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# Computed Tomography Manual for Diagnostic Imaging Technicians

2nd Edition by Joaquín Costa Subias and Juan Alfonso Soria Jerez

## INTRODUCTION

This manual, the second edition of a comprehensive didactic work, serves as a fundamental reference for both students and professionals in the field of diagnostic imaging. It is designed to provide a thorough understanding of Computed Tomography (CT) principles and applications.

Students will gain familiarity with the basic principles of physics and instrumentation relevant to CT, alongside the development of functional techniques, imaging sequences, the use of contrast media, and essential patient care protocols. Professionals will find this manual invaluable as a refresher and an updated guide, incorporating the latest technological advancements and their practical applications in clinical settings.

The content has been meticulously prepared by specialized technical and clinical educators and professionals, ensuring its pedagogical effectiveness and high quality. This edition includes carefully reviewed and updated chapters, featuring new and improved images to enhance learning.

## HOW TO USE THIS MANUAL

To maximize your learning experience with this manual, consider the following guidelines:

- **Chapter Structure:** Each chapter is designed to build upon previous knowledge. It is recommended to read chapters sequentially to grasp foundational concepts before moving to more advanced topics.
- **Self-Assessment Questions:** Utilize the self-assessment questions provided at the end of each chapter to test your understanding. Solutions are available at the end of the book.
- **Practical Cases:** Engage with the practical cases to apply theoretical knowledge to real-world scenarios. Solutions are provided for verification.
- **Glossary:** Refer to the comprehensive glossary of specialized terms at the end of the book for definitions and clarifications.

## NAVIGATING THE CONTENT

Effective navigation of this manual will enhance your learning and reference capabilities:

1. **Sequential Reading:** For initial learning, proceed through the chapters in order to establish a strong conceptual foundation.
2. **Targeted Reference:** For specific information, use the detailed chapter headings and subheadings to quickly locate relevant sections.
3. **Image Analysis:** Pay close attention to the numerous images and diagrams, which are integral to understanding complex anatomical structures and CT techniques.
4. **Review and Reinforce:** Regularly revisit key sections and utilize the self-assessment tools to reinforce your knowledge and identify areas requiring further study.

## CARE AND PRESERVATION

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To ensure the longevity and usability of your manual, please follow these care instructions:

- Store the book in a dry place, away from direct sunlight and extreme temperatures.
- Avoid bending or creasing the spine excessively to prevent damage to the binding.
- Use bookmarks instead of folding pages to mark your place.
- Keep the book away from liquids and food to prevent stains and damage.

## TROUBLESHOOTING AND SUPPORT

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Should you encounter difficulties in understanding specific concepts or require further clarification, consider the following:

- **Re-read Sections:** Often, re-reading a challenging section can provide new insights.
- **Consult Glossary:** Use the glossary to clarify unfamiliar terminology.
- **Academic Resources:** For persistent difficulties, consult additional academic resources or seek guidance from instructors or experienced professionals.

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## PRODUCT SPECIFICATIONS

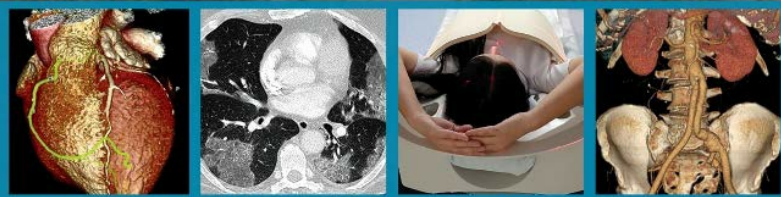
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2.<sup>a</sup> edición

# TOMOGRAFÍA COMPUTARIZADA

dirigida a Técnicos Superiores  
en Imagen para el Diagnóstico



J. Costa | J. A. Soria



Image: Front cover of the 'Computed Tomography Manual for Diagnostic Imaging Technicians, 2nd Edition'. The cover features the title prominently, authors' names (J. Costa | J. A. Soria), and several medical imaging scans, including a 3D heart reconstruction, a lung CT scan, a patient undergoing a scan, and a spinal CT scan. The Elsevier and AETR logos are visible at the bottom.


