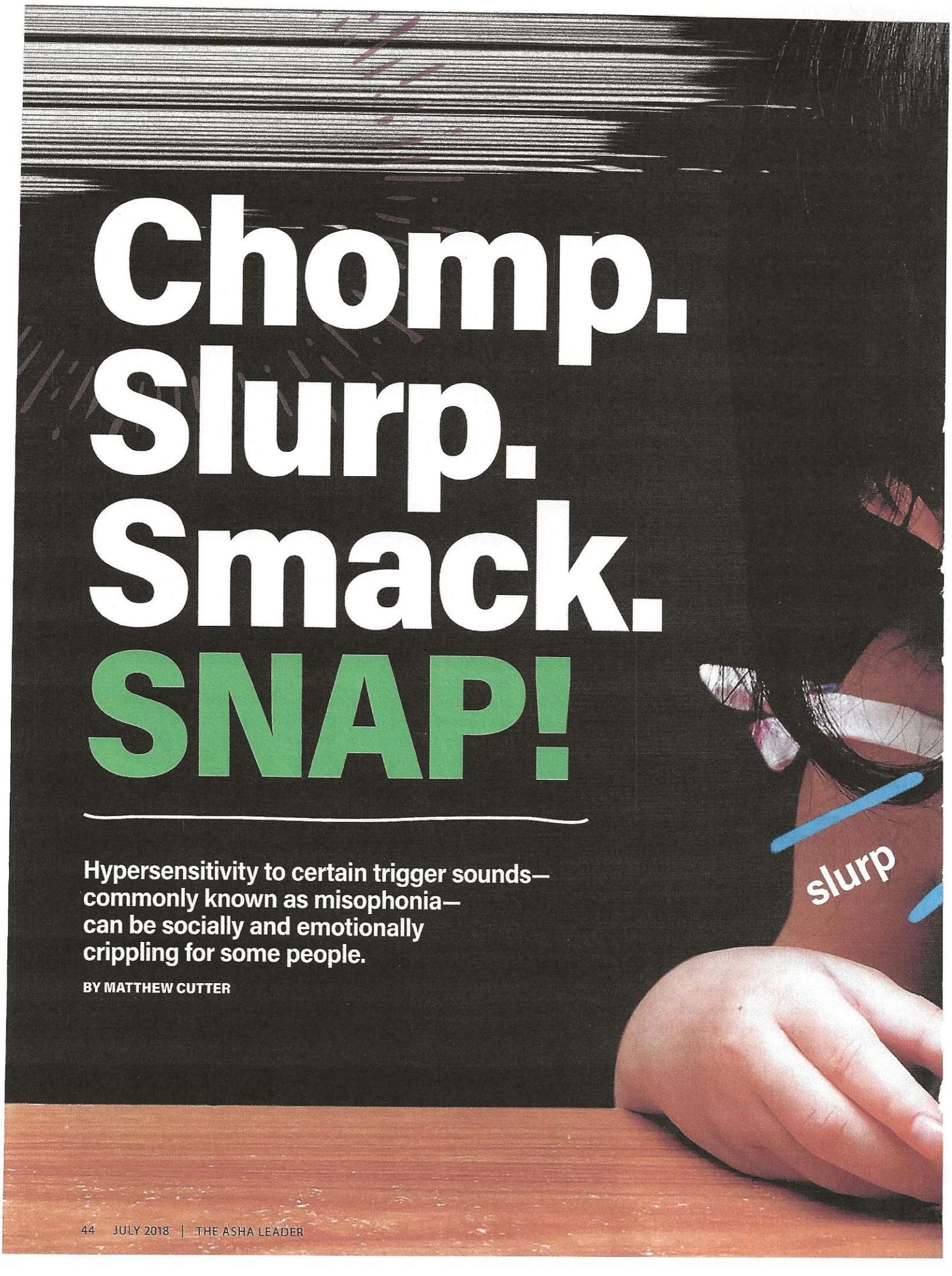
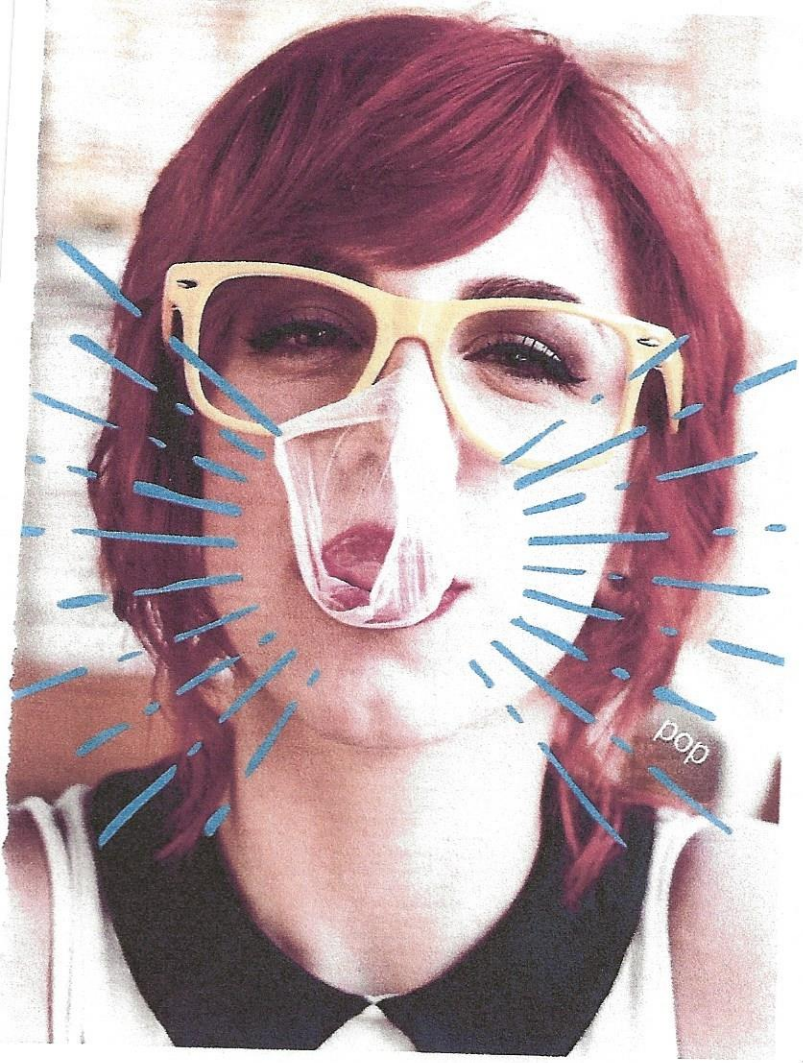
Chomp. Slurp. Smack. SNAP!

