



# Effects of Harmonica Playing on Pulmonary Rehabilitation Status

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## OVERVIEW:

This research project was designed to examine the effects of harmonica playing on:

- Inspiratory Force
- Expiratory Force
- Peak Flow
- Total Lung Volume

## TARGETING & MEASURING ENDURANCE:

- Limit practicing to 10 minutes, twice daily
- Measure your endurance at the beginning, middle, and end of each practice session

Measure:

- Length of time (in seconds) you can sustain a single tone
- Number of notes played in a single breath within the context of a song
- Number of phrases able to play in one breath within the context of a song
- Number of seconds played consecutively, without stopping, prior to tiring. Make note of time of day, daily activities and physical health

## SAMPLE SPIROMETER MEASUREMENTS:

Sample data sheets are from 2 patients. Project is in progress and therefore data collection is not complete. Measures were taken prior to learning to play harmonica and will be retaken after the four week course.

Pt #1:	Results:	% Predicted:
<b>FVC:</b>	3.24 liters	93.93%
<b>FEV1:</b>	2.09 liters	76.29%
<b>FEV1/FVC%:</b>	64	82.14%
<b>MVV:</b>	63.9	65.10%

Pt #2:	Results:	% Predicted:
<b>FVC:</b>	1.11 liters	38.78%
<b>FEV1:</b>	1.07 liters	47.84%
<b>FEV1/FVC%:</b>	96.4	123.78%
<b>MVV:</b>	36.9	42.62%

FVC: Forced Vital Capacity  
 FEV1: FEV1 - Forced Expiratory Volume in one second  
 FEV1/FVC%: FEV1 Percent (FEV1%) Ratio of FEV1 to FVC  
 MVV: Maximal Voluntary Ventilation

## TEACHING METHODS & NOTATION:

**Traditional Notation:** Arrows pointing up indicate a blow (exhale) and the down arrows indicate a draw (inhale).

Ma-ry had a lit- tle lamb lit- tle lamb lit- tle lamb  
 5 4 4 4 5 5 5 4 4 4 5 6 6  
 ↑ ↓ ↑ ↓ ↑ ↑ ↑ ↓ ↓ ↓ ↑ ↑ ↑

Ma- ry had a lit- tle lamb fleecewas white as snow  
 5 4 4 4 5 5 5 4 4 5 4 4  
 ↑ ↓ ↑ ↓ ↑ ↑ ↑ ↓ ↓ ↑ ↓ ↑

**Chordal version:** O representing blow (out), I representing draw (in). Color coding is also used in this method to differentiate blow and draw when numbers are used.

O I O  
 Mary had a little lamb, little lamb, little lamb

O I O  
 Mary had a little lamb, fleece was white as snow

Color coded notation based on chord charts facilitated slow inhalation and exhalation much better than traditional notation which involved playing one note at a time and focusing on the cognitive task.

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