
SWALLOWING MANEUVERS

SUPRAGLOTTIC SWALLOWING MANEUVER

PURPOSE

To close the airway at the vocal fold level before and during the swallow and to clear residue after the swallow.

APPLICABILITY

Patients who have delayed airway closure, reduced airway closure, delayed pharyngeal swallow, poor oral control of liquids with premature loss into the pharynx. Patients who can follow a series of commands.

___ Only saliva swallow

___ Food/Liquid swallow

INSTRUCTIONS

1. Take a breath in.
2. Hold your breath after you inhale (lightly cover your tracheostomy tube, if present).
3. Keep holding your breath while you swallow.
4. Clear your throat immediately after swallow before breathing.
5. Swallow again.

Perform with each food/liquid swallow.

Perform ___ times throughout the day.

WARNING

Patients with uncontrolled high blood pressure should not use this maneuver; bearing down may raise blood pressure. Talk with your doctor before beginning any exercise regimen.

References

- Lazarus, C., Logemann, J.A., & Gibbons, P. (1993). Effects of maneuvers on swallow functioning in a dysphagic oral cancer patient. *Head and Neck*, 15, 419-424.
- Martin, B.J.W., Logemann, J.A., Shaker, R., & Dodds, W.J. (1993). Normal laryngeal valving patterns during three breath-hold maneuvers: A pilot investigation. *Dysphagia*, 8, 11-20.
- McConnel, F.M., Mendelsohn, M.S., & Logemann, J.A. (1987). Manofluorography of deglutition after supraglottic laryngectomy. *Head and Neck Surgery*, 5, 142-150.

SUPER-SUPRAGLOTTIC SWALLOWING MANEUVER

PURPOSE

To close the airway at the vocal fold level before and during swallow, to increase tongue base retraction and pressure generation, and to clear residue after the swallow.

APPLICABILITY

Patients who exhibit penetration into the airway with aspiration after the swallow. Patients who can follow multistep directions.

- Only saliva swallow
- Food/Liquid swallow

INSTRUCTIONS

1. Hold your breath very tightly, bearing down (lightly cover your tracheostomy tube, if present).
2. Continue to hold your breath tightly while swallowing. Swallow hard.
3. Clear your throat/cough immediately after swallowing.
4. Swallow again.

Perform with each food/liquid swallow.

Perform times throughout the day.

WARNING

Patients with uncontrolled high blood pressure should not use this maneuver; bearing down may raise blood pressure. Talk with your doctor before beginning any exercise regimen.

References

Martin, B.J.W., Logemann, J.A., Shaker, R., & Dodds, W.J. (1993). Normal laryngeal valving patterns during three breath-hold maneuvers: A pilot investigation. *Dysphagia*, 8, 11-20.

Ohmae, Y., Logemann, J.A., Kaiser, P., Hanson, D.G., & Kahrillas, P.J. (1996). Effects of two breath-holding maneuvers on oropharyngeal swallow. *Annals of Otology, Rhinology, and Laryngology*, 105, 123-131.

HARD / EFFORTFUL SWALLOW

PURPOSE

To increase tongue base retraction and pressure during the pharyngeal phase of the swallow and reduce the amount of food residue in the valleculae of the throat.

APPLICABILITY

Patients who exhibit residue in the valleculae after the swallow.

SUPPLIES

- Only saliva swallow
- Food/Liquid swallow

INSTRUCTIONS

Swallow normally but squeeze very hard with your tongue and throat muscles throughout the swallow. Excess effort should be clearly visible in your neck during the swallow.

Perform with each food/liquid swallow.

Perform ___ times throughout the day.

References

Lazarus, C., Logemann, J.A., & Gibbons, P. (1993). Effects of maneuvers on swallow functioning in a dysphagic oral cancer patient. *Head and Neck*, 15, 419-424.

Shanahan, T.K., Logemann, J.A., Rademker, A.W., Pauloski, B.R., & Kahrillas, P.J. (1993). Chin down posture effects on aspiration in dysphagic patients. *Archives of Physical Medicine and Rehabilitation*, 74, 736-739.

TONGUE HOLD EXERCISE

PURPOSE

To increase the tongue base and throat muscles range of motion.

APPLICABILITY

Patients who exhibit reduced tongue base/pharyngeal wall movement.

SUPPLIES

___ Only saliva swallow

___ Liquid swallow between repetitions

INSTRUCTIONS

1. Protrude your tongue slightly from your mouth. Keeping your mouth moist is helpful for this exercise.
 2. Hold the tongue gently with your teeth.
 3. Swallow while keeping your tongue protruded.
- Perform ___ times throughout the day.

