

Steaming vs nebulising

We've talked about the importance of surface hydration but how best to do it?

Your vocal folds are covered in a mucous membrane which likes to be moist. There are two main ways to add surface hydration: steaming or nebulising. Here are the main differences.

Steaming

Increases surface hydration, reduces laryngeal tension, decreases roughness and hoarseness.

Pros	Cons
<ul style="list-style-type: none"> • Increased vocal fold flexibility • Significant improvement of noise/harmonic ratio (hoarseness), shimmer and jitter (roughness) • It puts moisture into the whole vocal tract • Reduction and thinning out of mucus • Tension reduction in the vocal tract from the warmth of the steam • There isn't a risk of lung infection, as steam particles are too big to enter the lungs • Cheap—can just put hot water in a mug • There is currently no evidence that steam causes damage to the vocal folds and is recommended by Laryngologists after vocal fold surgery 	<p>Like any task that involves hot water, you need to be careful about the risk of burning/scalding. Proceed with the same caution you would with a hot cup of tea</p>

When should you steam?

- When you hear vocal roughness
- When you feel throat tension
- When you feel thick, sticky mucus
- After long days of talking
- Before or after singing practice or performance

Nebulising

Rather than steaming, which is hot, nebulising is cool air. It will also increase surface hydration and help reduce vocal effort.

Pros	Cons
<ul style="list-style-type: none"> Nebulising sterile 0.9% saline solution has been shown to decrease phonation threshold pressure (PTP). <i>PTP determines how quickly our vocal folds start vibrating to make sound.</i> <i>HIGHER PTP = more effort is needed to start vocal fold vibration</i> <i>LOWER PTP = less effort is needed to start up vocal fold vibration.</i> 	<ul style="list-style-type: none"> Nebulisers break down water particles into a fine mist, which allows whatever liquid you are inhaling to enter your lungs, as well as onto your vocal folds. Because of how far nebulized water travels into your airway, it is recommended by researchers Pritchard, Hatley, Denyer & Hollen (2018) to rinse your nebulizer after each use, wash daily and boil weekly to avoid microbial contamination of your nebulizer and potential infection in your lungs. More expensive as need to buy a nebuliser and saline solution.

When should you nebulise?

- Before singing, especially if the voice is feeling fatigued
- During vocal tasks that you perceive as 'higher effort', such as belt
- To help relax the laryngeal system
- Before or after a performance, rehearsal or practice session

References

- Alves, Maxine, Krüger, Esedra, Pillay, Bhavani, Van Lierde, Kristiane, & Van der Linde, Jeannie. (2019). The Effect of Hydration on Voice Quality in Adults: A Systematic Review. *Journal of Voice*, 33(1), 125.e13-125.e28.
- Chan, R., & Tayama, N. (2002). Biomechanical Effects of Hydration in Vocal Fold Tissues. *Otolaryngology–Head and Neck Surgery*, 126(5), 528-537.
- Leydon, C., Wroblewski, M., Eichorn, N., & Sivasankar, M. (2010). A meta-analysis of outcomes of hydration intervention on phonation threshold pressure. *Journal of Voice*, 24(6), 637-643.
- Mahalingam, S. and Boominathan, P. (2016), Effects of steam inhalation on voice quality-related acoustic measures. *The Laryngoscope*, 126: 2305-2309. <https://doi.org/10.1002/lary.25933>
- Pritchard, J. N., Hatley, R. H., Denyer, J., & Hollen, D. V. (2018). Mesh nebulizers have become the first choice for new nebulized pharmaceutical drug developments. *Therapeutic Delivery*, 9(2), 121-136.
- Tanner, Kristine, Fujiki, Robert B, Dromey, Christopher, Merrill, Ray M, Robb, Whitney, Kendall, Katherine A, . . . Sivasankar, M. Preeti. (2015). Laryngeal Desiccation Challenge and Nebulized Isotonic Saline in Healthy Male Singers and Nonsingers: Effects on Acoustic, Aerodynamic, and Self-Perceived Effort and Dryness Measures. *Journal of Voice*, 30(6), 670-676.