

## Living and Breathing Easier

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**T**his case study is about a 10 year old girl with a medical history of birth at 28 weeks gestation via emergency C-section. She presented with decreased oxygenation and fetal distress. Her APGAR scores were 2 and 4.

APGAR is a quick test performed on a baby at one and five minutes after birth. The one minute score determines how well the baby tolerated the birthing process. The five minute score tells the doctor how well the baby is doing outside the mother's womb.

An APGAR score ranges from 0-10 and is comprised of evaluations of five categories which are: breathing effort, heart rate, muscle tone, reflexes, and skin color. Each category receives a rating in the range of 0 to 2 depending on the observed condition of the infant. Scores for each category are added together to produce the overall APGAR score. Normal APGAR scores range from 7-9 for a healthy baby while scores lower than 7 indicate the infant requires some additional assistance to survive outside the mother's womb.



Connie Jordan

After delivery this infant received assisted ventilation, supplemental oxygen, respiratory stimulation, and airway management. She was transported to the neonatal intensive care unit where she spent 4 weeks.

While in the NICU she received assisted ventilation, suctioning, bronchodilator breathing treatments, CPT (chest physio-therapy), chest x-ray, and arterial blood gas monitoring. Chest x-ray results showed she had respiratory stress syndrome at birth. While still in the NICU she contracted bacterial pneumonia requiring IV drug intervention.

Once released from the hospital she continued to present indications of respiratory distress including chronic cough, shortness of breath, low SaO<sub>2</sub> level (oxygen level in hemoglobin) which was supplemented with oxygen and breathing treatments.

She also experienced chronic ear infections, frequent pneumonia or bronchitis infections, sinus infections, and stomach issues. At age two she was diagnosed with asthma. She was prescribed steroids, bronchodilator (MDI), CPT, and antibiotics for her bacterial infections.

At age ten she became my client. Her respiratory assessment can be viewed on the following chart under week 1. She currently was on a steroid inhaler and albuterol. Her FEV (Forced Expiratory Volume) was 46% of her predicted without bronchodilation.

This child received the MNRI® Respiratory Reflex integration weekly for 3 hours for a period of 5 weeks. Her clinical results are presented in chart 1. (Please see the Abbreviation Key at the end of this story.)

**Chart of Clinical Results**

		Week 1	Week 2	Week 3	Week 4	Week 5
<b>Height</b>	<i>Pre:</i>	44.0"	44.0"	44.1"	44.1"	44.3"
	<b>Post:</b>	44.4"	44.5"	44.6"	44.5"	45.0"
<b>Blood Pressure</b>	<i>Pre:</i>	107/60	123/72	112/68	118/70	120/69
	<b>Post:</b>	98/62	102/64	103/60	110/64	96/60
<b>Heart Rate</b>	<i>Pre:</i>	109	98	104	100	96
	<b>Post:</b>	90	90	92	88	86
<b>Respiration Rate</b>	<i>Pre:</i>	24	26	22	20	20
	<b>Post:</b>	20	20	18	16	18
<b>FEV*</b>	<i>Pre:</i>	75 LPM	78 LPM	85 LPM	95 LPM	110 LPM
	<b>Post:</b>	80 LPM	90 LPM	100 LPM	110 LPM	120 LPM

\*FEV (Forced Expiratory Volume) predicted value=160 LPM (liters per minute–O<sub>2</sub> flow rate) at weight 50 pounds

### **Breath Sound (B.S.) Evaluations: Weeks 1 – 5**

*Week 1 Pre:* B.S. were decreased in both bases bilaterally. Inspiratory wheezing was present RUL>LUL and scattered throughout RML. Expiratory wheezing was scattered throughout both lung fields.

*Week 1 Post:* Wheezing throughout both lung fields was now only scattered. Increased lung exchange in both lungs noted. Easy breathing vs. decreased shortness of breath was also noted.

*Week 2 Pre:* Inspiratory and expiratory wheezing was throughout both lung fields. Rt>L. Decreased B.S. noted in RLL only.

*Week 2 Post:* Air exchange showed noticeable improvement from first session.

*Week 3 Pre:* Minimal inspiratory wheezing in R>L lung field. Expiratory wheezing in the bases could be heard R>L.

*Week 3 Post:* Minimal inspiratory and expiratory wheezing bilaterally.

*Week 4 Pre:* Slight inspiratory wheezing in RUL and RML. Left lung without inspiratory wheezing and clear.

Rales (crackles in or near the base of the lung) were noted in Rt. LL. L lung base is slightly diminished in B.S.

*Week 5 Pre:* Scattered inspiratory and expiratory wheezing Rt. > L.

*Week 5 Post:* Slight wheezing in both lungs Rt.>L. Increased aeration to both lung bases were now audible.

