

VOICE FREQUENCY (PERCEIVED AS PITCH)

Average for Males: 85hz to 180hz
 Average for Females: 165hz to 255hz
 Gender Neutral Range: 140hz to 170hz

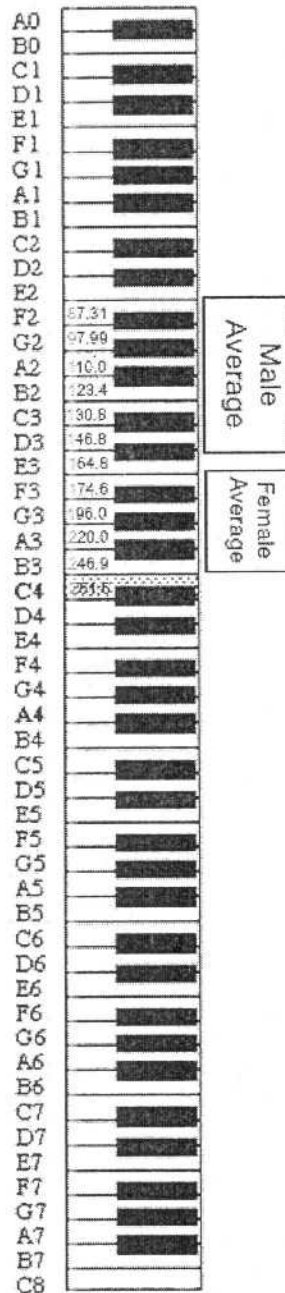
Baseline

6/3/15

1. 133

2. 149

3. 157



RESPIRATORY TRAINING EXERCISES

1. Maintain optimal posture: straight spine, head up, shoulders back.
2. Place hand on lower ribs and feel the ribcage expand.
3. Place hands around ribcage and apply slight pressure. Resist on exhale; ribcage should remain wide and open.
4. Inhale for 3 seconds; hold for 3 seconds; exhale 3 seconds.
5. Raise arms above head. Return arms to side while maintaining moderately high posture of sternum and rib cage. Inhale through your nose, and exhale on the sound "shhhhh."
6. To fully release tension in the stomach, lean forward with elbows on knees, and exhale on the sound "ahhh."

Mindfulness instructions

Sit in a comfortable position with your head, neck and back straight but not stiff, and allow your shoulders to drop.

Close your eyes if you feel comfortable to do so.

Bring yourself to the present moment, the here, and the now... Let go of any thought you may have about this exercise...

Let go of any thoughts you may have about your day
or thoughts you may have... about what you may need to do when you get back to work
or home...

Not judging your thoughts, just accepting them as thoughts and letting them go
Notice what is going on for you in this moment... Notice any thoughts or feeling you may
have

Not holding onto them or suppressing them, just noticing them. They are there with you
right now...

Noticing them and letting them go...

Gently re-direct your full attention to your breathing... Observe the breath as it flows in
and out...

Give full attention to the feeling of the breath as it comes in...

And full attention to the feeling of the breath as it goes out...

Bring your attention to your abdomen, feeling it rise or expand gently as you breathe in
and breath out.

Whenever you find that your attention has moved elsewhere, as no doubt it will, just
noticing it, not judging, and letting go.

(pause for 1s)... Keep your focus on your breathing, being with each in-breath and out-
breath for their full-duration... as if you were riding on the wave of your own breathing..

Notice that each breath is different and unique and will only happen this once...

Focus on where you are most aware of it...

This may be your nose, your mouth, your chest, or your abdomen...

Notice how each breath feels for you, right now... and now... and now...

If your mind wanders from your breath, and it will, then your job is simply to bring it back
to your breath every time... no matter what is it occupied with.

It is just valuable to become aware that your mind has wandered.... And to bring it back
to your breath...

Pay attention to each in-breath and each out-breath as they follow one another.


Use your breathing as a way of grounding you in the present, Helping you to tune in to your state of awareness and stillness.

