Taking pulmonary rehab one step beyond…

Harmonicas for Health

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• My thanks to Mary Jane Gormley for her passion to not only make our harmonica class become a reality but also for being the catalyst in the writing of the Harmonicas for Health book used in our classes. A big thanks for her extraordinary proof-reading skills.
• Thanks also to Williams Bros. for supplying the harmonicas for this event and for our classes.
• And to Vicky Hicks, my collaborator in crime whom helped with her technical and proof-reading skills.

Objectives and goals

Objectives:
1) To recognize the benefit of harmonica playing in regards to the improvement of respiratory function.
2) Apply the use of harmonicas primarily in the COPD or reactive airway populations.

Goals:
A. Identify the benefit to COPD, reactive airway patient populations.
B. Demonstrate and return demo the basics of simple harmonica playing.
C. Apply new skills to your everyday clinical practice.

Three hidden goals until now kept secret from the all knowing Eye

• You will NOT become a virtuoso on harmonica in one lesson.
• You may still not like the harmonica; however, you should have a healthy respect for it.
• And, you should have at least one ounce of fun during this class.
What's going on? What do we know?

- COPD has the 4th highest mortality rate in the U.S., not including the other respiratory illnesses; interstitial lung disease, pulmonary fibrosis, lung CA, etc.
- Estimated 120,000 deaths annually.
- Most major illness mortality rates are decreasing or in the very least staying even, while COPD is increasing.
- 1.4 million emergency room visits annually.
- 3.2 million admissions annually.
- Annual cost $32.1 billion in USA.

Two absolutes in improving COPD mortality is:
- If you need oxygen, wear it (ALA states minimum 15 hours daily).
- If you haven't, quit smoking.

Respiratory medications will improve your breathing and allow you to improve your activities of daily living.

COPD can severely limit ADL’s, quality of life (QOL), causing increase SOB as on attempts to increase activities.

COPD symptoms may also:

- Decrease psychosocial functioning at home, and community.
- Become worse with stress.
- Limit the immune system’s ability to fight exacerbations and infections.
- Bring on negative psychological changes.

How can harmonica help?

- Exercise in general will help us keep ourselves in shape to function more efficiently.
- A more efficiently running car (our body) functions better, requiring less fuel (oxygen), and give off less exhaust (carbon dioxide).
- By exercising the muscles that breathe for us, we will breathe better with less effort.
  - Diaphragm (primary breathing muscle)
  - Intercostal muscles
  - Accessory and shoulder muscles

Playing harmonica:
- maintains lung function which help to reduce asthma and/or COPD symptoms, and possible exacerbations.
- facilitates deep breathing and helps us use more of our lung capacity.
- Improves ability to keep our lungs clear.
OTC devices: balloons, pinwheels, soap bubbles, vuvuzelas, etc.

Other techniques: singing or playing a wind instrument functions basically on exhaling; however, does require deep, abdominal breathing.

Self-generated:
- pursed-lip breathing
- abdominal breathing
- cheap, always around, never wears out

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

**How does the harmonica improve the breathing of someone with COPD?**

1) COPD causes air trapping
- Loss of elasticity
- Airway collapse
- Inflammation, and irritation of airways causing narrowing

**Common solutions:**
- Pursed-lip breathing (PLB)

**Harmonica:** When exhaling through a hole or holes of the harmonica, you create a back pressure that mimics PLB as you are generating sound. Playing a wind instrument (trumpet, saxophone, singing, etc. may also help).
How does the harmonica improve the breathing of someone with COPD (continued)?

2) COPD causes a loss of proper diaphragmatic ability
   - People when SOB will often breathe from their upper chest and/or shoulders often in a tripod position with elbows on a table.
   - Diaphragmatic breathing should do 80% of the work of breathing.
   - Incorrect breathing wears people out quicker, causing more SOB, which may cause a downward spiral toward a possible exacerbation.

Common solutions:
   - Incentive spirometry
   - Inspiratory muscle trainer
   - Exercise in general
   - Singing
   - Playing wind instrument
   - Swimming
   - Yoga

Harmonica: Performing breathing exercises by blowing and drawing slowly and repetitively in a harmonica improves diaphragmatic tone and control. This is due to breathing through restricted orifices, increasing breathing resistance.

How does the harmonica improve the breathing of someone with COPD (continued)?

3) People with COPD have difficulty ridding themselves of CO2 as well as inability to generate effective cough to help clear the lungs.
   - Loss of elasticity in lungs
   - Rigidity of lower rib cage
   - Ineffective overuse of intercostal and accessory muscles causing fatigue, increased O2 demand, increased calorie consumption.

Common solutions:
   - Strengthening of abdominal muscles
     - Incentive spirometry
     - Inspiratory muscle trainer
     - Core exercises

How does the harmonica improve the breathing of someone with COPD (continued)?

