Tinnitus Stepped-Care

A Standardized Framework for Clinical Practice

James A. Henry, PhD

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9177 Aero Drive, Suite B
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email: information@pluralpublishing.com
website: https://www.pluralpublishing.com

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Foreword

After having over 20 years of clinical practice as an audiologist, I attended a talk by Dr. Jim Henry about Progressive Tinnitus Management (PTM). It was a true revelation for me as he laid out an organizational structure for helping patients cope with tinnitus. I found him extremely generous in his willingness to share the tools and methods he had developed over the years with his colleagues, starting with Drs. Jack Vernon and Mary Meikle at the Oregon Health & Science University (OHSU) Tinnitus Clinic, the world's first clinic dedicated to providing tinnitus services exclusively. Later at the National Center for Rehabilitative Auditory Research (NCRAR) at the Veterans Affairs Medical Center in Portland, Oregon, he formed a team dedicated to tinnitus research. Many years following that talk on PTM, I had the incredible opportunity to work with Jim at the NCRAR when I joined the Center in 2011 as its Director. This afforded me the chance to observe his dedicated work ethic and prolific intellectual output for the benefits of Veterans and others with tinnitus and hearing loss.

In this book, Dr. Henry brings the same logic, skill, and knowledge that he brought to the development of PTM to *Tinnitus Stepped-Care: A Standardized Framework for Clinical Practice*. As Dr. Henry describes, Tinnitus Stepped-Care is a framework for providing tinnitus services while keeping any specific procedures to a minimum. Tinnitus Stepped-Care provides for increasingly higher levels of care as needed by the patient in a framework that is time-efficient for both patient and clinician. However, very few patients require the entire six-step process. Step 1 *Triage* and Step 2 *Audiology Services* will meet the needs of the majority of patients with bothersome tinnitus. A portion will advance to Step 3 *Tinnitus Education* with some desiring to move to Step 4 *Tinnitus Counseling*. Few of these patients will need more intensive services offered in Steps 5 and 6. Step 5 involves comprehensive assessment by an audiologist and psychologist, both of whom have specialized tinnitus expertise. At that point the patient may exit the stepped process or, if needed, move to additional treatment in Step 6 with any of the evidence-based counseling methods or

complementary methods described. The beauty of this book is that it offers evidence-based guidance for the clinician literally every step of the way.

After an exploration of training limitations for audiologists on tinnitus and the lack of national certification in tinnitus in Chapter 1, the book lays the groundwork for Chapter 2, *Tinnitus Terminology and Definitions*. This chapter answers the question of what tinnitus is and explores its myriad causes. The book focuses on primary tinnitus, which is idiopathic and may or may not be associated with sensorineural hearing loss (SNHL). Chapter 3 explores the effects of tinnitus, which vary from non-bothersome for most individuals to extremely bothersome for the unfortunate few and can be influenced by a number of factors as shown in Figure 3–1 (p. 31). Chapter 4 provides an overview of PTM, the basis for the stepped approach. This chapter includes a fascinating introduction to the research endeavors that led from the OHSU Tinnitus Clinic to the birth of PTM years later. Chapter 5 provides an overview of the steps in Tinnitus Stepped-Care followed by detailed chapters on each step. I consider Chapter 8, *Addressing Sound Hypersensitivity Disorders*, as a bonus chapter on an area closely associated and sometimes coexisting with tinnitus. As the study of hypersensitivity disorders develops, the chapter's focus on terminology and definitions, a description of disorders and underlying mechanisms, is foundational.

This book could be used as the basis for a graduate course on tinnitus. Moreover, as Dr. Henry explains in Chapter 1, many university audiology curricula provide limited training in tinnitus management. Thus, the text could also serve as a guidebook for the practicing clinician who may have been ill-prepared to provide care for their tinnitus patients. Also, Chapter 6 provides sufficient guidance in the triage of tinnitus patients that any non-auditory health-care provider (e.g., dentists, nurses, physical therapists, opticians) would find beneficial.

Having worked closely with Dr. Henry over the past decade at the NCRAR, I retain the sense of awe I experienced during his lecture that introduced me to PTM over 25 years ago. I expect readers of *Tinnitus Stepped-Care: A Standardized Framework for Clinical Practice* will be delighted to find they have discovered a comprehensive plan for managing their patients with tinnitus.

