

TEST BANK

THE PEARSON COMMUNICATION SCIENCES AND DISORDERS SERIES



Twelfth Edition INTRODUCTION TO
AUDIOLOGY

FREDERICK N. MARTIN | JOHN GREER CLARK

Instructor's Resource Manual and Test Bank

for

Introduction to Audiology Twelfth Edition

Frederick N. Martin
Professor Emeritus
Communication Sciences and Disorders
The University of Texas at Austin

John Greer Clark
Associate Professor
Communication Sciences and Disorders
University of Cincinnati

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Preface

The manuscript of the first edition of *Introduction to Audiology* was begun in 1972 typed on what was then a state-of-the-art Smith-Corona typewriter. We have seen tremendous advances in the profession of audiology and manuscript preparation in the nearly 45 years since that date.

This book was originally designed as a primary text for a single-term instructional course in audiology. A variety of pedagogical features were incorporated within the first edition of the text to facilitate student mastery of new concepts in the study of hearing diagnostics and treatment. Each edition has seen an increase in coverage of this evolving field of study and the expanding scope of practice of its practitioners. And as coverage has expanded, so have the pedagogical aides provided within the text to support student learning. These include:

- Learning objectives at the beginning of each chapter to direct students' attention to the material to be introduced.
- Bold facing of all new terms that are fully defined in the glossary at the end of the book.
- A comprehensive glossary that serves as a full dictionary of audiologic terms.
- A large number of illustrative figures with instructional captions throughout the text.
- Summary tables and review questions at the end of each chapter.
- An expansion of the instructive "Evolving Case Studies" that are followed from chapter to chapter.
- Twenty demonstrative videos that can be accessed by clicking the video title within the text.
- A list of frequently-asked questions for each chapter derived from students' actual queries in class and during office hours.
- Interactive examinations with immediate answer feedback at the end of each chapter for self-assessment of learning that include multiple choice, diagram labeling and matching exercises.

This instructors' manual has been created to further facilitate student learning by making the task of teaching audiology courses easier. The provision of examination questions and other materials can serve to free course instructors from some of the more mundane tasks, allowing them to devote their time to other aspects of their teaching.

Instructors are encouraged to use all or any part of the materials in this instructors' manual to assist in offering audiology courses. Each chapter in this manual opens with a listing of vocabulary items to which students will be introduced within the corresponding book chapter. Extrapolation of these lists from the text facilitates instructors' development of study sheets or vocabulary quizzes pertinent to select chapters. For more in-depth assessment of student learning, examination questions are included including true/false, short answer and essay varieties. A large sampling of case studies is provided for class discussion. Each includes a background history, expected audiometric findings, the diagnosis of the case based on the findings, the probable etiology, discussion of case

management and reasons for the decisions drawn. Any portion of any material in this manual may be used in its entirety, edited, substituted, or augmented with other materials.

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Chapter 1

The Profession of Audiology

Compared to other professions in the health arena, audiology is a relative newcomer, emerging from the combined efforts of otology and speech pathology during World War II. Following the war, this new area of study and practice grew rapidly within the civilian sector because of the high prevalence of hearing loss in the general population and the devastating effects on individuals and families when hearing loss remains untreated. To support the needs of those served fully, especially the pediatric population, audiologists often maintain close working relationships with speech-language pathologists and educators of people with hearing impairment. A mutual respect for what each profession brings to auditory (re)habilitation leads to the highest level of remediation for those served.

Today the profession of audiology supports a variety of specialty areas and is transitioning toward a professional doctorate as the entry-level degree. Given projected population demographics, students choosing to enter this profession will find themselves well placed for professional growth and security.

Learning Objectives

The purpose of this opening chapter is to introduce the profession of audiology, from its origins through its course of development to its present position in the hearing-healthcare delivery system. At the completion of this chapter, the reader should be able to

- Describe the evolution of audiology as a profession.
- Discuss the impact of hearing impairment on individuals and society.
- List specialty areas within audiology and the employment settings within which audiologists may find themselves.
- Describe the reasons that speech-language pathologists may closely interact with audiologists as they provide services within their chosen professions.

Vocabulary Items

Aural rehabilitation	Otology
Prevalence	Speech-language pathology

Essay Questions

1. Why is it important for speech-language pathologists to have a working knowledge of audiology?
2. List the specialty areas of audiology and the types of employment settings in which they may be practiced.
3. What purpose do professional societies serve for the profession of audiology and its practitioners?
4. Briefly outline the evolution of audiology.
5. Discuss the economic burden hearing loss presents to society.
6. What is the difference between a license to practice one's profession and professional certification?

