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Harmonicas for Health

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Thanks

- Thanks to **Mary Jane Gormley** for her passion to not only make our harmonica class a reality, but also for being the catalyst in the writing of the *Harmonicas for Health* book used in our classes, and her proof reading.
- Thanks to Vicky Hicks for her technical advice and proof reading.
- Thanks to my wife, Bonnie, for her editing, proofreading and constant support.
- I would also like to extend thanks to Christine Brock for putting the final editing touches on this program.



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Objectives & Goals

Objectives

1. Recognize the benefit of harmonica playing for improvement of respiratory function.
2. Apply the use of harmonicas in respiratory populations to further improve their medical condition and well being.

Goals

- a) Identify the benefit that playing the harmonica will bring to the COPD, reactive airway disease patient, and other respiratory patient populations by teaching them better control of their breathing.
- b) Teach patients to exercise the muscles that help them breathe more efficiently.
- c) Help patients to strengthen their abdominal muscles for a more effective cough, as well as to help mobilize secretions.
- d) Demonstrate and teach back the basics of simple harmonica playing.
- e) Apply new skills to your everyday clinical practice.

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Three Hidden Goals

- You will NOT become a harmonica virtuoso in one lesson.
- You may still not like the harmonica; however, you should have a "healthy" respect for it.
- You should have at least one ounce of fun during this class (your choice!).

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COPD Data

- Third highest mortality rate in U.S., not including other respiratory illnesses.
- Most other major illness mortality rates decreasing or stable, COPD mortality rates increasing.
- 134,676 COPD deaths reported in 2010.
- In 2011, over 12.7 million U.S. adults diagnosed with COPD.
- Over 24 million Americans have impaired lung function, indicating under-diagnosis of COPD.
- Around 80% of COPD is caused by smoking; one study indicates nearly 20% could be linked to industrial pollutants. The figure is 31.1% for workers who never smoked.
- Mayo Clinic has estimated that about 1% of COPD is caused by Alpha-1-antitrypsin deficiency.
- Worldwide, more than 3,000,000 people died of COPD in 2005. Ninety percent of those deaths take place in low or middle income regions.

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COPD Data, 2011

- 10.1 million Americans diagnosed with chronic bronchitis (affects all ages).
- 4.7 million Americans diagnosed with emphysema; 92% are older than 45.
- 1.4m ER visits and 3.2m admissions annually for COPD.
- 10.8% of assisted living residents have COPD.
- Lowest rates of COPD: Washington and Minnesota
- Highest rates: Alabama and Kentucky

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Women and COPD

- Approximately 7 million women in the U.S. live with COPD. Millions more have the disease but are undiagnosed.
- The number of COPD deaths among women COPD has quadrupled over the past 30 years.
- 2014 was the 11th consecutive year in which women have exceeded men in COPD deaths.
- In 2010, 70,000 women died from COPD vs. 64,000 men.
- Research has shown that women diagnosed with COPD experience higher rates of anxiety, depression and report lower quality of life.

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Increased Mortality Among Women vs. Men

Possible reasons may be:

- The tobacco industry targeted women in the late 1960s, which resulted in a huge increase in women smoking. The numbers continue to increase as new cases of smoking-related disease are diagnosed, including COPD, as women age.
- Women are more vulnerable than men to lung damage. Their lungs are smaller and estrogen plays a role in worsening lung disease.
- Women are often misdiagnosed because COPD has long been diagnosed as a man's disease.

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Prolonging Life: Two Absolutes

1. Patients who need oxygen must wear it!
(Minimum 15 hours daily recommended.)
2. If patient hasn't quit smoking, he/she needs to quit!

Respiratory medications will improve breathing and allow improvement of activities of daily living (ADL) but not necessarily prolong life.

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Ongoing Effects of COPD

- COPD can severely limit ADLs and quality of life (QOL), causing increased SOB as patient tries to increase activities.
- COPD symptoms can also:
 - Decrease psychosocial functioning in home and community, creating less independence.
 - Become worse with stress.
 - Limit immune system's ability to fight exacerbations, infections.
 - Bring on negative psychological changes, i.e. chronic anxiety, depression.

