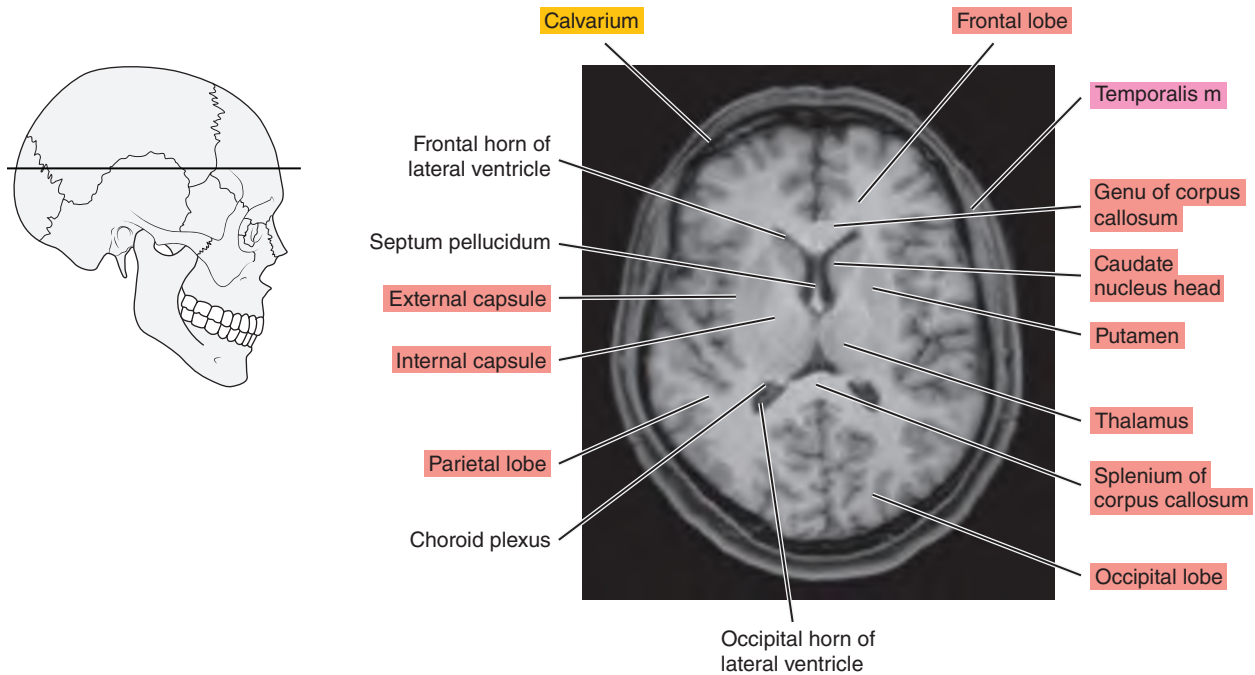


Figure 2.1.6

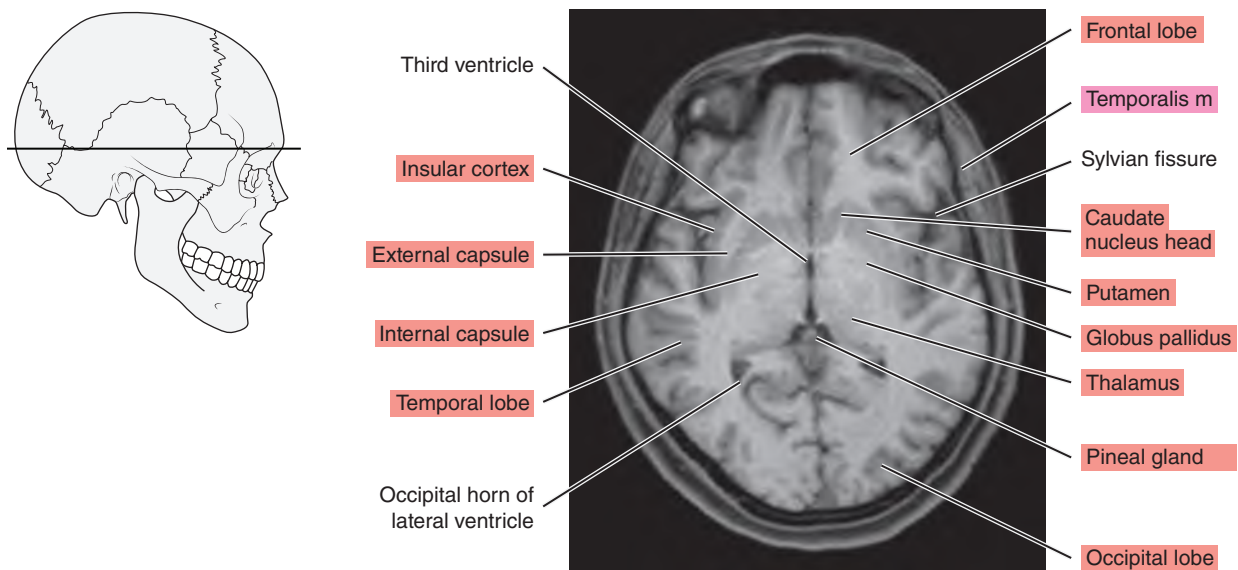


Figure 2.1.7

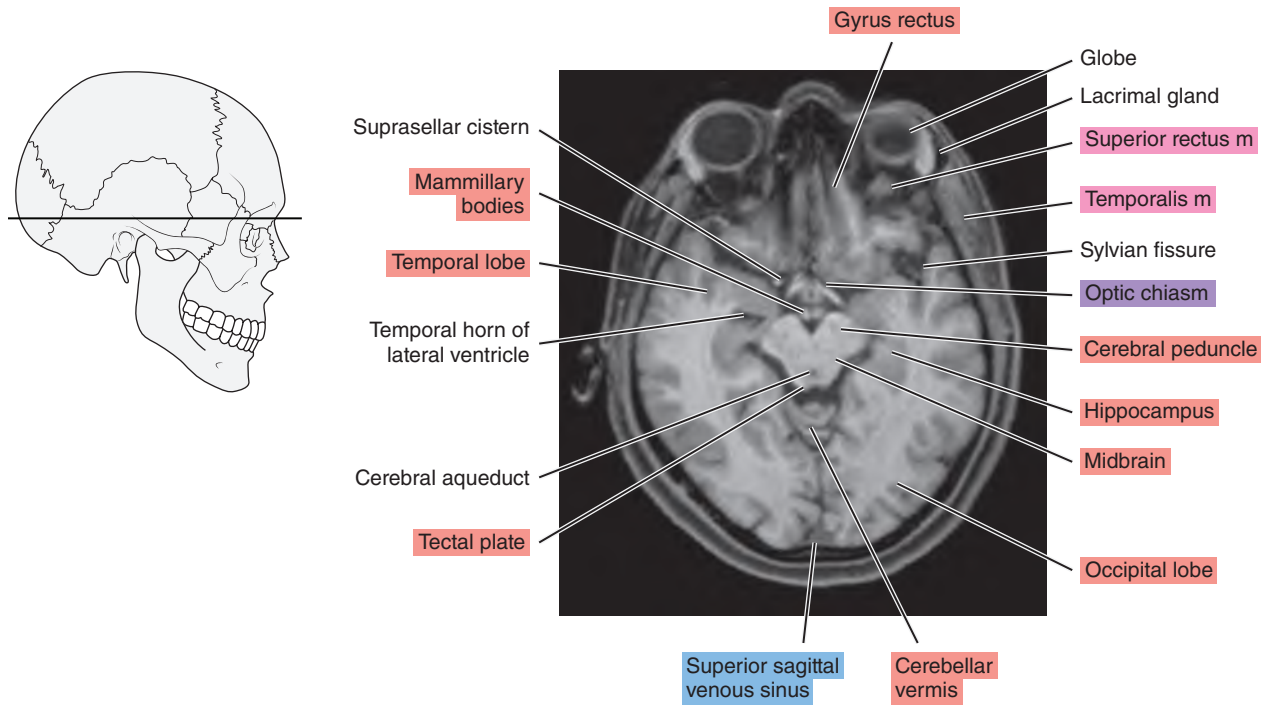


Figure 2.1.8

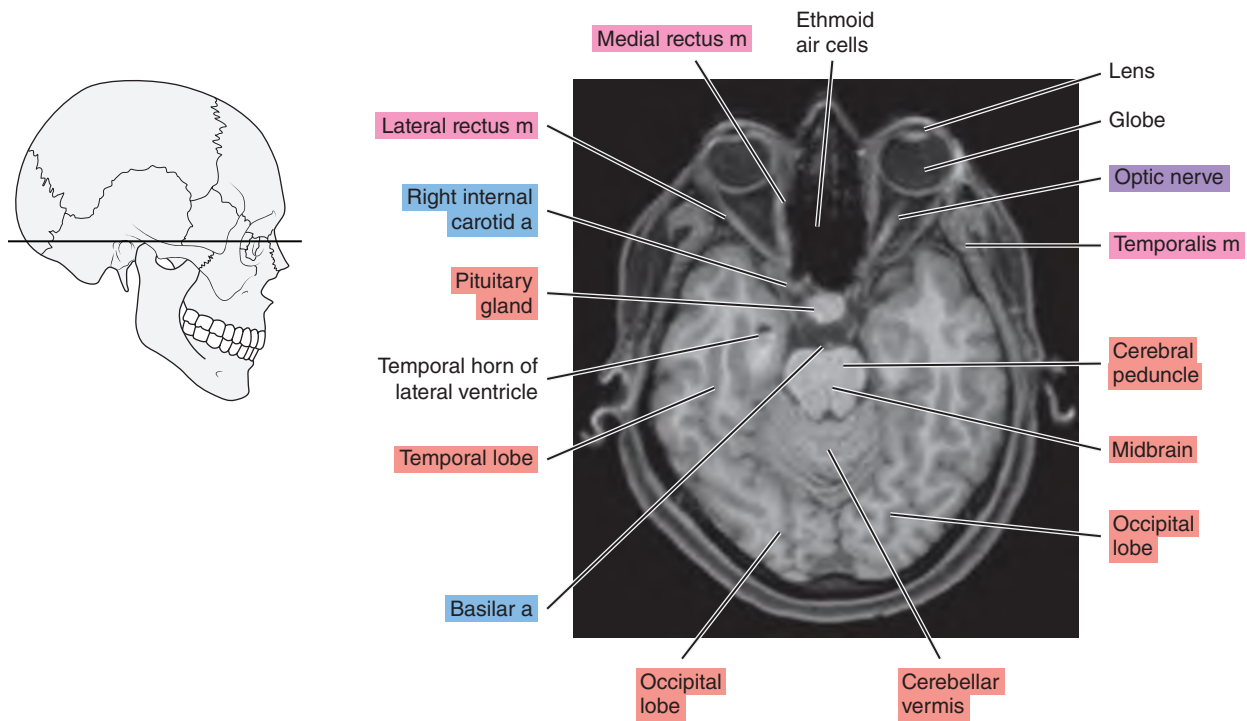


Figure 2.1.9

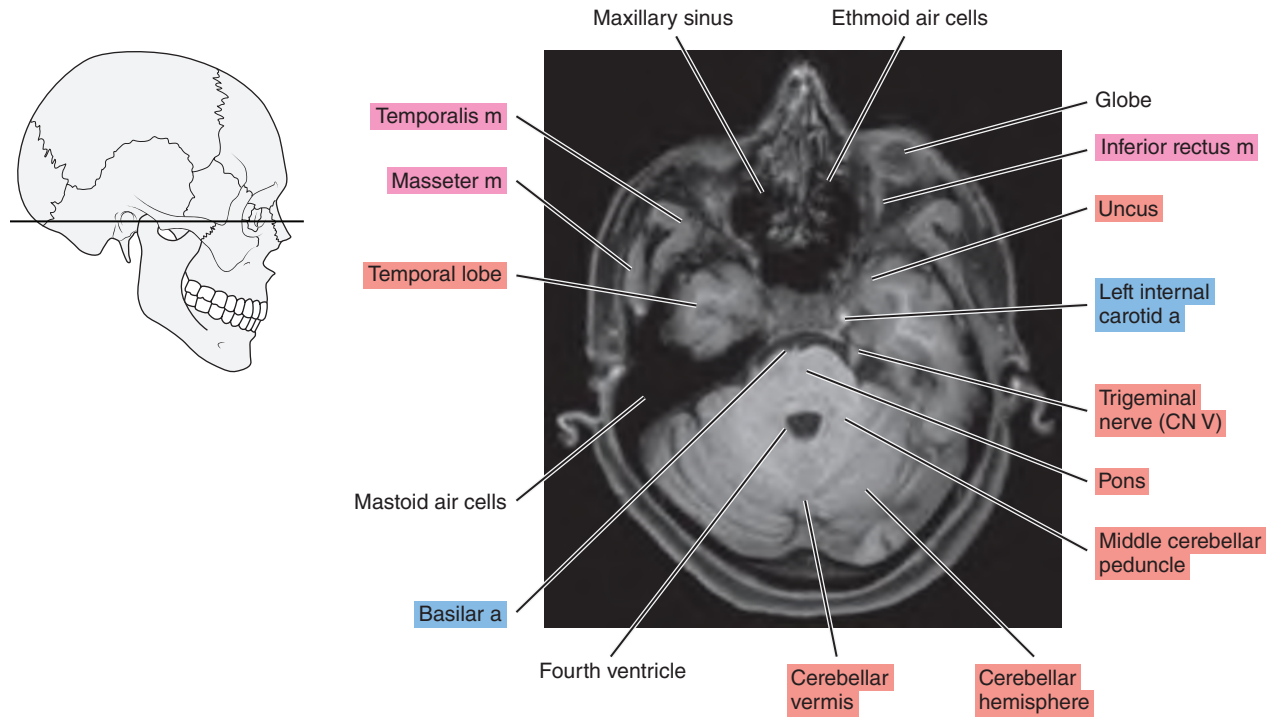


Figure 2.1.10

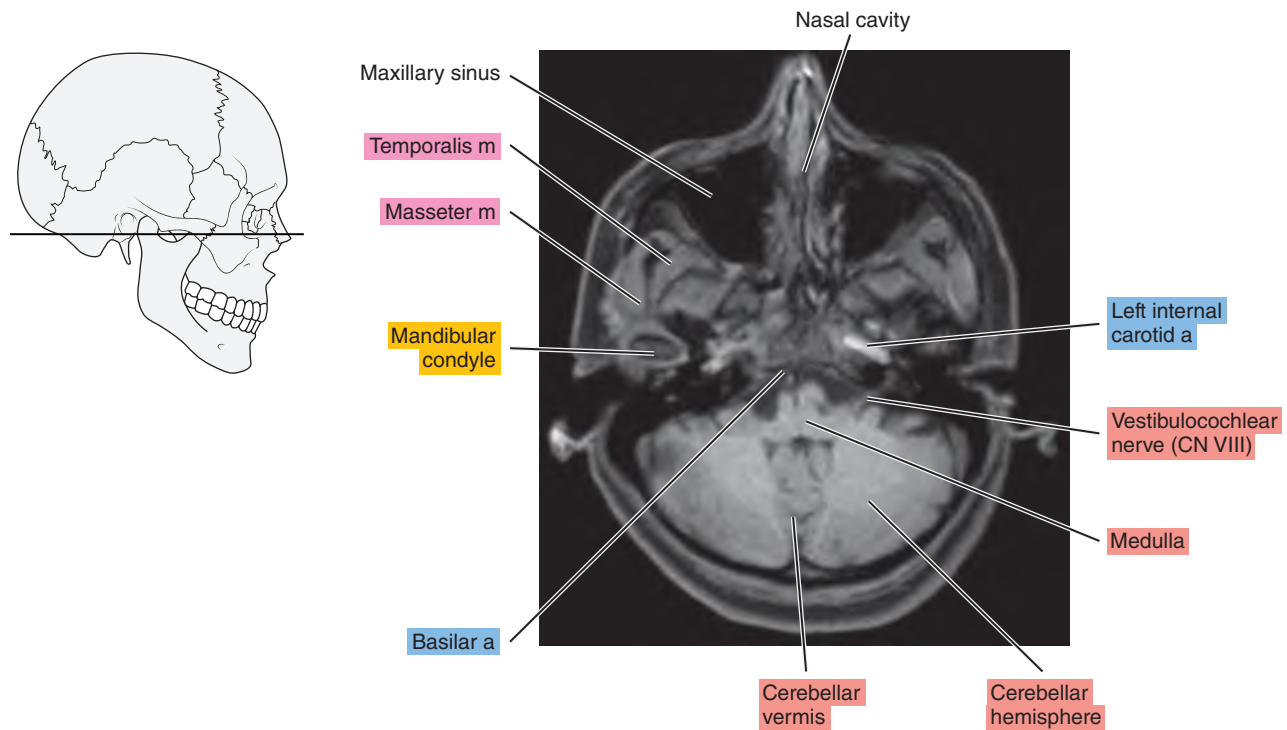


Figure 2.1.11

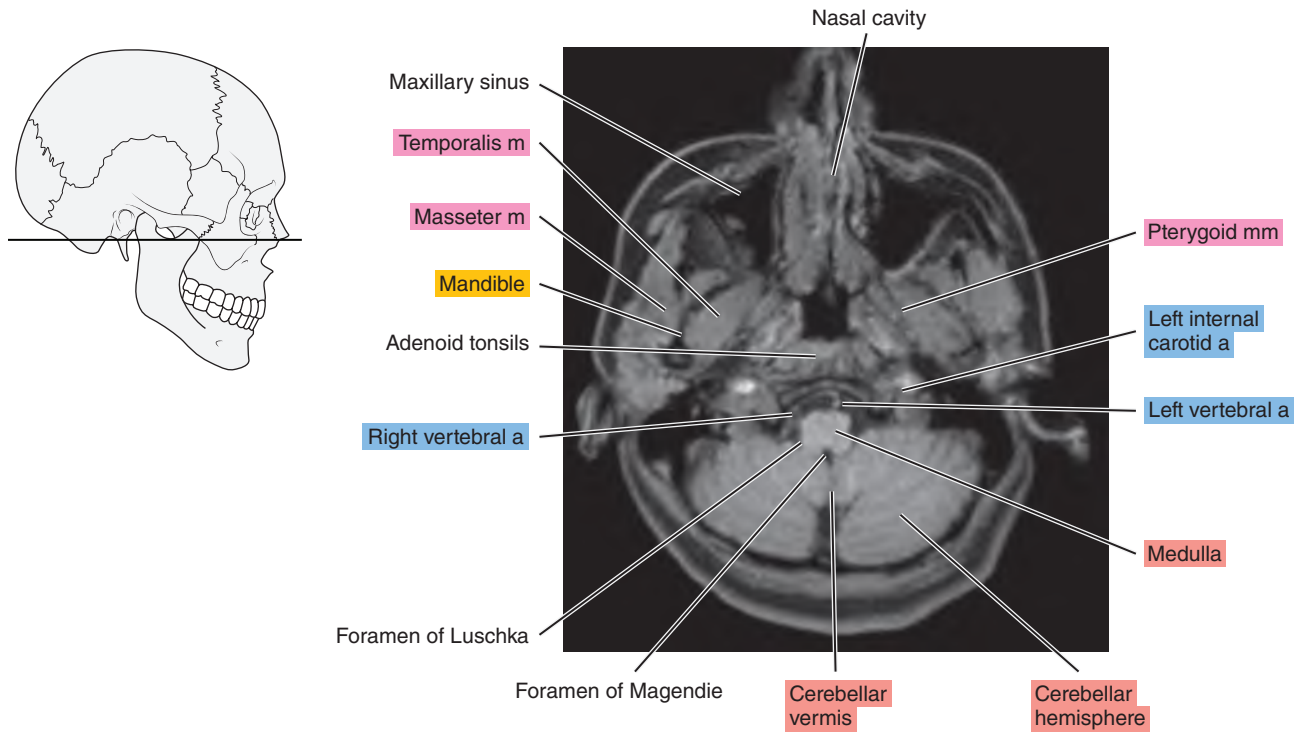
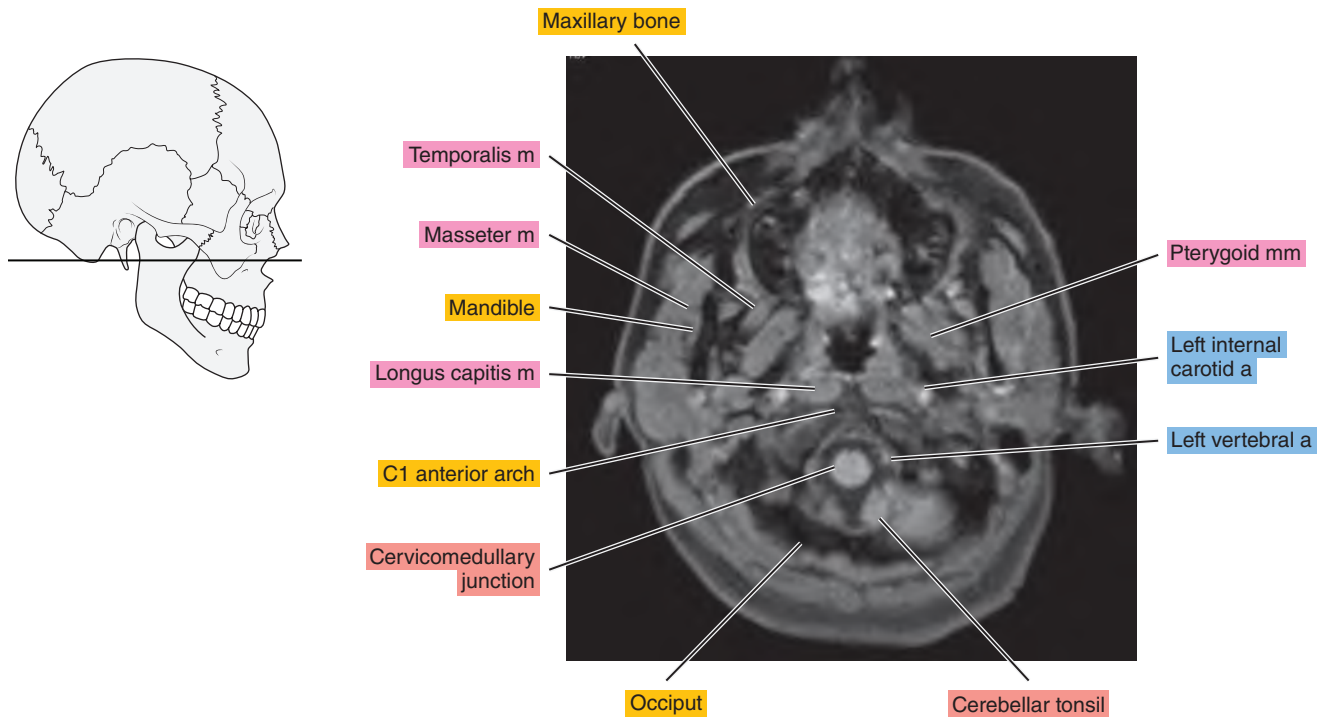


