

Swallowing Difficulty and the Late Effects of Polio

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A major polio epidemic in the mid-20th century left many survivors with a wide variety of physical limitations including problems swallowing foods. Many persons with swallowing problems also had original bulbar signs of polio including difficulty breathing, clearing the throat, speaking and singing.

Some persons however, had no overt signs of swallowing difficulty and seemed to recover many of their original physical abilities. Twenty to 30-plus years after the original polio episode, many people began to experience new signs of muscle weakness with difficulty walking or breathing and new problems with swallowing. Many polio survivors are now beginning to complain of difficulty swallowing and food getting stuck in their throats.

In a series of studies completed at the National Institutes of Health in 1991-1996 by Dr. Barbara Sonies and Dr. Marinos Dalakas, and in other studies, it has been substantiated that new swallowing complaints begin to emerge decades after the initial polio onset. Many people are only mildly aware of any change, and others who deny swallowing problems actually do have symptoms. An informal survey taken in 2003 of 23 persons diagnosed with post-polio syndrome (PPS) indicated that more than half had both new complaints of swallowing difficulty.

What are the possible causes of changes in swallowing?

Current thinking is that muscle overuse is responsible for swallowing problems that are emerging as new symptoms or reappearing in persons who recovered from swallowing problems years ago. The assumption is that the remaining fewer healthy nerve fibers and muscles they innervate (motor units) become overused. This overuse

appears to cause a slow deterioration of the function of the head and neck bulbar muscles needed to swallow. Once-healthy muscles of the face, palate, tongue, throat, lips and larynx become weakened. Because many of the muscles and nerves that control swallowing also control speech and voice, changes making swallowing more difficult may also make speaking more difficult.

What should I expect from a swallowing diagnostic examination?

To evaluate and make an appropriate treatment plan for someone with a swallowing disorder, a clinical swallowing assessment should be conducted. In this examination, the strength and coordination of the various muscles used to swallow will be assessed during a series of activities. If weakness or incoordination of the muscles of the mouth and throat are found, strategies for treatment will be suggested.

Swallowing safety will be observed during eating a meal or with liquids and soft foods in a clinical setting. A thorough history of medical/surgical diagnoses, medications, allergies and family and caregiver observations will be included along with a history of the polio progression. Oral hygiene and condition of the teeth will also be evaluated.

If the swallowing problem is such that the person is at risk for aspiration, where food enters the airway, an instrumental swallowing examination

What are some signs of swallowing difficulty?

A wide but consistent range of complaints is noted including food sticking in the throat, trouble swallowing pills, coughing during eating, food backing up from the throat, eating a meal takes longer and unintentional weight loss. A self-assessment questionnaire for dysphagia (swallowing disorders) listed below can help determine if you need further attention (adapted from Sonies, BC, Parent LJ, Morrish K, Baum, BJ, *Dysphagia* 1:178-186, 1987).

If you answer YES to more than three of the following questions, seek consultation from a physician and speech-language pathologist.

If you have many of these symptoms, contact a speech-language pathologist at a hospital or rehabilitation center who specializes in dysphagia. (Go to www.swallowingdisorders.org to see a listing of specialists in your state.)

- Do you have difficulty swallowing?
- Do you have difficulty chewing hard foods?
- Do you have an overly dry mouth?
- Do you have excessive saliva or drooling?
- Do you cough or choke during or after swallowing?
- Do you have a feeling that food catches or remains in your throat?
- Do you have continual mucous dripping into the throat?
- Does your voice become hoarse or gurgly after you swallow?
- Do you have food particles backing up into your throat or mouth?
- Do you have heartburn or indigestion?
- Do you have difficulty swallowing liquids?
- Do you have difficulty swallowing solids?
- Do you have difficulty swallowing pills?
- Do liquids sometimes come out of your nose?
- Does it take you longer than everyone else to eat a meal?
- Have you had episodes of airway obstruction during eating?
- Have you had frequent pneumonia or aspiration pneumonia?

will be conducted. The two primary techniques are the *modified barium swallow* and a *fiberoptic swallowing examination* of the throat. These procedures will help to determine if the problem is in the oral, pharyngeal or esophageal phases of the swallow. Both of these techniques are objective and can assist in determining the severity of a problem and allow the clinician to suggest proper treatment.