As the time comes to a close, sit for a minute or two, becoming aware of where you are. Open your eyes gradually.

VOCAL FUNCTION EXERCISES

Practice twice per day with special attention on posture, breath support, tone placement, and onset.

1. Warm-Up
Sustain the vowel "ee" on the musical note E3 *→ possibly F3* for as long as possible.
Goal = 12 seconds

2. Stretching
Glide from your lowest note to your highest note on:
 - * knoll
 - * tongue trill
 - * lip trill
 - * whoop * vibration
 Goal = no voice breaks
 

3. Contracting *(start on ahh or ee if that helps) - skip falsetto*
Glide from a comfortable high note to your lowest note on:
 - * knoll -
 - * tongue trill *→ sustain note, then contraction*
 - * lip trill *→ watch the dead zone!*
 - * whoop*(ah) *→ start w/ 'oo' first to get adequate vibration*
 Goal = no voice breaks

4. Adductory Power
Sustain the sound "ol" on the musical note E3 for as long as possible.
Goal = 10 seconds

Laryngeal and Vocal Fold Warm-up and Exercises

The following exercises are designed to reduce vocal fold and laryngeal tension and to increase range of motion, balance between airflow and vocal fold closure and to ease vocal production. If possible, complete one or two times daily (in the morning and in the afternoon or evening).

The Warm-Up

1. Take the first 2-3 minutes stretching your upper body (or if you have time the whole body). Reach up with your arms; try to bring your elbows together in the back. Shake your hands down by your side.
2. Roll your shoulders. Begin first with the left shoulder. Roll it 8-10 times. Allow the rotations to become larger as it is comfortable to do so. Repeat with the right shoulder. Make the movements slow and easy.
3. Roll your neck with 8-10 rotations to the right and 8-10 to the left. Make these motions slow and sweeping. Start with your chin straight down against your sternum. Think about your chin as a pendulum. Roll your chin over to the right shoulder. Hold this position for a slow count to five. Move your chin back to the middle. Repeat on the left side. Each time you roll, stop in the middle. Hold these positions for a slow count of 5. When you do this activity, let your mouth open slightly.
4. Now, take 10 deep breaths into the lower abdomen. Feel your stomach expand; feel your lower back fill with air. Pay careful attention to your chest and neck. These should be still and flat. Lay a hand on your stomach and one on your chest to feel their movements.

As you breathe **in**, the stomach should move **outward**. As you breathe **out**, the stomach should **flatten**. Remember that breathing is a matter of moving the muscles of the stomach, without tensing the muscles of the chest and shoulders.

After the 10 breaths, inhale through the nose or pursed lips then exhale with 5 easy "s" sounds. After producing "s", switch to "z". Concentrate of the vibration of your tongue and roof of you mouth. Make sure your shoulders remain still.

5. Try some easy, exaggerated chewing, like you have a few pieces of bubble gum in your mouth. If necessary, use your hands to massage your cheeks. Chew for 2-3 minutes without making sound, then chant or hum while you are chewing. Let your voice come out easily and softly.
- 6.

Once you feel relaxed and warmed up, try counting in sequence, 1 (inhale); 1-2 (inhale); 1-2-3 (inhale); 1-2-3-4 (inhale); 1-2-3-4-5 (inhale); 1-2-3-4-5-6 (inhale), etc. Open your mouth as you count; support your breath with your abdomen. Remember to use short inhales and longer exhales as you increase each sequence. Count slowly and continuously - make all the numbers connect together; try not to count in a choppy way. As soon as you feel tension or are out of breath, stop. Set a goal for how long you can comfortably count (10, 15, 20?).

Laryngeal and Vocal Cord Exercises

These exercises should be completed slowly and with attention to your voice quality. They should be done at as low a volume as you can sustain. Anyone can belt out sounds, but the exercise is in maintaining improved voice quality in your softest register. Have some water close by so you can take sips during these exercises.

