‘Today’s research - Tomorrow’s practice’

Breathing Dysfunction
Breathing Pattern Disorders
Tania Clifton-Smith
What is a normal breathing pattern?

**Adult at rest**
- Nose: humidifies, warms, filters
- Diaphragm: 80-90% of work at rest
- 10-14 breaths per minute-bpm

**Baby**
- A/A
- Rate-30-50 bpm

**Young child**
- 25 bpm

**Young adult**
- 18 bpm

West, John B. (John Burnard)
Respiratory physiology : the essentials
Why is a normal pattern important?

• Breathing is subject to major disruption or interference from **thinking, feeling and experience**, and also as a result of **biomechanical and biochemical factors** - it too can work in reverse & effect all these functions.

What is Breathing Dysfunction?

Dysfunctional Breathing (DB) is defined as chronic or recurrent changes in breathing pattern that cannot be attributed to a specific medical diagnosis, causing respiratory and non-respiratory complaints.


Dysfunctional breathing is a term describing a group of breathing disorders in patients where chronic changes in breathing pattern result in dyspnea and often non respiratory symptoms in the absence of, or in excess of, organic respiratory disease.

- Morgan MD. Dysfunctional breathing in asthma: is it common, identifiable and correctable? Thorax 2002; 57: Suppl 2, II31-II35.
What is Breathing Dysfunction?

‘Inappropriate breathing which is persistent enough to cause symptoms, with no apparent organic cause” Clifton-Smith T, Rowley J. Breathing pattern disorders and physiotherapy: inspiration for our profession. Phys Ther Rev. 2011; 16: 75-86

“are abnormal respiratory patterns which range from simple upper chest breathing to, at the extreme end of the scale, hyperventilation”.

### Proposed classification of dysfunctional breathing patterns, with associated lung diseases and key references:

<table>
<thead>
<tr>
<th>Breathing pattern</th>
<th>Number of papers</th>
<th>Linked Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperventilation syndrome</td>
<td>Asthma</td>
<td>Panic disorder</td>
</tr>
<tr>
<td>Periodic deep sighing</td>
<td>Asthma</td>
<td>Panic disorder</td>
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<tr>
<td>Thoracic dominant breathing</td>
<td>Asthma</td>
<td>COPD</td>
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<td></td>
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<td>Heart failure</td>
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<td></td>
<td></td>
<td>Panic disorder</td>
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<tr>
<td>Forced abdominal expiration</td>
<td>COPD</td>
<td>Obstruction</td>
</tr>
<tr>
<td>Thoraco-abdominal asynchrony</td>
<td>Neuromuscular disease</td>
<td>Respiratory failure</td>
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</tbody>
</table>

Dysfunctional breathing: a review of the literature and proposal for classification  
Richard Boulding1, Rebecca Stacey1, Rob Niven2 and Stephen J. Fowler  
DOI: 10.1183/16000617.0088-2015
Typical symptoms can include:

- Frequent sighing and yawning
- Breathing discomfort
- Disturbed sleep
- Erratic heartbeats
- Feeling anxious and uptight
- Pins and needles
- Upset gut/nausea
- Clammy hands
- Chest Pains
- Chest Pains
- Shattered confidence
- Tired all the time
- Achy muscles and joints
- Dizzy spells or feeling spaced out
- Irritability or hyper vigilance
- Feeling of 'air hunger'
Observe

Breathing pattern Pattern:  RR
Mouth- Nose / Upper chest -Abdominal

Erratic pattern; rapid, yawn, sigh, cough, over inflated upper chest

Handshake (clammy hands are an indicator of a BPD)

Sitting and standing postures-rounded shoulders-
Pokey chin- Closed breathing window

Body tension- jaw, mid back, pelvis, legs
Common presentation:

**Upper chest** vs Abdomen

**Mouth** vs Nose

Forward head posture

High shoulders, rounded

Closed breathing window

Tense legs

Pallor

Fidgety
This is my "depressed stance."

When you're depressed, it makes a lot of difference how you stand...

The worst thing you can do is straighten up and hold your head high because then you'll start to feel better...

If you're going to get any joy out of being depressed, you've got to stand like this.
Effects of chronic mouth breathing

• Loss of URT protection

• Overuse of upper chest & deep neck muscles

• Loss of resistance - reduced energy efficiency

• Nitric oxide
Better Breathing/Learn breathing

Diaphragmatic breathing

What to do when you are breathless

Clearing phlegm from your lungs

Exercises mornings and evenings:
Diaphragmatic breathing
Use the Green Dot method for hyperinflation reprogramming during the day, check nose breathing then think about using the diaphragm.

BradCliff® motto of ‘When in doubt breathe out’

- The role of breathing training in asthma management-Mike Thomas 2013
Diaphragmatic breathing
Nasal rinsing

- Saline & bicarbonate solutions
- Ease of use with nasal rinse bottles
- Exhale out mouth when squeezing bottle
- All have a go before you leave!
What to do when you are breathless
Inhaler Technique

Sputum

Chronic Cough
Exercises mornings and evenings
Thank-you

“Breathe Well To Be Well”

Tania Clifton-Smith