References

- Fujiu, M., & Logemann, J.A. (1996). Effect of a tongue holding maneuver on posterior pharyngeal wall movement during deglutition. *American Journal of Speech Language Pathology*, 5, 23-30.
- Fujiu, M., Logemann, J.A., & Pauloski, B.R. (1995). Increase postoperative posterior pharyngeal wall movement in patients with anterior oral cancer. Preliminary findings and possible implications for treatment. *American Journal of Speech Language Pathology*, 4, 24-30.
- Lazarus, C., Logemann, J.A., & Gibbons, P. (1993). Effects of maneuvers on swallow functioning in a dysphagic oral cancer patient. *Head and Neck*, 15, 419-424.

MENDELSON MANEUVER

PURPOSE

To accentuate and prolong laryngeal elevation and thereby increase the extent and duration of cricopharyngeal opening.

APPLICABILITY

Patients who exhibit reduced laryngeal movement and consequent reduced cricopharyngeal opening.

SUPPLIES

- Only saliva swallow
- Food/Liquid swallow

INSTRUCTIONS

1. Swallow normally. Feel the larynx (voice box) lift during the swallow.
2. On the next swallow, feel your larynx (voice box) elevating and hold it up with your neck muscles. Do not try to lift the larynx early. Let the larynx lift normally and then hold it up so that it does not drop for ___ seconds.

Complete the swallow.

Perform with each food/liquid swallow.

Perform ___ times throughout the day.

References

- Kahrilas, P.J., Logemann, J.A., Krugler, C., & Flanagan, E. (1991). Volitional augmentation of upper esophageal sphincter opening during swallowing. *American Journal of Physiology*, 260, G450-456.
- Lazarus, C., Logemann, J.A., & Gibbons, P. (1993). Effects of maneuvers on swallow functioning in a dysphagic oral cancer patient. *Head and Neck*, 15, 419-424.
- Logemann, J.A., & Kahrilas, P.J. (1990). Relearning to swallow post CVA: Application of maneuvers and indirect feedback: A case study. *Neurology*, 40, 1136-1138.

HEAD LIFTING MANEUVER

PURPOSE

To strengthen muscles of the neck in order to facilitate opening of the bottom of the throat (e.g.- upper esophageal sphincter) for food passage.

APPLICABILITY

Patients who exhibit reduced upper esophageal sphincter opening and who demonstrate food residue in the pyriform sinuses.

INSTRUCTIONS

Part one: Sustained Hold

1. Lie flat on your back with no pillow under your head.
2. Lift your head to look at your toes.
3. Keep your shoulders flat on the floor / bed.
4. Hold this position for ___ seconds.
5. Release. Repeat 3 times and rest 1 minute between repetitions.

Part two: Lift and Lower (same starting position as sustained hold)

1. Lift your head and look at your toes.
2. Let your head go back down with control.
3. Repeat 30 times.
4. Rest in between as needed.
5. Repeat 3 times a day.

WARNING:

Patients with neck problems may not be able to perform this exercise.

References

Easterling, C., Kern, M., Nitschke, T., Grande, B., Kazandjian, M., Dikeman, K., Massey, B.T., & Shaker, R. Restoration of oral feeding in 17 tube fed patients by the Shaker Exercise. *Dysphagia*, 15: 105, 2000.

Shaker, R., Kern, M., Bardan, E., Taylor, A., Stewart, E., Hoffmann, R.G., Arndorfer, R.C., Hoffmann, C., & Bonnevier, J. Augmentation of deglutitive upper esophageal sphincter opening in the elderly by exercise. *AJR*, 272: G1518-1522, 1997

JAW-OPENING EXERCISE

PURPOSE

To improve upper esophageal sphincter (UES) opening during the swallow.

APPLICABILITY

Patients that have poor hyoid elevation and/or poor UES opening as a result of the decreased hyoid elevation.

SUPPLIES

Mirror if biofeedback is needed.

INSTRUCTIONS

1. Hold the jaw in the maximally opened position for 10 seconds.
2. Rest for 10 seconds.
3. Repeat 5 times.
4. Do two sets a day.

WARNING: “When the jaw is closed, the superior head of the lateral pterygoid muscle maintains contraction in order to properly position the articular disk. When the jaw is fully open, however, the superior head is controlled in a relaxed position. Thus, this exercise is probably safer when patients open their jaw to the fullest extent. However, dislocation of the mandibular joint could occur if aging has caused some wear of the articular fossa or condyle, or degeneration of the articular disk. Accordingly, patients with a history of mandibular joint dislocation should not perform this exercise” (Wada, et al 2012).

References

Satoko Wada, Haruka Tohara, Takatoshi Iida, Motoharu Inoue, Mitsuyasu Sato, Koichiro Ueda, Jaw-Opening Exercise for Insufficient Opening of Upper Esophageal Sphincter, Archives of Physical Medicine and Rehabilitation, Available online 10 May 2012, ISSN 0003-9993, 10.1016/j.apmr.2012.04.025.