1. **The Yawn-Sigh:** Begin by attempting the most authentic yawn you can imagine. Lift your chin slightly; open the mouth wide so that you feel a stretch in the jaw. Feel your voice box in your throat with your flat hand on your neck. It should go down when you yawn. Pull your tongue back along the floor of the mouth, and breathe in deeply. You may yawn better by stretching your arms and shoulders as one might do in the morning.

As you exhale, sigh 'ah' and hold it out for 3-5 seconds. The voice quality should be soft and cottony as it comes from deep in your throat. Don't allow the voice to turn off mid-way through your sigh. The exercise is in the soft cottony sigh. You should feel really open in your throat. Repeat these yawn-sighs 8-10 times slowly with attention to the quality of the voice, the accuracy of your form, and the feeling of openness you get.

2. **The Fog Horn:** Begin with a deep lower abdominal breath (see step one of the warm up on page 1). Purse your lips into a narrow 'O' shape. Make an 'oo' vowel sound (like 'oops') on a low comfortable note and hold for 6 to 8 seconds. Your voice quality should be very quiet and breathy. Relax the cheeks and allow the breath to puff them out. There should be some air flow through your lips (like you would do to make a candle light flicker). If you are doing this exercise properly, you will feel a vibration in your lips or nose. If you don't feel this, try using a lower pitch and more air. Repeat 10 times.
3. **The Lip or Tongue Trill:** This exercise is similar to the fog horn above. Begin by taking a deep lower abdominal breath. Bring the lips together and jut them out slightly. Make sure your lips and cheeks are relaxed. Begin breathing out as you produce the sound "Brrrr." The lips should trill consistently. If they stop moving or stop trilling, take another breath and begin again. If you have trouble trilling with your lips, try your tongue. Repeat 10 times.

4. **The Pitch Slide:** Your goal is to slide softly from your lowest pitch to your highest pitch as you say the word "Whoop." Make sure the sound is soft, with lots of breath support and with an extra 'puh' sound at the end of the word. Imagine saying "Whoop-puh." Repeat 8-10 times, then reverse and slide your pitch from high to low. This time, say the word "boom." Repeat 8-10 times. In both cases, focus on the sound and vibration at your lips. The goal is to perform the slides without voice breaks.

PITCH

The pitch of our voice refers to the “highness” and “lowness” of our voice, and includes changes in pitch (inflection) when we speak. When we use a pitch pipe to find the note you produce on a comfortable “ah”, we were determining your average or habitual pitch. One of your goals is to produce voice with a slightly higher pitch (3-4 notes on a pitch pipe).

Using good breath support from your abdomen and without movement or tension in your shoulders, neck, and chest prolong “ah” for as long as you can. Try to prolong the vowel a little higher. Remember doe-ray-me-fah? Start with your average pitch on doe and rise up to me or fah. How does this feel? If you have a pitch pipe or a voice app, what numbers do you generate when you produce your most comfortable pitch? How about when you try to go higher?

Check the piano keyboard on the next page to see where this frequency (pitch) is in regard to the male and female range. If the pitch is in the gender neutral (140-170 Hz) or female range (165-250), you are in a good starting place for work on inflection.

Now, let’s count to see where our pitch is - notice that there is change in your pitch when you produce speech. When you count, are you producing voice with your habitual pitch? Is it higher or lower? What numbers do generate on the Voice Test app?

When we perform the whoops and booms during Vocal Function Exercises, we are changing pitch. Let’s try some pitch glides. Consider how they feel and sound. Like the prolonged “ah”, are you producing the tone without tension or movement of the shoulders, chest, or neck?

If you can measure these, what numbers do you produce:

Low pitch High pitch Range (in octaves)

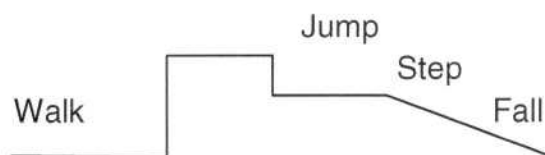
You may wonder what is happening when you do this task. Well, you are stretching and relaxing your vocal cords in your voice box, changing your pitch. We actively do this when we are working on our Vocal Function Exercises. In addition, good resonance (high, forward focus) helps us produce a voice that is higher in pitch, perceived to be more feminine in quality.