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Limiting Effects of COPD

A recent American Lung Association survey reports that COPD patients experience limitations in their ability to:

- Participate in family activities (46%)
- Sleep (50%)
- Work (51%)
- Socialize (53%)
- Do household chores (56%)
- Physically exert themselves (70%)

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The Harmonica as Exercise

Exercise keeps us in shape to function more efficiently: playing a harmonica is exercise!

- As the patient exercises breathing muscles, they breathe better with less effort by engaging their:
 - Diaphragm (primary breathing muscle)
 - Intercostal muscles
 - Accessory and shoulder muscles

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How the Harmonica Helps

- Maintains good lung function, helping to reduce COPD (and asthma) symptoms, and possible future exacerbations
- Facilitates deep breathing and helps us use more of our lung capacity
- Improves ability to keep our lungs clear

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It's Not Just for COPD Patients

Patients with other health issues who have benefited from learning harmonica include those with:

- | | |
|--------------------------|----------------------------------|
| • Cardiovascular disease | • ALS |
| • Asthma | • Chronic pain |
| • Pulmonary fibrosis | • Depression, Anxiety and Stress |
| • Sleep apnea | • Tobacco use |
| • Parkinson's disease | • Memory loss |
| • Muscular dystrophy | • Learning disabilities |

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The Evidence is Clear

- 1970s -1990s: "Standards of Clinical Practice per American Music Therapy Association have found improvement in motor, cognitive, language, social skills and emotional, spiritual components"
—UW-Eau Claire: *Harmonics in Music Therapy: Research and Clinical Programming*, Lee Anna Raser
- 2004: "Playing harmonica...is certainly superior to the traditional methods of inhalational therapy"
—Amarillo Globe News: *Playing Harmonica Leads to Health Benefits*
- 2011: "Playing harmonica shows you how to breathe right and leads to an increase in lungs capacity and oxygen storing capacity"
—The Times of India: "Play Harmonica, live a healthy life.", Madhavi Dharis Shah
- 2013: After his second lung-transplant procedure in 2008, Larry Rawdon, Broadway cellist, began to supplement pulmonary rehab exercises with the harmonica and showed significant positive results. "I am convinced that for lung transplant patients, playing the harmonica can be considered [as] a piece of legitimate breathing exercise equipment."
—Mayo Clinic: *Harmonica Helps Pulmonary and Lung-Transplant Patients Breathe Easier*, @LaurenVenoy

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Additional OTC Tools & Exercises

- Other tools: balloons, pinwheels, soap bubbles, etc.
- Other techniques: singing or playing a wind instrument functions basically on exhaling; however, does require deep, abdominal breathing
- Cheap and proven breathing exercises that RTs teach:
 - Pursed-lip breathing
 - Abdominal breathing



Training your bubble

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Da Harmonica

- Inexpensive
- Small
- Goes everywhere
- Universally accessible
- Simple
- Especially pleasing to most dogs
- Works effectively on inhale and exhale



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Four Points for Improved Breathing

1. COPD causes air trapping
2. COPD causes a loss of proper diaphragmatic ability
3. COPD makes it difficult to eliminate CO₂ and to effectively clear the lungs through coughing
4. COPD interferes with quality of life

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1. Trapped Air

- Loss of elasticity
- Airway collapse
- Inflammation and irritation of airways that causes narrowing

Common solutions:

- Pursed-lip breathing (PLB)
- Harmonica: Exhaling through harmonica creates a back pressure that mimics PLB as you generate sound. Playing more traditional wind instruments (trumpet, saxophone, vocal, etc.) may also help.

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2. Loss of Proper Diaphragmatic Ability

- When SOB, people often breathe from upper chest and/or shoulders, in tripod position with elbows on table.
- Diaphragmatic breathing should do 80% of the work of breathing.
- Incorrect breathing wears some people out more quickly, increases O₂ demand causing more SOB: downward spiral toward possible exacerbation.

Common solutions:

- | | |
|------------------------------|---------------------------|
| • Incentive spirometry | • Playing wind instrument |
| • Inspiratory muscle trainer | • Swimming |
| • General exercise | • Yoga |
| • Singing | • Harmonica |

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3. Eliminating CO₂ and Effectively Clearing Lungs

- Loss of elasticity in lungs
- Rigidity of the entire rib cage especially lower rib cage
- Ineffective overuse of intercostal and accessory muscles causing fatigue, increased O₂ demand, increased calorie consumption.