Hypersensitivity to certain trigger sounds—commonly known as misophonia—can be socially and emotionally crippling for some people.

BY MATTHEW CUTTER





FAST READ: *Certain sounds like chewing, pen-clicking and gum-cracking send people with the disorder, misophonia, into paroxysms of anger and disgust. Little research has investigated the phenomenon, and experts disagree on whether it's even a discrete disorder. But audiologists can help those affected cope by providing treatments that include counseling and sound therapy.*

TAGS > MISPHONIA, HYPERACUSIS

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Every evening, the Johnsons gather around the dinner table to share a meal and tell stories about their day. Bill had a rough commute, but he tells a funny story about a co-worker. Maria got a raise, so maybe they can take that summer vacation after all. William Jr. relates the results of a math quiz—not a fun story—and promises to study harder.

The dining room fills with talking, laughter, soft clinks of forks on plates, comfortingly domestic sounds.

Abruptly, 13-year-old Cindy slams her hand on the table. Everyone is shocked into silence.

"Mom!" she shouts, "stop chewing with your mouth open!"

Sound therapy, often used to relieve tinnitus symptoms, can be equally effective in some cases of hyperacusis and misophonia.

What had been a pleasant dinner turns into a shouting match. Cindy flees to her room in tears. And no one's quite sure what they could have done to avoid her outburst or help soothe the obvious and extreme discomfort she feels.

Worst of all, this dinner is not an isolated occurrence at the Johnson house. For Cindy and many others, this is daily life with the neurobehavioral condition sometimes called misophonia.

So far, there is minimal research on misophonia, and even less agreement among professionals as to how the disorder should be classified. But here's the good news: Armed with counseling and education techniques—and ready to provide sound-therapy devices, behavior-modification advice and hearing protection—audiologists can help.

Hatred of sound

We know that most people have a slight aversion to certain sounds—nails scraping on a chalkboard, gum snapping, openmouthed chewing or a clicking pen. But for a person with misophonia, one or more of their "trigger sounds" can elicit an emotional reaction totally out of proportion with the sound's objective qualities: usually aggravation, followed by anger or disgust, and a desire to leave the area or, more rarely, react with aggression.

Christopher Spankovich and James W. Hall III wrote in their article "The Misunderstood Misophonia" (see sources) that a reaction may include "physical effects such as pressure in the chest and arms, clenched teeth, and tightened muscles." And although the trigger is usually auditory in nature, it need not be: Some people report visual or even tactile triggers.

"These all tend to be sounds that we all tend to find aversive at some level," says Spankovich, an associate professor, director of clinical research and clinical audiologist at the University of Mississippi Medical Center in Jackson,

Mississippi. "It's just that a person with misophonia does it at a much, much higher level."