—M. Patrick Feeney, PhD
Director, VA RR&D National Center for
Rehabilitative Auditory Research (Ret.)
Portland VA Medical Center

Preface

I have had tinnitus for close to 50 years. It started when, night after night, I was exposed to loud music (my professional musician days), and it has persisted ever since. It is bilateral, high-pitched, and loud, and it sounds like it's coming from inside my ears. People often ask me if having tinnitus is the reason I became a tinnitus researcher. That is not the reason, but having tinnitus has certainly given me empathy for other people who have tinnitus.

How did I get involved in tinnitus research? It's a long story, and I'll keep it short. I left the music business and was a carpenter for the next four years (more noise exposure). I had a five-year-old deaf daughter (Erin), and we moved from California to Portland, Oregon, where she could attend a special school for deaf children. I returned to college and, because of my daughter, was drawn to the field of audiology. I completed the audiology graduate program at Portland State University. From there, I was hired to work in the auditory research lab at the Portland Veterans Affairs Medical Center. There, I discovered how much I enjoyed research, and I decided to go back to school to earn a doctorate so that I could start my own research program. My doctoral program included working in the lab of Jack Vernon, PhD, for six years.

Dr. Vernon's lab was the Oregon Hearing Research Center (OHRC), which was the research branch of the Department of Otolaryngology —Head & Neck Surgery at Oregon Health & Science University (OHSU) in Portland. Dr. Vernon was also the director of the OHSU Tinnitus Clinic. Mary Meikle, PhD, was an investigator at OHRC, and her research focus was tinnitus. Dr. Meikle was my research advisor, and she mentored me for those six years.

I completed two tinnitus research projects to fulfill the doctoral program requirements, and during that period of time I closely interacted with researchers, clinicians, and staff at OHRC and the OHSU Tinnitus Clinic. When I completed the doctoral program, I felt well prepared and motivated to begin conducting my own tinnitus research, which I did until my retirement in 2022. That's how I became a tinnitus researcher.

Enough about me—what's this book all about? In a nutshell, it is my effort to promote consistency and uniformity across clinics that provide tinnitus services. Since the days of Dr. Vernon and his OHSU Tinnitus Clinic (which was the first dedicated tinnitus clinic in the world), interest in tinnitus has grown by leaps and bounds. That growth, however, has taken place without any organization, resulting in many diverse methods of clinical assessment and treatment for tinnitus. Further, the lack of regulatory oversight has meant that clinicians—mostly audiologists—are not held accountable for the tinnitus services they provide. They can claim expertise as a tinnitus specialist regardless of their level of proficiency. This situation leaves patients at a clear disadvantage when seeking clinical services for their tinnitus condition. This book addresses these concerns. Tinnitus Stepped-Care offers a clinical framework for all methods of tinnitus management.

Fortunately, a number of well-established, research-based methods are available for the clinical management of tinnitus. For treatment, these methods generally use some version of counseling and sound therapy. Although no one method has been proven more effective than the others, patients usually do well under the care of a competent professional. You might be wondering, with all these good therapies, what's the problem?

"The problem" can be summarized as follows: (1) A cure to reduce or eliminate the tinnitus *sensation* has not yet been discovered. We therefore must rely on behavioral methods to treat the *effects* of tinnitus, which can generally be categorized as sleep disturbance, concentration difficulties, and negative emotional reactions. No standards exist for providing treatment. (2) Although effective methods are often available to patients, the methods differ in many ways. It is unknown how the differences in methodology result in different outcomes. (3) Intake assessment of patients varies greatly between clinics. Some clinics take hours evaluating patients who report tinnitus. Other clinics take very little time. Some don't even have an assessment protocol. (4) It is unknown how to tailor treatment to meet the individual needs of patients who present with unique characteristics and life experiences. (5) Patients cannot be assured of the fidelity of clinical services they will receive. (6) Outcome assessment involves different measures in different clinics, making it difficult to compare and contrast outcomes between clinics (and between clinical trials).

How would Tinnitus Stepped-Care address these gaps? Clinics that adopt the framework of Tinnitus Stepped-Care do not need to change their basic methodology for providing tinnitus services to their patients. What they would do is adapt their procedures to fit within a stepped-care

framework that creates a minimum essential level of consistency between clinics. More specifically, they would

- inform other hospitals and clinics in their geographic area about tinnitus and how to properly refer patients who complain of tinnitus (Step 1 Triage).
- conduct the initial assessment of patients using a minimum of specific measures that are consistent across clinics (Step 2 Audiology Services).
- advance patients with *bothersome* tinnitus to learn about tinnitus, including how and why it can be bothersome and what realistically can be done about it (Step 3 Tinnitus Education).
- make available an established, research-based method of treatment for tinnitus (Step 4 Tinnitus Counseling).
- conduct a comprehensive assessment for patients who require further care—to determine why services thus far have been inadequate (Step 5 Comprehensive Assessment).
- provide further treatment or refer patients to another tinnitus specialist to address any needs identified in Step 5 (Step 6 Expanded Treatment).

