

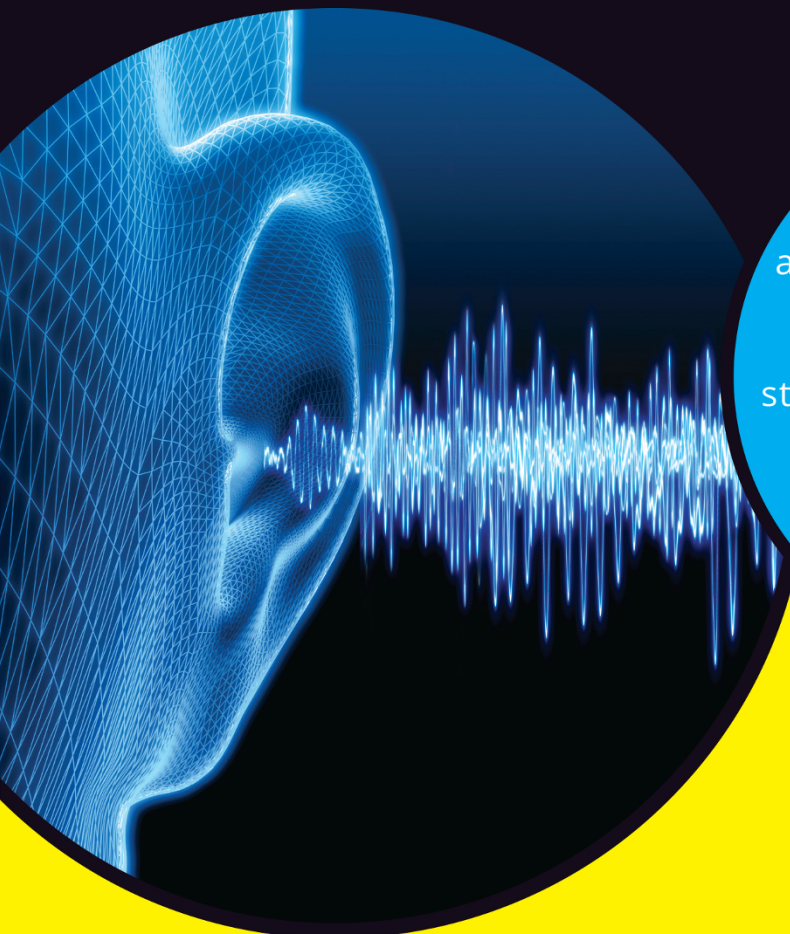
LEARNING MADE EASY



AARP®

Hearing Loss

for
dummies®
A Wiley Brand



Know why hearing declines
and why you shouldn't ignore it

Choose the best hearing
strategies and devices for you

Get up to speed on
new OTC hearing aids

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Hearing Loss

AARP[®]
for
dummies[®]
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by Frank Lin, MD, PhD, and
Nicholas Reed, AuD

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Hearing Loss For Dummies®

Published by: **John Wiley & Sons, Inc.**, 111 River Street, Hoboken, NJ 07030-5774, www.wiley.com

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Library of Congress Control Number: 2022941589

ISBN 978-1-119-88057-8 (pbk); ISBN 978-1-119-88058-5 (epdf); ISBN 978-1-119-88059-2 (epub)

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Introduction

You've arrived on the first page of the first edition of *Hearing Loss For Dummies*. When AARP and *For Dummies* asked us to write this book about hearing loss for adults, we jumped with excitement. We, your authors (Frank and Nick), have dedicated our lives to addressing hearing loss through public health research, advocacy for solutions through public policy, and the clinical management of hearing loss. To us, the need was obvious, but perhaps you may be wondering why an entire book is necessary.

Hearing loss among adults is startlingly common. Nearly half of all adults over the age of 60 years have hearing loss. Scientists and clinicians are just now understanding that treating hearing loss is important for our emotional, cognitive, and even physical health. In fact, recent research suggests hearing loss is a risk factor for social isolation, loneliness, falls, cognitive decline, and dementia.

