

Developing Tone in Adolescent Singers

Systematic Voice Building

Lynne Gackle, Ph.D.
Professor Emeritus
Baylor University

Developing tone with adolescent singers is often a challenge. The vocal changes of male and female changing voices often present specific challenges both for the individual singer and the choral ensemble. Consistent use of systematic voice building lays a foundation for development of the young voice and expressive singing in both the choral and solo context.

I. Vocal Techniques for Working with the Adolescent Voice

- A. The importance of Warm-ups/Vocal Exercises = Voice Building for the Choir/Singer
- B. A Systematic Approach to good Tone Production implies Consistency
- C. Visualization/Awareness -- Kinesthetic Movement -- Reinforcement -- Transfer

II. Overview of Male and Female Adolescent Voice Development Stages

- A. Male Adolescent Voice Stages – John Cooksey
- B. Female Adolescent Voice Stages – Lynne Gackle

II. A Systematic Approach to Tone Production

A. Relaxation

- 1. Stretching, Bending, Shoulder Rotation, etc.
- 2. Jaw, Neck, Face, Chest Elevation
- 3. Sigh, Vocal Glides, Lip trills, Humming (Breath/Voice/Breath/Tone connection)

B. Body Alignment

- 1. Standing
- 2. Sitting

C. Breath Management Techniques

1. Inhalation

- a. Begin from the point of Exhalation
- b. Clavicular Breathing vs. Diaphragmatic/Costal Breathing
- c. Arms behind head slowly while exhaling on “sh” – then, one arm behind head, one hand on abdomen to “feel” the exhalation (while ribcage is expanded)
(Note: Maintain body alignment - shoulder back and down; ribs Expanded/sternum high)
- d. Imagery - Cool air sip -- slow inhalation -- lungs fill OUT and DOWN
- e. “Breathe into the hands”
- f. Importance of a kinesthetic approach to inhalation/exhalation process

2. Exhalation

- a. Controlled Exhalation -- Legato
 - 1. “Shh” over extended count
 - 2. -- crescendo
 - 3. -- decrescendo
 - 4. -- crescendo/decrescendo -- one breath

- b. Transfer exercise to sung pitch on “oo”[u] or “oh”[o]
- c. Imagery: Removing frost from a windowpane with warmth of breath
- d. Imagery: Blowing over a hot bowl of soup to cool it
- e. Imagery: ‘Cooling’ a small wound on the hand with gentle stream of breath

- 3. Controlled Exhalation -- Staccato - Pulse
 - a. Rhythmic pattern on sibilant sound - Note abdominal muscle movement.
 - b. *Rah-pah-ti-kah Exercise*
 - c. Transfer pattern to sung pitch preceded by a consonant such as “h, d, t, l, or m.” Then, use only the vowel sound on the sung pitch.
 - d. Breath/Voice Connectors
 - 1. Buzzing sounds (“z”, lip trill)
 - 2. Sirens - register connection

D. Resonance

- 1. Sustained Humming
- 2. Use of Voiced Consonants -- Encourages energy to the tone
- 3. *Lifted Soft Palate Exercise* -- Use of Internal Space

E. Range and Agility

- 1. *Doo-bee-doo Exercise* (vowel placement, range, resonance)

V. Building Good Choral Tone Quality and Vocal Resonance

A. Building Vocal Line (legato) -- Basis of Phrase

- 1. The Vowel Stream
- 2. Vowels -- Unification of the vowel is the key.
- 3. Use of the “oo” [u] as basis for all other vowels with young treble Voices; Use [u] and then, [i] for developing singers
- 4. Circle of vowels: (Clockwise from the top.)

oo[soon]		[u] soon		sit
(father)[a]	ee (see)	father) [a]		[i] (see)
				set
	[o] (toe)			
			s[o]	