Figure 2.1.12



SAGITTAL

Figure 2.2.1

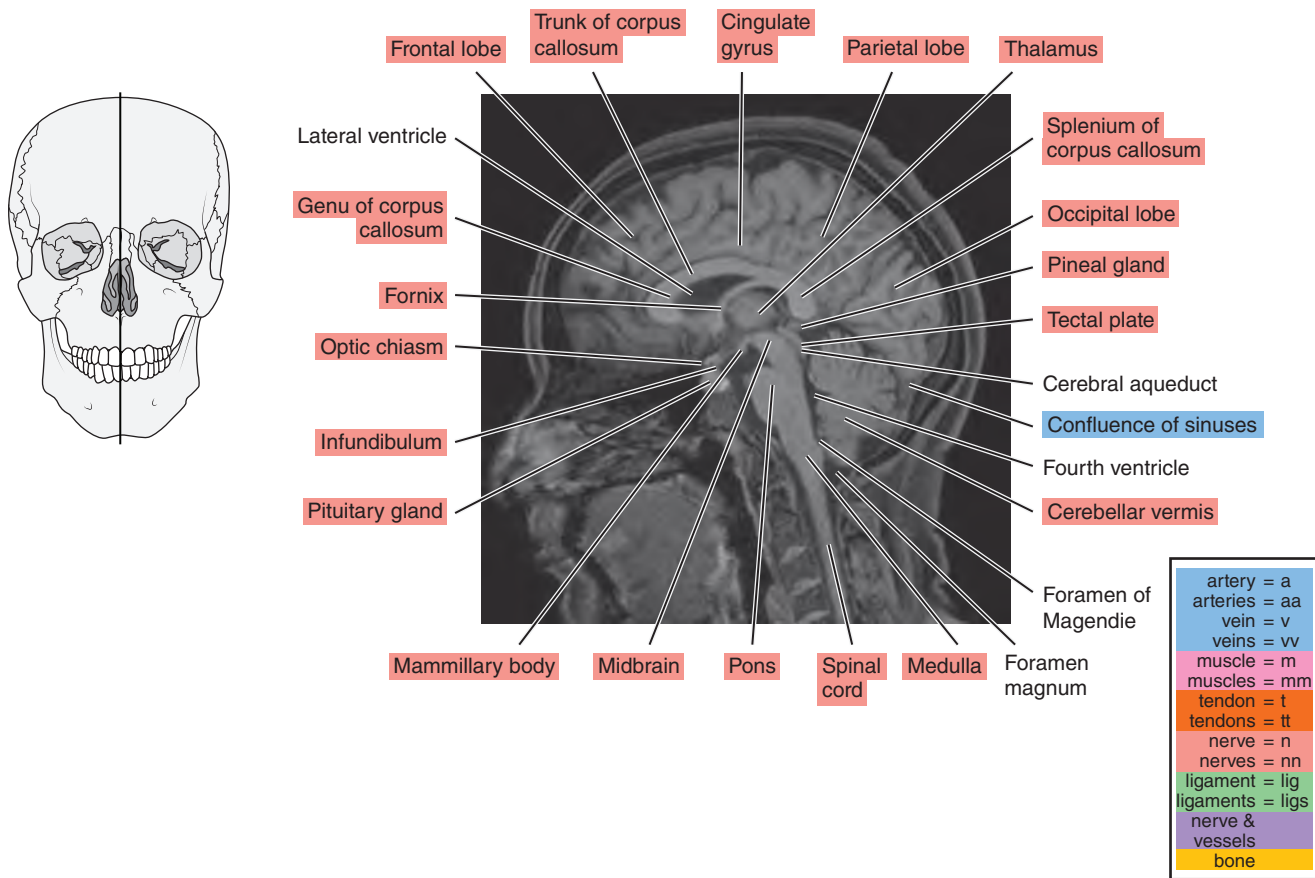


Figure 2.2.2

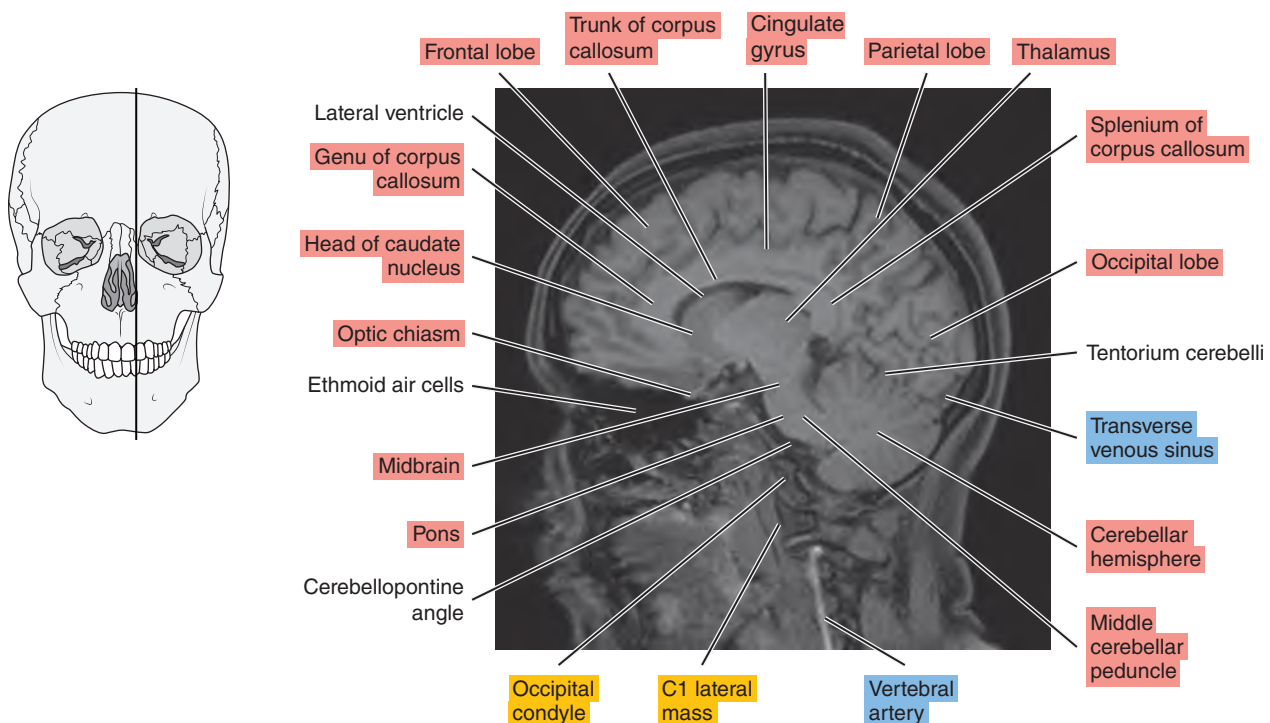


Figure 2.2.3

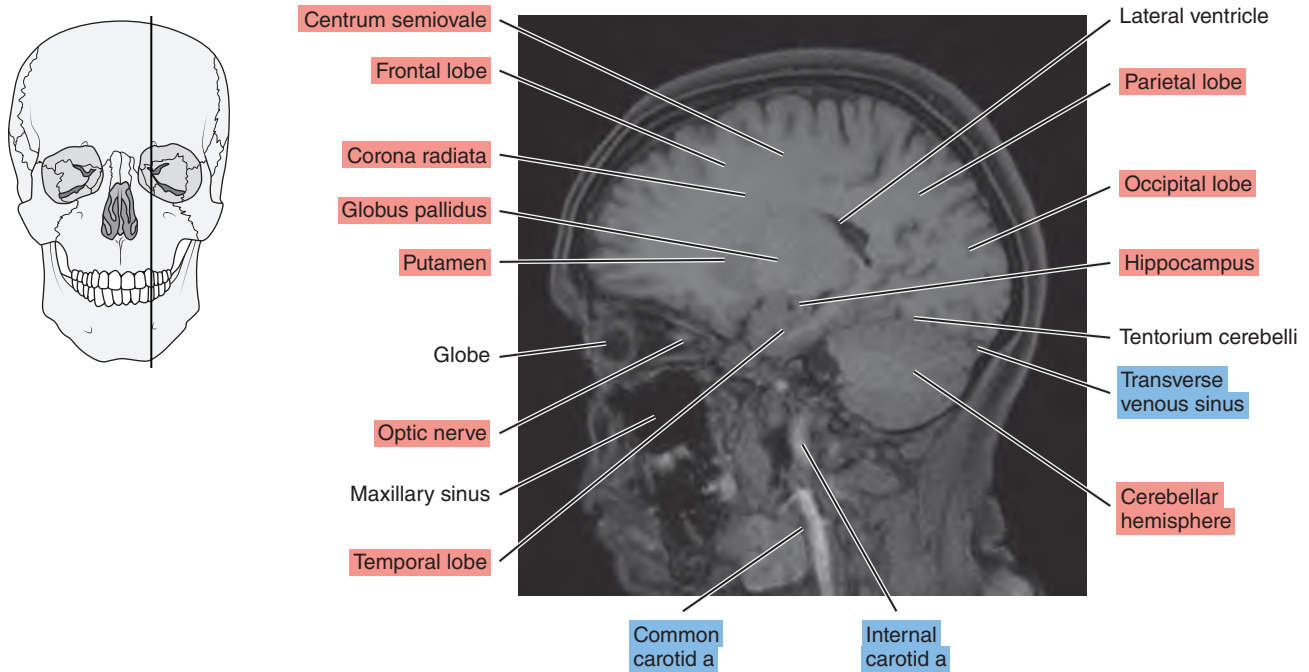


Figure 2.2.4

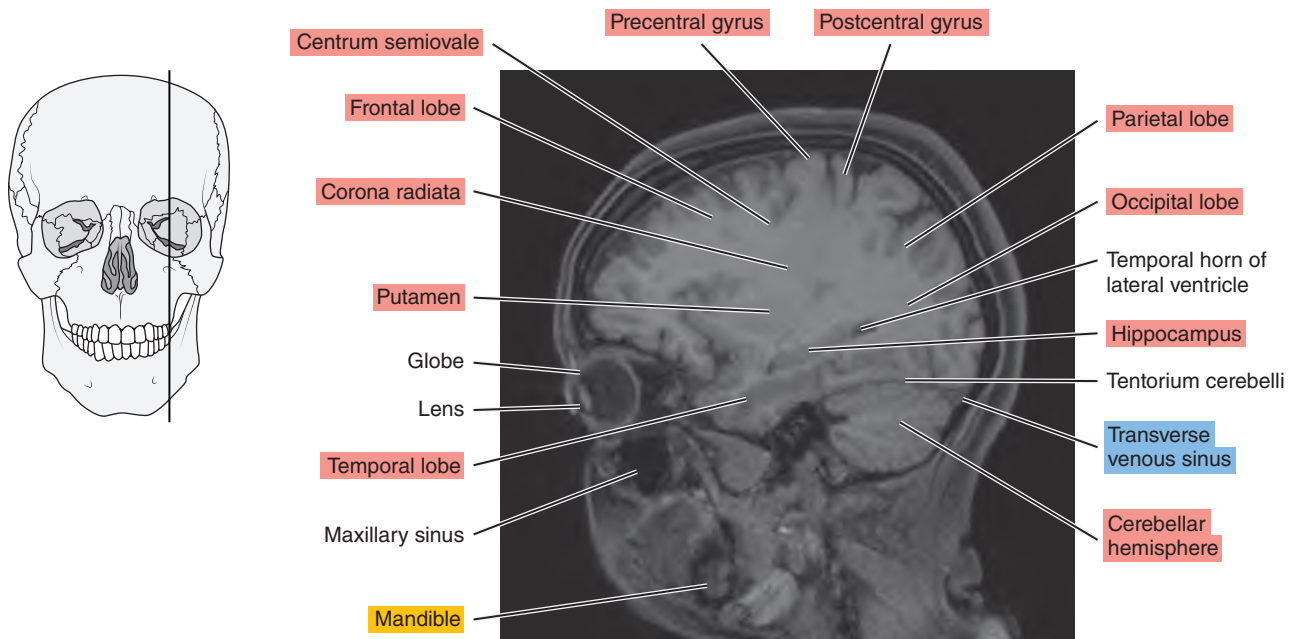


Figure 2.2.5

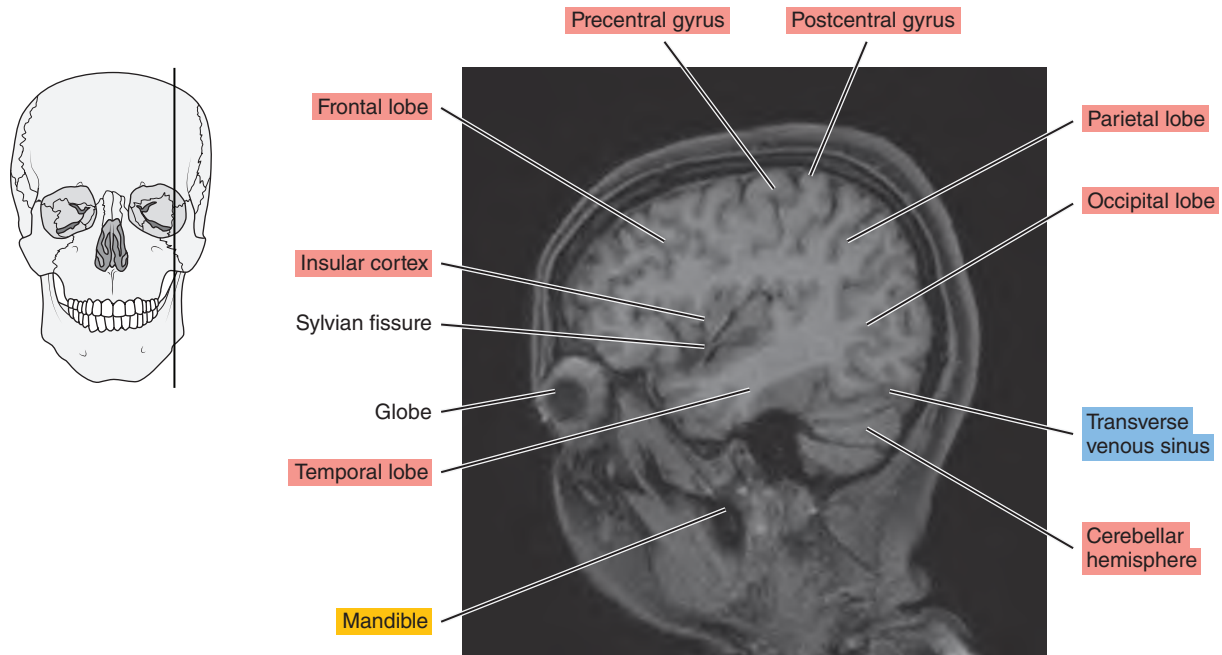
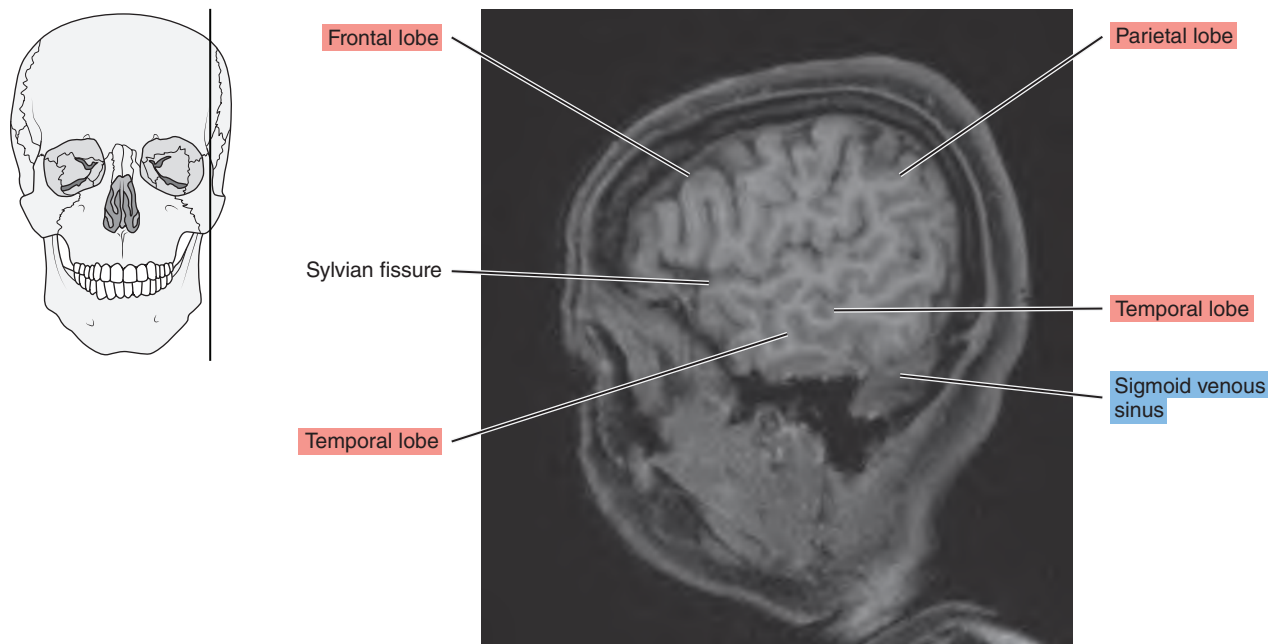