Yet very few people recognize they have hearing loss, and fewer still seek treatment.

In our opinion, the reasons hearing loss is so overlooked and hearing care neglected include these:

- » Hearing loss sets in so slowly and subtly over time that many people don't even realize what they're missing.
- » Society has painted hearing loss as an inconsequential aspect of aging with, until recently, little understanding of how it impacts our overall health.
- » Hearing care, such as hearing aids, can be a costly and timely endeavor that isn't covered by most insurance, including Medicare.
- » Hearing aids get a bad rap. People think it's a sign of aging, when in reality, addressing hearing loss keeps you vibrant and engaged.
- » Hearing loss is complex and confusing. For example: What's mild hearing loss, and is it important? What's a high-frequency or low-frequency hearing loss? What do all those graphs and numbers from a hearing test mean? What hearing aids and other treatments are available?

But so much has changed in just the past decade or so that the time is now right for this book.

Given the explosion of research on the importance of addressing hearing loss, Congress has approved a new category of more affordable over-the-counter hearing aids intended for sale directly to adults without the need for a professional. At press time, these new hearing aids, aimed at people with mild to moderate hearing loss, are slated to be available in late 2022. In addition, new public health initiatives have emerged to move away from vague terminology and graphs when explaining hearing loss to simple and actionable numbers that are easier for people to grasp and more clearly show how hearing changes over time.

That's a lot of change in a short time period, and *Hearing Loss For Dummies* is here to break it all down for you and provide a road map for your hearing health journey.

About This Book

If you're feeling overwhelmed with where to start in understanding how hearing loss happens and what can be done about it, you've come to the right place. This book is intended to act as an easy-to-read reference guide, giving you practical knowledge and actionable solutions to address hearing loss and how it affects your everyday life.

This book focuses on hearing loss in adults that develops over time. (We do not cover the complex nature of hearing loss in children, nor do we go into rare and complex medically related hearing loss in adults.) Simply put, the inner ear was not made to last forever. Every single person on this planet experiences a decline in hearing ability as they age, and most over a certain age (around 60) develop a level of hearing loss that is sufficient to begin interfering with their daily lives and is linked with an increased risk of poorer health, falls, social isolation, cognitive decline, and dementia.

To help you navigate what occurs with hearing loss, we cover risk factors for hearing loss and touch on types of hearing loss for adults. We also walk you through the process of taking a hearing test and reading your results as well as give helpful information on purchasing hearing aids — either prescription hearing aids through a professional or over-the-counter hearing aids — and seeking support as you manage your hearing loss.

Foolish Assumptions

This book assumes you know nothing about and have no prior knowledge of hearing loss. Nothing. Nada. Zero. We explain terms and concepts in plain language. But even if you already know a lot about hearing loss, we think you'll find this

book helpful as we take some deeper dives into concepts and offer practical advice from years of clinical care and research.

If you find yourself answering “yes” to any of the following, you’ll find information in this book for you:

- » Do you suspect you have hearing loss but don’t know where to start?
- » Have you heard about the new (at the time of this book) category of over-the-counter hearing aids and want information to make an informed decision on your purchase?
- » Do you have a loved one or friend with hearing loss and want to support them?
- » Are you new to hearing aids, and do you want a reference book with practical tips and tricks for using them?
- » Have you recently learned you have hearing loss and are looking for a guide to your options in hearing care?
- » Do you think you may need hearing aids but are reluctant to start the process?
- » Do you just want to know more about hearing loss?

Icons Used in This Book

You’ll see various icons throughout this book. They’re meant to complement the material and are our way of pointing out what is essential information versus what is nice to know but can be skipped without affecting your ability to get the right message. Here’s what each icon means:



REMEMBER

This icon refers to fundamental and important information on hearing loss that shouldn’t be ignored.



