From stuttering

As a child in the 1970s, Katie was frustrated and embarrassed by her stuttering. She was teased by children in her preschool class, was bullied by some of the boys and would cry every morning before she went to school. She was very frustrated by the fact that while she was a competent child in all other aspects of her life, she got "stuck" on her words and struggled to get them out. She did not understand why she could not talk and other children could.

That began to change when her parents took her to see psychologist Ronald L. Webster, PhD, founder and president of Hollins Communications Research Institute (HCRI), a nonprofit center that specializes in stuttering treatment methods and research. By participating in an intensive 19-day behavioral therapy program, Katie basically learned how to talk all over again. She mastered how to produce the correct oral positions for the 44 basic sounds used in American English and the transitional speech gestures into a large, representative set of syllables involving sound combinations typical for the language. In addition, she learned how to control her voice amplitude patterns — allowing for fluent speech — and how to breathe properly as she spoke.

Fast forward to the late 1990s when her own young daughter began to stutter, and Katie was able to teach her how to speak fluently using the skills she had learned as a child. (Webster has just published a children's book based on the true story of this patient, whose named has been changed, "Katie: The Little Girl Who Stuttered and Then Learned to Talk Fluently.")

Katie and her daughter are among the roughly 1 percent of the world's population who stutter, some 3 million people in the United States alone. The disorder is about four times more common in males than females.

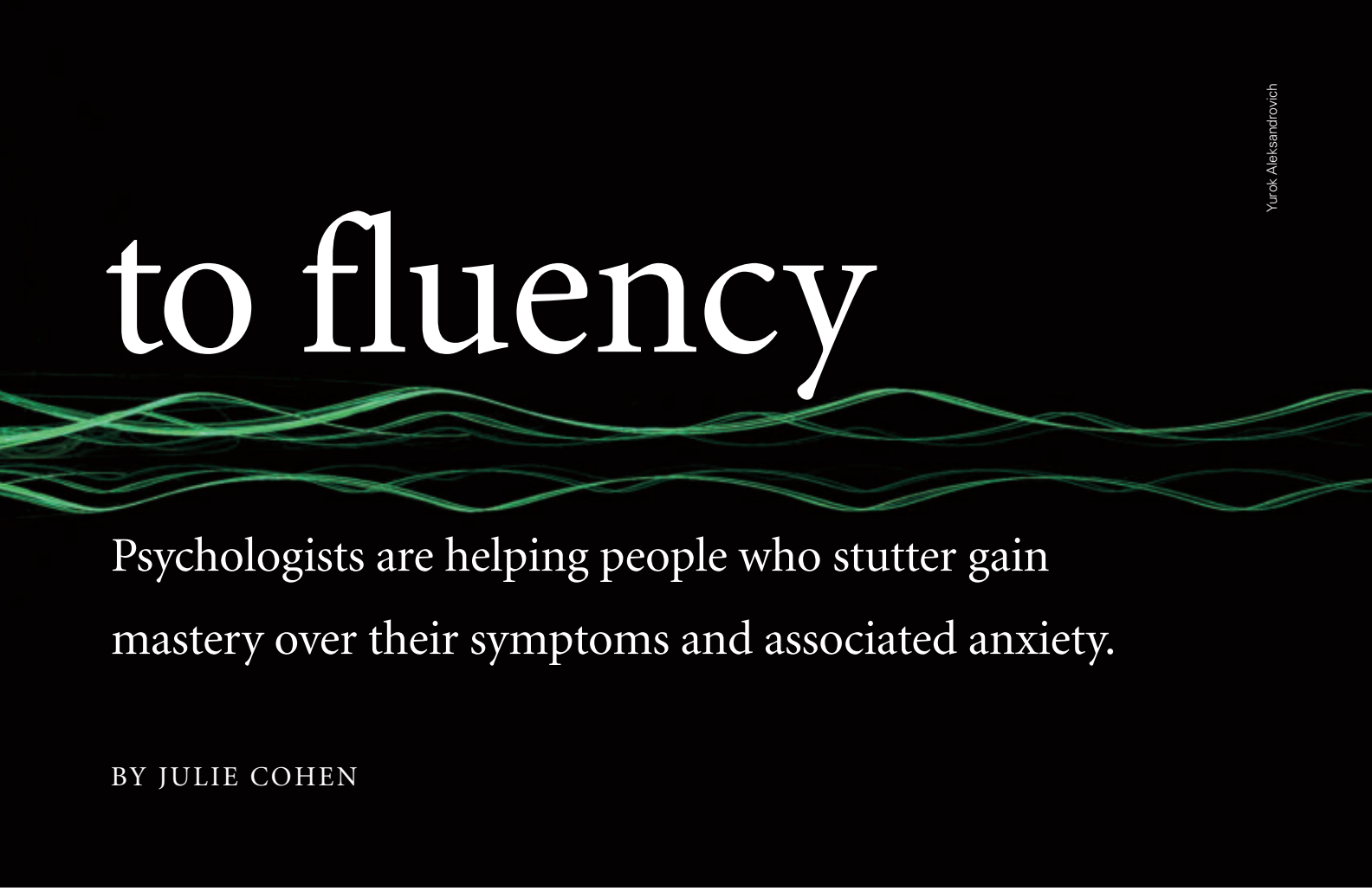
Most children who stutter experience spontaneous recovery on their own by age 8. But for those whose stuttering persists beyond age 8, it's likely to last through adolescence and beyond unless they get treatment.