Figure 2.2.6



SAGITTAL
Figure 2.3.1

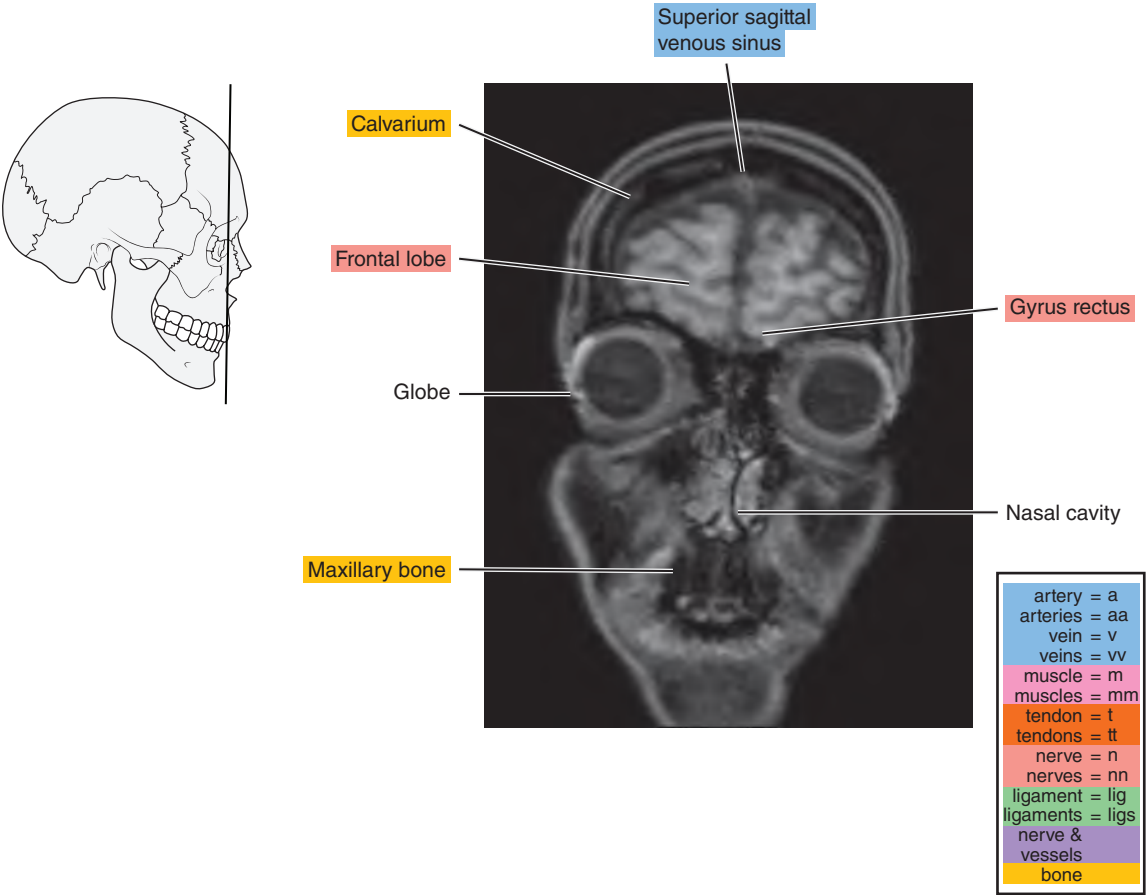


Figure 2.3.2

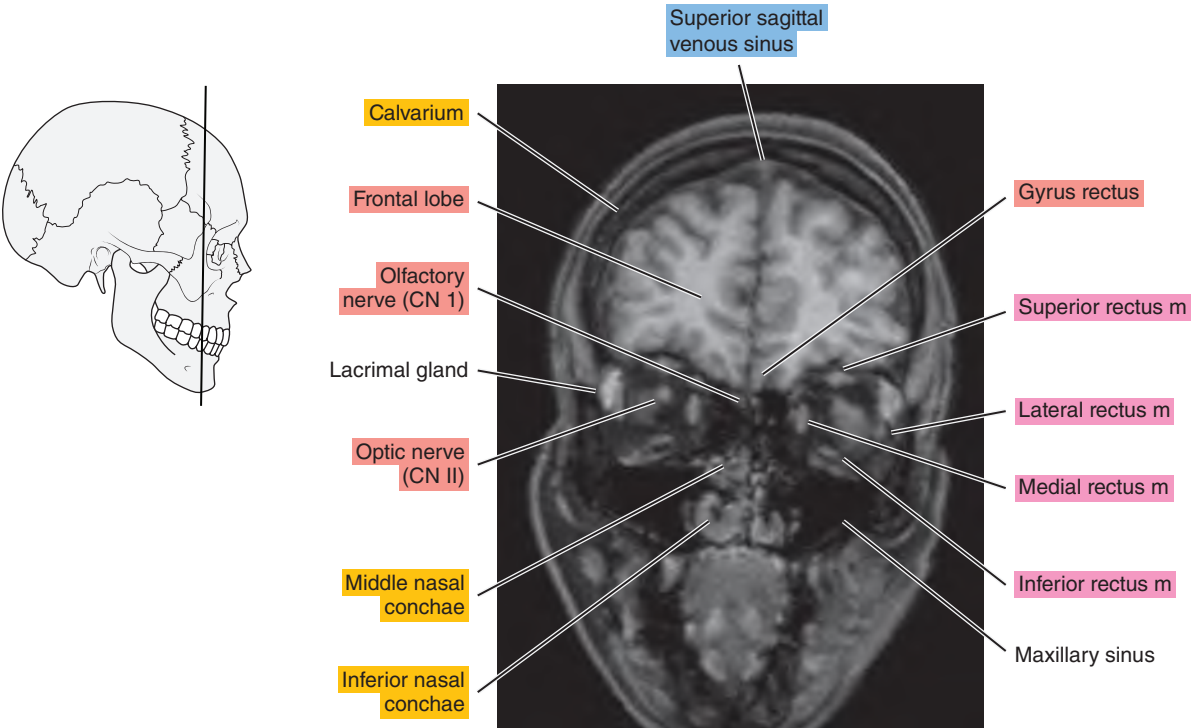


Figure 2.3.3

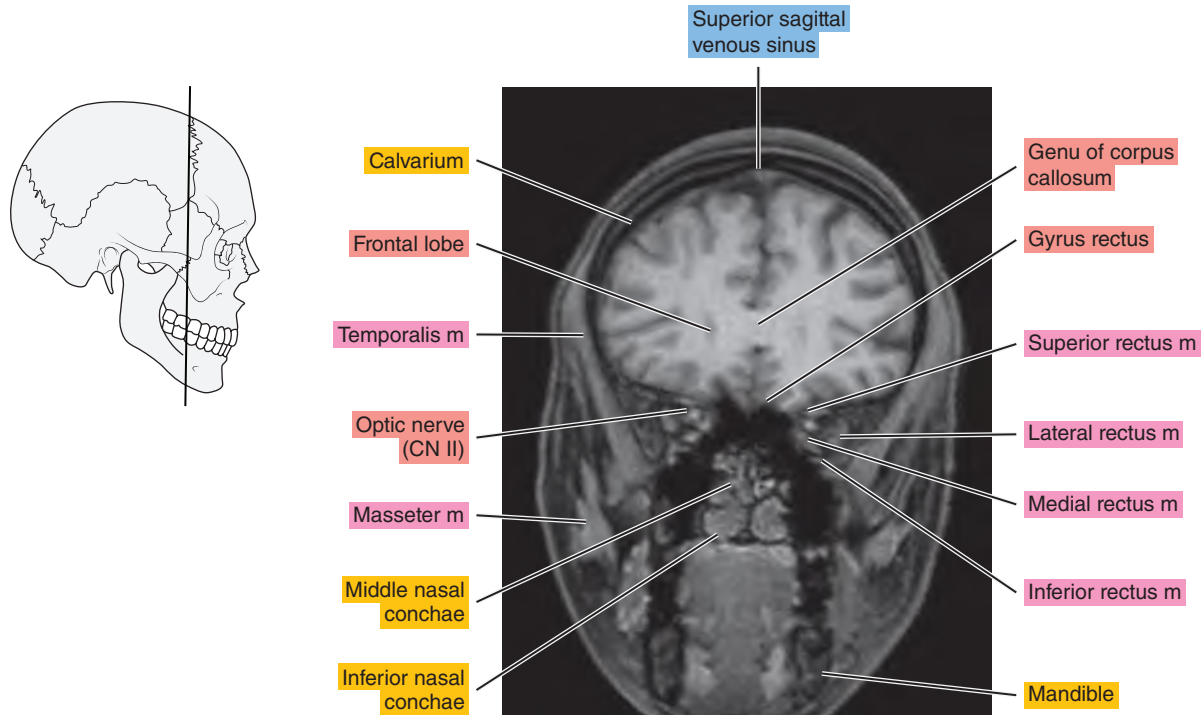


Figure 2.3.4

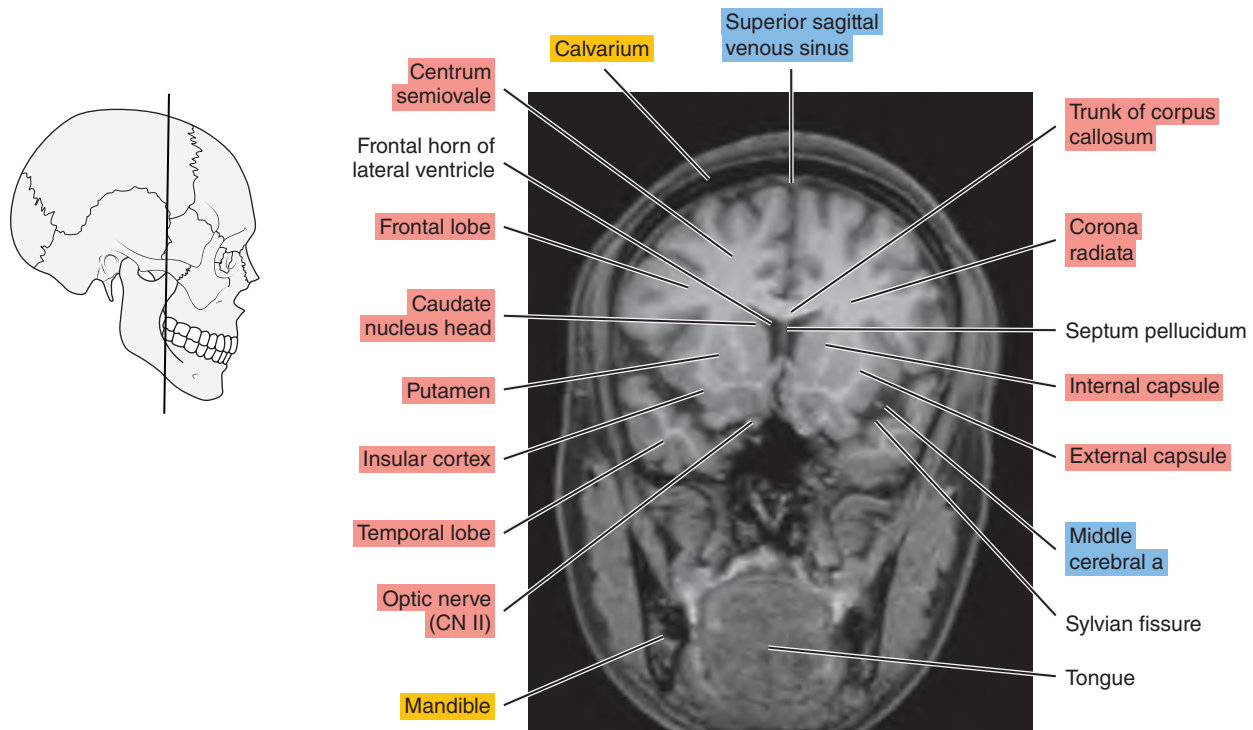


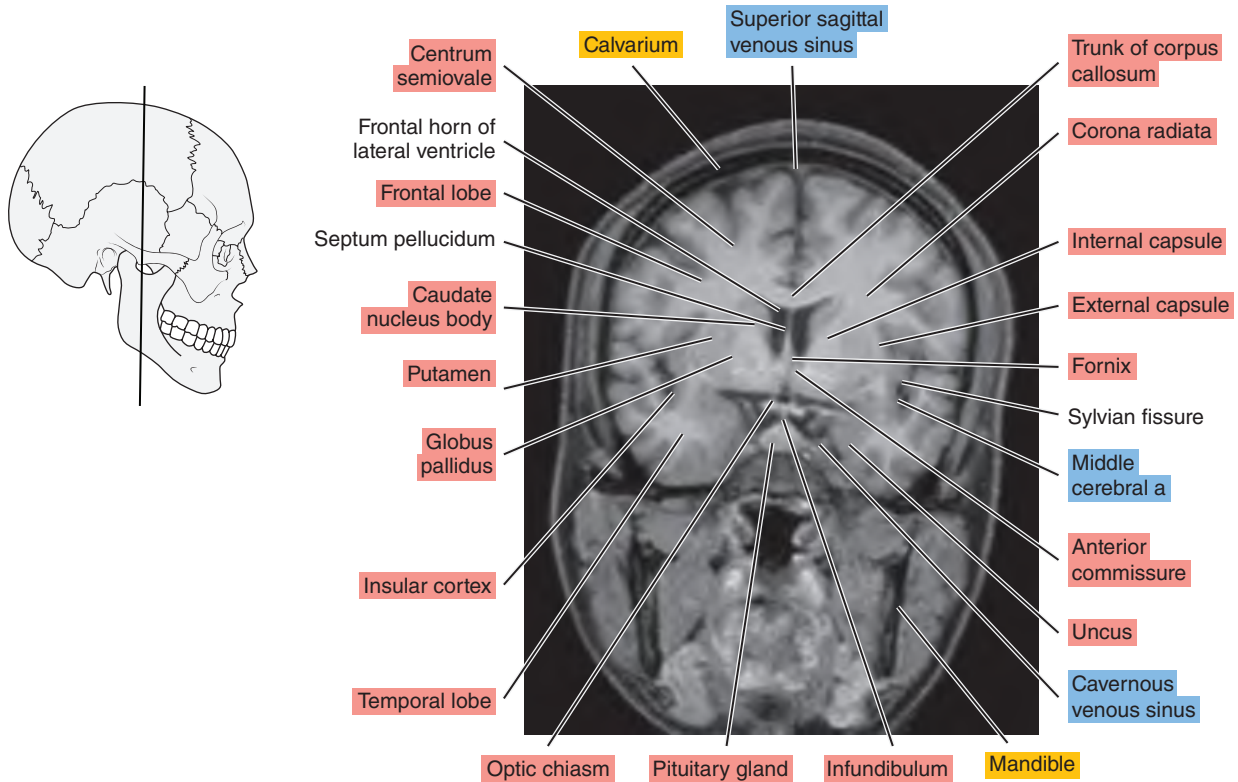
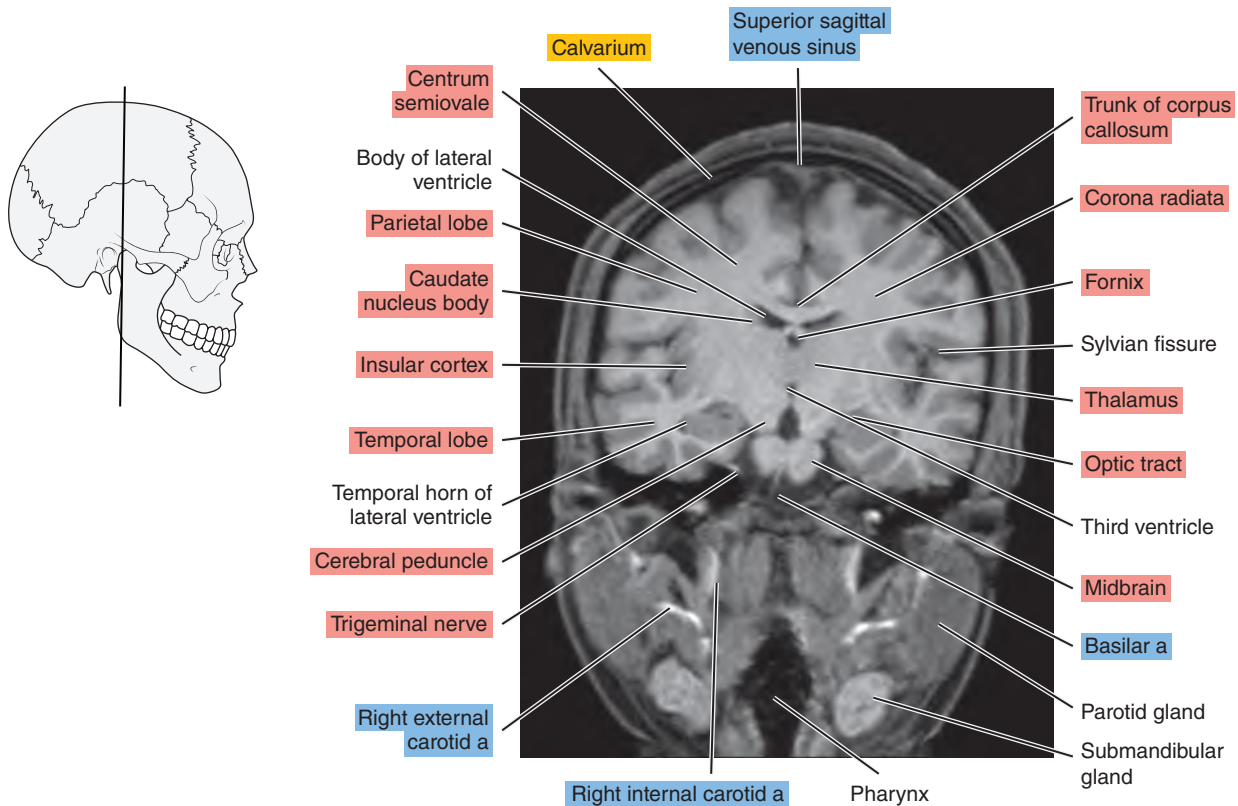
Figure 2.3.5

Figure 2.3.6


Figure 2.3.7

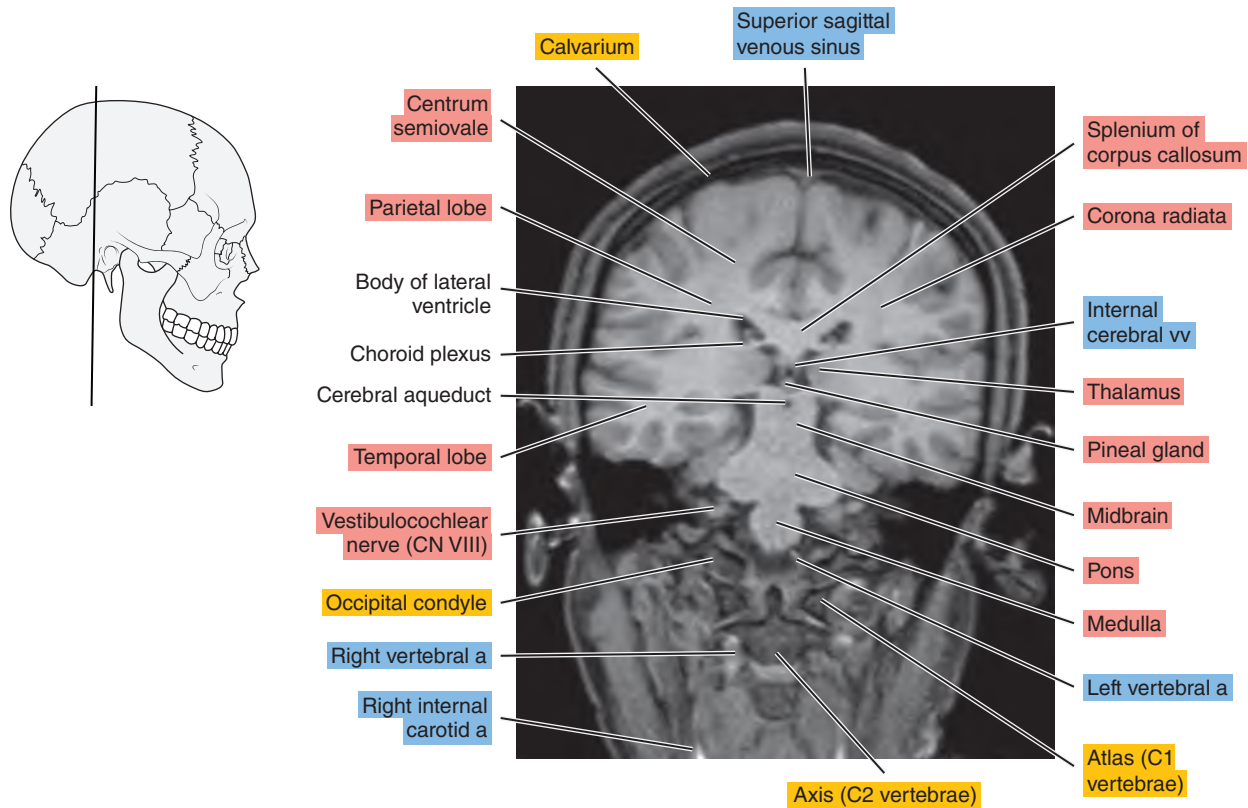


Figure 2.3.8

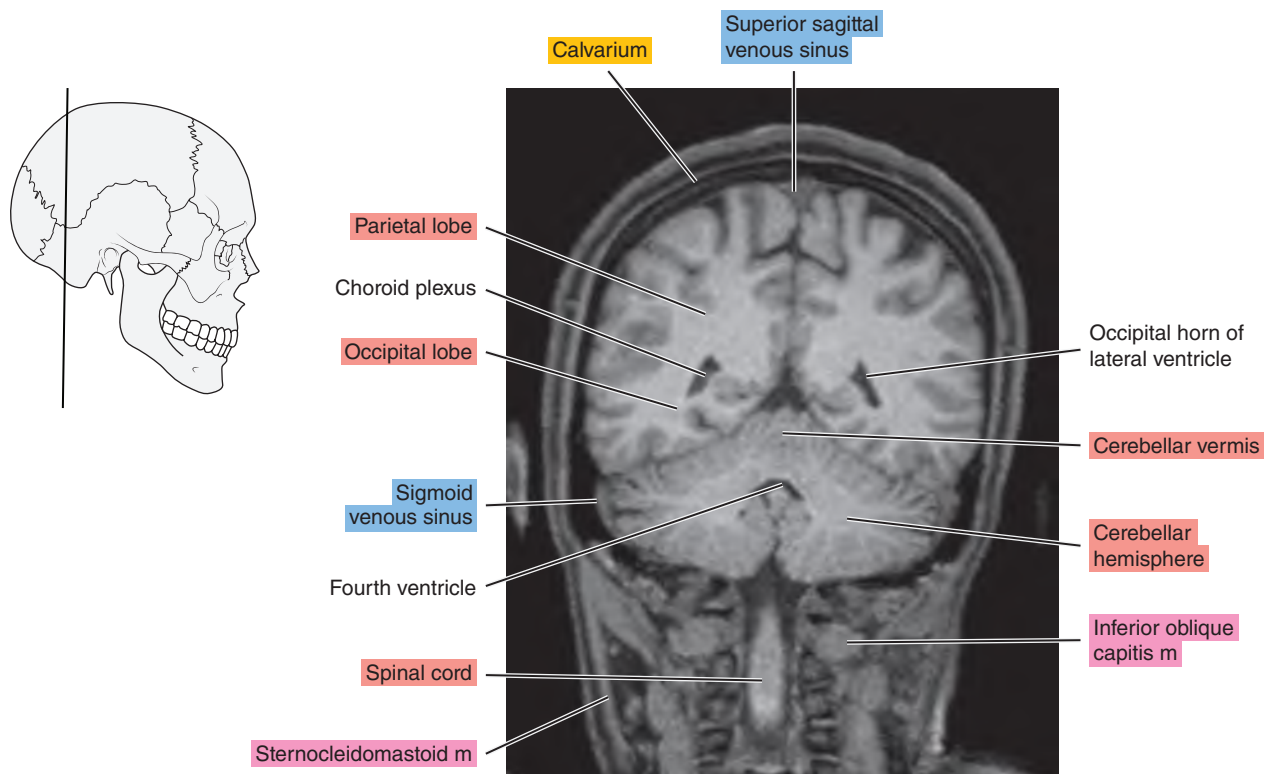


Figure 2.3.9

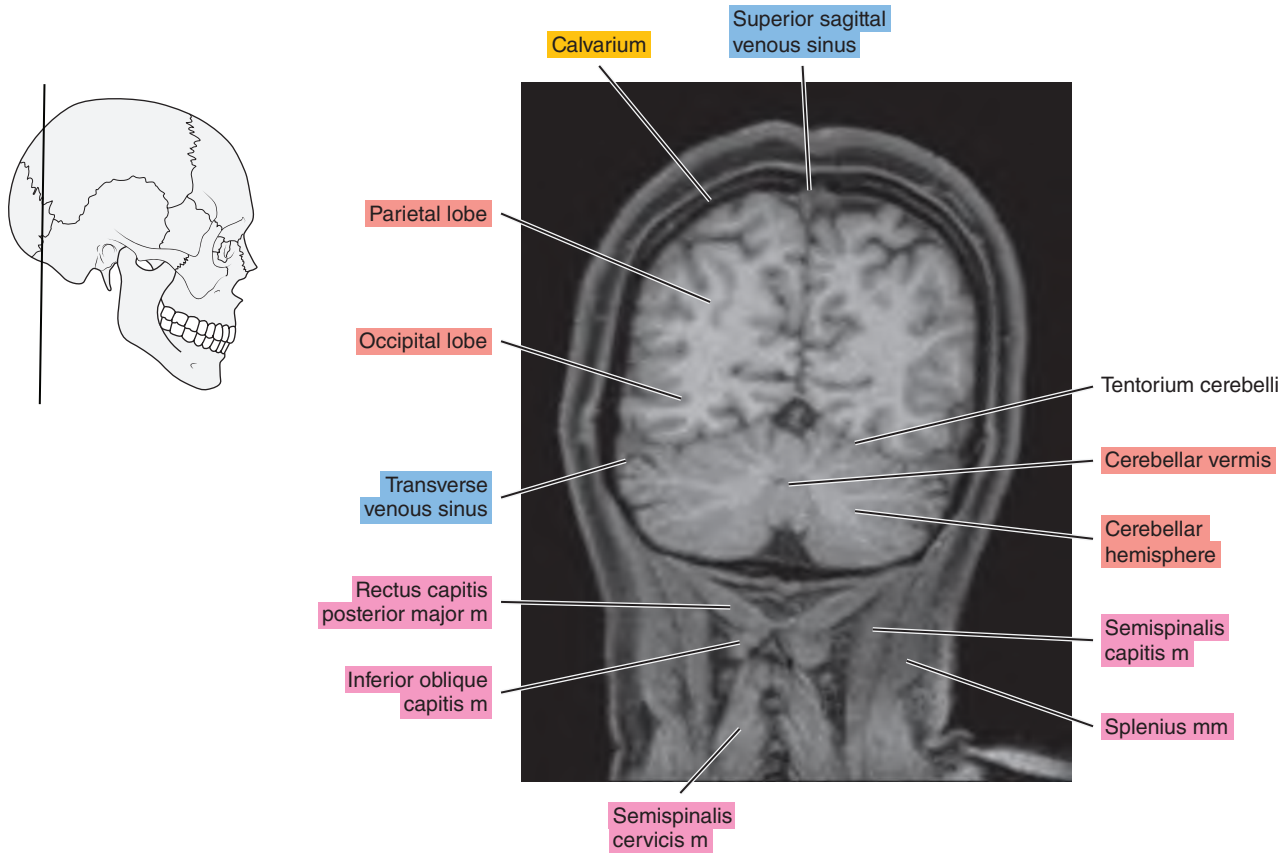
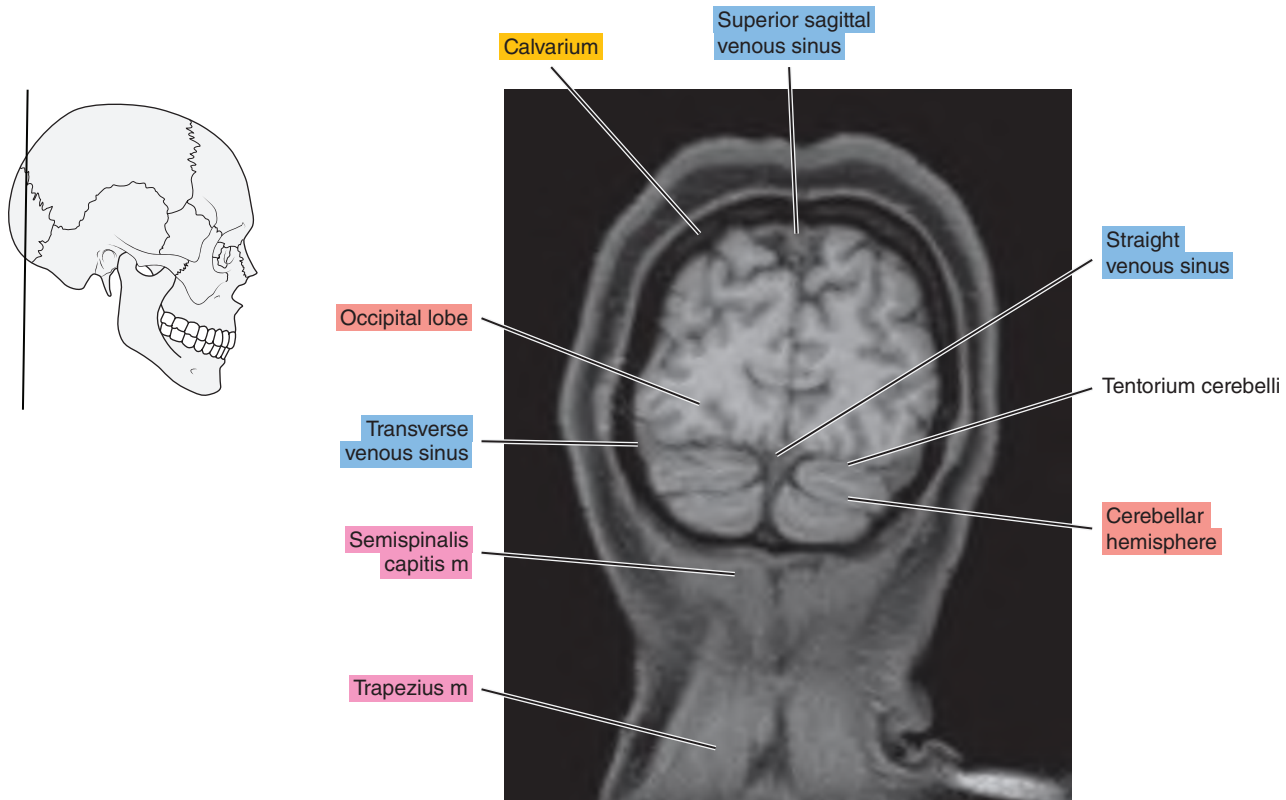


Figure 2.3.10



The background of the slide features a complex, repeating geometric pattern of green hexagons and triangles, creating a textured, crystalline effect. The colors range from light mint green to a darker forest green.