The first four chapters of this book provide the context that is relevant to explain the six steps of Tinnitus Stepped-Care. Chapter 1 explains why training in tinnitus management is so inconsistent between audiology graduate programs and proposes a possible solution. Chapter 2 addresses tinnitus terminology and definitions, with specific suggestions to improve consistency. Chapter 3 explains why tinnitus becomes bothersome for some people. In chapter 4, Progressive Tinnitus Management is described as the precursor to many aspects of Tinnitus Stepped-Care.

Chapter 5 provides an overview of the six steps of Tinnitus Stepped-Care. Chapter 6 describes Step 1 Triage. Chapter 7 describes Step 2 Audiology Services. Chapter 8 takes a detour to differentiate the sound hypersensitivity disorders (loudness hyperacusis, pain hyperacusis, misophonia, noise sensitivity, and phonophobia) and includes how they can be managed clinically. Chapter 9 describes Step 3 Tinnitus Education, which is an intermediary step that empowers patients to make informed decisions regarding Step 4 treatment options. Chapter 10 explains Step 4 Tinnitus Counseling and suggests established, research-based treatments for this stage of care. Chapter 11 describes Step 5 Comprehensive Assessment, which involves assessment by both an audiologist and a psychologist.

Chapter 12 describes Step 6 Expanded Treatment, which would only be needed by patients with the most intractable tinnitus problem or who have comorbidities that prevent their benefiting from treatment.

Chapter 13 explains the concept of a Tinnitus Learning Health Network (TLHN), which is proposed as a means of bringing clinics together under a common umbrella to improve tinnitus services through collaboration involving patients, clinicians, and researchers who are part of the network. Work is underway to create a TLHN, which will enable clinical research to occur with real-life patients, thereby facilitating (and dramatically shortening) the translation of research findings into clinical practice. Finally, Chapter 14 summarizes key points from the book and offers a few suggestions for optimizing tinnitus care.

The history of this book's development goes back 50 years to when my tinnitus first emerged. I did not know anything about tinnitus at the time, nor did I realize the damage that would occur by loud music and construction noise. I ended up with persistent tinnitus, hearing loss, and loudness hyperacusis. Fortunately, I have learned how to manage each of these auditory disorders, and I can live life fully. That is my hope for all people with tinnitus and ultimately is the reason for writing this book.

About the Author

James A. Henry, PhD, is an audiologist with a doctorate in behavioral neuroscience. He spent over 35 years as an auditory researcher focusing mostly on tinnitus. During his career, he received funding of $28 million as principal or coprincipal investigator for 43 projects and grants. He has authored over 250 publications, including more than 140 articles in peer-reviewed journals and nine books (this one is his tenth). He gave lectures and presentations nationally and internationally. His accomplishments resulted in numerous national awards.

Dr. Henry, who retired in 2022, continues to present lectures and training workshops, serves as an educational consultant, and maintains his role as editor-at-large for the American Tinnitus Association's journal *Tinnitus Today*. His primary interest is writing books about tinnitus, sound hypersensitivity disorders, and hearing loss. Since his retirement, he has published four books under his corporation Ears Gone Wrong®, LLC. Each of those four books supplements the present book because of the additional detail they contain. Every book written by Dr. Henry maintains the high standard that would be required of any peer-reviewed publication, including hundreds of references to support the text. While the present book is targeted to audiologists, the content would be of interest to all professionals and consumers who desire to learn more about tinnitus.

Dr. Henry's website is www.earsgonewrong.org

Notes to the Reader

This book provides educational information about tinnitus and its clinical management. It not only is targeted to audiologists but also can serve as a valuable resource for all professional disciplines as well as individuals who experience tinnitus. Although many different treatments for tinnitus are described, the book cannot be construed as directly providing any therapy or treatment. If you have any of the symptoms described in this book and feel that professional services are needed, you should meet with an audiologist or other appropriate health-care provider.