Although no genetic markers have been identified, misophonia anecdotally seems to travel in families. For instance, psychologist and licensed professional counselor Jennifer Jo Brout first encountered misophonia in her daughter in the 1990s, before the name had been coined. Later she came to understand she also has the condition. Now she provides treatment for sensory processing disorders and misophonia in Westport, Connecticut.

"There are so many [misophonia] myths perpetuated out there," Brout says. For instance, misophonia sufferers are sometimes told by their families or peers they're making it up for attention, or that the problem is all in their imagination.

Many with the condition report their trigger sounds to be connected to a specific family member or even a pet. In a 2017 survey of more than 300 participants with self-reported misophonia conducted by Romke Rouw and Mercede Erfanian (**bit.ly/miso-study**), about a third of the respondents said they had family members with the condition. The results also suggest that misophonia typically begins in childhood or adolescence and grows more severe with repeated exposure to trigger sounds. Participants report a wide array of physical, emotional and cognitive reactions.

These negative emotions can take a big toll on social interactions, says Tom Dozier, a California-based behavior analyst and director of the Misophonia Institute. "You're hitting this huge anger and rage and disgust and anxiety and sadness, and you're having these extremely strong emotional responses," says Dozier. "And with that comes physiological arousal. Distress arousal."

Some people find the trigger sounds so distressing that they avoid going to public places like football games or restaurants, notes Rich Tyler, professor of audiology and otolaryngology-head and neck surgery at the University of Iowa. "Some patients in the extreme form experience pain," he says. "Some of those patients don't leave their home. It's a very disturbing disorder."

Audiologists Margaret and Pawel Jastreboff coined the term misophonia—literally "hatred of sound"—in their 2001 study (see sources) of tinnitus and hyperacusis. The Jastreboffs' research at Emory University in Atlanta emerged from a tradition of inquiry into sound sensitivity and decreased sound tolerance dating to the 1950s. Their results suggested a link between aversive sounds and the brain's limbic system; put simply, certain sounds induced a disproportionate "fight or flight" response in the hearer.

Fast forward to 2018. Misophonia does not appear in the fifth edition of the "Diagnostic and Statistical Manual of Mental Disorders" (DSM-5) as a discrete disorder. What little research has investigated misophonia since the Jastreboffs is largely composed of case studies and individual patient reports. A few recent experiments (led by Miren Edelstein, **bit.ly/miso-measure**, and Sukhbinder Kumar, **bit.ly/miso-brain**), however, have used psychophysiological measures—namely skin conductance response, electroencephalogram and functional magnetic resonance imaging—to establish that the disorder includes a measurable, brain-based component. Much like tinnitus, the disorder is "real" and not imagined by patients.

Today's debate about the disorder's reality isn't over whether it exists, but rather how to classify it, what causes it, and whether it's a disorder that stands alone or a symptom or comorbidity of some other condition. Experts do not even agree on how the word misophonia should be pronounced. (You say

"We need to determine what exactly is going on in terms of the sound sensitivity patients are experiencing, as well as what's going on with their auditory pathway."

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"You're hitting this huge anger and rage and disgust and anxiety and sadness .... And with that comes physiological arousal. Distress arousal."

MISS-o-phonia; I say MEESE-o-phonia.) But most concur that more research into the phenomenon is crucial.

"There's really not a lot of clarity, just because there's not a lot of research currently that exists," says Spankovich. "And most of that work is just in the past few years. So there's not a lot of knowledge understanding what exactly misophonia is. Is it its own separate disorder? Is it a symptom of something else? It's probably all of those things. Misophonia is probably more of a spectrum-based phenomenon."

Based on his own research and his background as a behaviorist, Dozier classifies misophonia as a Pavlovian conditioned physical response disorder. "This is a reflex condition," he says. "I mean, we're talking about instant emotional responses. So this is reflex behavior, and surely the field of behavior science has something to contribute to this topic."

Brout—who was involved in recent efforts to have the American Psychiatric Association include misophonia in the DSM—is hopeful that misophonia will one day make it into the manual.

"However, at some point you have to ask yourself," she says, "how is it going to be presented in the DSM? Because often psychiatrists are going to look at this as a psychiatric disorder. Whereas audiologists are going to look at this as an audiological disorder. So if it does get in the DSM, we don't want it getting in as a psychiatric disorder."

Misophonia treatment may in fact require cross-disciplinary teams. "I think there's going to be different levels of the system involved, depending on different patients," says Spankovich. "So for one person, misophonia could be separate from any other type of psychological issue or any other type of symptomology. They could simply just have an aversive reaction to this single sound that they find annoying and bothersome."

Some people may have conditions that combine elements of a sensory processing disorder or obsessive-compulsive disorder (OCD). "Misophonia can be a symptom of those things, but that doesn't mean that all people with OCD have misophonia, or all people with sensory processing deficits have misophonia," he adds.

With the next DSM revision scheduled for 2025, there is time for scientists to conduct crucial research. But not all professionals are so sanguine regarding misophonia's prospects of inclusion.