What can I expect from swallowing treatment?

Most of the swallowing problems experienced by persons with PPS can be treated. For example, if one side of the body is weaker, specific strategies can be used that can help swallowing be more efficient. There are other strategies that can help to develop better oral sensation, move food from

the mouth through the throat, alter foods so that they can be swallowed safely and reduce risk of aspiration. Postures and positions can be used to help food enter the throat and esophagus without sticking. Some treatments use food, and others focus on muscle strengthening, biofeedback and rehabilitation without food until the strategy is safe to use while eating. Depending on what was found in the clinical and instrumental examination, treatment will be individualized to suit the findings and provide optimal help for each person.

Although PPS may be progressive in some cases, the strategies to improve swallowing can assist in stabilizing the swallow to maximize safety and provide adequate nutrition.

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Modified Barium Swallow:

A radiologic examination, performed while the patient swallows barium-coated substances, that assesses quality of the swallowing mechanisms of the mouth, pharynx and esophagus.

Fiberoptic Swallowing

Examination: A procedure to diagnose swallowing disorders by inserting a flexible fiberoptic endoscope through the nasal passage into the hypopharynx, allowing direct observation of the pharyngeal and laryngeal structures during swallowing.

Suggested Readings and Websites:

- BC Sonies, Speech and Swallowing in Postpolio Syndrome (2004) in (Eds.) Silver JK & Gawne AC, *Postpolio Syndrome*, Hanley and Belfus, Philadelphia.
- BC Sonies, Long-term Effects of Post-Polio on Oral-Motor and Swallowing Function. (1995). In (Eds) Halstead LS & Grimby G. *Post-Polio Syndrome*. Hanley & Belfus, Philadelphia.
- Board Recognized Specialists in Swallowing and Swallowing Disorders website: www.swallowingdisorders.org
- American Speech Language Hearing Association, Special Interest Division on Swallowing. Rockville MD, www.asha.org

Response from Stephanie T. Machell, PsyD:

There's no "right" way to feel about anything. How you feel is how you feel. From your question, I'm guessing that you felt confused or uncertain how you felt. Or maybe you felt more than one thing at once and had difficulty sorting it out. On a subject as complicated as your disability, it would be likely that you would have mixed feelings – maybe in this case both proud *and* insulted.

How you feel about yourself as a person with a disability most likely influences your feelings. Are you ashamed of your disability? Were you always able to "pass" as nondisabled and now PPS makes that impossible? If so, you might be proud that the other person sees you as still able to pass. Conversely, you may be proud of your identity as a person with a disability and so you might be insulted that the other person doesn't see or accept that part of you. If you are uncertain, it may be because you feel ambivalent and are struggling with how you feel about your disability.

How you might feel about someone saying he or she forgot you had a dis-

ability might also depend on the context, including how well you know him or her, what your relationship is, what you know about the person's attitudes towards disability and how relevant your disability is to the interaction the two of you are having.

For example, a close friend may not think of you as disabled because for him it is not the most important fact about you. People in close relationships where there are differences of gender, race or religion – or disability – often report forgetting about the differences until a situation that makes them relevant occurs. If your friend were to take you out to dinner to a restaurant that turns out to be inaccessible, your disability would be quite relevant to both of you.

You may be uncertain how to feel because you don't know how the person saying it meant it. She may not be a close friend, or you may not know how she views people with disabilities. Or her statement might bring up some issues or doubts for you. You could try asking this person why she said this, or (if appropriate) talking about how her answer made you feel. ▲



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Send questions for Drs. Olkin and Machell to info@post-polio.org.

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Swallowing specifics for those with PPS

It is important that a swallowing examination be conducted periodically if any of the symptoms listed here are exhibited. Even if the problems seem minimal, swallowing should be evaluated, as people with PPS often accommodate changes that need

attention, and these can become full-fledged problems when ignored. Make sure to contact a qualified clinician for treatment. A modified barium swallow study is the most complete and reliable instrumental test to examine a swallow, so be sure to follow through if it is recommended and to follow up with additional studies if any changes in swallowing occur. Swallowing is an important human function that can be preserved in those with PPS. ▲