#3 (continued)
   - Devices, modalities to help clear lungs:
     - Flutter valve
     - "Accapella"
     - Mechanical vest
     - Chest physical therapy
     - "Lung flute" (see picture at right)

Harmonica:
   - Promotes efficient diaphragmatic control
   - Strengthens abdominal muscle
   - More effective cough mechanism
   - Less reliance on intercostal and accessory muscle use
   - Vibration caused by sound generated transmits throughout chest and lungs helping facilitate airway clearance.
How does the harmonica improve the breathing of someone with COPD (continued)?

4) Psychosocial benefits

People with breathing problems have:

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

**Common solution:** enlisting in an exercise regimen such as OPPR, joining community organizations, involving oneself in a hobby, volunteering, etc.

4) Psychosocial benefits (continued)

**Harmonica:** knowing that you are doing something that will enhance your health, as well as the accomplishment of learning something new.

- Increase of self-esteem, accomplishment, and well being in learning something new
- Better control over symptoms
- Possibly decrease exacerbations, hospitalizations
- Increase mental involvement and focus
- Skill development
- Increase quality of life
- Possible new religious experience

So what stops us from learning and teaching harmonica in our OPPR classes?

**What 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 learn I play harmonica?
- It may decrease my credit rating.
- Make me grow grey faster.
- I may find myself single, homeless, and/or penniless.
Seriously folks...

- The benefits are not from how well you sound but on the action of the blowing and drawing through the harmonica on a repetitive schedule that will help your breathing.

- You really can’t make a bad sound. The arrangement of the holes and notes are such that you will either play one note at a time or play a musical chord depending on what you’re trying to play and/or your technique.

- Your technique will improve with practice.

- It’s easy to start.

- Who cares what you look like as long as you are helping others to breathe better!

Patients with other health issues have benefitted from learning the harmonica include:

- Cardiovascular disease
- Asthma
- Pulmonary fibrosis
- Sleep apnea
- Parkinson’s disease
- Muscular dystrophy
- ALS
- Chronic pain and its mgmt
- Depression
- Anxiety
- Stress
- Tobacco use
- Loss of memory
- Learning disabilities

Playing harmonica engages:

- mouth
- lips
- tongue
- cheeks
- jaw
- teeth
- neck
- eyes
- ears
- muscles
- arms
- the mind

- hands
- joints
- bones
- ribs
- throat
- lungs
- heart
- diaphragm
- legs and feet (if it makes you dance)
- etc.
So let's get started!
Do's and Don'ts

Rule #1: Keep things separate and clean!
- 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 completely dry.
- No sharing!
- Don’t eat or drink anything except water.
- Don’t let the dogs lick harmonicas.
- Lap whap often.

Exercises to warm up the player and the harmonica:

- In/out x 4, same volume
- In/out x 4, change volume
- In/out x 4, tremolo effect generated by diaphragm
- Try playing as you change the shape and position of your mouth and tongue.
- Lap whap

Positioning the harmonica:
Goal is to try to play one note at a time

- Purse lips

TILTED EMBOUCHURE - ideal method

- Hold towards the far side of the harmonica.
- Put harmonica up to lips.
- Tilt far side of harmonica upward almost touching tip of nose.
- When you play with this technique, you play fewer notes due to the bowl of your lower lip.
Harmonicas for Health

More positioning the harmonica
“Classic” hand position

• Make “alligator jaw” with left hand.
• Place harmonica in “mouth” of “alligator”.
• Touch both heels of hands together.
• Cup right hand over back end of harmonica.
• Open and close right hand over harmonica quickly to make 2nd tremolo effect.

10-hole Diatonic harmonica

• Plays your basic Do-Re-Mi-Fa-Sol-La-Ti-Do scale.
• Harmonica is 3 octaves.
• Octave in the middle is from holes 4-7 and plays most melodies.
• Play middle octave up and down (use hand to signal blow and draw).
• Lower octave (holes 1-3) mostly for chording and accompaniment.
• Upper octave (holes 8-10) for extending the melody higher.
• Neither lower octave nor upper octave is a full octave.

10-TOLE Diatonic harmonica (continued)
**Variations:**

Making the train sound:

- Play 2 holes in/out x 2 slowly.
- Change holes by moving harmonica L>R as you play faster.
- When you are to the far right, playing fast, start to move to the left, playing more slowly as you move.
- Make the train whistle @ beginning and end.

Slides up and down, easy way to find starting note.

Play long notes in & out, making 4 sounds "ta-ta-ta-ta" or "ka-ka-ka-ka" using the tongue and mouth, tremolo #3.

- Creates vibrations in the chest similar to flutter valve with similar results.

Have you lap whapped lately??!

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**Do-re-mi...**

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

- 4  do  blow into the fourth hole
- 5  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.

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 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.
Monitoring our 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.

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, Joedai Warriors, “Red, Black, & Blue” CD.
- All photography used with permission:
  - Steve Fletcher, slide 1
  - clip art, 15
  - Louise Michaelis, 22, 23
  - F.D. Gormley, all remaining photos