Stop Aging in Its Tracks

- The aging voice
  - ~20-30% of individuals over 50 years of age have altered vocal function
    - Due to onset of disease or age-related physiological changes
  - Older individuals are perceived to present with more roughness, breathiness, strain, and instability
  - Studies have shown dramatic impact of dysphonia (voice disorder) on quality of life
- Impact of puberty on the voice
  - Male voices can drop an octave
    - Lower pitches are typically more stable than higher pitches in males
    - Change in tone and timbre of the voice
    - Frequent voice "cracks" (pitch breaks) when the voice is actively changing, decreases as the individual matures
  - Female voice change is less dramatic, typically dropping ~3 tones
    - May be breathy or husky
    - Occasional pitch breaks
    - Increased pitch inaccuracy during singing
- Impact of menstrual cycle on the voice
  - Hormone changes can profoundly affect the voice
  - As hormones change throughout the menstrual cycle, the changes can manifest in the voice
  - Changes typically occur right before menstruation, though some women note changes during ovulation
  - Vocal changes can include:
    - Loss of upper range
    - Vocal fatigue
    - Husky vocal quality
    - Reduced vocal flexibility and/or power
    - Reduced vocal efficiency

        - Pitch uncertainty
- Voice changes during and after pregnancy
    - Rise in estrogen and progesterone levels
        - Causes swelling of vocal folds→heavier and "sluggish" when vibrating
    - Pregnant or lactating mothers may notice:
        - Breathiness
        - Hoarseness
        - Prolonged warm-up time
        - Muffled vocal quality
        - Vocal fatigue
        - Increased vocal effort
- Voice changes during perimenopause and menopause
    - Menopause: a point in time. A person has "reached menopause" when they have not had a menstrual cycle in one year
    - Perimenopause: an extended transitional state. Begins with irregular menstrual cycles and ends a year after the last period
    - Estrogen levels fall and androgen levels increase relatively
    - Structural changes and issues impacting voice during perimenopause and menopause:
        - Drier larynx
        - Less lung power
        - Weakened laryngeal muscles
        - Stiffer laryngeal cartilages
        - Thickened vocal folds (due to relative increase in androgen levels)
- Causes of presbyphonia (the aging voice)
    - Age at which people begin to "sound old" varies widely
        - Time does not define aging, biological changes and the functional deficits of those changes define aging
    - Normal aging process can affect the larynx and vocal folds:
        - Muscle atrophy
        - Thinning of mucous membranes
        - Stiffening of connective tissues
- Aging voice symptoms

    - Higher pitch in men (thinning of vocal folds due to fall in androgen level and relative rise in estrogen/androgen ratio)
    - Lower pitch in women
    - Reduced projection
    - Loss of resonance
    - Reduced endurance
    - Voice tremors
    - Weak (asthenic), breathy, and/or strained voice
    - Typically gradual
- Potential impact of vocal fold changes
    - Important to note that vocal fold changes can lead to use of compensatory strategies that can be harmful
        - Increased muscle tension in head, neck, base of tongue, jaw, throat, larynx
        - Can result in vocal fatigue and hoarseness
        - Can result in vocal fold trauma, depending on how long the negative compensatory strategies are used and how traumatic they are
- Voice therapy
    - Typically completed prior to surgery
    - If surgery is performed, recommend voice therapy after surgery to ensure no muscle tension exists to compensate for prior dysphonia
    - Voice therapy is completed after the voice has changed but it's best to try to combat muscle loss before you notice the vocal changes associated with that loss
- What can you do?
    - Be aware
    - Maintain your overall health
    - Continue using your voice!
    - Practice good vocal hygiene
    - See an ENT if you notice symptoms of presbyphonia
    - Straw phonation in water
    - Vocal function exercises