

Frogbreathing: A Forgotten Breathing Aid

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Tom has Duchenne muscular dystrophy (DMD) and turned 50 years old in January 2010. He has avoided a respiratory crisis, which can often lead to a tracheostomy, by careful monitoring of his respiratory condition and seeing a doctor willing to try non-invasive alternatives. Tom worked for Southwestern Bell until 1997 when he left to start his own company, Mecke & Associates, which designs websites, upgrades PCs and builds custom computer systems (www.meckeai.com). Tom is a DMD Pioneer, a group of individuals with DMD who have surpassed their expected life span (late 20s) by many years, even decades. (<http://dmdpioneers.org>)

I had made it to the age of 22 and was in my senior year at Texas A&M University working on an electrical engineering degree before I had any major respiratory infections. College life was busy and quite tiring, but I had noticed a decrease in my respiratory function. Around Thanksgiving, I became congested and went to the doctor to get some antibiotics, which usually cleared up any infection. However, this one kept hanging on, and finally I was so exhausted that my doctor put me in the hospital over the Christmas holidays.

Intravenous antibiotics and IPPB treatments began. My doctor tried to avoid tracheostomies if he could, and he put me into an iron lung that the hospital (Santa Rosa Hospital in San Antonio) still maintained, even in the early '80s, to give me respiratory support. After the pneumonia cleared up, I went home. However, I was soon back in the hospital, and after that infection cleared, my doctor said I would need at least respiratory support at night, and I should try to find a used iron lung. Miraculously, I found one at the Air Force surplus dealer locally. I modified and used this machine for 13 years to sleep in at night while breathing on my own using frogbreathing for extra support during the day. I was able to complete my engineering degree and to begin my career.

On one visit to the MDA clinic where I was being monitored and which was located at the medical school, several residents and medical students accompanied the doctor as he checked me out. One of the students noticed how I was taking in air so that I could talk

loud enough to be heard and asked, "Who taught you how to frogbreathe?" I asked what he was talking about and was told, "That's what you're doing." Apparently I had taught myself how to do it unconsciously.

So what is this technique with the funny name? (The medical term is glossopharyngeal breathing or GPB.) Basically, it involves using your tongue and pharynx as a sort of air pump. The glottis or vocal cords act as a check valve as you use your tongue to gulp air into your lungs. You repeat the gulping of air until you have a full breath. I used this technique at first to stack enough air to speak loudly, but eventually I needed the technique to speak audibly. (GPB usually doesn't work with a tracheostomy because the air will just leak out of the trach.)

After 13 years using the iron lung at night and GPB by day, my respiratory weakness had progressed to the point that I needed continuous support. I was referred to Joseph Viroslav, MD,

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at the Dallas Rehabilitation Institute for evaluation. He switched me to noninvasive ventilation using a PLV®-100 volume ventilator with a custom nasal mask while in bed and a mouthpiece positioned near my mouth when I was in my wheelchair. I have been using this arrangement for 15 years with good success.

GPB still comes in handy if I lose access to my mouthpiece or a hose comes off of my vent, while showering, and for use with an Ambu bag. On a few occasions, GPB may have saved my life when a ventilator tube popped off during the night, and I was able to stack up enough air to call for help.

I have had a somewhat different experience than most people with DMD. Some of the techniques from the polio days that have been essentially forgotten can work for DMD now. ▲

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Frogbreathing (glossopharyngeal breathing)

www.garymcperson.com/?#FrogBreathing

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www.irrd.ca/education/slide.asp?RefName=e2r4&slideid=60

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