Most people who stutter are treated by speech therapists in 60-minute sessions, usually once or twice a week, but research by Webster and other psychologists has also led to evidence-based treatments that can help stutterers in as little as 12 days.

Etiology and co-occurring disorders

There are large individual differences in which particular sounds people will stutter on, says Webster. In general, stutterers will stutter on initial sounds in the first words spoken in a phrase or sentence, but some stutterers always have trouble with the first sound in their names. Others will have trouble with "plosive" consonants — such as p, b, d, t, g and k — for a while, then will have trouble with a different set of sounds. Some will have trouble with a simple word, such as "I."

The exact cause of stuttering remains unclear. Some research suggests that stuttering may have a genetic basis, says Gerald Maguire, MD, a professor at the University of California,



Yurok Aleksandrovich

to fluency

Psychologists are helping people who stutter gain mastery over their symptoms and associated anxiety.

BY JULIE COHEN

Irvine, School of Medicine. Maguire himself stutters, for example, as do his mother and brother.

"There's a strong familial history of a higher rate of concordance, where family members have a higher rate of risk of stuttering," he says. So far, however, no "stuttering gene" has been identified.

One theory holds that excess dopamine activity in the brain may lead to stuttering via abnormal functioning of the basal ganglia, although the research is not definitive, says Maguire. Brain imaging studies also indicate that stuttering could be due to a person's having underactive left cortical hemisphere speech areas.

What researchers do know is that people who stutter have abnormalities in the way their speech muscles contract when they talk. That leads their speech to have the characteristic involuntary repetitions, prolongation of words and broken words — the effects that can be so stigmatizing, particularly for children who stutter.

Adding to that stigma is the fact that many people — including stutterers themselves — think of the condition as a purely psychological, rather than physical, problem, says clinical psychologist and stuttering researcher J. Gayle Beck, PhD, of the University of Memphis.

"We have some conceptions that stuttering might be due to some deep-seated character problems or merely

A new name for stuttering in DSM-5

"Stuttering" is no longer an official diagnosis, according to the DSM-5. Instead, the name of the disorder has been changed to Childhood-Onset Fluency Disorder.

Criteria for diagnosis have also changed in the new DSM, most notably the removal of saying "ums," "ahs" and "you knows" and other interjections as a requirement for diagnosis. "People may have interjections as part of their speech but it may not be stuttering," says Gerald Maguire, MD, a professor at the University of California, Irvine, School of Medicine, who served as a consultant for the DSM revision. "They may not be bothered by it, and it may not be part of an underlying disorder."