WARNING

This icon raises awareness of potential misunderstandings or easy-to-make mistakes in hearing care such as avoiding certain predatory situations in purchasing a hearing aid.



TIP

This icon marks important and practical advice and insights.



TECHNICAL
STUFF

If you see this icon, it means that what follows is probably just your authors giving you scientific details you don’t absolutely need but we find super interesting. Feel free to ignore information with this icon without sacrificing take-home knowledge.

Beyond the Book

In addition to the content in this book, we've created online Cheat Sheets for quick access to important information in this book, including hearing loss basics, guidelines for testing and care, communication tips, and major Dos and Don'ts of hearing aids. The Cheat Sheets can be found at www.dummies.com by typing "Hearing Loss For Dummies Cheat Sheet" in the Search bar.

Where to Go from Here

This book was never intended to be read cover to cover. Don't get us wrong; feel free to do so if you are inclined, but you won't hurt our feelings if you don't.

We wrote this book as a reference guide using plain language and plenty of examples to present advanced concepts. The book is designed for each chapter to stand alone so you can jump in at any place to find information you need at that moment. We also understand that sometimes reading one section can create new questions, so we regularly point you to other places in the book for related topics. Of course, you're always free to check out the table of contents or the index. Start wherever suits your needs. For example:

- » Need a broad overview of everything? Start with Chapter 1.
- » Concerned you may have hearing loss? Skip to Chapter 5 for some signs of hearing loss.
- » You already know the basics of hearing loss, have already had a hearing test, and now are thinking about hearing treatment? Start with Chapters 8 and 9.
- » Want some tips on hearing better at work, at home, in social settings, and in public places? Turn to Chapter 12.
- » Want to find out more about whether you're a good fit for the new over-the-counter hearing aids? Check out Chapter 10.
- » Want some help navigating insurance and government benefits related to hearing loss? Jump to Chapters 15 and 16.
- » You bought this book because a friend or loved one has hearing loss and you want to find out how to support them? Chapter 14 is for you.

1

Understanding Hearing Loss

IN THIS PART . . .

Learn how hearing naturally declines over time and why it matters to recognize hearing loss and the role it plays in everyday life.

Uncover how the ear and brain work together to recognize sound.

Review causes of hearing loss.

Discover the link between your hearing and your health and well-being.

- » Discovering how hearing loss happens
- » Realizing how common hearing loss is and the many ways addressing it benefits your health and well-being
- » Looking at different strategies to hear and communicate better

Chapter 1

Cheers to Your Ears!

Cheers, indeed! It's not often that we take a moment to appreciate what our ears — and more importantly our ability to hear — allow us to do!

From the clink of two wine glasses coming gently together to the word “Cheers” itself, your ability to hear allows you to process and understand the world around you. Enjoying a conversation over dinner, appreciating the melody and voices of a choir, pulling to the side of the road at the sound of a fire engine . . . it's all made possible by your hearing!

For all of us, though, our hearing will gradually and subtly decline over time. By the time we're in our 40s, 7% of us will experience some hearing loss. By our 60s, that number grows to 27%, and by our 80s and older, 82%. Hearing loss is inevitable even for those of us who didn't attend loud concerts or crank up the volume in our earbuds. Yet all too often, people perceive hearing loss as a relatively inconsequential aspect of aging.

Scientists now know that nothing could be further from the truth. Addressing hearing loss may be one of the most important things you can do to keep your body and brain healthy and to keep you engaged with life. This chapter takes you on a tour of why we all develop hearing loss, why it matters, and most importantly, what you can — and should — do about it. Hearing loss isn't about growing old. Rather, addressing hearing loss is one thing we can do to keep us engaged with our families, friends, and colleagues in our everyday lives. This book is all

about understanding hearing loss, what you can do about it, and the joys and benefits to health and well-being that hearing brings to your daily life.