Breath sounds have been affected by the MNRI® Respiratory Reflex Integration therapy. Increased aeration to both lung bases was now audible. Client has gone from being a mouth breather to a nose/mouth breather with ease. Breathing prior to therapy was only present in the upper lung fields using accessory muscles. At post therapy, the client is now an abdominal breather with corrected abdominal movement IE: inspiratory - abdomen expands out, expiratory – abdomen contracts inward.

### **Forced Expiratory Volume (FEV) Results**

FEV predicted normal value for this client's height, weight, age and sex is 160 LPM. To monitor results of therapy, FEV was used. Pre values obtained were prior to bronchodilation medication use and prior to Respiratory Reflex Integration therapy. Post values were obtained without bronchodilation medication and after 3 hours of Respiratory Reflex Integration therapy. (See graphs on next page.)

### **FEV Evaluations: Weeks 1 and 5**

Week 1 Pre: FEV = 75 LPM (47% of predicted)

Week 1 Post: FEV = 80 LPM (50% of predicted) 3% Increase over pre-therapy

Week 5 Pre: FEV = 110 LPM (69% of predicted)

Week 5 Post: FEV = 120 LPM (75% of predicted) 6 % increase over pre-therapy

*Other changes noted after 5 weeks of therapy are:*

- height measurement increased 1 inch from 44 inches to 45 inches
- blood pressure dropped from 107/60 to 96/60
- heart rate dropped 28 BPM (beats per minute) from 109 BPM to 86 BPM

- respiration rate dropped 6 breaths per minute from 24 to 18. This indicated improvement in the ventilation to perfusion ratio.

*Notable structural changes include:*

- improved rib spacing bilaterally
- lung symmetry improved
- released diaphragm
- trachea and hyoid shifted to center midline
- rib cage lengthened and lowered.

*Further assessments of this client which support the value of MNRI® Respiratory Reflex integration therapy include:*

- increased aeration to both lung fields
- ease of breathing without distress or noticeable shortness of breath
- ability to walk and talk at the same time without needing to stop
- fluent speech without needing to pause to catch her breath
- dry non-productive cough without tightness
- B.S. clear to bases bilaterally
- O<sub>2</sub> use reduced 50% from 2.0 L to 1.0 L and only while sleeping or as necessary upon exertion
- apnea monitor no longer required
- CPT no longer required
- improved activity level in daily activities
- increased school attendance (Prior to therapy absenteeism rate was as high as 23%. Currently, it is 0 % resulting in improved grades.)
- absence of ear, chest, or sinus infections for 4 months
- ability to participate in physical education without fear.

The client states that she can now breathe easier and live life with less stress.

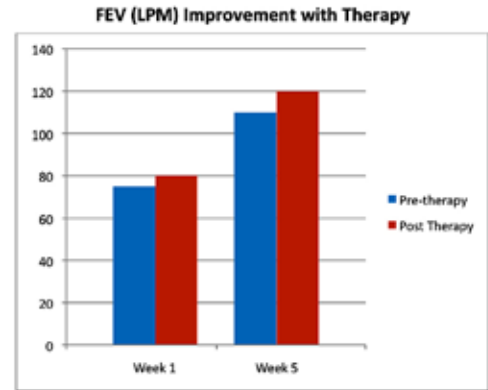


Figure 2

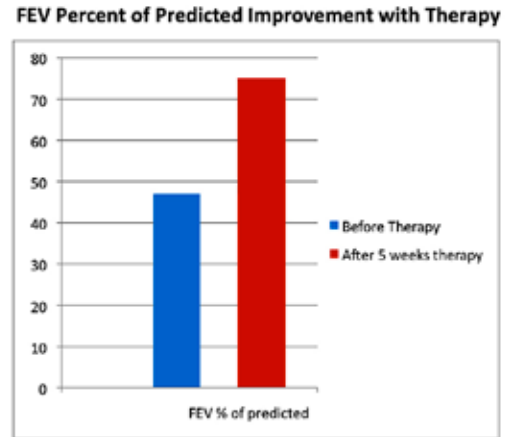


Figure 3

*Abbreviation Key:*

RUL= Right upper lobe

RML= Right middle lobe

( Rt.>L meaning the wheezing is greater on the right lung than the left lung):

R= Right

LMP= liters per minute

MDI= meter dose inhaler

I= inspiratory

LUL= Left upper lobe

RLL= Right lower lobe

L=Left

CPT= chest physical therapy B.S.= breath sounds

NICU=neonatal intensive care unit

E=expiratory



*It is such a joy to see great improvement in the breathing and strength in our children. Breathing should be an ease of living; thank you to everyone who improved breathing reflex functions, showing that it is possible to come through even severe health challenges and to live to our full extent!*

– Connie Jordan