Meanwhile, anxiety and avoidance have been added to the diagnostic criteria. "For many people, this is what can disable them," Maguire says. "They may have a high level of anxiety and they avoid certain speaking situations or certain words and they focus so much of the time around the avoidance and the anxiety. It's really a key focus."

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involve psychological issues," she says. "There's not a lot of data to support that."

In fact, two studies by Beck and University of Memphis speech and language pathologist Walter Manning in the *Journal of Fluency Disorders* find that stutterers are no more likely than the general population to have personality disorders. Although rates of anxiety are higher among those who stutter, their anxiety is situation-specific and related to social evaluation, rather than to high levels of trait anxiety, says Beck. "That makes sense as we think about this — your anxiety is going to be pretty much focused around things that are garnering negative social attention" — such as stuttering, he says.

Manning, who has many years of experience treating people who stutter, echoes Beck's views. "Decades of research indicate that people who stutter are normal in many respects — including psychological aspects — except when they try to communicate with others. They experience anxiety, often at high levels. ... It would be unusual for a person who stutters *not* to experience anxiety."

Treatment options

That's why addressing the anxiety is an important part of treatment. Although there is no consensus on the most effective treatment for stuttering, the most common modality is speech therapy, often with cognitive therapy to address anxiety.

In traditional speech therapy for stuttering, a counseling component focuses on modifying client reactions to his or her stuttering. Traditional treatment protocols involve attempting to alter features of stuttering as the person begins to stutter. Clients are taught to speak in a more relaxed mode; they are taught to attempt to "glide" or "slide" through blocks once they begin, and they are taught to stutter on purpose in order to face their disorder more directly and purposefully. Treatment also often involves group therapy and taking part in support groups, such as those offered through the National Stuttering Association.

Webster and his HCRI team have updated their treatment methods over the years through trial and error, collecting data on what works. Participants in his 12-day intensive program start by practicing particular speech sound combinations, and then once they have mastered those sounds, they practice them with other program participants.

The next step is making hundreds of telephone calls practicing their newly learned speech skills, calling local businesses and asking questions like, "What time do you close?" before going on to have lengthier phone conversations with friends, family and business colleagues, says Webster. Practice and desensitization continue with trips to the mall to speak with store clerks, with a clinical staff member present to monitor the client's speech and give feedback.

"We think anxiety is a consequence of having gone out and stuttered and the adverse social learning that has taken place," says Webster.

Once participants master the skills and can transfer them in a variety of situations, "fears begin to simply drain away," he says. "If you've made several hundred telephone calls, you're not going to be afraid to go into the garage and have your car serviced, you'll be able to go into job interviews."

Webster's team continues to innovate. They recently developed an iPhone app called Voice Monitor that gives patients feedback on their speech, thereby helping them learn how to control their voices.

Maguire prescribes dopamine-blocking medication for his adult patients, which he said can be done in conjunction with speech therapy. Although there are no FDA-approved medications for stuttering, researchers have had some success in trials of dopamine-blocking drugs. Maguire has tested olanzapine and risperadone and found positive results in his own lab. These results were included in a 2012 review article he co-authored that appeared in the *Journal of Experimental and Clinical Medicine*, "Overview of the Diagnosis and Treatment of Stuttering."

He often refers patients to speech therapy as well as to self-help and support groups through organizations such as the National Stuttering Foundation. He would like to conduct a study comparing medication alone versus combining medication with speech therapy.

Beck would like to see more research done that focuses on better understanding the link between anxiety and stuttering. While stuttering causes performance anxiety, the anxiety itself could be a barrier to treatment.

"If someone's social anxiety is really high, they may not have as motivated a speech therapy outcome," she explains. "We don't know at this point. In my mind, that would be kind of a natural next step growing out of our understanding of anxiety and stuttering." ■

Julie Cohen, PhD, is a clinical psychologist and writer in Boston.

Further reading

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