Chapter 3

CT of the Thorax

AXIAL

Figure 3.1.1

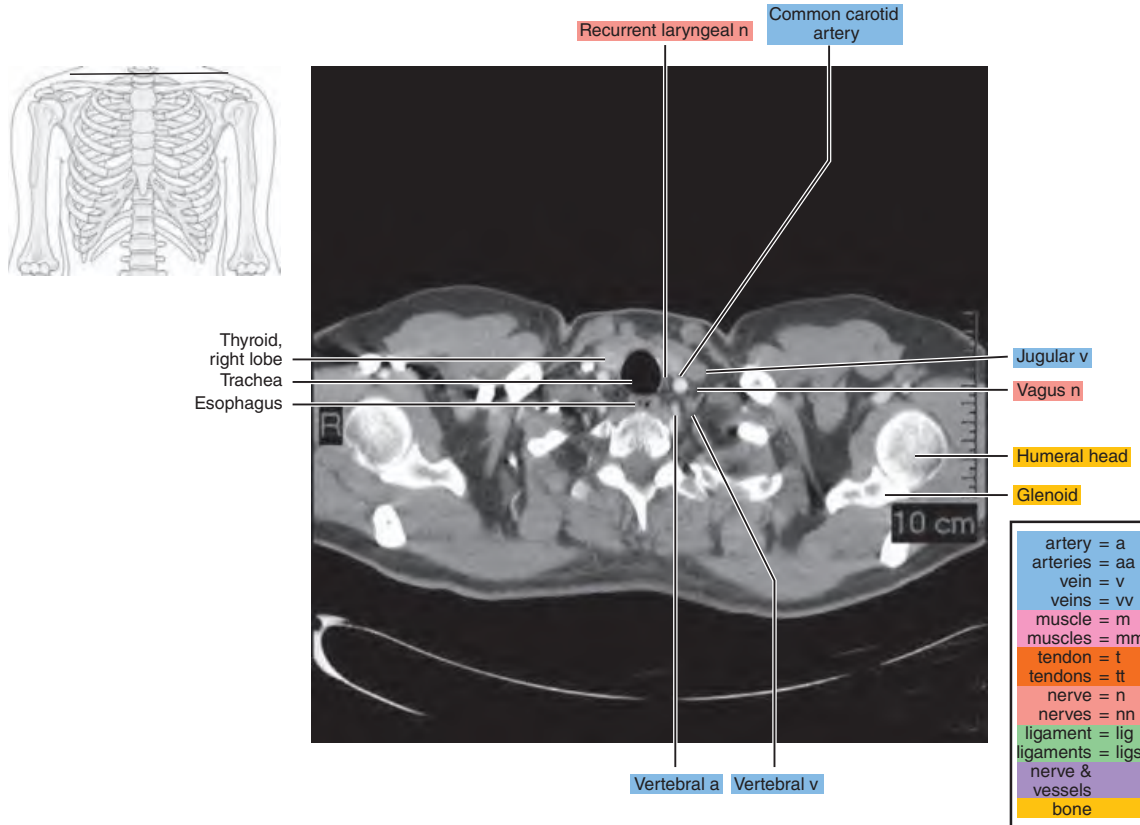


Figure 3.1.2

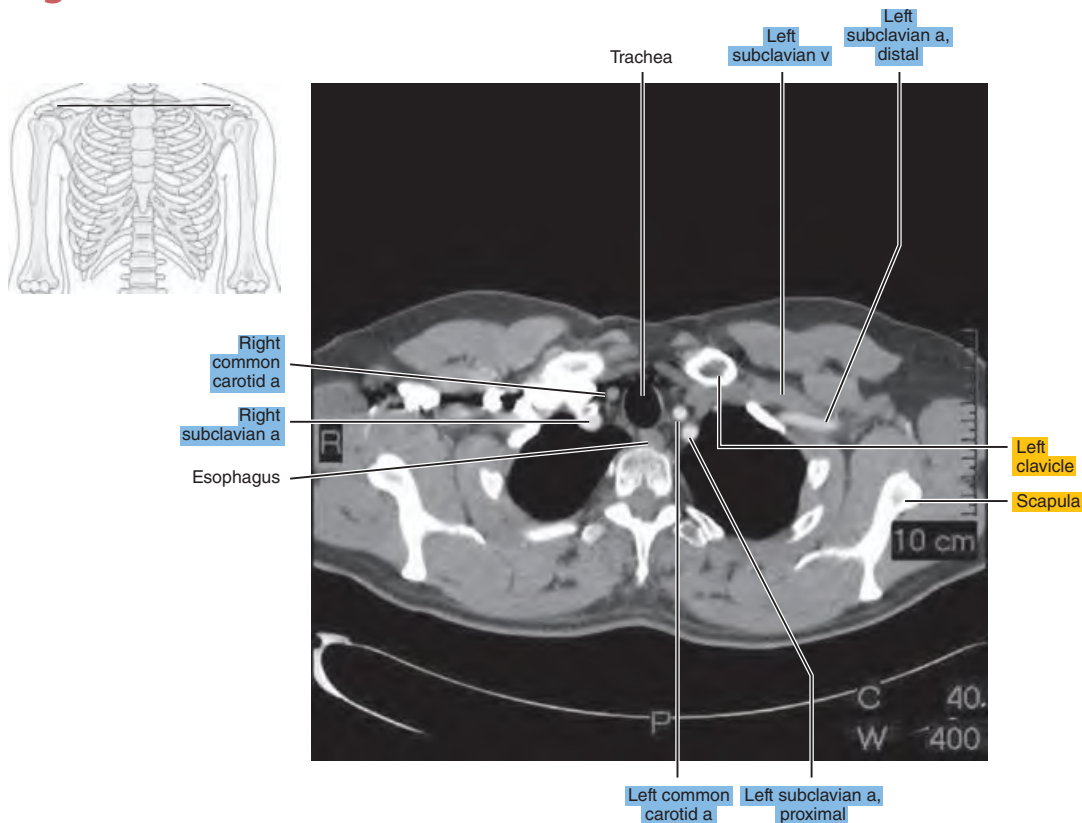


Figure 3.1.3

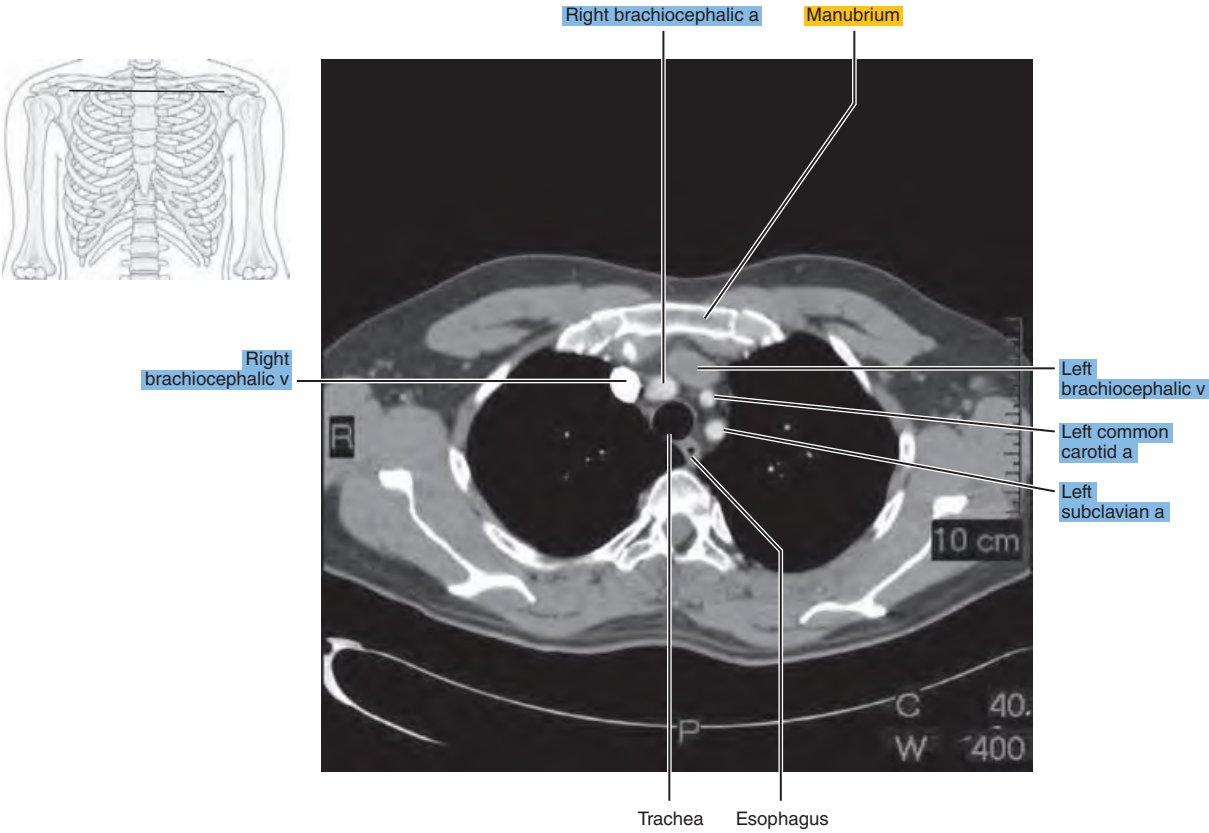


Figure 3.1.4

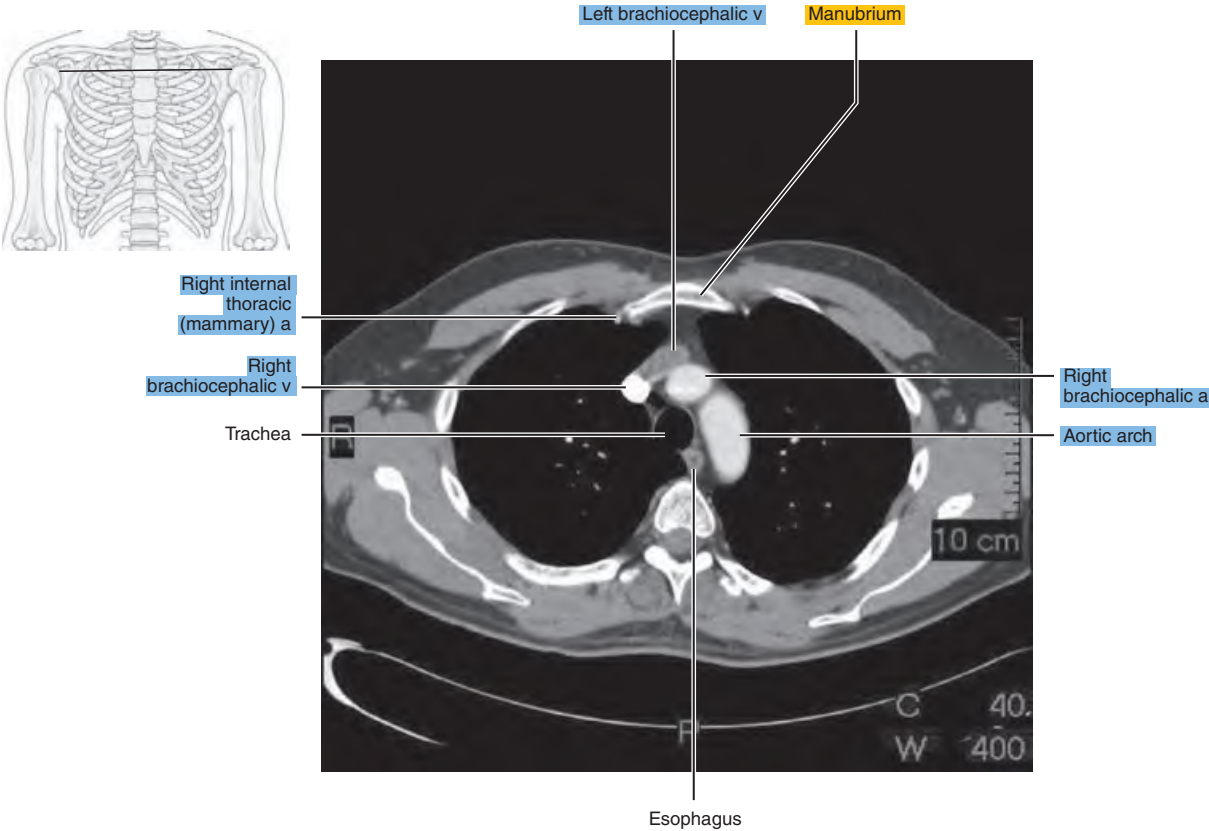


Figure 3.1.5

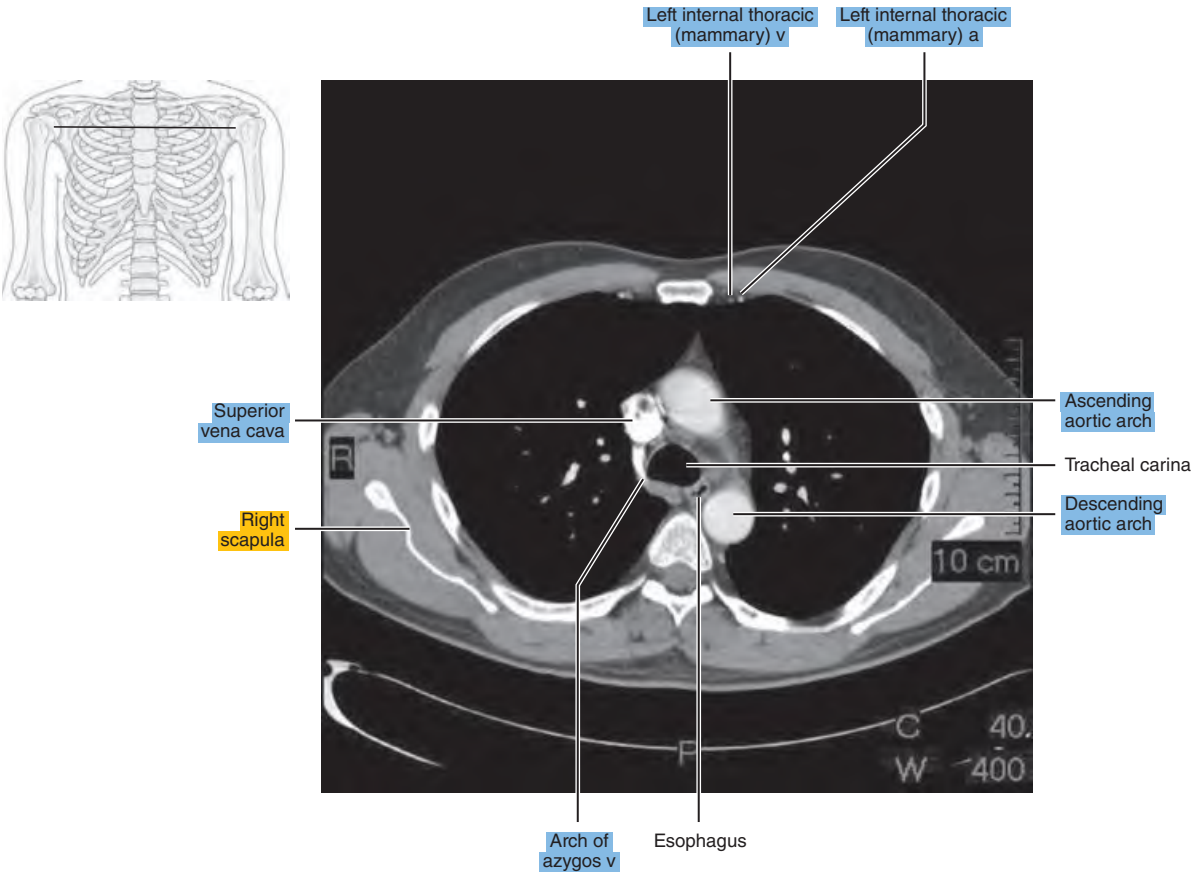


Figure 3.1.6

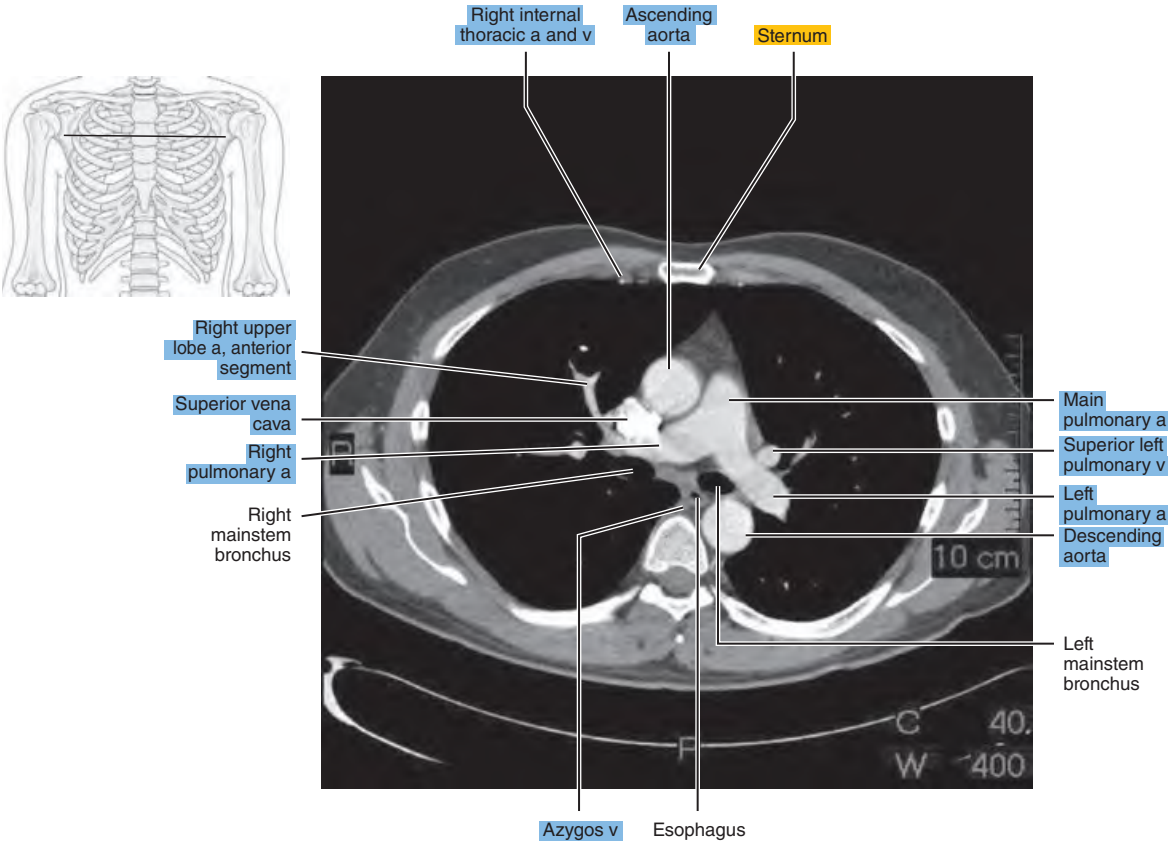


