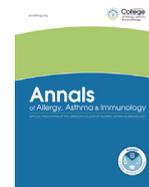




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Perspective

## Chronic cough in children and adults

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A recent review, titled Management of Cough, begins with the comment, “People with chronic cough (CC) can experience significant quality-of-life impairment.”<sup>1</sup> That statement is incontrovertible. However, the references supporting etiology of CC exclusively related to adults. The review failed to consider causes of CC in a quarter of the population: those younger than 18 years. As a pediatrician, that deficiency disturbed me. The absence of age-related recommendations results in children with CC being treated with measures recommended for adults. The most probable causes of CC described for adults were asthma, upper airway cough syndrome, and gastroesophageal reflux disease. Vocal cord dysfunction was also identified as a cause of CC.

From my experience with respiratory disease in children, I recognized only asthma among those causes of CC. In fact, gastroesophageal reflux disease and upper airway cough syndrome, otherwise known as postnasal drip, were rare or absent when a systematic approach for diagnosis was used in 346 children with CC.<sup>2</sup> In addition, CC was not present in 49 pediatric patients with vocal cord dysfunction.<sup>3</sup> Common causes of pediatric CC other than asthma were protracted bacterial bronchitis, tracheomalacia, and habit cough, none of which were mentioned in the review.

A conundrum for adults with CC is that 40% of adults with CC seen in specialty cough clinics have no identifiable cause.<sup>1</sup> The hypothesized mechanism for those 40% is cough hypersensitivity, explained as “central sensitization of the cough reflex and laryngeal dysfunction.”<sup>1</sup> This is not relevant for those with CC who are younger than 18 years because absence of an identifiable cause is uncommon.<sup>2</sup>

Habit cough, readily identifiable from clinical characteristics,<sup>4</sup> was most often the cause of CC in children when no organic or anatomical cause was apparent. Habit cough was first described in 1966 by Bernie Berman, a Boston allergist and immunologist. He reported cessation of the cough by the art of suggestion.<sup>5</sup> A specific

form of suggestion, used at the University of Iowa Pediatric Allergy and Pulmonary Clinic, provided cessation of cough after 15 to 30 minutes for all but 3 of 85 patients with CC diagnosed as habit cough; the median age was 10 years. Flexible bronchoscopy under procedural sedation for all with troublesome CC for which an organic cause was suspected permitted bronchoalveolar lavage findings to identify protracted bacterial bronchitis and enabled the identification of tracheomalacia.<sup>2</sup>

Are there implications from the experience of CC in pediatric patients for the adults with CC discussed in the recent review?<sup>1</sup> In an online communication, Dr Mandel Sher, director of a cough center in Florida, stated, “The mechanisms of habit cough in children and neurogenic cough in adults, appear to be overlapping...Both appear to be triggered by the urge-to-cough...Both usually occur after a pathologic event, usually a viral respiratory infection...” Dr Sher additionally notes that a “behavioral component in adult chronic cough is supported by the observation that...trials have demonstrated a 30–40% placebo response.” (The complete discussion is available at <https://www.docmatter.com/dm/app/profile/person/?id=64460>.)

An event in early 2019 enhanced our experience with suggestion therapy for habit cough. I agreed to provide suggestion therapy to a 12-year-old girl with a 3-month troublesome CC. She met the criteria for the diagnosis of habit cough because she had repetitive cough throughout much of the day with absence of cough when sleeping. Given the 3000 miles that separated us, remote communication (Skype) was used to provide suggestion therapy with cessation of her cough. That session was recorded by the father, who then placed the event in a website he created ([www.habitcough.com](http://www.habitcough.com)).

Once that website went online in April 2019 and the video also placed on YouTube, other parents searching for an answer to their child's CC began to contact me by email. Responding to those communications, I eventually provided remote suggestion therapy, just as in the video, to 9 additional children with successful cessation of cough. As of this writing, I have received email reports that cough also stopped in 24 individuals solely by watching the video of me providing suggestion therapy remotely to the 12-year-

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old girl. This result was initially unintentional and unexpected. A further unexpected outcome was that 5 adults, 2 older than 50 years and 3 in their 20s, were among those whose chronic repetitive cough stopped after watching the video.

There are several implications of these observations that habit cough could be cured by proxy. First, it demonstrates that children with habit cough are highly amenable to being empowered with the ability to stop coughing despite durations in some cases of many months or even years. Second, there are some adults with CC who respond in the same manner. I discussed the potential mechanism of these observation with my colleague, Ran Anbar, a pediatric pulmonologist and certified medical hypnotist. He suggested that this was an example of observational learning, a well-recognized form of social learning in psychology. Dr Anbar proposed that the child or adult with CC responded to the observation that the girl in the video stopped coughing while they were listening to what Dr Anbar called my “hypnotic patter” of suggestion. Although I do not consider myself a hypnotist, I was willing to consider that as a reasonable explanation until I received 3 follow-up reports that did not use the video directly. Those 3 parents, having seen the video, thought they could approximate the procedure with their child themselves. In fact, they successfully stopped their child’s cough without the child seeing the video.

The bottom line is that allergists and immunologists or pulmonologists who encounter these patients should recognize the disorder based on the unique clinical characteristics and avoid excessive and unnecessary testing and therapeutic trials. The diagnosis should not be one of default after excluding all other causes of CC. That approach only adds to further quality-of-life impairment. The clinical characteristics of habit cough are sufficiently recognizable that a diagnosis is generally possible based on a history and physical examination.<sup>4</sup>

As a pediatric specialist, I will not comment further on the implications for adult CC suggested by the observations described in this article. I will leave that to my adult medical colleagues.

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