



# Dysfunctional Breathing in Women's Health

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[www.physiohypervent.org](http://www.physiohypervent.org)

Are dysfunctional breathing  
and hyperventilation the  
same thing??

# Dysfunctional Breathing

- Abnormal Pattern

## “Normal” Breathing

- Nose
- Inspiration-diaphragmatic
- Expiration -passive
- Quiet
- Regular pattern
- Rate 10-14 bpm
- Size of each breath approximately 500 mls  
(minute volume =  $10-12 \times 500\text{ml} = 5-6$  litres)





# Causes of Dysfunctional Breathing

## Physiological

- Disease process
- Pain
- Chest wall deformities-congenital-acquired
- Pregnancy



# Causes of Dysfunctional Breathing



## Psychological

- Panic disorders
- Depression
- Stress
- Bereavement
- Major life-style changes

“the brain exercises the greatest power in mankind-but the air supplies sense to it”  
(Hippocrates)

Over-breathing is a normal reaction to physical and emotional stress and strain

-it only becomes abnormal when it causes symptoms which can be acute or chronic



# Hyperventilation



- Defined as Breathing in Excess of metabolic demands
- Estimated 6-10% of population hyperventilates
- Higher in Asthmatics
  - (as much as 29% in one study)
  - 80% of patients presenting to their GP have a stress related illness (Roet 2002)

# Causes of Chronic Hyperventilation



Pain, illness, stress,  
bereavement,  
pregnancy

Trigger

Over breathing

Increased anxiety

Symptoms





# Physiology



## CO<sub>2</sub> Theory

- Over-breathing → Respiratory Alkalosis  
Lowering of CO<sub>2</sub> → Increased pH  
(hypocarbia)

(Explanation of vast number of symptoms)

# Hypocarbica



- Respiratory Alkalosis
- Nerve cell activity
- Sympathetic Nervous System stimulation
- Lactic Acid production (to balance ph)
- Inefficient Metabolism
- Constriction of Smooth Muscle
- Reduced oxygen uptake

# Symptoms



**breathlessness**-undue, varied,  
**cough**-unproductive, irritable,  
**tired**-poor sleep, lack of concentration  
**musculo-skeletal**- aches, pains, weakness  
**neurological**- pins and needles, dizziness  
**gastro-intestinal**- IBS  
**cardiac** "angina"



# Chest Pain



- Effort Angina
- Constant site for each patient
- Quality of pain uniform
- Described as a tightness or constriction
- Not tender to palpate
- Relieved in 5 minutes with rest

- Hyperventilation
- Variable site
- Quality of pain variable
- Graphic description of pain or ache
- Tender to touch
- Long duration

# Assessment



- **Signs** –cough, yawn, sigh, giggle  
posture-shoulders, hands fidgety,  
appear uncomfortable

“fat-folder” patients (multi-pathology)

- **Objective**  
Breath-hold  
Provocation test  
Nijmegen



# Nijmegen questionnaire

## 1. Initial assessment

## 2. To show progress

Out of a total of 64

>23 indicates hyperventilation

### Nijmegen Questionnaire

Patient's Name ..... Hospital No. ....

Date: .....

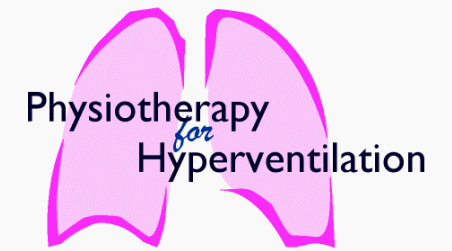
	Never (0)	Rarely (1)	Sometimes (2)	Often (3)	Very often (4)
Chest pain					
Feeling tense					
Blurred vision					
Dizzy spells					
Feeling confused					
Faster / deeper breathing					
Short of breath					
Tight feelings in chest					
Bloated feeling in stomach					
Tingling in fingers					
Unable to breathe deeply					
Stiff fingers / arms					
Tight feelings around mouth					
Cold hands / feet					
Heart racing (palpitations)					
Feelings of anxiety					
Total Score					

Signature: .....

Date: ..... Name: .....



# Women's Health Physiotherapy



- Prevention
- Recognition
- Treatment??

# Treatment

- Explanation
- Breathing correction
- Control “cheats”
- Pain management
- Musculo-skeletal management
- Reassurance



# Hyperventilation



- Complex interaction of physiological and psychological disorders
- Need full investigation for any underlying treatable disease or condition



# Are Dysfunctional Breathing and Hyperventilation the same thing?

- No
- Not all dysfunctional breathers are hyperventilators but all hyperventilators must be dysfunctional breathers

# Inspire

- To breathe or blow into
- To instruct by divine influence
- You have to breathe to live. But if you breathe too much, life becomes dominated by fear of symptoms and of living life to the full





Physiotherapy  
*for*  
Hyperventilation

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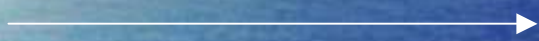
# Provocation test

- The patient is asked to hyperventilate at 30-40 deep breaths for four to five minutes
- Aim to replicate patients symptoms
- Helpful therapeutically as may reassure the patient of their diagnosis

# Breath hold test

**Why test it ?**

Determines the...



'Drive to Breathe'

**How do you test it?**

Debatable...

End of inspiration OR end of expiration?