Common solutions:


- Strengthening of diaphragmatic and abdominal muscles
- Incentive spirometry
- Inspiratory muscle trainer
- Core exercises

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3. Eliminating CO² and Effectively Clearing Lungs

Devices and modalities to help clear lungs:

- Flutter valve
- "A Cappella"
- Mechanical vest
- Chest physical therapy
- "Lung flute" (see picture)
- Bi-level devices
- Harmonica:
 - Promotes efficient diaphragmatic control
 - Strengthens abdominal muscles
 - Promotes a more effective cough mechanism
 - Less reliance on intercostal and accessory muscle use
 - Vibration caused by sound transmits throughout chest and lungs helping facilitate airway clearance



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4. Quality of Life

People with breathing problems have:

- Loss of well being
- Increase frustration
- Loss of independence
- Possible emotional problems such as depression, anxiety, etc.

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4. Quality of Life

Common solutions:

- Enlisting in an exercise regimen such as OPPR
- Joining community organizations
- Hobbies, volunteering, learning a new skill, etc.
- Harmonica:
 - Enhances health
 - Learning a new skill increases self-esteem, sense of accomplishment and well-being
 - Better control over symptoms
 - Possibly decreases exacerbations, hospitalizations
 - Increase mental involvement and focus
 - Skill development
 - Increase quality of life
 - Possible new religious experience

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What Stops Us?

What stops us from learning and teaching harmonica?

- If I stink at playing the harmonica, I will have a major loss of self-esteem!
- What will my family, friends, peers say if they find out I play harmonica?
 - It may decrease my credit rating.
 - It could make me grow grey faster.
 - I may find myself friendless, homeless and/or penniless.

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It's About the Exercise!

- The benefits are not from how you sound!
- The benefits are from the blowing and drawing action through the harmonica in a repetitive regimen.
- You really can't make a bad sound.
- Your technique will improve with practice.
- It's easy to start.
- Who cares what you look like as long as you are helping yourself (and others) to breathe better?!?!?

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Playing Harmonica Engages...

- | | |
|-----------|-------------------------|
| • Mouth | • Hands |
| • Lips | • Joints |
| • Tongue | • Bones |
| • Cheeks | • Ribs |
| • Jaw | • Throat |
| • Teeth | • Lungs |
| • Neck | • Heart |
| • Eyes | • Diaphragm |
| • Ears | • Legs and Feet |
| • Muscles | (if it makes you dance) |
| • Arms | • More |
| • Brain | |

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Let's Get Started!

Rule #1: Keep things separate and clean!

- Use hand sanitizer
- Provide napkins for harmonicas when not in use.
- Remember, those things are going in our mouths!
- Keep them warm and dry before playing.
- Don't store in plastic containers until complete
- No sharing!
- Don't eat or drink anything except water.
- Don't let the dogs lick harmonicas.
- Lap whap often.



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Warm-Up Exercises

Look at the harmonica and find the row of numbers from 1 to 10 above the holes.

1. Keep your shoulders relaxed.
2. Put a hand on your diaphragm and feel it move in and out as you practice the exercises.
3. Draw in/blow out on holes 1 - 4, each exercise counting to 4, @ same volume.
4. In/out x 4, change volume, soft - loud - soft.
5. In/out x 4, change volume, loud - soft - loud.
6. In/out x 4, separate notes, generated by diaphragm, counting 1-2-3-4.
7. In/out x 4, changing the shape and position of your mouth and tongue, making the sound "ooo-wee-ooo..."
8. Practice #7 faster causing a tremolo effect.
9. Lap whap



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Hand Positioning

The "Alligator"



- Make "alligator jaw" with left hand.
- Place harmonica in alligator's "mouth."

The "Open Clam"



- Touch both heels of hands together ("clam shell").

The "Closed Clam"



- Cup right hand over back end of harmonica.
- Open and close right hand over harmonica quickly to make a different tremolo effect.

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Variations

Replicating the Flutter Valve Effect

- Creates vibrations in the chest similar to flutter valve of respiratory therapists, with similar results.
- Make the sound "tah-tah-tah-tah" or "ka-ka-ka-ka" blowing out.
- Make the sound "hut-hut-hut-hut" or "hah-hah-hah-hah" when drawing in.
- In x 4, Out x 4, using the above sounds.
- Practice for 3-5 minutes daily.