INFLECTION

Inflection refers to the change in pitch when we say a word, phrase or sentence. We use inflection all the time to distinguish questions from statements and to add meaning to what we are saying. You can practice inflections producing words like the ones below. Stretch the words out (like you are doing glides), exaggerate the sounds and notice your pitch change. Start at the pitch you produced in Lesson One. For the questions, make your inflection rise up. For the exclamations, make your inflections go down.

Really?	Really!
Where?	There!
Why?	Because!

The main textbook describing voice modification for people in the transgender community (Adler, Hirsch & Mordaunt, 2006) has a nice visual for inflection in English sentence.



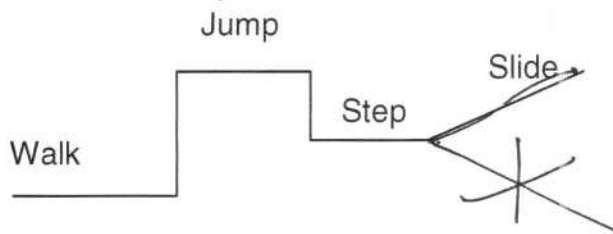
Normal inflection in English (for declarative sentences) follows this pattern. Try it; notice how your pitch is changing. Is the change easy or effortful? Can you do it without movement of your shoulders? Remember, you do not need a deep breath to do this.

Now try to follow this pattern with the following sentences. The underlined word is the one that you should “jump” on. It is suggested that the beginning word (“walk”) is produced with a gender neutral or female pitch.

Your car is running, *isn't it?*
The store is open, *right?*
I can't stop by, *can I?*
We tried to visit, *didn't we?*
The water is running, *isn't it?*
My shoes are tight, *right?*

Since female communication tends to include more upward inflections (rising pitch) and often includes tag questions (this is coool, isn't it?), try to modify the sentences above to include changes in inflection. One thing you could try is to emphasize ("jump" on) the last word, rather than the first. Experiment, play with the sound.

Research suggests that many questions have a rising (rather than falling) inflection. Also, female speakers have a tendency to produce more rising inflection patterns at the end of a sentence. Consider the following pattern for questions and statements that will be perceived as more feminine:



Say some of these sentences using exaggerated inflection. Put the "jump" in at different places in the sentences. How does the change in pitch affect the meaning?

Your dress is really pretty, *right?*

Is that a new dress?

The big dog just barked, *right?*

Is that your big black dog barking?

I was late for the meeting, *really?*

Are you late for the meeting?

A nice clerk helped me ~~out~~, *is* you know what I mean

Did that nice clerk help you ~~out~~?

Here are some statements with tag questions. Experiment with inflection:

It's really cold outside, isn't it?

My new dress is pretty, don't you think?

He was late for the meeting, wasn't he?

Can you think of any others?

RESONANCE

Resonant voice is often an effective way to produce strong, rich vocal projection while maintaining relaxed shoulders, neck, jaw, tongue, and lips. Some describe resonant voice as less effortful, buzzy, focused, and/or "easy." With this technique, you will utilize your body's natural resonance to produce a rich, "free" voice which much less muscular effort.

1. Sit as tall as you can with your head resting comfortably. You should be able to move your head easily from side to side. Take care not to slouch or raise your chin in the air. Once seated comfortably with your arms resting at your sides and your shoulders relaxed, take a few deep belly breaths. When exhaling, maintain a continuous breath stream. If you feel any resistance in your chest or neck while exhaling, take a few more breaths until you are exhaling freely. You are now ready to begin to explore your resonant voice.

2. To begin, gently allow your lips or tongue to trill without voice. You should feel the air gently bubble through your lips without effort from your neck or throat. After this feels easy, and your throat feels very open and free, add your voice. Does this change the effort in your throat? See if you can do the trill without any pushing or effort from your throat, neck, or shoulders. Now that you are producing an easy trill, see if you can vary the pitch up and down the musical scale. Does it still feel free?