Understanding Why Hearing Loss Happens

Knowledge is power! If you're reading this book, you may be concerned about what you should know about hearing loss and what can be done about it. This chapter gives you an overview of the information you need to understand what's happening and the steps you can take to hear better.

Hearing takes place over two steps

The sounds we hear every day — like someone's voice, a piece of music, or a fire engine — are complex and made up of a mosaic of thousands of individual sounds of different pitches and intensities. The first step in being able to hear is that your inner ear (the *cochlea*) converts this mishmash of different sounds with perfect precision into a signal that is transmitted to the brain. (For more on how your ears and hearing work, turn to Chapter 2.)

Imagine recording a symphony with a fancy microphone and a computer. The microphone picks up the complicated, rich music in the symphony hall and encodes it into a stream of data that can be analyzed and recorded on the computer. Your cochlea is basically doing the same thing as the microphone in picking up the sounds that come to your ear and encoding these sounds into electrical signals (data) that are transmitted to your brain.

The second step of hearing occurs when your brain receives the signal (or “data”) from the ear and decodes it into meaning. Your brain can nearly instantaneously decode the signal into whether the sound you just heard was someone saying your name, a melody in your favorite piece of music, the fire engine roaring down the street, or perhaps all three at the same time! To do this, your brain relies not only on the data sent from your ear but also additional cues as well. For example, when decoding speech sounds, your brain also relies on knowing the context of the conversation and seeing the movements of the speaker's lips.

Hearing loss happens as the inner ear wears out

There are many different types of and causes of hearing loss, but in this book, we're covering the most common type of hearing loss that all of us will develop to

some degree over time. This type of *sensorineural* hearing loss (see Chapter 2) develops over time as parts of the inner ear wear out gradually. The inner ear is made up of highly specialized cells responsible for converting sounds into a neural signal. Unfortunately, unlike other cells in the body, these specialized cells of the inner ear (called sensory hair cells) can't regenerate once they wear out and have become damaged. In contrast, cells in other parts of your body, like your brain, liver, and heart, can all gradually be replaced over time by new cells.

As these cells of the inner ear wear out over time and are lost, the inner ear becomes less effective at accurately encoding the sounds entering your ear into a precise neural signal. In this case, your brain still receives data from the ear, but instead of being crystal clear, the data comes across as garbled and unclear. That's why for anyone with hearing loss, it sounds as if other people aren't speaking clearly or are mumbling. You may not even notice that your hearing is getting worse over time, because it can happen very gradually and subtly. Certain sounds may just sound a little fuzzy or garbled, but you may not realize it's due to hearing loss.

Factors that affect your hearing over time

Lots of different factors can affect your hearing over time (we detail these in greater depth in Chapter 3), and they can generally be divided into those that are non-modifiable (those you can't control) versus those that are modifiable (ones you *can* control).

Here are some key non-modifiable risk factors:

- » **Age:** This is the strongest risk factor for hearing loss. The cells in your ears responsible for hearing degrade over time.
- » **Sex:** Compared to men, women in general have better hearing. This may be related to women having increased estrogen that scientists think could protect the inner ear. Women may also have less exposure on average to loud sounds than men.
- » **Skin color:** Individuals with darker skin on average are at a lower risk of hearing loss. The amount of melanin in your skin determines your skin color (the more melanin you have, the darker your skin color is), and there's a corresponding amount of melanin in your inner ear. Scientists believe this inner ear melanin helps protect the inner ear over time.

The most important modifiable risk factors for hearing loss include these:

- » **Noise:** This is by far the most important risk factor you can control. As a general rule of thumb, if you're in an environment or situation where you

consistently have to raise your voice to be heard, you should move away from the noise if you can or consider using some form of ear protection such as earplugs or over-the-ear noise-canceling headphones or earmuffs. You'll also want to avoid listening to music through headphones or earbuds for too long or too loud. See Chapter 3 for tips on how to use headphones safely and information on how noise affects hearing.