B. *Nee, Neh, Nah, N[o], Noo* Exercise with Kinesthetic motion

C. Importance of Vowel Blends

- 4. Diphthongs = i.e., “praise, sky, high, know, you”
- 5. Triphthongs = i.e., “hour, power, fire”

D. Importance of Consonants

- 1. Affect Resonance (See sustained humming above)
- 2. Consonants which have pitch (Voiced consonants, i.e. ‘z, b, d, m, n, v, f=v, [th] as in ‘this’, l, ng, g, etc.)
- 3. Sibilant sounds (Unvoiced) p, t, k, ch, sh, s, c=k, f, h)
- 4. Consonants have rhythmic quality within the musical phrase
- 5. Consider the 3 “R’s”

Lynne Gackle, 2024

Adolescent Voices
Stages of Change
Male Voices- Characteristics

Working with Adolescent Voices by John Cooksey (Concordia Publishing) - 1999

Premutation – Unchanged

Average Speaking Fundamental Frequency (SFF): approximately A3-C4

Characteristics: Much like the unchanged girls voice

Full, rich soprano sound

Flexible/Agile

Assigned Voice Part: Soprano

Approximate Ages: Ages 8-11.

Midvoice I/Early Mutation – SFF: A3- Bb3

Initial pubertal period – much like Unchanged stage, except:

Some decrease in range

Loss of clarity

Some loss of flexibility and agility

Can expect breathier quality above C5 and some strain in the C5 – F5 area.

Assigned Voice Part: Alto

Approximate Ages: Between ages 12 – 13 usually (but seems to be occurring earlier)

Midvoice II/High Mutation – SFF: Ab3 (G3-A#3)

Comfortable singing range: F3 – F4

Appearance of Falsetto at G4 – C5

Height of mutational change

“Huskier” and thicker sound than MVI

Range decreases

Upper Range unstable; lower range more stable – (Like a “slinky”)

Range extension is possible through falsetto and down

Assigned Voice Part: Careful selection: Sometimes Alto is too high; sometimes the tenor is too low (3-Part mixed works well here!)

Approximate Ages: Usually, around 13 – 14 years, but occurring earlier currently.

Midvoice IIA/Mutational Climax Stage – SFF: F3 - F#3

Comfortable range: F#3 – D4

Most climactic period of puberty

Huskier and thicker than MVII, tends toward breathiness

Register breaks very apparent/Voice cracking

Falsetto transition is sometimes very difficult – lift points occur in

E4 – B4 range; however, some change to falsetto register on G4

Susceptible to hoarseness and abuse

Traditionally, most problematic for part assignment

Assigned Voice Part: Alto – too High!

sometimes Tenor is too high or too low

Approximate Ages: Usually, around 13 – 14 years, but occurring earlier currently.

New Baritone/Postmutational Stabilizing Stage – SFF: D3 (C3-E3)

Lower pitches are evident

Represents the end of the most dramatic stage of mutation and represents the beginning of more stability in the changing process.

Quality is thin and light compared to the adult baritone

Generally, less breathiness and constriction

Often presents an aural illusion (Some listeners hear this voice higher than it is).

Lift points or transition notes occur in the D4 – F4 range

Blank Spots are **sometimes** apparent (C4 – F4) where no notes can be produced at all. Some can produce falsetto above F4, but cannot produce pitches below that point without pushing the tone.

Assigned Voice Part: Baritone – Be careful in selecting pieces which have a tessitura around middle C up to E4. (3-part mixed music is sometimes problematic for this stage.)

Approximate Ages: Usually, around 13 – 15 years; Mean age approximately 14 years.

Developing Baritone/Postmutational Development Stage – SFF: Bb2/B2 (A2-C#3)

Postmutational stage, represents tendency towards vocal maturity.

Gradual expansion of range and vocal capability.

More consistency in vocal production.

Register transition is somewhat lower than NB – (D4 – E4).

More stability; adult-like qualities appear.

LTP can be 4 – 6 half-steps below SFF.