3. Now that you've warmed up and feel relaxed in your neck, throat, and jaw, lightly start humming at a comfortable pitch. Do you feel "buzzing" or vibratory sensations in your head bones and facial tissue?

4. After warming up, practice with these resonance exercises.

* Hmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm
Notice where you feel the humming.

* hm-m-molm-molm-molm . . . as a sigh

* molm-molm-molm-molm . . . sustained pitch on F3/G3 (note)
Vary your rate while sustaining the pitch.

* Soft to Loud → Loud to Soft (and then vary)
* molm-molm-molm-molm . . . combine slow-fast-slow and soft-loud-soft on F3/G3 (note)
Vary rate, and place particular emphasis on intensity changes.

* molm-molm-molm-molm . . . vary as speech, with the intonation of spoken phrases

*comfortable
+ controlled
* easeful *
effortless*

7/16/15

- whoop / boom
 - * start in mid-range
 - and then ↓ or ↑
- respiratory ex.
- chanting > rate (slow → fast) + volume (loud → soft)
- mark words to emphasize

- * Chant the following phrases on the note G3.

My mother made marmalade.
Mary made me made.
My merry mom made marmalade.
My mom may marry Mary.
Mary made my mother merry.

- * mamapapa . . . slow-fast-slow on the note _____.
Vary the rate only.

- * mamapapa . . . slow-fast-slow and soft-loud-soft on the note _____.
Especially emphasize intensity changes.

- * mamapapa . . . as speech, with the intonation of spoken phrases

- * Chant the following phrases on the musical note _____.

Mom may put Paul on the moon.
Mom told Tom to copy my manner.
My manner made Pete and Paul mad.
Mom may move Polly's movie to ten.
My movie made Tim and Tom sad.

- * Over-inflect the phrases as in typical speech.
- * Follow this sequence for the following phrases:
 1. Chant the phrase on the note _____.
 2. Over-inflect it.
 3. Repeat as natural speech.

All the girls were laughing.
Get there before they close.
Did you hear what she said?
Come in and close the door.
Are you going tonight?
Put everything away.
Come whenever you can.
We heard that yesterday.
The player broke his leg.
The children went swimming.

RESONANCE (CONT.)

5. For the next set of exercise, focus on where you feel the energy of your voice for each word that you say.

- * Count from 1-10
- * Count from 70-80
- * Count from 170-180
- * Say the months of the year

6. Say these sentences. After each sentence, stop and reflect on how it felt. Did it feel easy and free? Did your voice "drop off" at the end?

Turn it down.

I took a nap at noon.

It began to rain at noon.

Gene ran for senator and won.

Lawns need rain to remain green.

Ben turned the fan on in his van.

Not one crane was seen before noon.

Don and Jean went on their honeymoon.

Gene is a lean, mean, running machine.

The chicken noodle soup is nearly gone.

My neighbors painted my new barn in only one day.

My arm is numb.

Come to my summer home.

Marlene can roam a shopping mall all morning.

Our home team will meet the Mets on Monday.

Meet me in my room at the same time tomorrow.

I've made up my mind; we may move to Maine.

Mark and Mona will be married in the middle of May.

Come with me and have some of Mom's marvelous homemade jam.

Many men were mining.

Mama made lemon jam.

Mary made muffins every morning.

His ears buzzed.

He bruised his knees.

His nose is as red as a rose.

His shoes are the wrong size.

* Now see if you can produce the following list of words, feeling the energy of your voice in your mouth the whole time:

MOON	SOON	LOON	NOON	SING	RING
NOON	MOAN	NINE	MOON	NOON	MINE
MEN	NOON	MAN	MOM	NAME	THING
RING	SING	LONG	WRONG	SONG	BRING
BUZZING	RUNNING	TOUCHING	DRIVING	CARING	SAYING

Feel the resonant tone of your voice through the final consonant. You should feel the tone in your mouth and/or face.