» **Cardiovascular risk factors:** There are myriad risk factors for cardiovascular disease such as smoking, hypertension, and diabetes, and all these can also increase your risk for hearing loss by damaging the small blood vessels that go to your ear. Head to Chapter 3 for more information.

Putting Hearing Loss in Context

Everyone loses some hearing with age. What we want to stress is just how common it is; how it can impact your physical, emotional, and cognitive health; and what you can do to hear better.

Hearing loss happens to everyone

If you're concerned about hearing loss, you are most certainly not alone!

The number of people who experience hearing loss is staggering, as Figure 1-1 shows.

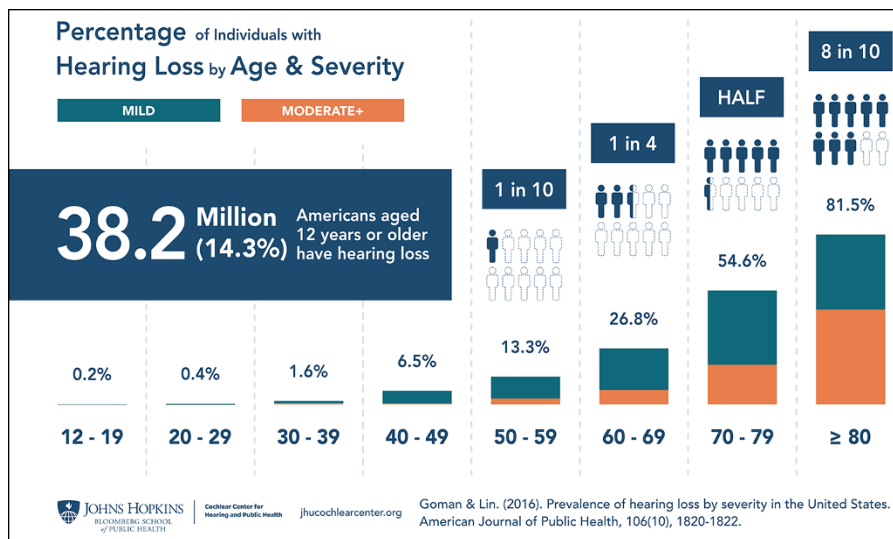
In this figure you can see that the percentage of people with hearing loss nearly doubles with every decade of aging. The figure also gives an indication of the relative severity of the hearing loss divided into those with mild and moderate or worse hearing loss. These concepts are covered in more detail in Chapter 7.

How hearing loss impacts our health and well-being

Scientists didn't always understand much about the consequences of hearing loss for adults. The general impression among even doctors was that since everyone developed some hearing problems over time, it couldn't possibly be that bad for health.

That period has now passed.

FIGURE 1-1:
Prevalence of
hearing loss in
the United States.



Source: Johns Hopkins Cochlear Center for Hearing and Public Health

Research over the past decade has increasingly demonstrated the adverse effects that hearing loss can have on our health. Key areas where scientists now believe that hearing loss increases our risk for adverse health events include cognitive, emotional, social, and physical areas of health:

- » **Cognitive impairment and dementia:** Research suggests that of all the known treatable risk factors for dementia, hearing loss may be the single largest contributor to dementia risk. Scientists think this is because hearing loss makes it harder for our brain to process sound, and individuals with hearing loss are less likely to remain engaged in social and other stimulating activities that are critical to cognitive health.
- » **Loneliness:** Feeling withdrawn and detached from others is strongly linked with poor health outcomes like early mortality, heart attacks, and cognitive decline. Hearing loss contributes to loneliness because it makes it harder for people to socially engage with others.
- » **Falls:** Hearing is one of several systems — including our vision, *vestibular* (balance), cardiovascular, pulmonary, and *proprioception* (sense of touch) systems — that allow our brain to maintain our body's balance.