Have you lap whapped lately!???!?

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Variations

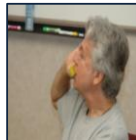
- **Making the Train Sound**
 - Make the train whistle (at beginning and end, over holes 5-6-7, drawing in forcefully twice (try to bend the reeds a little).
 - Play holes 1-2 on the left side of the harmonica, in/out twice, each time slowly.
 - Move harmonica from L-R after each repetition as you play faster.
 - Once you are to the far right, playing fast, start to move back to the left, playing more slowly as you move, until you are back to holes 1-2, drawing in and blowing out very slowly.
 - End with the train whistle.
- **Slide up or down to the notes, which is an easy way to start finding notes** (or correct mistakes – “ah-hah mistakes!” 7171).
- **Blues “chugging”**, inhaling/exhaling back and forth in a “shuffie-type” rhythm.
 - The goal is to be able to do this repeatedly without getting short of breath with just stopping.
 - The sound you make on inhale is “hah-HAH” and exhale is “tah-TAH.”
 - “hah-HAH – tah-TAH – hah-HAH – tah-TAH – hah-HAH – tah-TAH.”

Have you lap whapped lately!???!?

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Playing One Note at a Time: Positioning

- **Pursed Lip** technique
- **Tilted Harmonica**– ideal method (you may do a mix of both pursed lip and tilted harmonica).
 - For now, hold with both hands on each side.
 - Put up lips and blow out.
 - Tilt back of harmonica upward almost touching tip of nose.
 - Using this technique, you'll play fewer notes due to bowl of lower lip.
 - This takes practice!



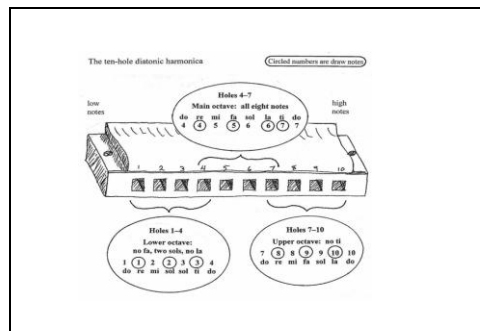
Note the tilted harmonica

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10-Hole Diatonic Harmonica

- Diatonic means you play your basic Do-Re-Mi-Fa-Sol-La-Ti-Do scale (think "Sound of Music"). Low Do to high Do is called an octave.
- The most common diatonic harmonica has 3 octaves.
- Middle octave is from holes 4-7 and is where you play most melodies.
- Lower octave (holes 1-3) mostly for chording and accompaniment (previous exercises)
- Upper octave (holes 8-10) for extending the melody higher.
- Neither lower octave nor upper octave is a full octave.

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Do-re-mi . . .

Those are the first three notes of the major scale in any key. They are written

do blow into the fourth hole
re draw air out of the fourth hole
mi blow into the fifth hole

We can set that up with the two notes of each hole together, the draw note under the blow; underlining the anchor or tonic notes of the scale can help you keep track of where you are.

4 5 do mi
re

To find one note, you can cover the other holes with your fingers to hear how it sounds; then play the same note without the finger blocks. Tilting the far side of the harmonica up cuts down on the number of notes at one time. Play 4 5 do re mi, a few times up and down.

The first lines of several songs can be played with just do-re-mi.

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[illegible]

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[illegible]

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Monitoring Progress Monthly

PFT screening

- FVC/predicted %
- FEV1/pred. %
- Peak flow/pred. %
- SpO2 (+ HR)
- Inhale one note (hole 4) as long as possible.
- Exhale one note (hole 4) as long as possible.

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Smiles and Better Breathing All Around

Thanks! Now
get
practicing!!
Start a class!!!

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My Thanks to...

Introduction music:

- "Walkin' Blues" by Joe Peters; performed by Joedai Warriors, "Red, Black, & Blue" CD.
- "What's On Your Mind" by Joe Peters; performed by Joedai Warriors, "Edge of Disaster" CD.
- "Feeling Blue" by Phil Hipskind; performed by Kari Johnson & the Impasse Band, "Time Marches On" CD, 2014

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- F.D. Gormley, all remaining patient/class photos