Figure 3.1.7

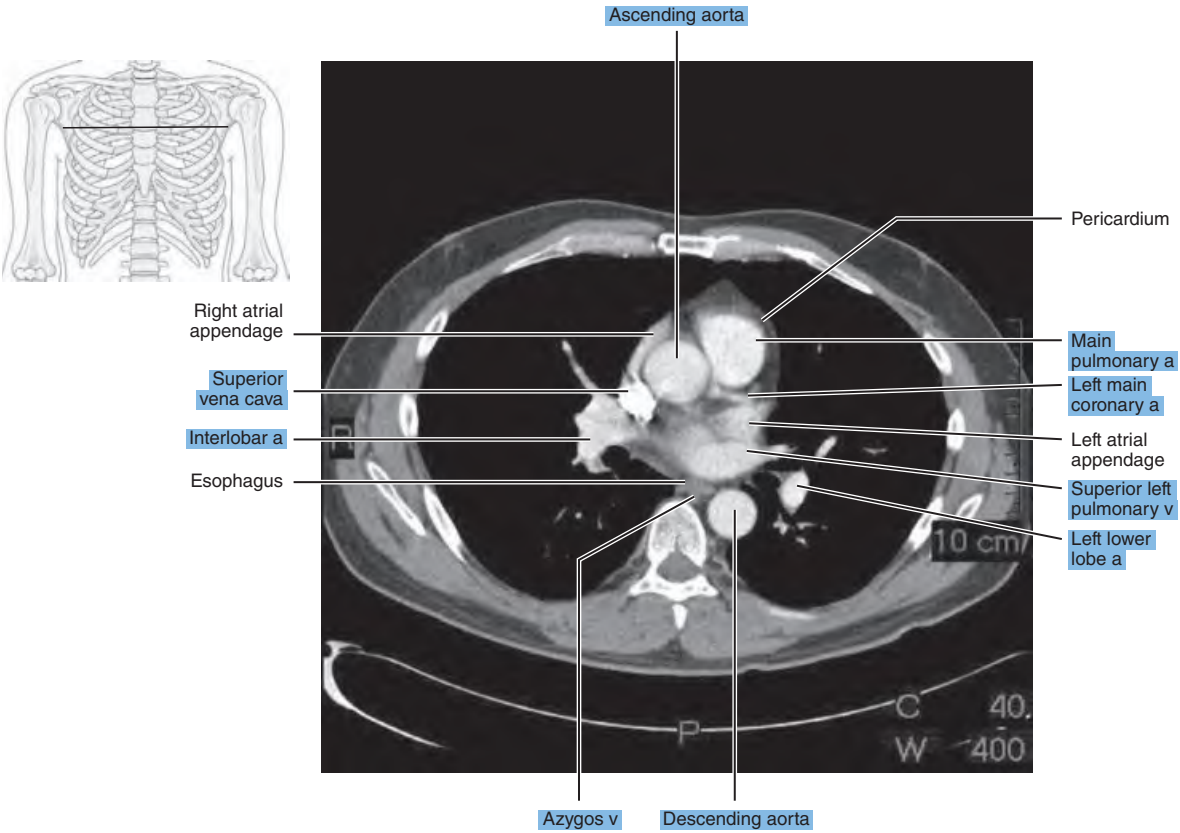


Figure 3.1.8

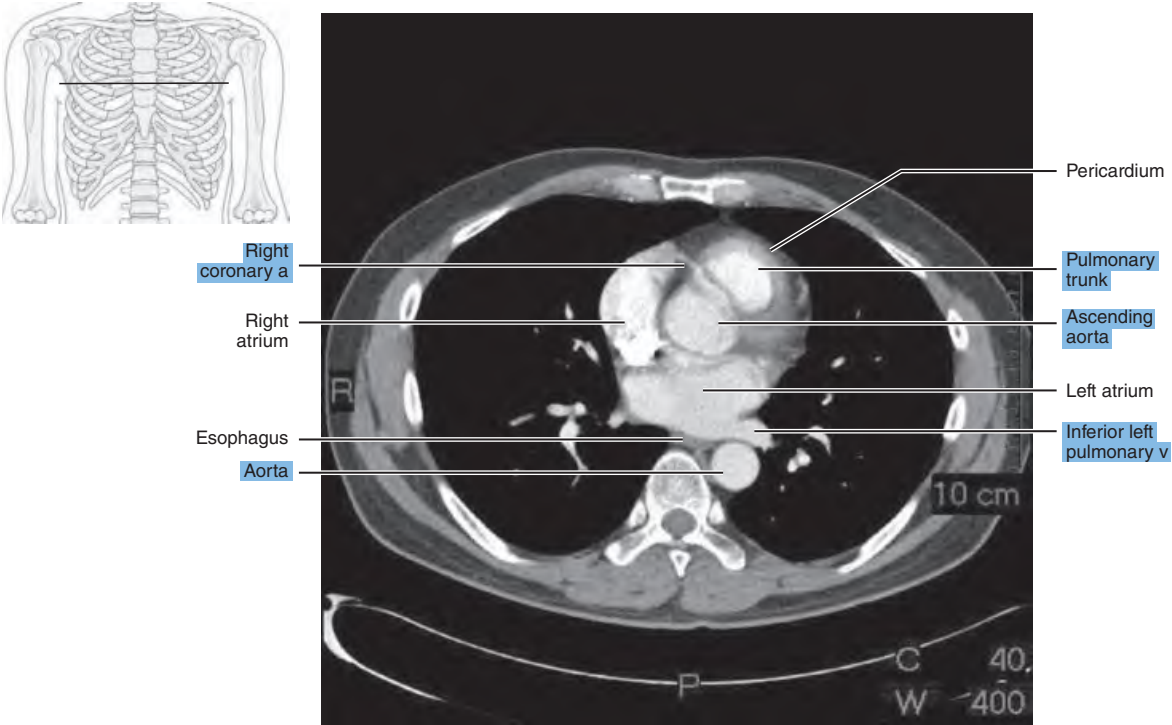


Figure 3.1.9

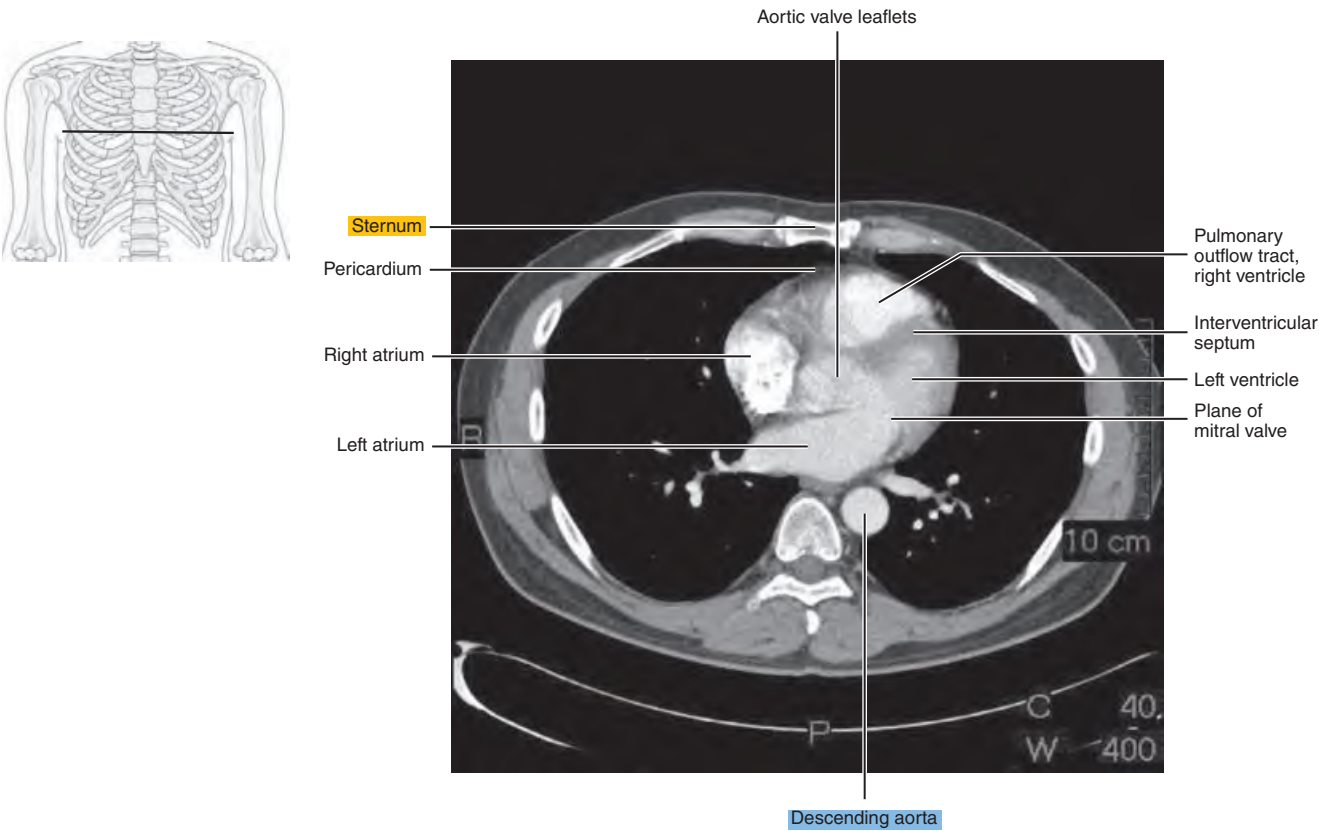


Figure 3.1.10

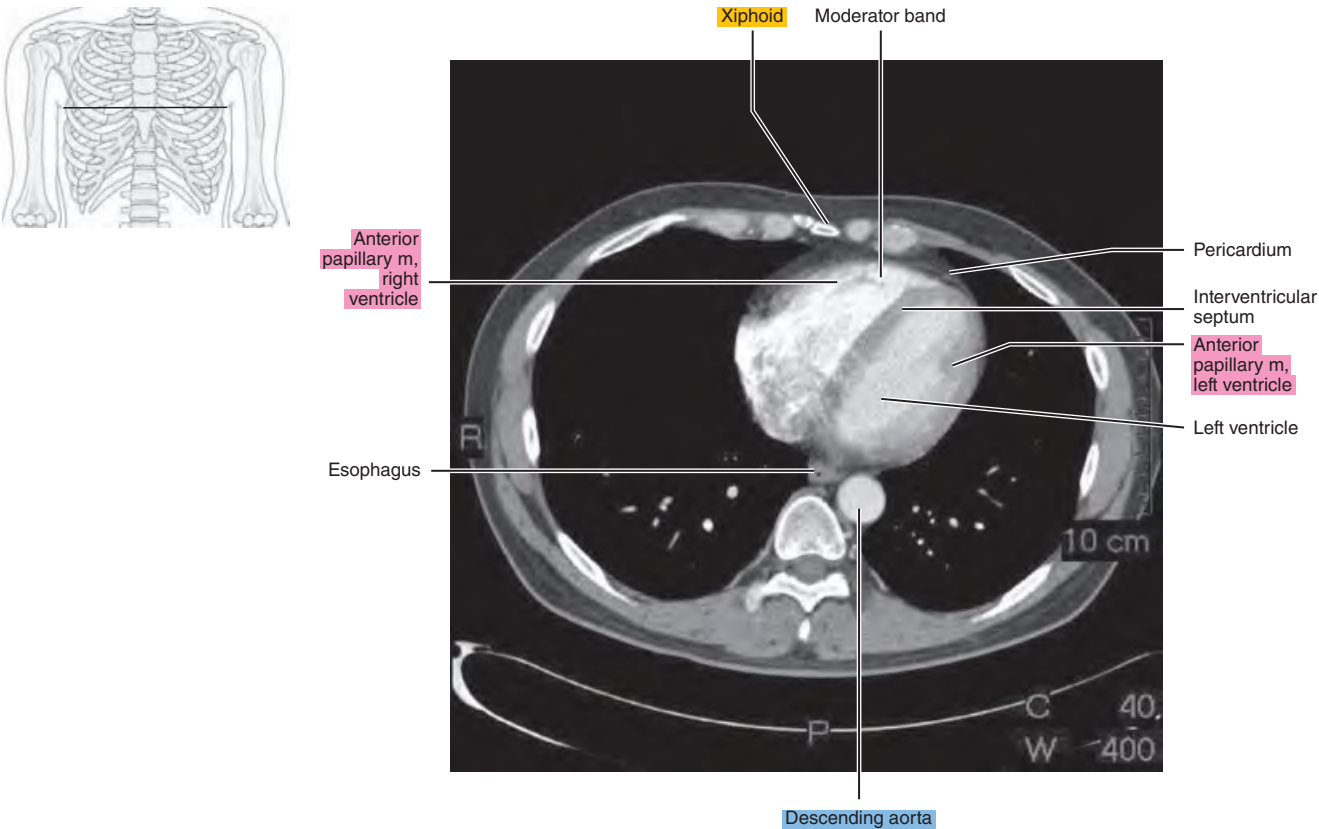


Figure 3.1.11

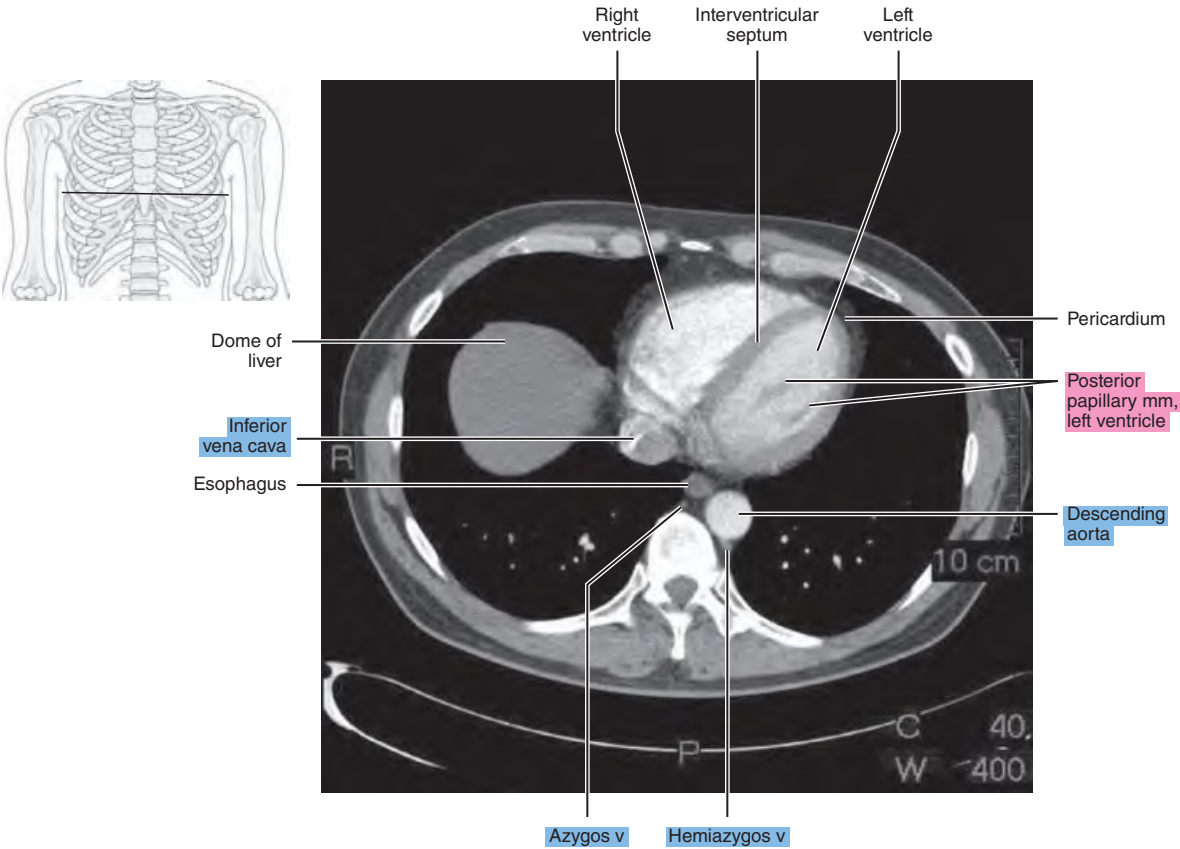


Figure 3.1.12

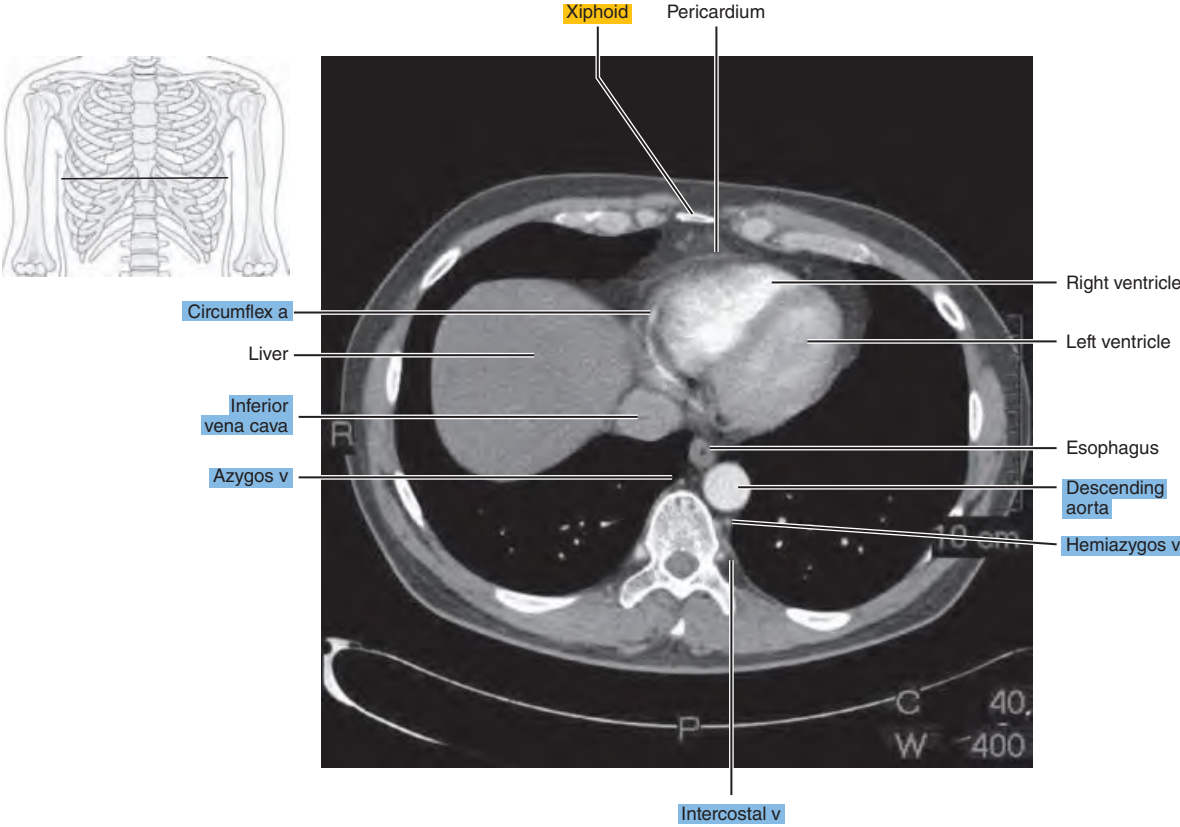
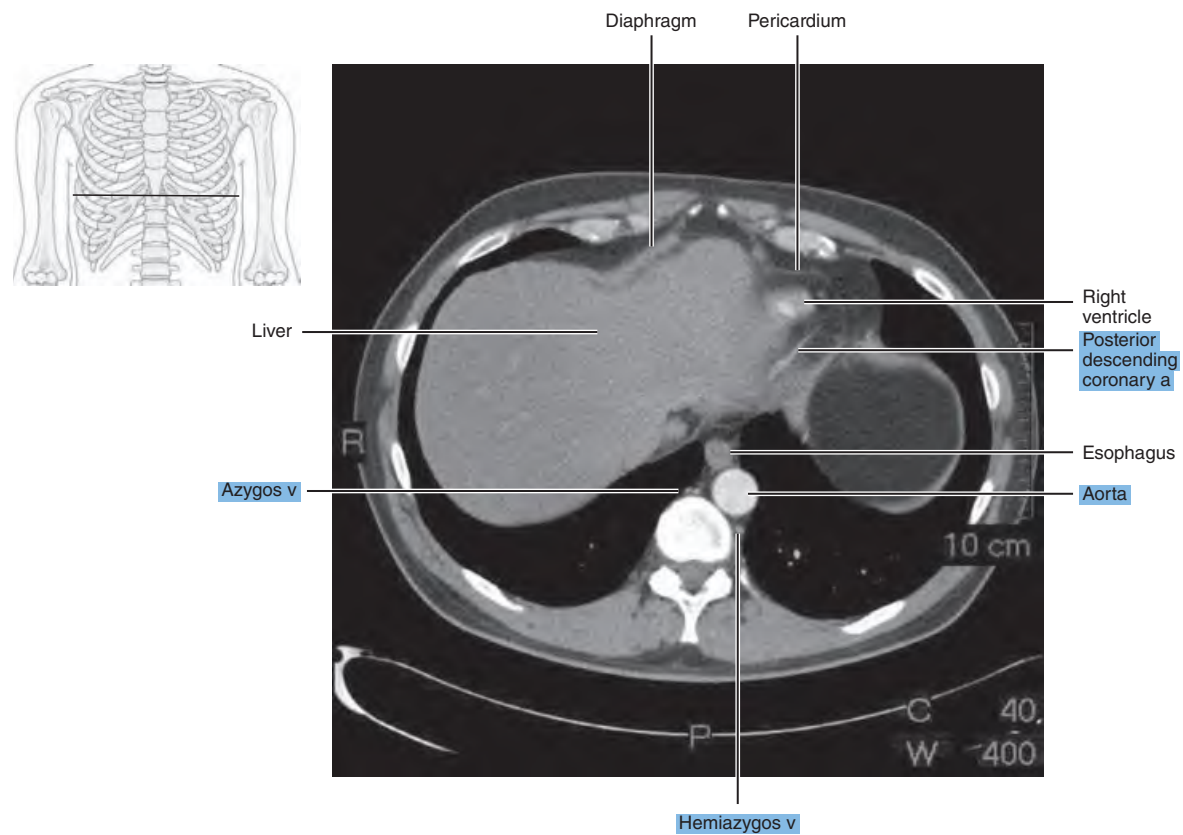