Importantly, while scientists now understand that hearing loss likely contributes meaningfully to all these adverse outcomes, they don't know yet whether our current treatments for hearing loss (for example, using hearing aids) may lower this risk. Studies are ongoing, and scientists are hopeful.

The benefits of addressing hearing loss

The important thing to keep in mind about hearing loss is that it comes on so slowly that many people aren't even aware they're struggling to hear (despite everyone else noting the struggles the person is having!). The single most important reason to address your hearing loss — with the strategies and technologies detailed in this book — is so that you can fully engage with others and the world around you. Scientists and doctors have long known the positive benefits that addressing hearing loss can have on relationships and personal well-being. Importantly, researchers are also now just beginning to understand that these strategies to address hearing loss may have even bigger long-term implications for keeping our brains healthy and free of disease as well!

What You Can Do about Hearing Loss

Besides avoiding loud noises and protecting cardiovascular health, what can you do about hearing loss? It can't be cured, but it most certainly can be addressed with a range of strategies to allow individuals with hearing loss to communicate and hear optimally. When it comes to hearing loss and how it affects you, you are the master of your own destiny. You don't have to sit back and just let hearing loss adversely impact your life. There are strategies and technologies to combat these effects so you can remain fully engaged with the richness of the world around you (see Chapters 8 through 13 for details on these).

Know your hearing

This may seem obvious, but to address hearing loss, you first need to know whether in fact you have hearing loss! In many cases, as you can tell from Figure 1-1, you may have a pretty good idea already based purely on your age (nearly two-thirds of everyone over 70 has hearing loss) and the symptoms you may be experiencing. Subjective impressions of your hearing can be helpful, but in most cases, you'll be far better informed if you have an objective hearing test.

Get your hearing checked

Hearing tests are most commonly performed by an audiologist or a hearing instrument specialist. Ideally, you want to start with an audiologist since these are health professionals trained to diagnose and treat hearing loss, and health insurance will nearly always cover the exam. Depending on your insurance, you may need a medical referral. An audiologist can perform a comprehensive hearing exam and then discuss your evaluation and possible options to address any hearing or communication problems you may be experiencing.

Hearing instrument specialists can also assess your hearing. They are licensed by the state to sell hearing aids and to conduct hearing tests expressly for the purposes of possibly fitting a hearing aid. Hearing instrument specialists often offer these hearing tests for free, but their ultimate hope is that you'll then buy a hearing aid from them. There's nothing wrong with these tests, but just be forewarned that they may also come with a sales pitch.

You may also want to consider having your hearing evaluated by an ear, nose, and throat (ENT) physician (also called an *otolaryngologist*), particularly if you have any medical concerns about your hearing. An ENT is trained in the medical and surgical management of hearing loss and often works with an audiologist in the office. The audiologist performs the hearing evaluation, and the ENT then examines your ears and evaluates whether you have any medically or surgically treatable issues related to your hearing loss. Consult an ENT if you notice any of the following:

- » Drainage from your ears
- » Ear pain
- » Asymmetrical hearing between your ears
- » Sudden or fluctuating hearing loss (see an ENT immediately if your hearing loss comes on suddenly)
- » Dizziness or vertigo
- » Hearing loss that has not been significantly helped by using hearing aids in the past

Turn to Chapter 6 for a full rundown on hearing professionals and tests.

Get your hearing number

One of the best ways to get a better grasp and understanding of your hearing is to know your hearing number. The hearing number — known clinically as the speech-frequency pure-tone average — indicates how loud on average speech sounds have to be for you to hear them. The larger your hearing number, the worse your hearing is.

You will get this number from your hearing test. You can also calculate it from a hearing test yourself using your own smartphone (see Chapter 7).

You can find more details about the hearing number — how it's calculated and what it means — in Chapter 7 and at www.hearingnumber.org, part of an effort by the Johns Hopkins Bloomberg School of Public Health, where both authors are based, to increase public awareness and knowledge around hearing loss.