

Vocal warm-up exercises (15-20 minutes)

A. Respiration (stretching and breathing components)

Stretching

Instruct the participant to assume a standing position and to hold each stretch for 5 s. Have the participant repeat the entire stretching section once.

1. Slowly reach your **arms up** towards the ceiling, one arm at a time.
2. Reach both **arms out** towards the sides of the room.
3. Press both **arms back** as far as you can.
4. **Look up** at the ceiling and **protrude** the mandible.
5. Starting with the head on the **left shoulder**, slowly roll the head from left shoulder to chest to right shoulder and return to the center and the left shoulder. Make sure both shoulders always remain parallel to the ground during the task.
6. **Drop the jaw** as far as is comfortably possible.
7. Stick out your **tongue** as far as possible.

Breathing

1. Sit up tall in a chair with both feet flat on the floor and take in a relaxing, deep **breath** through the nose and then exhale the air slowly through an open mouth. Repeat once.

The clinician gives feedback if the participant is using excessive shoulder and neck movements while breathing in or is not using a good posture to ensure the best respiratory support.

B. Resonance

The participant stays seated and continues to maintain a good posture. Each exercise is repeated once.

1. **Hum** a comfortable note for 5 seconds. Feel the buzz of nose or upper lip.
2. **Hum** lightly down and up and down a third of a musical scale (e.g., E4-D4-C4-D4-E4-D4-C4) on a comfortable pitch.

Starting pitches: E4, F4 F#4 G4 G#4

3. Sing **/m:a:/** softly on each of three pitches that descend a fifth of a scale (e.g., G4-E4-C4). Sustain the **/m/** for a full second before moving into the **/a/**. Continuing on the same breath, repeat the entire syllable **/m:a:/** at the two remaining pitches.

Starting pitches: G4 G#4 A4 A#4 B4

If the starting pitches for these tasks are uncomfortable, they may be adjusted based on the individual pitch range information already gathered.

C. Phonation

The third set of exercises focuses on phonation while incorporating the improved respiration and resonance just trained. These tasks follow the four vocal-function exercises described by Stemple et al. (2000). Each exercise is performed as **quietly** as possible (at threshold) and is immediately repeated once.

1. Take a deep breath. The first task is to **sustain the vowel /i/** as long as you comfortably can on F above middle C (F4).
2. The second task is an **ascending pitch glide**: Start at your lowest pitch and glide up the scale on the word "knoll" to your highest pitch without feeling strain.
3. The third task is a **descending pitch glide**: Start at your highest pitch and glide down the scale on "knoll" to your lowest pitch without feeling strain.
4. Finally, **sustain several notes** cued on a keyboard as long as possible on the sound "oll" (as in "knoll" without the "kn"). The notes used are C4, D4, E4, F4, and G4.