With hundreds of references cited, this book is referenced just as any scientific peer-reviewed publication would be. Professionals in the field of tinnitus often disagree regarding many aspects of tinnitus and its clinical management. The cited publications therefore express diverse opinions by the various authors. Any recommendations that are made for procedures to assess, diagnose, or treat tinnitus should be considered in that light.

Dr. Henry has not used artificial intelligence (AI) to write or edit any portion of this book, nor of any of his books or publications.

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Audiologists and Tinnitus

Audiologists all specialize in the assessment and treatment of hearing disorders. Increasingly, they are expanding their practice to also specialize in the provision of tinnitus services. We're watching a much-needed evolution of audiologic care to meet the needs of approximately 15% of all adults who experience chronic, persistent tinnitus (Henry et al., 2020). It is a basic premise of this book that audiologists are uniquely positioned to be the primary providers of clinical care for tinnitus.

Patients may just mention in passing they have tinnitus, or it may be their primary complaint. Every person with tinnitus experiences it differently. Often, patients claim their tinnitus is the cause of any hearing difficulties they experience (Ratnayake et al., 2009). When they have their hearing tested, they are surprised to learn they have hearing loss. It was the hearing loss that made it difficult to hear—not their tinnitus. It is another premise of this book that anyone with chronic/persistent tinnitus should have their hearing evaluated by an audiologist—because up to 90% of people who have tinnitus also have some degree of hearing loss (Henry et al., 2020; Kim et al., 2011; Vernon & Meikle, 2000).

Meeting with an audiologist may resolve all the questions a patient has about tinnitus, or it may be the start of a long journey to deal with an extremely troubling symptom. Audiologists can generally answer patients' questions and suggest or offer treatment options (Henry, Piskosz et al., 2019). Their training is extensive, and they have a deep understanding of how the auditory system functions.

Although tinnitus is technically a disorder of the auditory system, it can have far-reaching effects on a person's life. These effects can broaden tinnitus as a disorder that affects emotions, cognition, and sleep—impacting the person's career, family life, and social relationships. Audiologists may be capable of providing all the care a person needs to address these adverse consequences, or they at least will know how to refer patients to receive any needed services that are beyond the scope of audiology practice.

So far, this is a fairly rosy picture. Patients with tinnitus get all the care they need from an audiologist, and they are referred out for any services the audiologist cannot provide. This is how it is with some audiologists but not all.

I am currently aware of around 500 audiologists in the United States who practice tinnitus management and are likely very good at what they do. This is a far cry from the situation 40 to 50 years ago, when only a handful of audiologists were available as tinnitus specialists. That's good news for anyone distressed by tinnitus. So, what's the problem?

Gaps in Tinnitus Care by Audiologists

The practice of tinnitus clinical services by audiologists is hindered by (1) inconsistent and often inadequate training from Doctor of Audiology (AuD) graduate programs, (2) lack of tinnitus-focused certification for competency by national audiologist organizations (which relates to lack of regulatory oversight by licensing boards), and (3) lack of standardization to guide evidence-based clinical services. These deficiencies enable any audiologist to claim to be a tinnitus specialist, hang out a shingle, and charge a fee for providing tinnitus services. People who have tinnitus and seek professional care have no assurance they will receive competent services.

These hindrances should not be interpreted to mean there are no audiologists proficient in providing tinnitus clinical services. As just mentioned, hundreds of audiologists currently specialize in tinnitus management. Many have taken the initiative to learn about and provide these services to their patients in spite of insufficient training. The immediate hope is that more audiologists will do the same. The longer-term hope is that AuD programs and related professional organizations will develop training and certification that ensures all audiologists are competent to provide high-quality tinnitus clinical care.

Inconsistent/Inadequate Training

According to the US Bureau of Labor Statistics (2025), there are currently about 14,400 practicing audiologists. The American Speech-Language-Hearing Association (ASHA) lists 14,800 audiologists with the Certificate of Clinical Competence in Audiology (CCC-A). Most audiologists have completed four years of graduate education to earn the AuD degree.

The problem starts with the fact that AuD programs are inconsistent in how they provide training in tinnitus management (Henry, Sonstroem et al., 2021). There are around 80 AuD programs in the United States. Some of them offer excellent training. Some offer less than excellent training. Some offer no training to speak of. Simply put, the majority of graduating audiologists are not adequately trained to provide evidence-based clinical services for tinnitus management.