Short Answer Questions

1. Audiology developed from the professions of ____ and ____.
2. A founder of audiology, often called the "father of audiology," is ____.
3. Two professional documents that govern the practice of audiology are ____ and ____.
4. The entry-level degree for the profession of audiology is the ____.
5. The credential required for the practice of audiology in the United States is ____.
6. The two organizations most closely associated with audiology are ____ and ____.
7. **True/False**
Hearing loss in children is a concern only due to the possible impact on communication.
8. **True/False**
Ear infections in children may or may not cause hearing loss.
9. List three areas that are impacted by hearing loss in adults besides hearing sensitivity.
10. The work of audiologists in areas of noise is sometimes called ____.

Answer Key

1. otology, speech-language pathology
2. Dr. Raymond Carhart
3. scope of practice, code of ethics
4. Doctor of Audiology (Au.D.)
5. state license
6. American Academy of Audiology, American Speech-Language-Hearing Association
7. False
8. True
9. general health, psychosocial well being, generated income
10. industrial audiology

The Human Ear and Simple Tests of Hearing

The mechanisms of hearing may roughly be broken down into conductive and sensory/neural portions. Tests by air conduction measure sensitivity through the entire hearing pathway. Tests by bone conduction sample the sensitivity of the structures from the inner ear and beyond, up to the brain. The Schwabach test compares the bone-conduction sensitivity of the patient to that of a presumed normal-hearing person (the examiner); the Rinne tuning-fork test compares patients' own hearing by bone conduction to their hearing by air conduction in order to sample for conductive versus sensory/neural loss; the Bing test samples for conductive hearing loss by testing the effect of occluding the ear; and the Weber test checks for lateralization of a bone-conducted tone presented to the midline of the skull to determine if a loss in only one ear is conductive or sensory/neural.

LEARNING OBJECTIVES

The purpose of this chapter is to present a simplified explanation of the mechanism of human hearing and to describe tuning-fork tests that provide information about hearing disorders. Because of the structure of this chapter, some of the statements have been simplified. These basic concepts are expanded in later chapters in this book. Upon completion of this chapter, the reader should be able to

- Define a basic vocabulary relative to the ear.
- Understand the core background for study of more sophisticated hearing tests.
- Describe the general anatomy of the hearing mechanism and its pathways of sound.
- List and describe the three types of hearing loss presented.
- Outline the expected tuning-fork test results for different types of hearing loss.

Vocabulary Items

Air conduction	Attenuation
Auditory nerve	Bing test
Bone conduction	Conductive hearing loss
Eardrum membrane	Inner ear
Lateralization	Malingering
Mastoid process	Middle ear
Mixed hearing loss	Nonorganic hearing loss
Outer ear	Psychogenic hearing loss
Rinne test	Schwaback test
Sensory/neural hearing loss	Stenger principle
Tuning fork	Weber test

Essay Questions

1. Sketch a diagram of the ear. Mark the conductive and sensory/neural areas.
2. What information is derived from bone conduction that cannot be inferred from air conduction?
3. Why is it a good idea to use more than one tuning-fork when doing tuning-fork tests?
4. Why are statements regarding the results of different tuning-fork tests limited to the pitch of the fork used?
5. What are the probable results on the four tuning-fork tests described in this chapter for a person with a conductive hearing loss in the right ear? State results for both ears.
6. What is implied if a person's hearing sensitivity is reduced by air conduction but is normal by bone conduction?
7. What is implied if a person's hearing sensitivity is reduced by air conduction and is reduced the same amount by bone conduction?
8. What are some of the problems with tuning-fork tests?

Short Answer Questions

1. Name the three main parts of the ear.
2. What is the connection between the inner ear and the brain?
3. What are the three main types of hearing loss?
4. Every tuning fork is designed to vibrate at a single _____.
5. The Schwabach test is designed to compare _____ to _____.
6. The Rinne test is designed to compare the patient's hearing by _____ to his/her hearing by _____.
7. The Bing test determines the presence of the _____.
8. The Weber test is one of _____.
9. What is the Stenger principle?

Answer Key

1. outer ear, middle ear, inner ear
2. auditory nerve
3. conductive, sensory/neural, mixed
4. frequency
5. The patient's hearing by bone conduction, the examiner's hearing by bone conduction
6. air conduction, bone conduction
7. occlusion effect
8. lateralization
9. When two tones of the same frequency are presented simultaneously into both ears only the louder one will be perceived