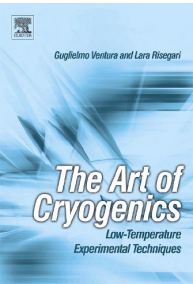
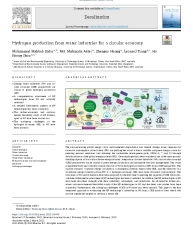

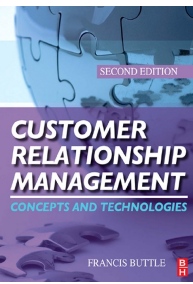
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Headly & Watkins: Multiple Trunkles Review: 28 March			
Topic / Location and Learning Objectives / Clinical Pearls / Pharmacokinetics / Comments by Dr. David			
Content Area	Learning Objectives	Pharmacokinetics	Comments by Dr. David
Multiple Trunkles			
Multiple Trunkles (MTC)	1. Define MTC 2. List the causes of MTC 3. List the clinical features of MTC 4. List the management of MTC	1. MTC is a rare condition 2. MTC is caused by a defect in the development of the trunk 3. MTC is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. MTC is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability	1. MTC is a rare condition 2. MTC is caused by a defect in the development of the trunk 3. MTC is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. MTC is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability
Spina	1. Define Spina 2. List the causes of Spina 3. List the clinical features of Spina 4. List the management of Spina	1. Spina is a rare condition 2. Spina is caused by a defect in the development of the spine 3. Spina is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Spina is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability	1. Spina is a rare condition 2. Spina is caused by a defect in the development of the spine 3. Spina is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Spina is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability
Hydrocephalus	1. Define Hydrocephalus 2. List the causes of Hydrocephalus 3. List the clinical features of Hydrocephalus 4. List the management of Hydrocephalus	1. Hydrocephalus is a rare condition 2. Hydrocephalus is caused by a defect in the development of the brain 3. Hydrocephalus is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Hydrocephalus is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability	1. Hydrocephalus is a rare condition 2. Hydrocephalus is caused by a defect in the development of the brain 3. Hydrocephalus is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Hydrocephalus is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability
Intellectual Disability & Phenotypic	1. Define Intellectual Disability 2. List the causes of Intellectual Disability 3. List the clinical features of Intellectual Disability 4. List the management of Intellectual Disability	1. Intellectual Disability is a rare condition 2. Intellectual Disability is caused by a defect in the development of the brain 3. Intellectual Disability is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Intellectual Disability is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability	1. Intellectual Disability is a rare condition 2. Intellectual Disability is caused by a defect in the development of the brain 3. Intellectual Disability is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Intellectual Disability is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability
Phenotypic	1. Define Phenotypic 2. List the causes of Phenotypic 3. List the clinical features of Phenotypic 4. List the management of Phenotypic	1. Phenotypic is a rare condition 2. Phenotypic is caused by a defect in the development of the brain 3. Phenotypic is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Phenotypic is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability	1. Phenotypic is a rare condition 2. Phenotypic is caused by a defect in the development of the brain 3. Phenotypic is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Phenotypic is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability
Genetic Testing	1. Define Genetic Testing 2. List the causes of Genetic Testing 3. List the clinical features of Genetic Testing 4. List the management of Genetic Testing	1. Genetic Testing is a rare condition 2. Genetic Testing is caused by a defect in the development of the brain 3. Genetic Testing is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Genetic Testing is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability	1. Genetic Testing is a rare condition 2. Genetic Testing is caused by a defect in the development of the brain 3. Genetic Testing is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. Genetic Testing is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability
Genetic Testing (GTC)	1. Define GTC 2. List the causes of GTC 3. List the clinical features of GTC 4. List the management of GTC	1. GTC is a rare condition 2. GTC is caused by a defect in the development of the brain 3. GTC is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. GTC is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability	1. GTC is a rare condition 2. GTC is caused by a defect in the development of the brain 3. GTC is characterized by a wide, shallow, and often asymmetrical defect in the lower back 4. GTC is associated with a variety of associated anomalies, including scoliosis, hydrocephalus, and intellectual disability

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