Falsetto is more clear and focused – (C/D4 – E/F4).

Assigned Voice Part: Most Bass parts are appropriate, giving consideration to range extremities.

Approximate Ages: Usually, around 14 – 15 years.

Lynne Gackle, 2024

Phases of Change
Female Voice Characteristics

Finding Ophelia's Voice, Opening Ophelia's Heart: Nurturing the Adolescent Female Voice,
By Lynne Gackle (2011) - Heritage Music Press (Lorenz Corp.)

Phase I - Prepubertal:

SFF: C4/D#4
Clear/flute-like quality
Much like the boys' voice at this age.
No obvious register breaks
Flexible/agile
Assigned Voice Part: Soprano I
Approximate Ages: Up to ages 8-11.

Phase 2A - Pre-menarcheal:

First signs of physical maturation begin: breast development, height increases and other secondary sex characteristics.

SFF: B flat 3/C#4
Beginning of Mutation
Breathiness of tone exhibited throughout range.
Lift points sometimes appear around F4 – B flat 4
Loss of upper range; some have difficulty in the lower pitch range.
Assigned Voice Part: Soprano II or Soprano I (if comfortable).
Approximate Ages 11-12 (13)

Phase 2B - Post-menarcheal:

SFF: A3/C4
Peak of mutation
Huskiness throughout the range
Register changes appear between F4 – B flat 4 and also at D5 – F#5.
Lower notes are more easily produced
Difficulty in phonation
Tessitura is variable; can move up or down at either end of range
Voice cracking and breathiness frequently occur
Assigned Voice Part: Soprano II or Alto
Approximate Ages 12 – 14 (15)

Phase 3 – Young Adult Female:

SFF: G3/B3
Timbre approximates adult female
More richness in quality
Range characteristically increases
Greater consistency in registers
Decreased breathiness
Register change at D5 – G5 (adult soprano passagio) is apparent
Some Vibrato may appear in the voice naturally.
Greater flexibility and agility in the voice
Assigned Voice Part: Soprano I, Soprano II, or Alto – wherever the student is most comfortable or wherever “color” is desired in the ensemble
Approximate Ages: 14 – 17 (18)

Lynne Gackle, 2024

MALE ADOLESCENT VOICE RANGES
As identified by Dr. John Cooksey

Quarter notes indicate average tessituras.



Stage I
Unchanged

Stage II
Midvoice I

Stage III
Midvoice II

Stage IV
Midvoice IIA

Stage V
New Baritone

Stage VI
Developing
Baritone

FEMALE ADOLESCENT VOICE RANGES AND TESSITURAE
As identified by Dr. Lynne Gackle

Quarter notes indicate average tessituras.



Stage I
Prepubertal

Stage II
Premenarcheal

Stage II B
Postmenarcheal

Stage III
Young Adult

Note: Complete development of the voice continues post mutation.

**COMPOSITE RANGES/TESSITURAE FOR
ADOLESCENT MALE AND FEMALE VOICES**

**Based on the average ranges/tessiturae and corresponding stages
of vocal development as outlined by
Dr. John Cooksey (Male Adolescent Voice) and
Dr. Lynne Gackle (Female Adolescent Voice)**

The diagram illustrates the composite ranges and tessiturae for four voice types: Soprano, Alto, Tenor, and Baritone. Each voice type is represented by a single musical staff with a treble clef. The notes are connected by a line, indicating the range and tessitura. Below each staff, the corresponding developmental stages are listed.

Voice Type	Developmental Stages
Soprano	Unchanged Boys Girls-Stage I, IIA, III
Alto	Midvoice I Girls-Stage IIB, III
Tenor	Midvoice II Midvoice IIA
Baritone	New Baritone Developing Baritone

Additional annotations on the musical notation include: 'girls' above the Soprano staff, '(v) boys' below the Soprano staff, 'a' above the Baritone staff, and 'dev' below the Baritone staff.