TONGUE MOVEMENT EXERCISES

PURPOSE

To improve tongue control for food and liquid bolus manipulation, mastication, and front to back bolus movement.

APPLICABILITY

Patients who exhibit reduced tongue range of motion.

SUPPLIES

Mirror

INSTRUCTIONS FORWARD / BACKWARD MOVEMENT

Stick your tongue out as far as you can and hold for 5 seconds. Relax. Try to keep your tongue in the middle. Use a mirror for visual feedback.

Pull your tongue back as far as you can. Hold for 5 seconds. Relax.

SIDE-TO-SIDE MOVEMENT

Put the tip of your tongue in your right cheek, as far back as you can, and hold it. Relax. Repeat with the tip of the tongue in the left cheek.

Smile. Put the tip of the tongue in the corner of your lips on the right, then move it to the left.

Perform the exercise(s)____times a day,____repetitions each time.

References

Logemann, J.A., (1998). *Evaluation and Treatment of Swallowing Disorders*. Austin, TX: Pro-Ed. Second Edition.

Logemann, J.A., Pauloski, B.R., Rademaker, A.W., & Colangelo, L. (1997). Speech and swallowing rehabilitation in head and neck cancer patients. *Oncology*, 11(5), 651-656, 659.

TONGUE RESISTANCE EXERCISES

PURPOSE

To improve tongue strength and endurance for food and liquid bolus manipulation, mastication, and front to back bolus movement.

APPLICABILITY

Patients who exhibit reduced tongue strength.

SUPPLIES

Tongue depressor or spoon

INSTRUCTIONS

Stick your tongue out as far as you can and push a tongue depressor / spoon against the tip of your tongue. Hold for 5 seconds. Relax.

Stick your tongue out as far as you can. Place a tongue depressor / spoon along the side of the tongue. Push against it with your tongue. Hold for 5 seconds. Relax.

Perform the exercise(s) times a day, repetitions each time.

References

Logemann, J.A., (1998). *Evaluation and Treatment of Swallowing Disorders*. Austin, TX: Pro-Ed. Second Edition.

Logemann, J.A., Pauloski, BR, Rademaker, AW, & Colangelo, L. (1997). Speech and swallowing rehabilitation in head and neck cancer patients. *Oncology*, 11(5), 651-656, 659.

CLOSURE OF THE LARYNX

PURPOSE

To improve airway closure and prevent aspiration.

APPLICABILITY

Patients who exhibit laryngeal aspiration with liquids and foods during the swallow.

INSTRUCTIONS

Breath Hold / Valsalva Maneuver

Take a breath. Bear down and hold your breath. You should not hold your breath with your lips, but in your throat, like you do if you are trying to lift something very heavy. Hold for ___ seconds. Relax. Repeat ___ times, ___ a day.

Push – Pull with Breath Hold

Place one or both hands under your chair and pull as if you are trying to lift your chair up with you in it. (You can also do it by standing up and pushing against the wall). Hold your breath tightly. Relax. Repeat times a day.

Head Rotation with Phonation

Turn your head to the left / right. Hold your breath tightly. Let go of your breath and say “ahh”. Perform this exercise ___ times a day, ___ repetitions each time.

References

Logemann, J.A., (1998). *Evaluation and Treatment of Swallowing Disorders*. Austin, TX: Pro-Ed. Second Edition.

Logemann, J.A., Pauloski, B.R., Rademaker, A.W., & Colangelo, L. (1997). Speech and swallowing rehabilitation in head and neck cancer patients. *Oncology*, 11(5), 651-656, 659.

BASE OF TONGUE EXERCISES

PURPOSE

To improve base of the tongue movement and strength in order to better propel the bolus (food / liquid).

APPLICABILITY

Patients who exhibit reduced tongue base / pharyngeal wall movement and vallecular residue.

INSTRUCTIONS

Gargle with Water / Pretend to Gargle

Look up toward the ceiling. Gargle for ___ seconds. Relax. Repeat ___ times. Gradually increase duration of gargling time. Perform the exercise ___ times a day ___ repetitions each time.

Pretend to yawn

Open your mouth wide. Start to yawn. You will feel all the muscles open wide in your throat. Relax. Repeat ___ times throughout the day.

Tongue Base Retraction

Pull the back of your tongue as far back as you can. Pretend you are trying to scratch the back wall of your throat with the back of your tongue. Hold for ___ seconds. Repeat ___ times, ___ times a day.

References

Lazarus, C., Logemann, J.A., & Gibbons, P. (1993). Effects of maneuvers on swallow functioning in a dysphagic oral cancer patient. *Head and Neck*, 15, 419-424.

Pouderoux, P., & Kahrilas, P.J. (1995). Deglutitive tongue force modulation by volition, volume, and viscosity in humans. *Gastroenterology*, 108, 1418-1426.

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