Figure 3.1.13



SAGITTAL

Figure 3.2.1A

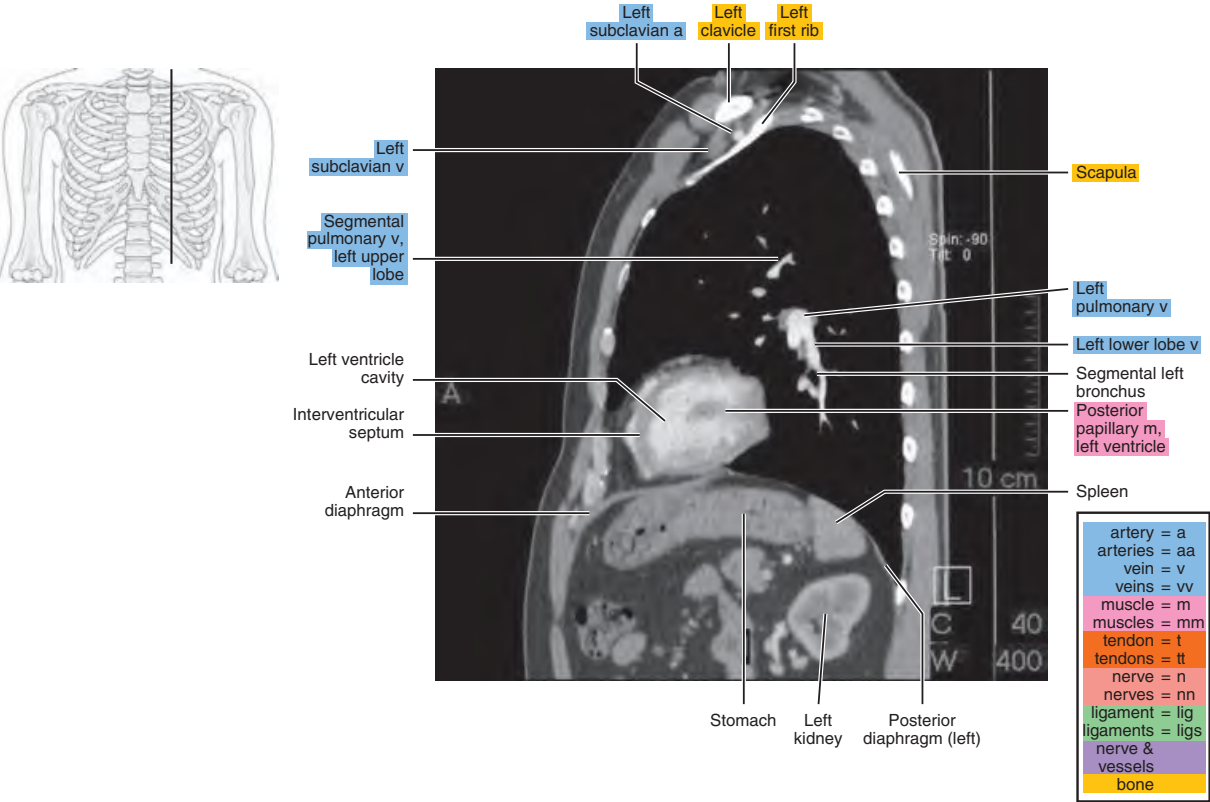


Figure 3.2.1B

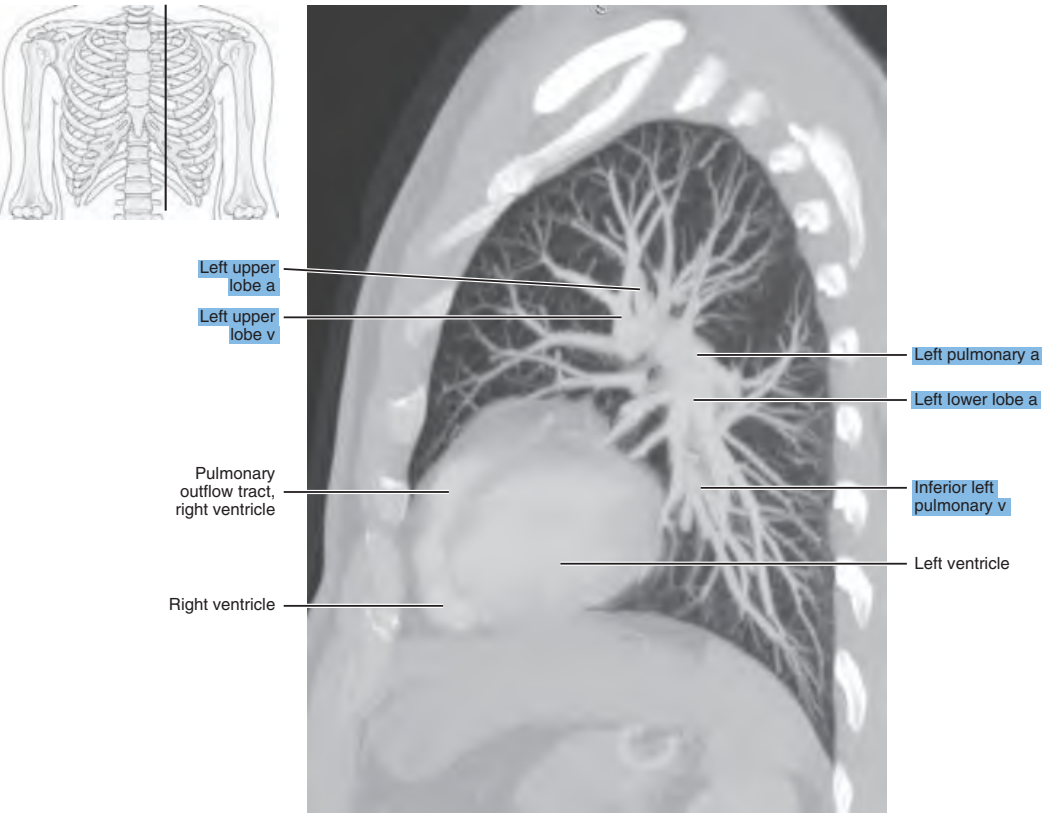


Figure 3.2.2

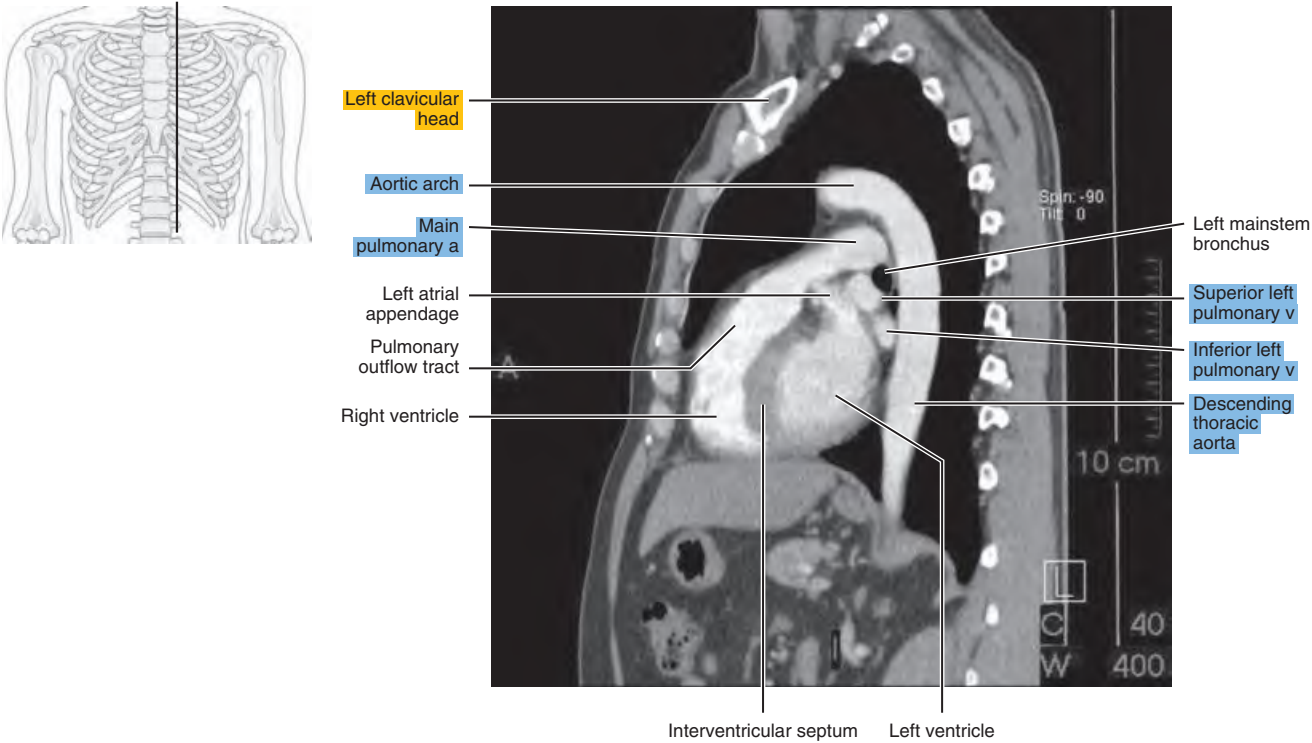


Figure 3.2.3

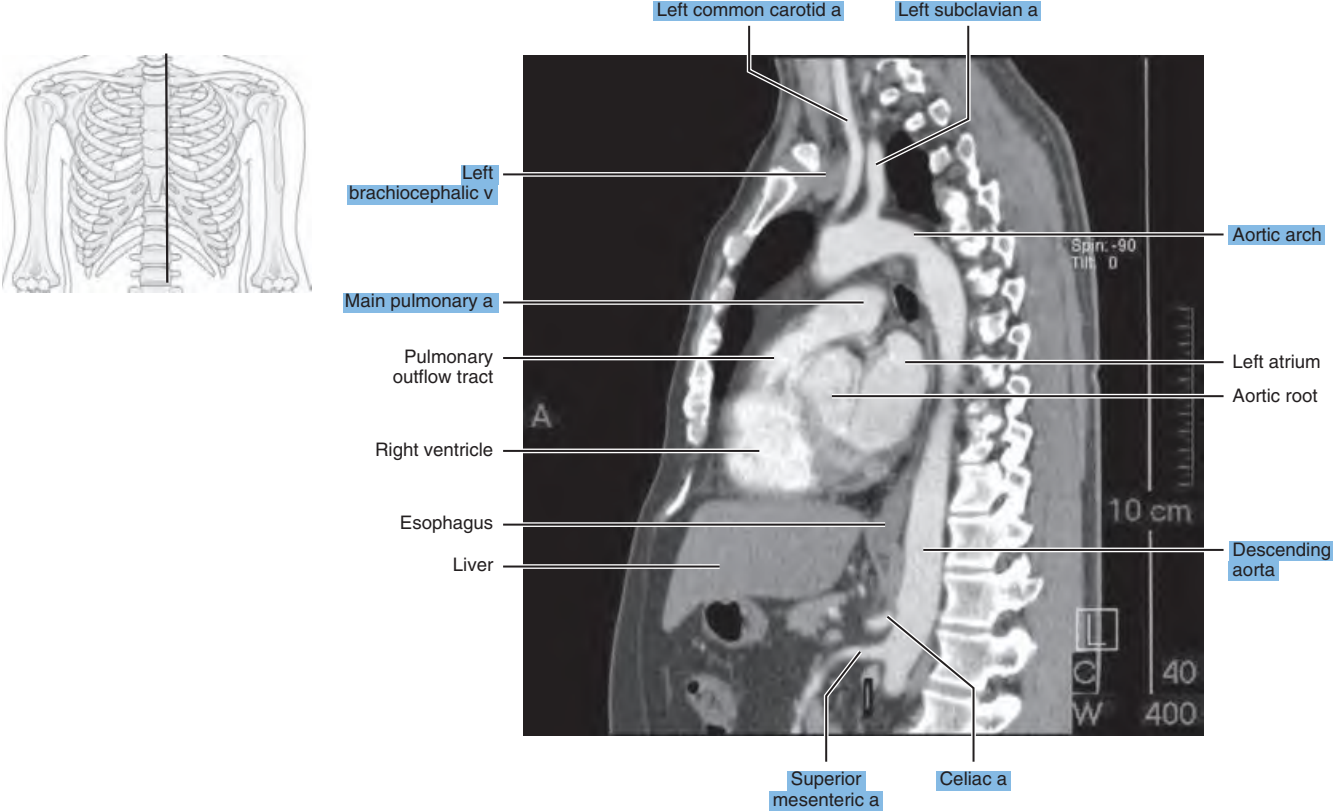


Figure 3.2.4

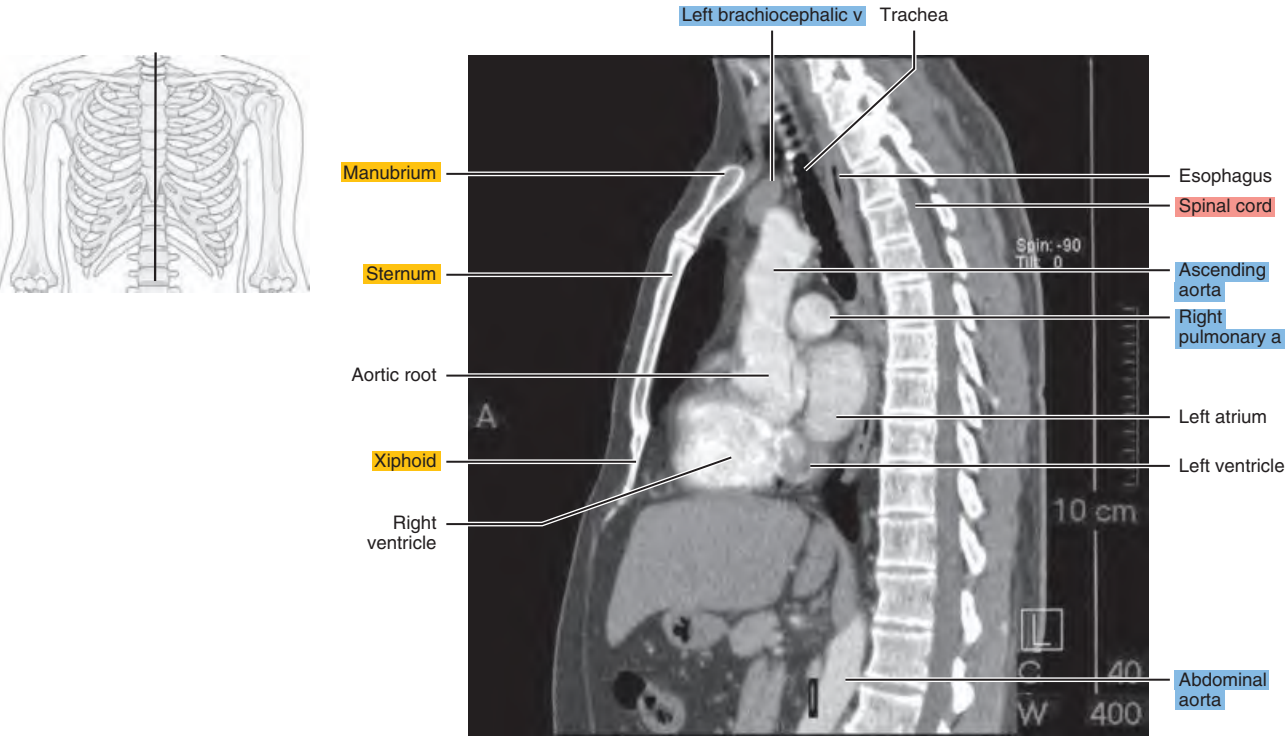


Figure 3.2.5

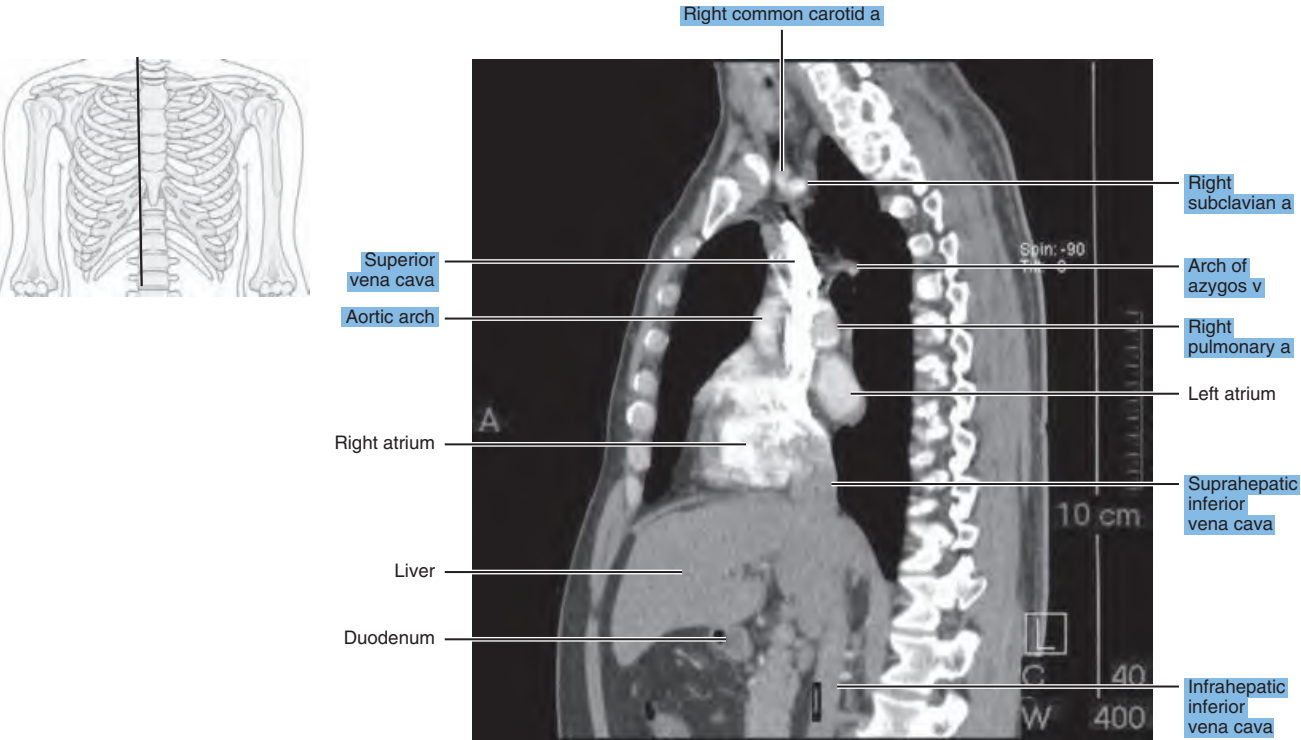
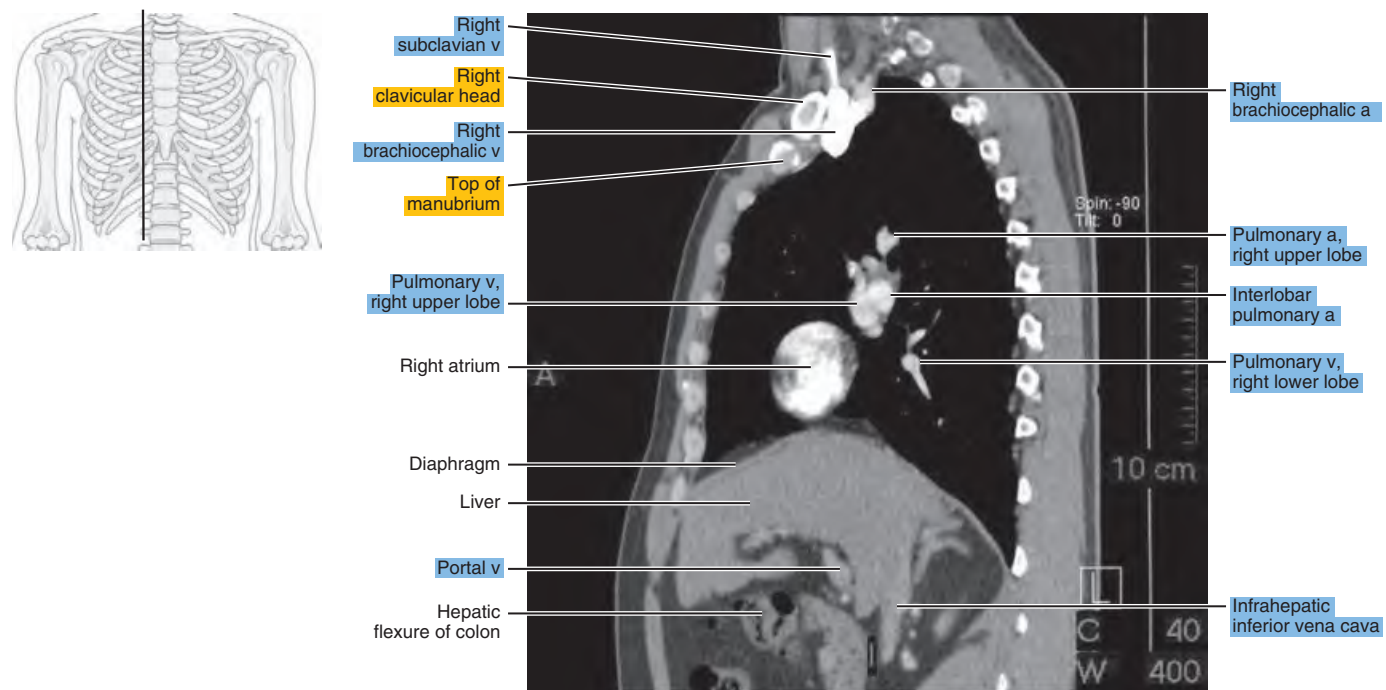