AuD graduate programs prepare their students to meet the requirements to become licensed and certified to practice audiology. In addition to the AuD degree, they must pass a national examination that verifies they have acquired knowledge in six professional areas of practice: Foundations of Practice, Prevention and Screening, Audiologic Evaluation, Counseling, Audiologic Rehabilitation Across the Life Span, and Pediatric Audiologic (Re)habilitation (ASHA, 2020). Each of the six areas of practice contains a list of specific topics that require demonstrated knowledge. The national exam can cover any of the topics that are listed, which comprise the "standards for clinical certification set by ASHA." This list of specific topics is fairly extensive (106 topics listed), but only four of the 106 topics address tinnitus (listed below):

- Audiologic Evaluation (Standard II-C). Applicant has demonstrated knowledge of and skills in:
  1. C5. Providing assessments of tinnitus severity and its impact on clients'/patients' activities of daily living and quality of life
- Audiologic Rehabilitation Across the Life Span (Standard II-E). Applicant has demonstrated knowledge of and skills in:
  2. E22. Counseling clients/patients regarding the audiologic significance of tinnitus and factors that cause or exacerbate tinnitus to resolve misconceptions and alleviate anxiety related to this auditory disorder
  3. E23. Counseling clients/patients to promote the effective use of ear-level sound generators and/or the identification and use

of situationally appropriate environmental sounds to minimize their perception of tinnitus in pertinent situations

4. E24. Counseling clients/patients to facilitate identification and adoption of effective coping strategies to reduce tinnitus-induced stress, concentration difficulties, and sleep disturbances

To summarize, the ASHA standards for certification require "demonstrated knowledge of and skills in":

- assessing the impact of tinnitus on a patient's life (C5);
- providing educational counseling about tinnitus (E22);
- teaching patients about sound therapy, using both environmental sounds and ear-level sound generators (E23); and
- teaching patients coping strategies to reduce tinnitus-related stress, concentration difficulties, and sleep disturbances (E24).

These are all important knowledge areas and skills for audiologists to possess. The topics, however, do not provide sufficient detail from which exam questions could be written with specificity. For example, exam questions could not be asked about Tinnitus Retraining Therapy or bimodal stimulation, because these methods are not even mentioned. The following are suggestions for how these topics might be rewritten with enough specificity to ensure that audiologists acquire knowledge about common methods of tinnitus assessment and treatment that could be tested with the national exam.

- Audiologic Evaluation. Applicant has demonstrated knowledge of and skills in:
  - assessment of tinnitus (distinguishing primary tinnitus from secondary tinnitus; identifying symptoms indicating the need for referral; determining need for treatment; performing outcome assessments).
- Audiologic Rehabilitation Across the Life Span. Applicant has demonstrated knowledge of and skills in:
  - educating patients about tinnitus (what it is; how and why it becomes a problem; what can be done to alleviate effects of tinnitus, such as sleep disturbance, concentration difficulties, and negative emotions).

- treating patients for bothersome tinnitus using established, evidence-based methods (Tinnitus Retraining Therapy, Tinnitus Activities Treatment, Progressive Tinnitus Management; hearing aids and various forms of sound therapy).
- describing other methods of treatment (cognitive behavioral therapy, acceptance and commitment therapy, mindfulness therapy, alternative and complementary treatments, bimodal stimulation, transcranial magnetic stimulation, etc.).

These suggestions for describing specific topics about tinnitus would hold AuD programs accountable to ensure that students are taught this information and have this knowledge when they graduate. This level of specificity would enable exam questions to be written to cover essential methods of tinnitus management. It is also suggested to cover Tinnitus Stepped-Care as a topic in the ASHA standards for certification to create a common clinical framework for audiologists who provide tinnitus services.

As an aside, it is noteworthy that the ASHA standards for certification only mention hyperacusis once:

- Audiologic Evaluation (Standard II-C). Applicant has demonstrated knowledge of and skills in:
  - C6. Providing assessment of tolerance problems to determine the presence of hyperacusis

There are actually five distinctly different *sound hypersensitivity disorders* (aka *decreased sound tolerance*, including loudness hyperacusis, pain hyperacusis, misophonia, noise sensitivity, and phonophobia) (Henry, 2025a). Assessment and treatment of sound hypersensitivity disorders should be included in audiologists' scope of practice, which would require this topic to be rewritten accordingly. Additional topics should be added addressing treatment methodologies that can be provided by audiologists.

Lack of National Certification and Regulatory Oversight

Certification from a national organization ensures that clinicians have demonstrated clinical competency in a particular area of health-care management. Audiologists are certified in the assessment and treatment of hearing loss when they earn the CCC-A from ASHA. As noted above, however,