"I don't think that misophonia exists [as a separate disorder]," says Tyler. "Misophonia means a dislike of sounds." He considers misophonia a type of hyperacusis, which the Hyperacusis Network defines as "a collapsed tolerance to normal environmental sounds." The picture is muddled slightly by the related condition known as recruitment, in which only loud

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noises are to blame for a person's discomfort.

Practical concerns

Given the absence of any evidence-based treatment for misophonia, what should an audiologist do for a patient who complains of its symptoms? Until experts reach a consensus on misophonia, audiologists can offer compassion. And according to Rich Tyler, they should focus on having patients describe symptoms in ways that are practical and reimbursable.

Tyler classifies misophonia as a sub-category of hyperacusis, defined by ASHA as an exaggerated response to normal environmental sounds. "Almost every single patient I've seen has sounds they can describe that are very annoying and bothersome and loud," he says. Rather than focusing on what the disorder is called, Tyler prefers to highlight practical aspects a patient can describe, such as degree of loudness, annoyance, fear and pain.

"I like to talk about it in those descriptors because patients can understand it, and the general public can understand it," Tyler says, "and people on reimbursement panels can understand it."

Treatment should include input from other professionals, such as the primary care physician, an occupational therapist or a licensed psychologist to provide any cognitive behavioral therapy that's recommended. But because misophonic symptoms so often accompany auditory triggers, an audiologist is likely to be the first clinician the patient visits.

"Audiologists have come up with different methods for clinically categorizing different types of sound-sensitivity–based experiences," Spankovich says. "So when the patient comes in, really, we need to differentiate and determine what exactly is going on in terms of the sound sensitivity that they're experiencing, as well as what's going on with their auditory pathway."

Sound therapy, often used to relieve tinnitus symptoms, can be equally effective in some cases of hyperacusis and misophonia. Sound therapy fights fire with fire, using a device to generate neutral sounds—white noise or pink noise—that cancel out bothersome sounds and help the patient acclimate to them over time. "It's perfect for audiologists because we're involved in sound therapy for tinnitus patients," says Tyler. And research conducted by the Jastreboffs and others suggests sound therapy can be effective (see sources).

So what sorts of treatment can an audiologist offer? According to the ASHA Practice Portal page on tinnitus and hyperacusis (**on.asha.org/pp-hyperacusis**), these categories are appropriate to help manage people's hyperacusis and misophonic symptoms:

- **Counseling:** Before any treatment program begins, patients need guidance and education to help

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them understand their condition. Audiologists can provide a basic understanding of the auditory pathway, how we hear and how the brain processes sound—so the patient is better prepared to cope. ASHA recommends including a patient's support system—family, friends and significant others—whenever possible. In some cases, an audiologist may also refer the patient to a psychologist or licensed counselor.

- **Sound therapy:** This treatment uses hearing aids or a sound-generating device to produce a low-level sound. In therapeutic sessions, the user increases the volume gradually and ideally becomes habituated to it over time. Some patients continue to use a sound-generating device in daily life to mask offending sounds.
- **Hyperacusis activities treatment:** Like tinnitus activities treatment, this approach also focuses on thoughts and emotions, hearing and communication, and sleep and concentration. It includes individualized counseling and sound therapy specific to hyperacusis.
- **Hearing protection:** Hearing protection may be appropriate for some patients. Take care to use hearing protection only for excessive noise levels, not to protect against normal environmental sounds, as this may cause increased sensitivity and make the hyperacusis worse.

"Sound is really the escape [from the offending noise]," Spankovich says. "So, for example, say you have a teenager and they can't stand the sound of mom chewing. But they really want to be at the dinner table and have a family dinner. That's where they put on their iPod and listen to their music at a level that's diminishing the perception of the chewing, so that they can be at the table. That's the first step, just getting to the table—right?"

A giant step

At the Johnson house, Cindy is back at the dinner table after a few months of treatment. Her audiologist recommended a sound-generating device that produces enough white noise to block out the sound of her mother Maria's chewing, but not so much that Cindy can't converse with her family. She, her mom, dad and brother all understand her condition much better than they did. Through counseling and therapy, Cindy has developed strategies to cope with her reactions to trigger sounds—and she's learned when it's best to excuse herself.

On Cindy's road to successful management of her condition, getting back to the table was only the first step. But it was a giant one.

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Find sources for this article at leader.pubs.asha.org.

RESOURCES

ASHA Practice Portal on Tinnitus and Hyperacusis:
on.asha.org/pp-hyperacusis

The Hyperacusis Network:
www.hyperacusis.net

The Misophonia Association:
misophonia-association.org

The Misophonia Institute:
misophoniainstitute.org

International Misophonia Research Network:
misophonia-research.com

Misophonia International:
www.misophoniainternational.com