Figure 3.2.6



CORONAL

Figure 3.3.1

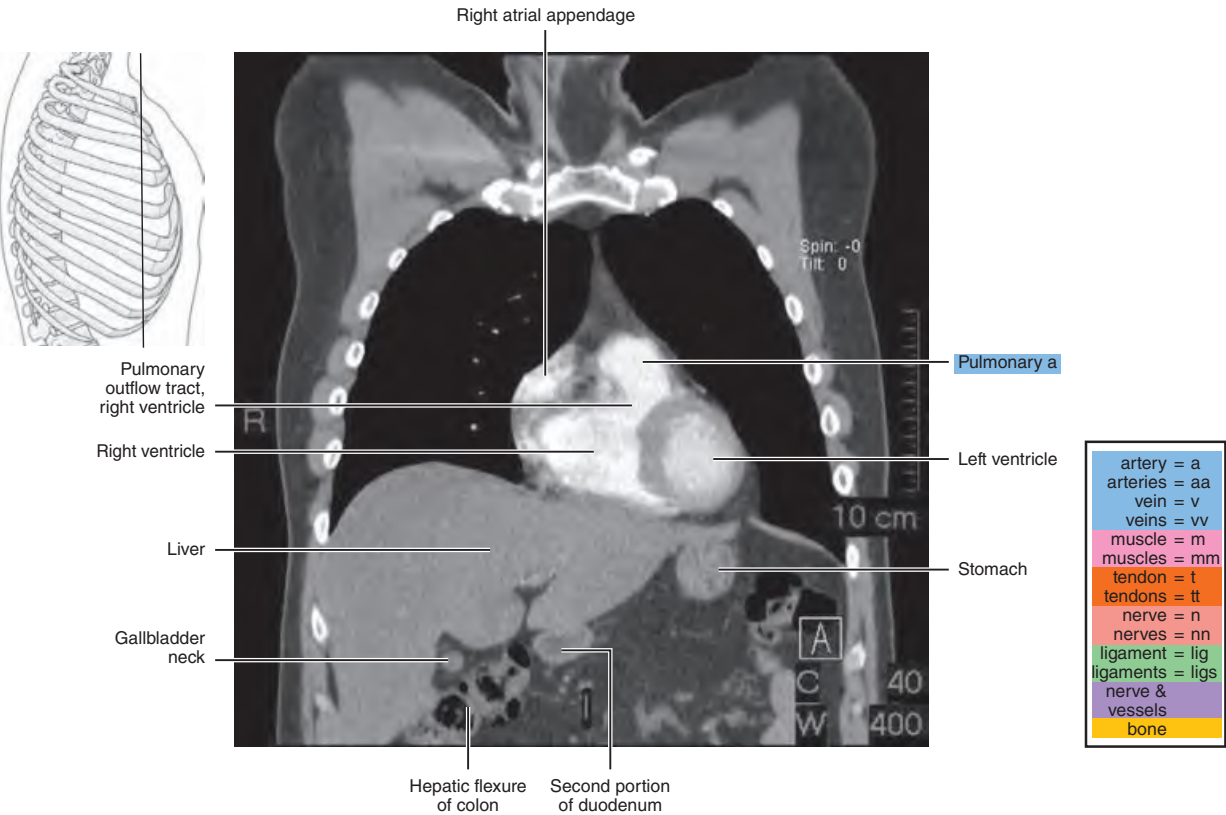


Figure 3.3.2

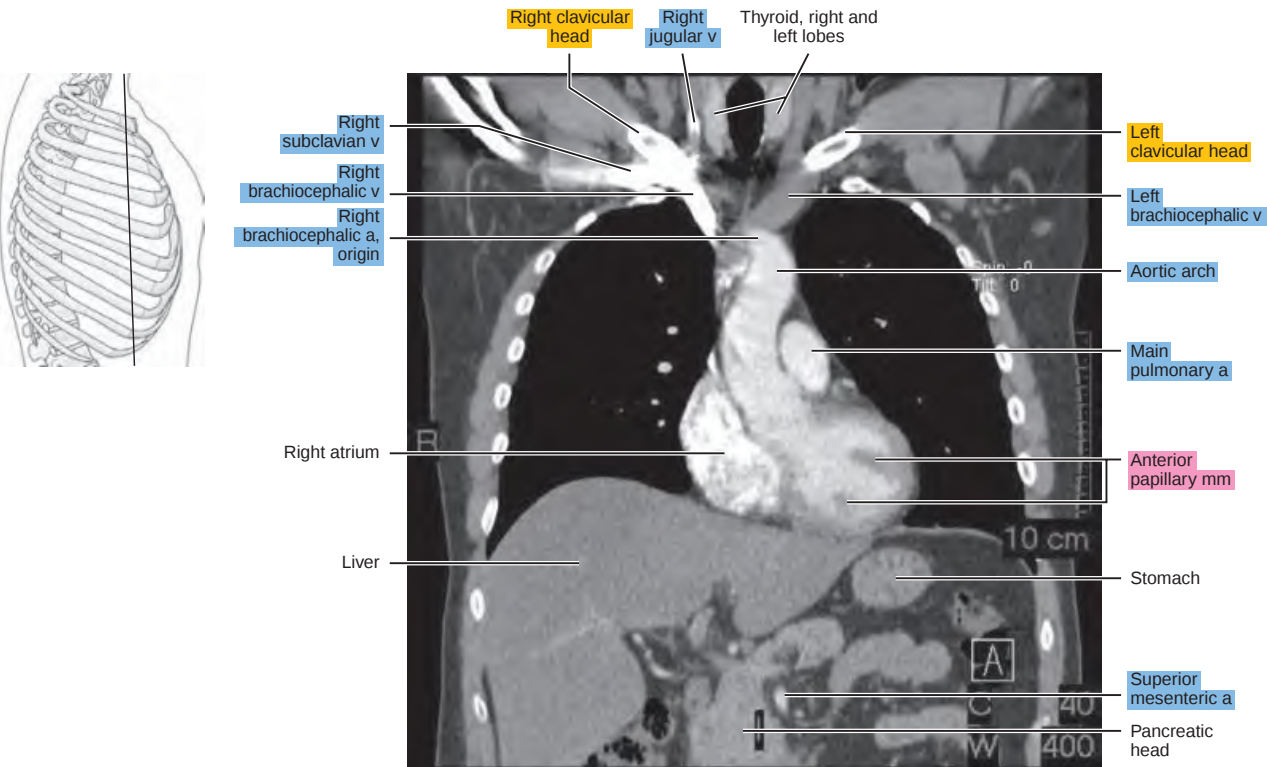


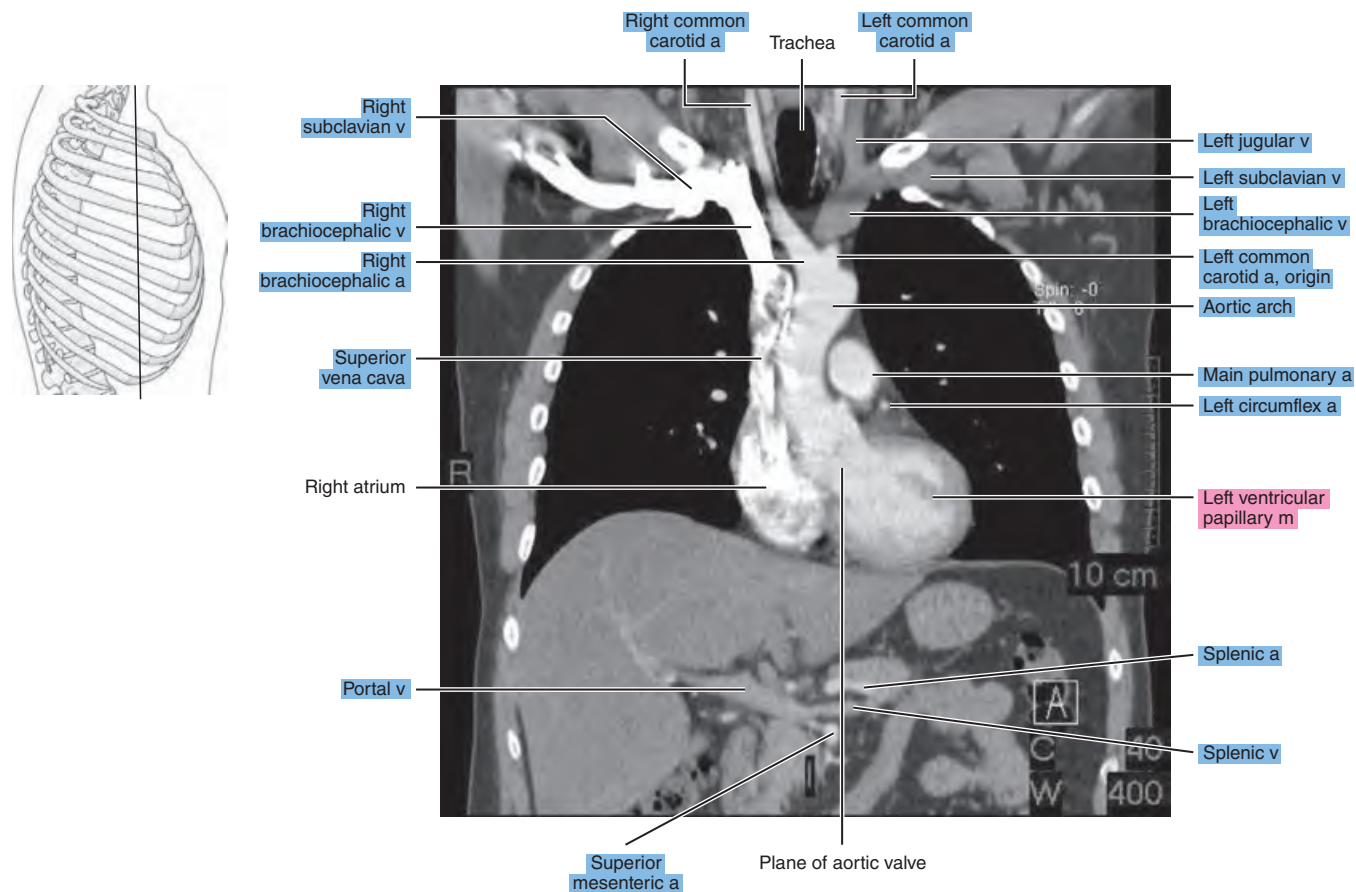
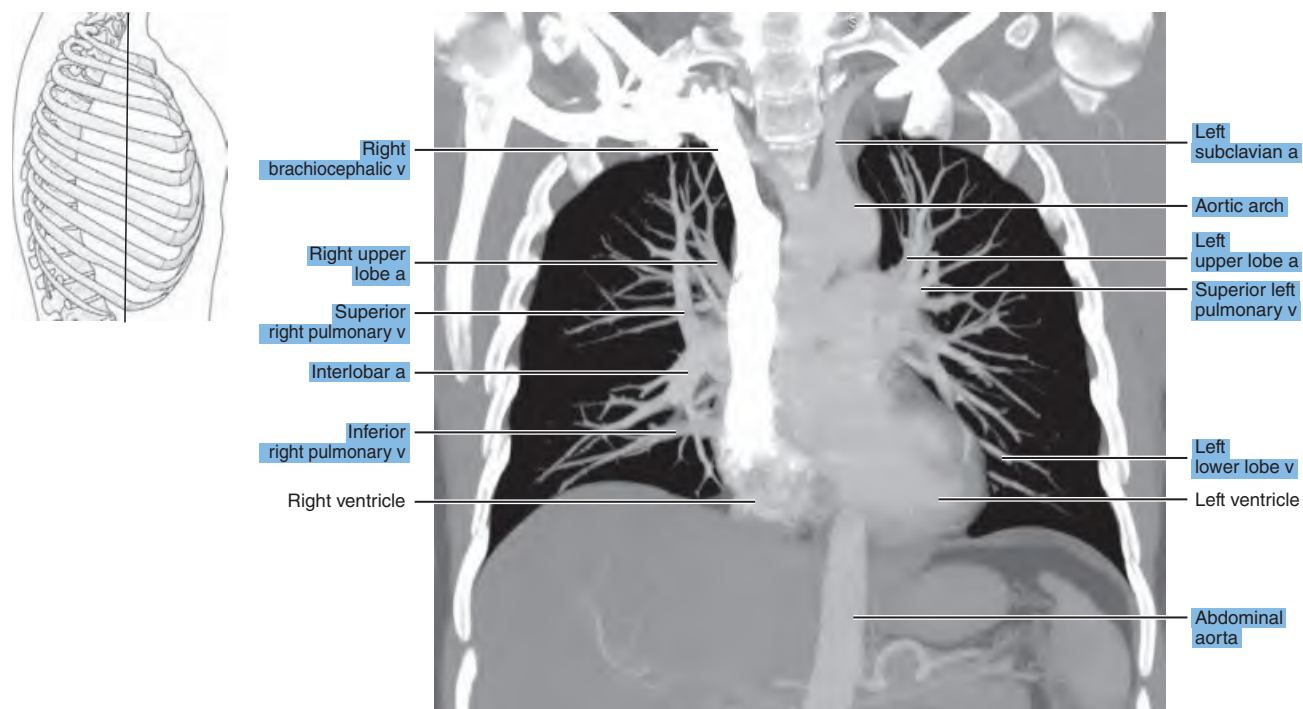
Figure 3.3.3A

