

Suggestions and Anecdotal Treatments Used in the Field that May Help Extend the Life of your Provox® Voice Prosthesis

The life of the voice prosthesis varies within and between individuals. It is dependent on many factors including diet, overall health, current medical treatments, the health of your mouth, cleaning routine of the voice prosthesis, whether or not you have gastroesophageal reflux, medications, and your gastrointestinal health to name of few. We all have various bacteria and fungi that live within our bodies that do not typically cause a problem. However, at times these same bacteria and fungi can be the reason the voice prosthesis fails as they grow into the silicone of the voice prosthesis. Below are some suggestions based on anecdotal and/or research findings. These should always be approved by your doctor prior to beginning them as it could interfere with medical treatments.

1. Keep your mouth as clean as possible. This is important as the bacteria and fungi in your mouth can grow into the voice prosthesis (VP) causing it to eventually fail (Williams et al., 2011).
 - Brush your teeth after each meal.
 - A mechanical toothbrush is helpful.
 - Make sure to brush your tongue.
 - Colgate™ Total Control toothpaste is suggested.
 - If you don't have teeth, consult with your dentist on how best to clean your mouth. You will at least need to brush your tongue as it houses a lot of fungi and bacteria.
 - If you wear dentures, make sure to remove and clean them as directed by your dentist each night.
 - Avoid mouthwashes that contain alcohol as they can cause dry mouth.
 - If you are undergoing radiation therapy, make sure to do your salt and soda rinses as directed by your doctor.
2. Your diet can also affect the life of your VP.
 - Avoid sugars and food that contain yeast (i.e., beer, carbohydrates).
 - Drink buttermilk (Busscher et al., 1998).
 - Take probiotic liquids and supplements containing *L. lactis* 53 and *S. thermophilus* B (Free et al., 2001).
 - Drink one 65mL Yakult yogurt drink after each meal (Schwandt et al., 2005).
 - Drink caffeinated soft drinks like, Coca-Cola Classic (Free et al., 2000).

3. If you are taking antibiotics, you may want to ask your doctor to prescribe an antifungal medication at the same time.
4. Clean your Provox® voice prosthesis at least twice a day and after meals with the Provox® Brush and Flush (Free et al., 2003). Consult the Instructions for Use for your specific Provox voice prosthesis and the Provox Brush and Flush. This is very important as the Brush and Flush help remove mucus and food particles from the prosthesis.
 - Cleaning should begin the day your new Provox® voice prosthesis is placed.
 - Avoid vigorous use of the Provox Brush.
 - Flush your prosthesis with warm water. (Itzak Brook blogspot <http://dribrook.blogspot.com/p/tracheo-esophageal-voice-prosthesis-tep.html>)
5. If you are using Nystatin Swish and Swallow daily, consult with your doctor to see if this medicine is necessary. Nystatin contains sugar which may affect the health of your mouth and the life of your prosthesis.
6. If you have been diagnosed with gastroesophageal reflux (GERD), make sure you take your prescribed anti-reflux medicine as directed. It is also important to follow any diet and behavioral suggestions. Research shows that patients diagnosed with GERD have early failure of their prosthesis (Boscolo et al., 2007; Lorenz et al., 2010).

Disclaimer:

This document does not replace the Instructions for Use of your voice prosthesis and should always be reviewed. These are only suggestions based on anecdotal and/or research findings and should always be reviewed by your clinician and physician before starting so it does not interfere with your current medications, medical conditions and/or treatments.

- Williams, D.W., Kuriyama, T., Silva, S., Malic, S. & Lewis, M.A.O. Candida biofilms and oral candidosis: treatment and prevention. *Periodontology*. 2011 55: 250-265.
- Boscolo-Rizzo, Marchiori, Gava, Da Mosto. The impact of radiotherapy & GERD on in situ lifetime of indwelling voice prostheses. *Eur Arch Otorhinolaryngol* 2007; 265(7): 791-796.
- Lorenz, Grieser, Erhart & Maier. Role of Reflux in Tracheoesophageal Fistula Problems After Laryngectomy. *Ann. Otol. Rhinol. Laryngol* 2010, 119(11): 719-728.
- Free, RH, Elving, G, Van der Mei, HC, Van Weissenbruch, R., Albers, FWJ, & Busscher, HJ. Caffeinated soft drinks reduce bacterial presence in the voice prosthetic biofilms. *Biofouling* 2000: 16: 69-76.
- Free, R.H., van der Mei, H.C., Elving, G.J., van Weissenbruch, F.W., Albers, J. & Busscher, H.J. Influence of the Provox Flush®, Blowing and Imitated Coughing on Voice Prosthetic Biofilms in Vitro. *Acta Otolaryngol* 2003;123(4):547-551.
- Busscher, HJ, Bruinsma, G., van Weissenbruch, R., Leunisse, C., Van der Mei, HC, Dijk, F & Albers, FWJ. The effect of buttermilk consumption on biofilm formation on silicone rubber voice prostheses in an artificial throat. *Eur Arch Otorhinolaryngo* 1998: 255: 410-413.
- Schwandt, vanWeissenbruch, van der Mei, Busscher, & Albers (2005). Effect of Dairy Products on the Lifetime of Provox2 Voice Prosthesis in Vitro & in Vivo. *Head & Neck*; 27(6): 471-477.
- Free, RH, Van der Mei, HC, Dijk, F., Van Weissenbruch, R., Busscher, JH, & Albers, FWJ. Biofilm formation on voice prostheses: In vitro influence of probiotics. *Ann Otol Rhinol Laryngol* 2001: 110: 946-951.
- <http://dribrook.blogspot.com/p/tracheo-esophageal-voice-prosthesis-tep.html>