The Science Of Singing

A Voice Lesson from Anatomy and Physiology
The study of the art and science of vocal instruction.
Overview of Vocal Styles Throughout History

- Gregorian Chant (A.D. 4-800)
- Polyphony (A.D. 800-1250)
- Drama/Theatrical (A.D. 1250-1590)
- Opera (16th-19th centuries)
  - Bel Canto
- Modernism (1920-present)
  - Alexander Technique
  - Estill
Bel Canto

- “beautiful singing”
- Originated in Italy
  - Rooted in opera
- the most highly regarded vocal technique in the 16th century
- Focused on the sound being produced
Manuel Garcia (1805-1906)

Garcia was a professional vocalist and voice teacher. His laryngoscope changed the history of vocal pedagogy.
Nasal and oral laryngoscope allow for us to see clearly the anatomical construct and physiological functioning of the vocal cords.
Anatomy of the Vocal Folds
Male vocal cords in action
“Understanding the physical aspects of vocal production and the workings of the larynx are just the first steps on the road to good vocal hygiene.”

- Peter LaPine
Vocal Lesions

**Nodules**

**Polyps**
Female vocal cords in action
Notice: she has two sets of nodules
## What causes these vocal problems?

### Vocal Misuse
- Straining the vocal folds
  - Singing or speaking too loudly
  - Using the voice vigorously for long periods of time
- Singing improperly
  - Tension
  - Poor posture

### Health Issues/Illnesses
- Gastroesophageal reflux disorder (GERD)
  - Acid reflux
- Postnasal drip
- Respiratory infections
- Cancer
Alexander Technique

- F.M. Alexander (1869-1995)
  - Experienced chronic laryngitis when he performed
- Technique:
  - Overall health
  - Proper use of the whole body
    - Diffusion of tension
Estill Voice Training™

- Jo Estill (1921-2010)
  - Voice specialist and researcher
- Technique:
  - Founded in 1988
  - Based on her extensive vocal research
    - Vocal fold vibrations
    - Laryngeal endoscopies
# A Shift in Vocal Pedagogy

<table>
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<tr>
<th>16th Century</th>
<th>Bel Canto style singing</th>
<th>Focus: the sound of the voice/aesthetics</th>
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<tr>
<td>1854</td>
<td>Garcia invents his laryngoscope</td>
<td>There was a need to see the vocal cords</td>
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<td>1930s</td>
<td>F.M. Alexander establishes his performance technique</td>
<td>Focus: how the whole body contributes to the health and proper functioning of the voice</td>
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<td>1988</td>
<td>Estill Voice Training is founded</td>
<td>Focus: the physical aspects of the voice in relation to singing</td>
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Singing is science!
People have dedicated their whole lives and careers to study the vocal processes, and we are still learning new things.

Modern singing techniques:
- Based on scientific evidence
  - Anatomical structure
  - Physiological processes
- Emphasize proper vocal tactics
- Focus on vocal health
  - Overall health
Sources:

- "What is the Alexander Technique?" (The Complete Guide to the Alexander Technique).

John Hopkins Voice Medical Center
- Center for the Care of the Professional Voice
- Photos and videos supplied by: Dr. Mark Spencer (used with permission)