Figure 3.3.3B


Figure 3.3.4

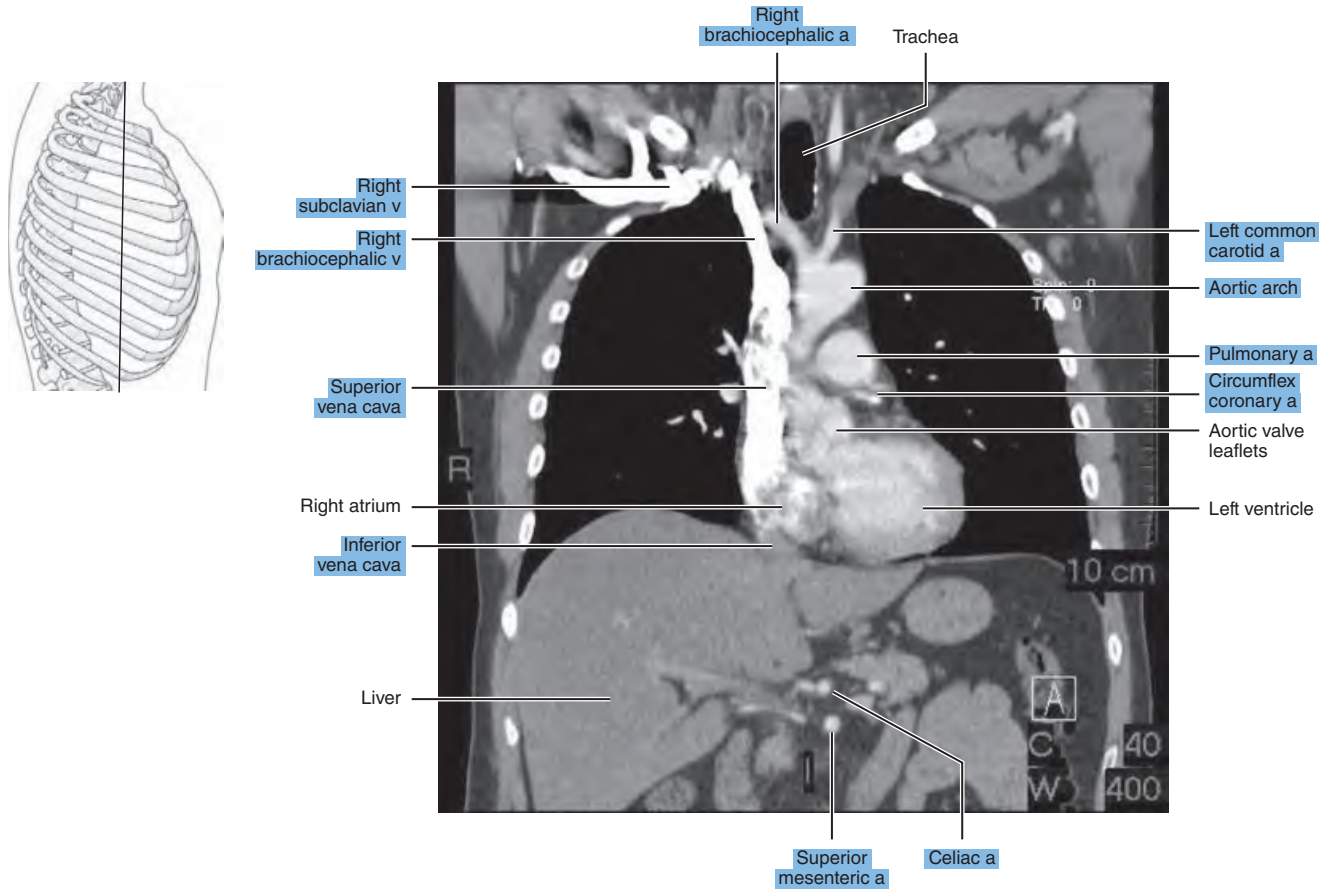


Figure 3.3.5

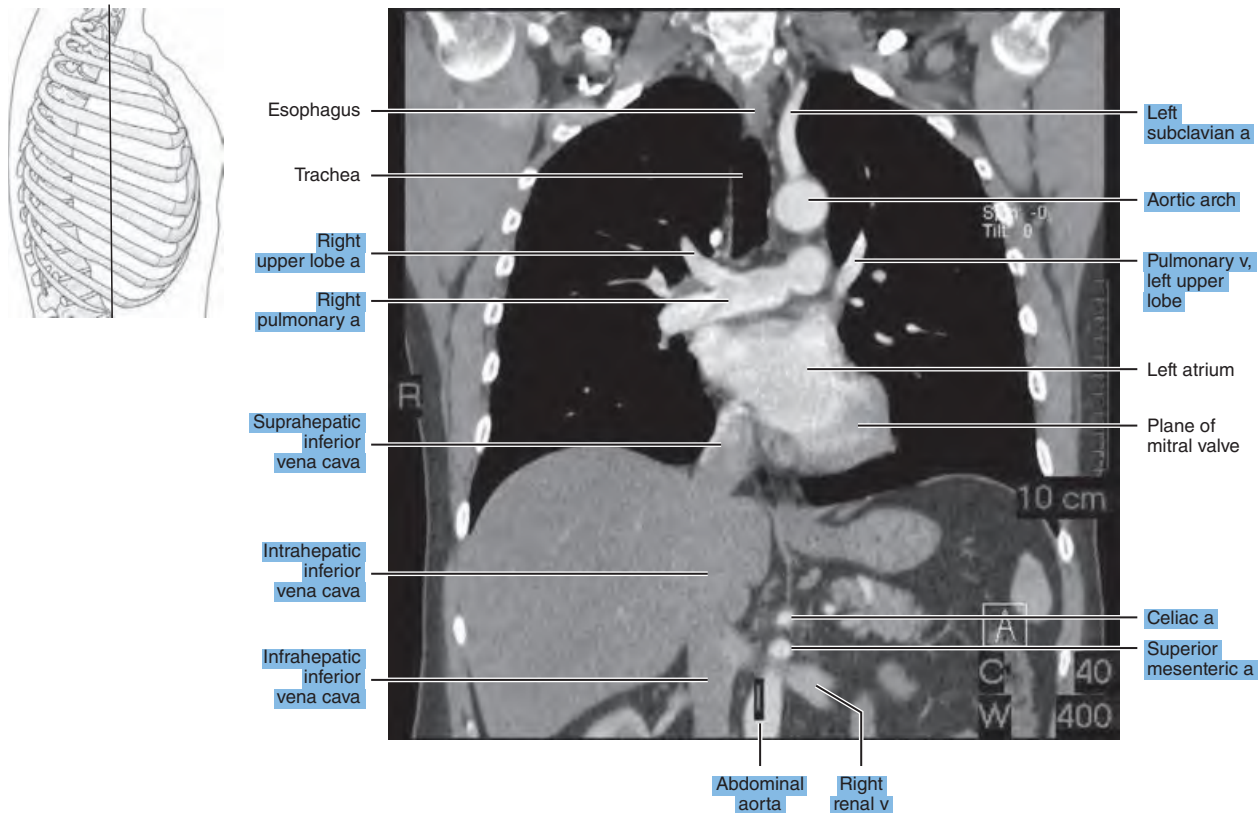


Figure 3.3.6A

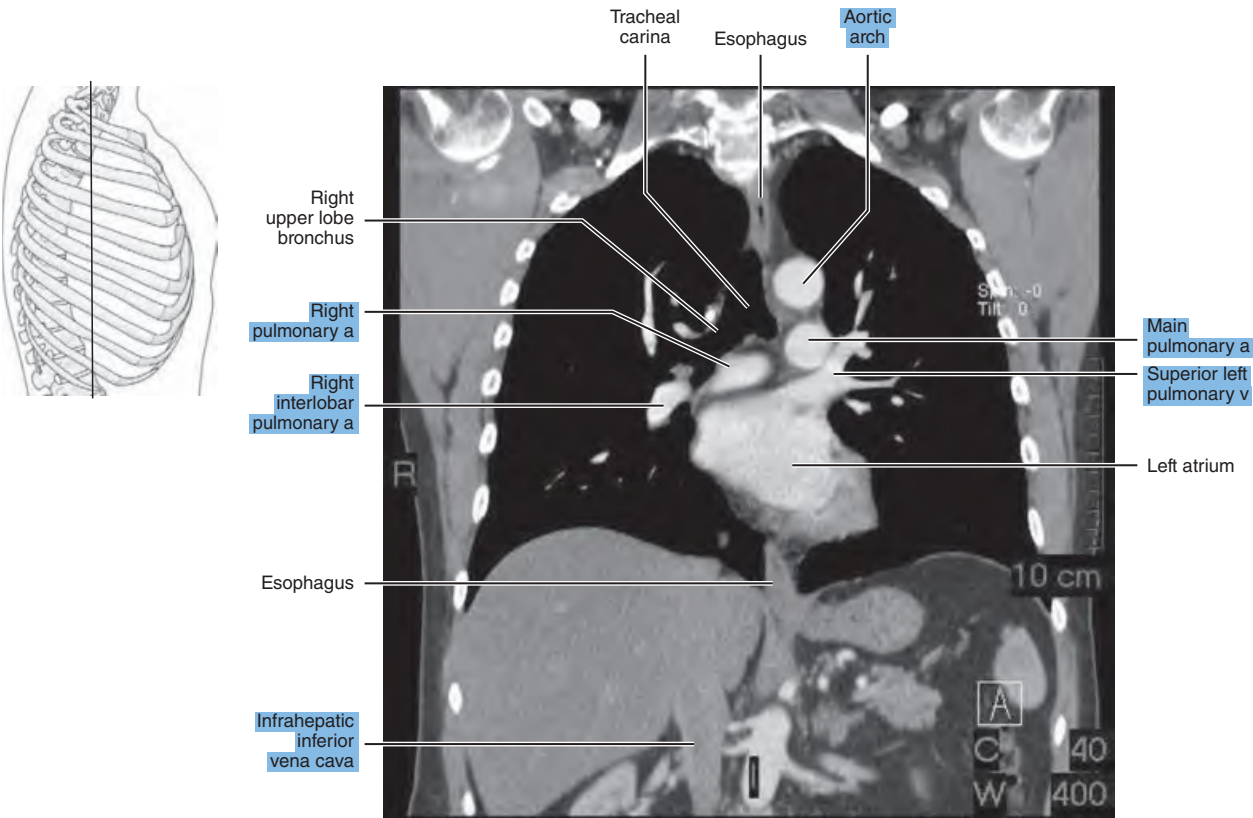


Figure 3.3.6B

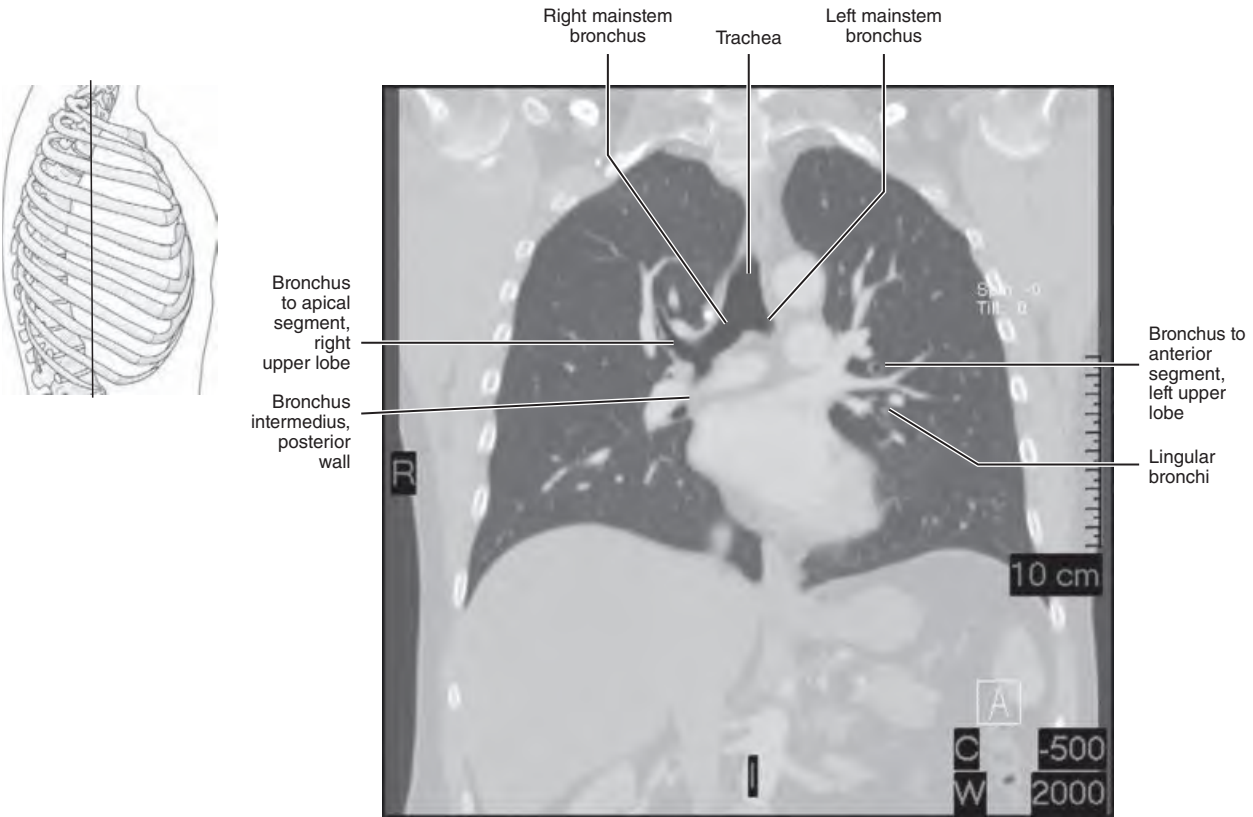


Figure 3.3.7A

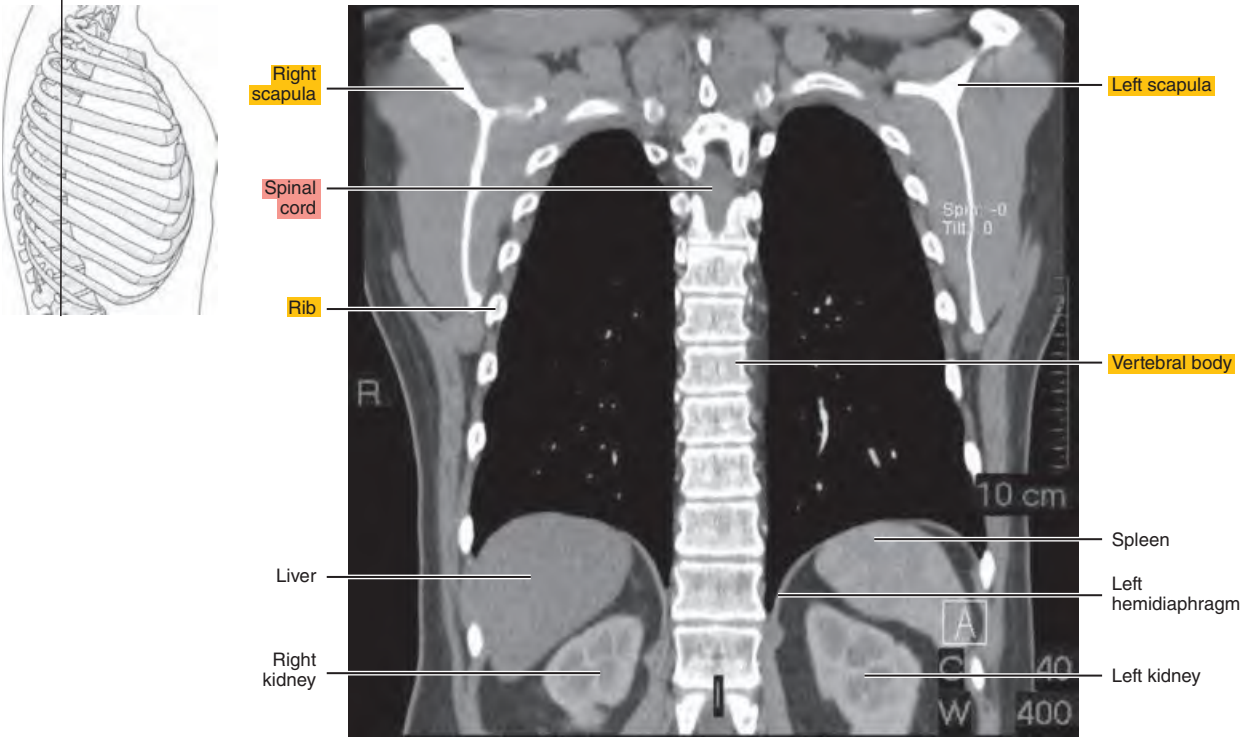


Figure 3.3.7B

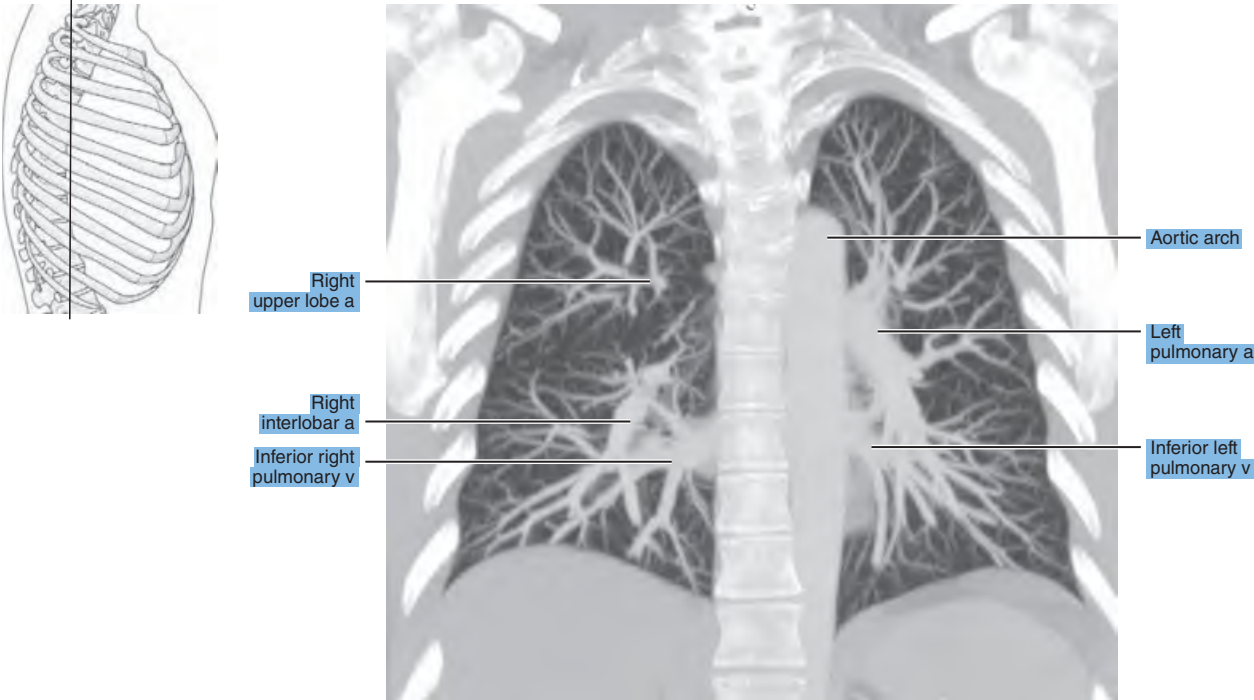
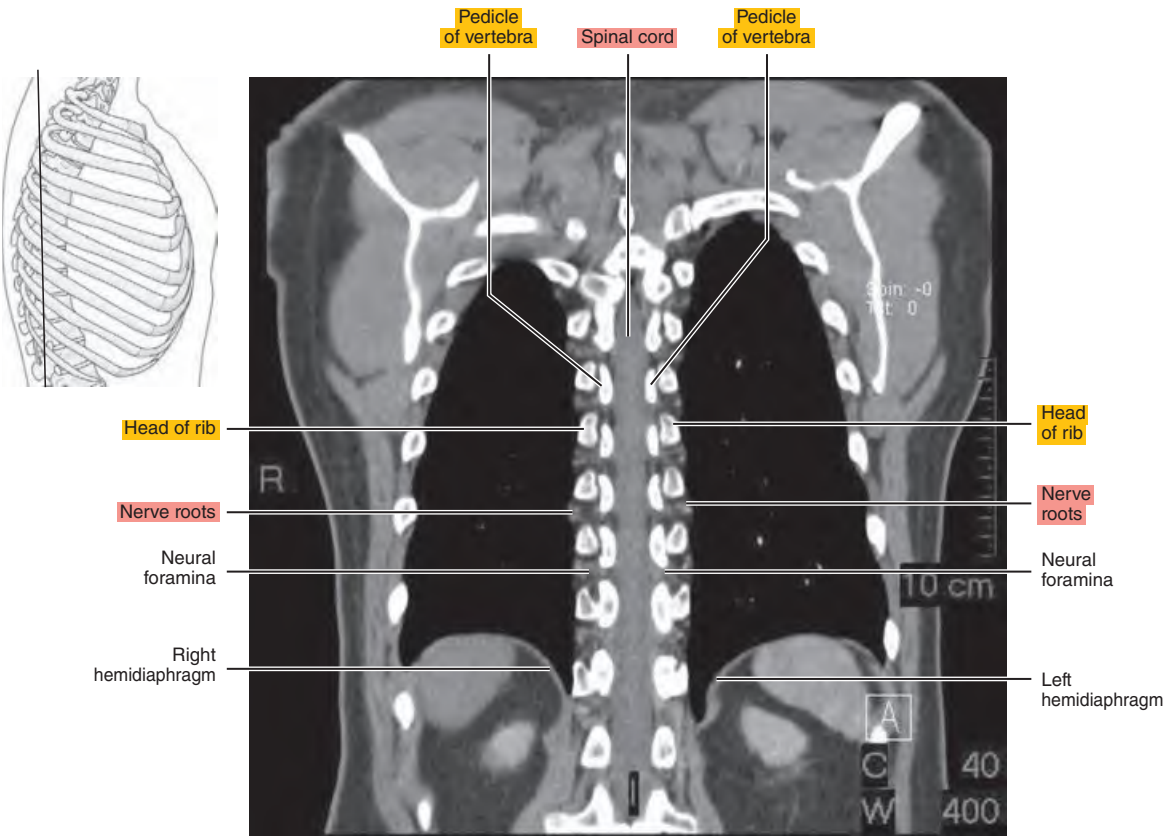


Figure 3.3.8



The background of the slide is a green geometric pattern composed of many small, overlapping triangles and hexagons, creating a 3D effect. The colors range from a light, pale green to a darker, forest green.

Chapter

MRI of the Heart

AXIAL

Figure 4.1.1

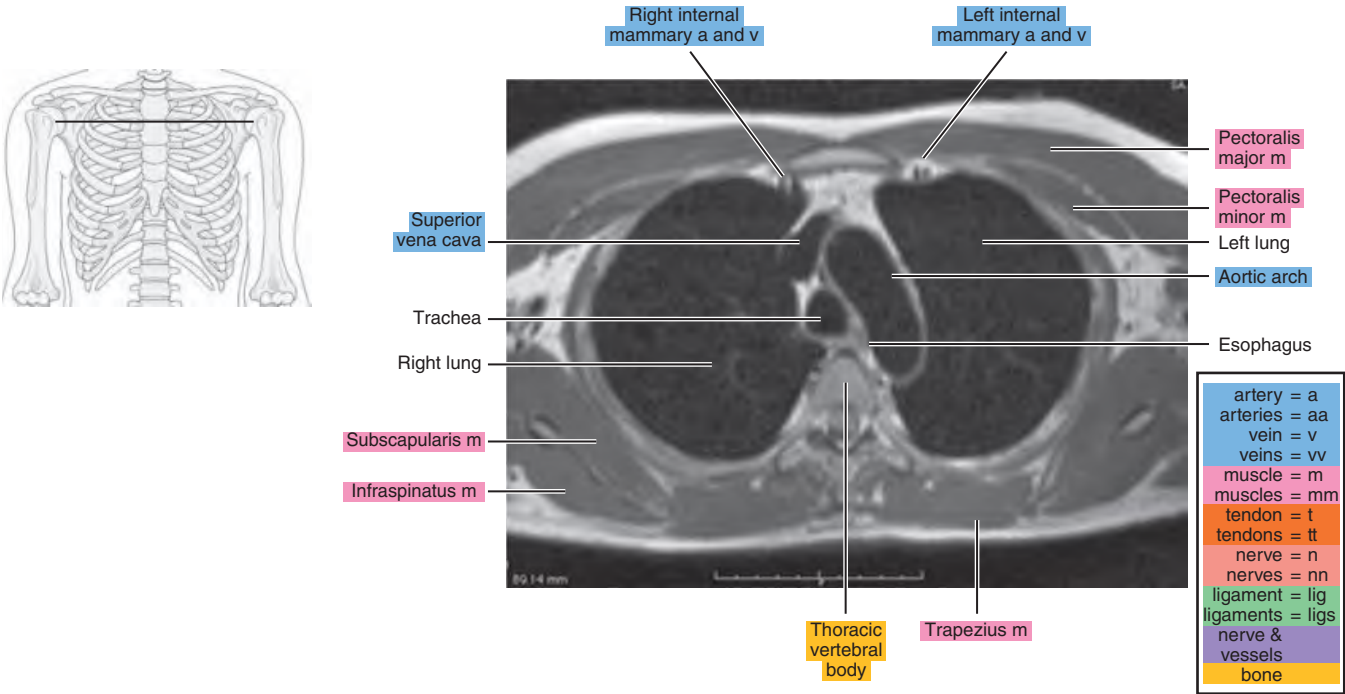


Figure 4.1.2

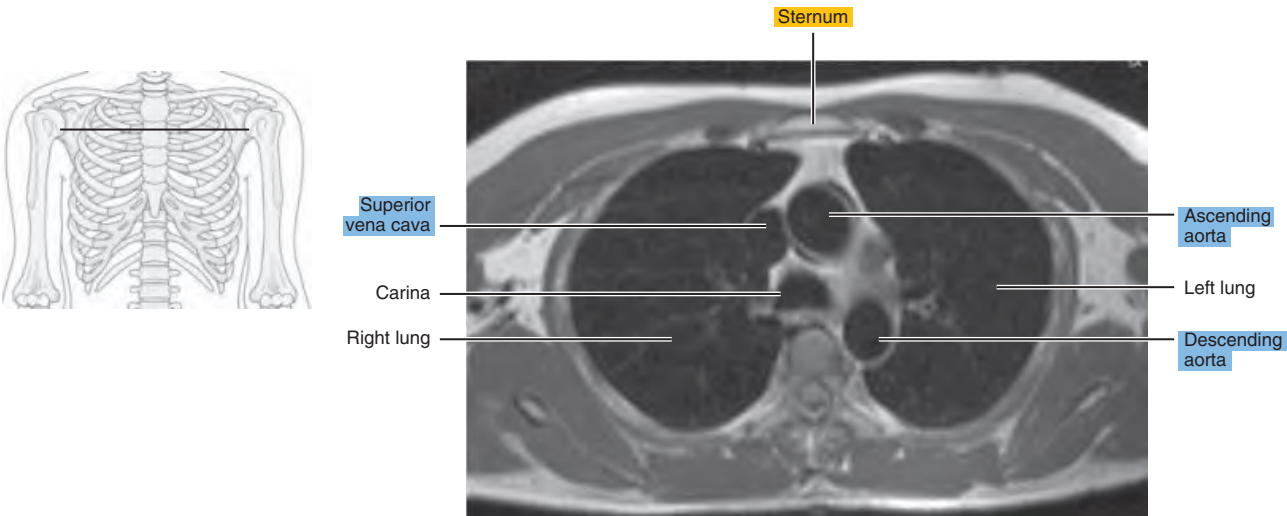


Figure 4.1.3

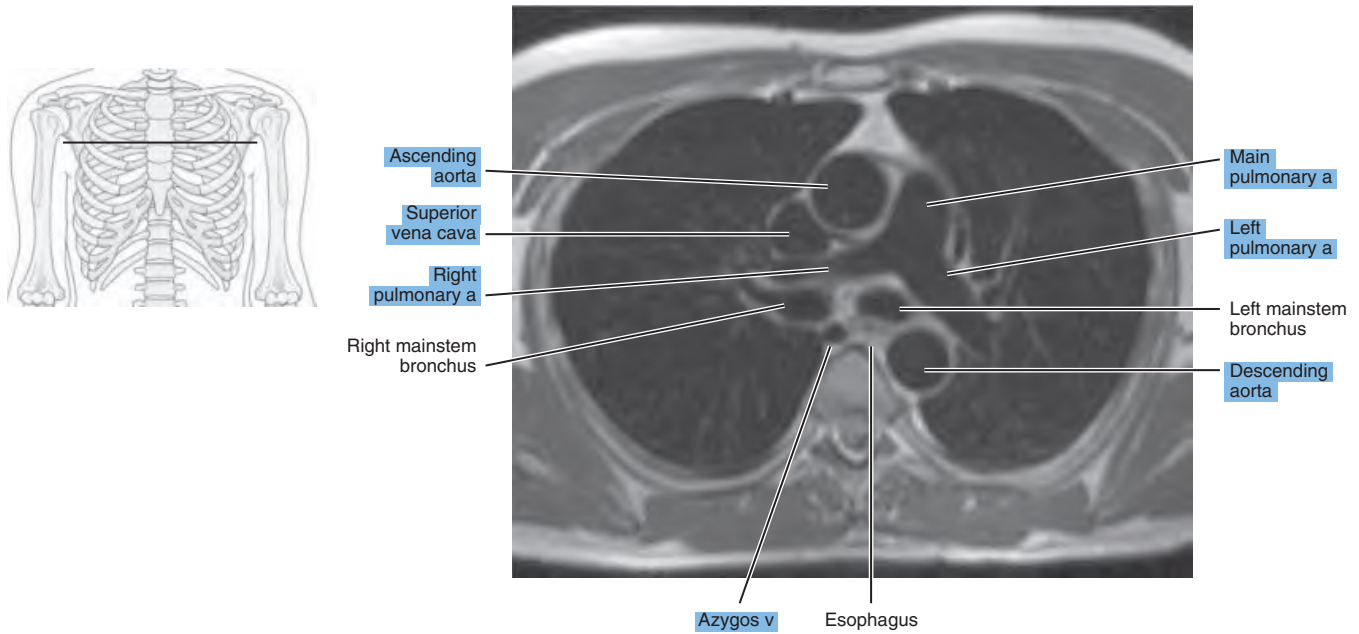


Figure 4.1.4

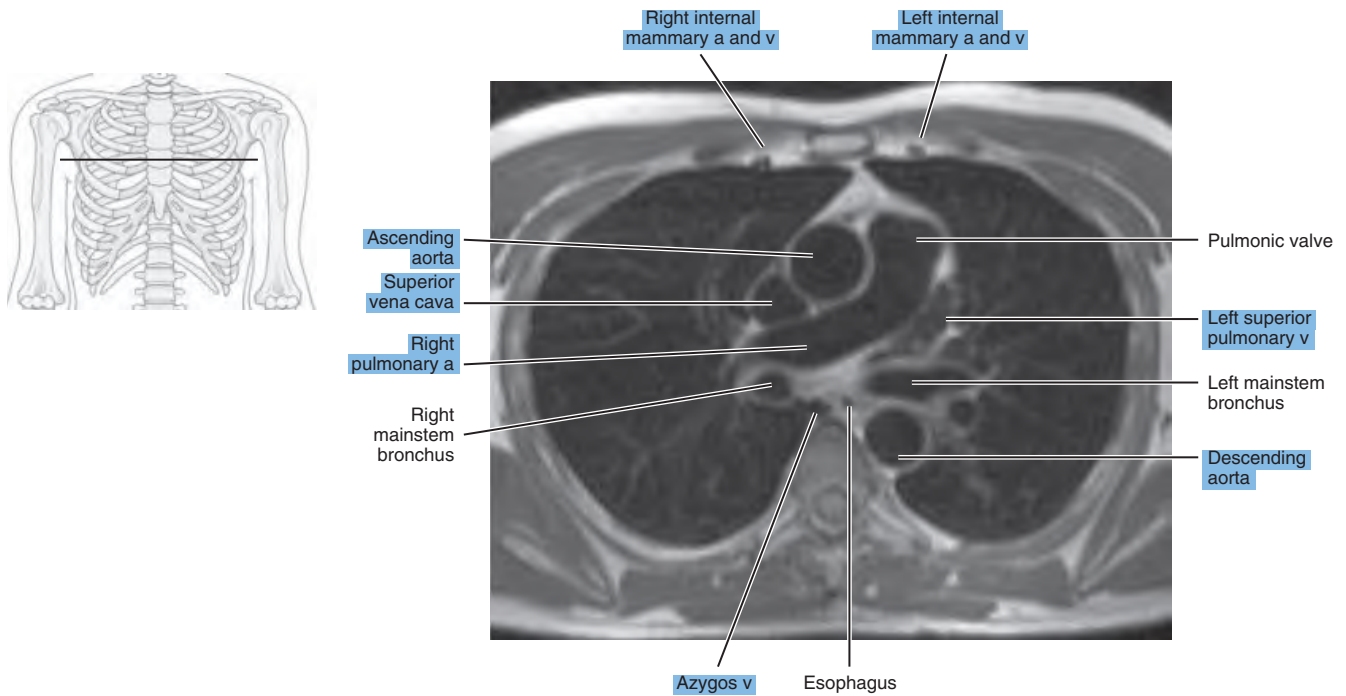


Figure 4.1.5

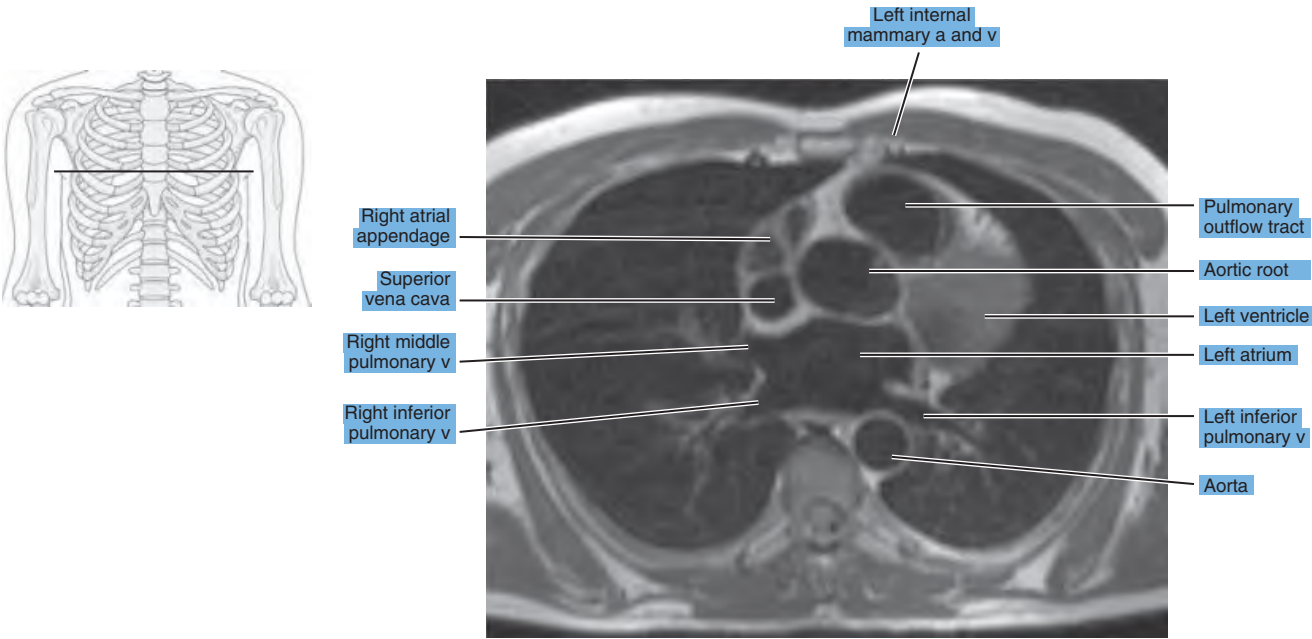


Figure 4.1.6

