

# Are cough augmentation techniques offered to people with motor neurone disease (pwMND) who cannot cough effectively?

## Background

pwMND experience difficulties with the respiratory system including swallowing, breathing and impaired cough (Hough, 2014). An audit tool was developed to evaluate if community physiotherapists are implementing current evidence based NICE guidelines of MND NG42 (2016) recommendation 1.13 for cough effectiveness.

## Aims

1. To identify the five NICE recommendations for cough augmentation techniques which should be considered and offered to pwMND.
2. To establish which of the individual techniques were offered?
3. If cough augmentation techniques were not offered to classify reason for this.
4. If techniques are not being offered, to identify common themes that may be preventing implementation of the NICE guideline.
5. To formulate a plan to address any themes.

## Evaluation

Audit completed for population of 20 pwMND in Swindon, Wiltshire. Results demonstrate up to 58% of pwMND are not being offered cough augmentation techniques as recommended in NICE guidance. Few physiotherapists feel confident and competent to carry out cough augmentation techniques, most commonly stating lack of confidence, skills, knowledge and resources as the main reasons. Many pwMND may experience a 'postcode lottery' when accessing domiciliary services. This appears to be the case for pwMND living in the Swindon area, as there is currently no community specialist respiratory service or pathway to receive comprehensive cough augmentation techniques or equipment to manage their respiratory symptoms.

Audit tool published on the NICE shared learning data base and available via: <https://www.nice.org.uk/sharedlearning/audit-proposal-to-address-cough-augmentation-for-people-with-motor-neurone-disease-mnd-a-shared-resource-tool>

## Conclusion

Overall the audit highlights the inconsistency in service provision. Cough augmentation techniques have been demonstrated to improve quality of life for pwMND. Therefore it is unacceptable that pwMND are having difficulty accessing the community respiratory services, support and equipment they require.

Although the audit focused on physiotherapists it is beneficial for all professionals who work with pwMND to be aware of signs of respiratory weakness so they can signpost appropriately.

## Recommendations

1. Audit tool available to evaluate local services.
2. Funding for a designated community specialist respiratory physiotherapist in Swindon.
3. All health care professionals should be aware of the NICE guidance and how to clinically implement recommendations.
4. All health care professionals should be aware of the Motor Neurone Disease Association respiratory checklist to identify signs and symptoms of respiratory weakness in pwMND.
5. Need to ensure pwMND are referred for respiratory assessment and support.

### MND Respiratory checklist


**Symptoms**

- breathlessness, especially when lying flat (orthopnoea)
- repeated chest infections
- disturbed/non-refreshing sleep
- nightmares
- daytime sleepiness/fatigue
- poor concentration/memory
- confusion/hallucinations
- morning headaches

**Signs**

- increased respiratory rate
- shallow breathing
- weak cough/sniff/voice
- stomach moves inwards when breathing in (abdominal paradox)
- use of accessory muscles for breathing
- reduced chest expansion on maximum inspiration

For health and social care professionals



### Explanation of cough augmentation techniques

TECHNIQUE	EXPLANATION OF TECHNIQUE	REFERENCE
Physical assistance given through abdominal thrusts to increase cough effectiveness.	Contraindications: paralytic ileus, internal abdominal damage, a bleeding gastric ulcer, unstable angina or arrhythmias and spinal and rib fractures.	NG42: 1.13.1
Consists of a cycle of huffs at various lung volumes interspersed with relaxed abdominal breathing and deep breathing. Caution: hyperventilation syndrome.		
A succession of deep breaths on top of each other without exhaling to increase lung volume. Caution: hyperventilation syndrome.		NG42: 1.13.2
A succession of deep breaths on top of each other without exhaling using a lung recruitment device such as modified ambu-bag.		NG42: 1.13.3
A machine which applies gradual positive pressure to the upper airways, followed by rapid negative pressure to simulate a cough.	Contraindications: extra-alveolar, e.g. undrained Pneumothorax, subcutaneous or bulla, bronchogram and acute asthma.	NG42: 1.13.4
	Contraindications: inadequate bulbar function, undrained Pneumothorax or subcutaneous emphysema, bullous emphysema, raised chest pain of unknown origin, severe acute asthma, recent lung surgery, raised intracranial pressure, inability to communicate, and haemodynamic instability.	

### MND Cough Augmentation Audit Tool

Motor Neurone Disease NICE guideline NG42 (2016): assessment and management

**1.13: Cough effectiveness**

Date: \_\_\_\_\_

Patient ID number: \_\_\_\_\_

Please use this tool to record if the person with MND was offered cough augmentation techniques as recommended by the NICE guidelines stated below. Overall a explanation of techniques 1-5. Please tick in each corresponding box to indicate if yes/technique was offered or if no please use the reason codes below.

Technique	Cough augmentation techniques offered to person with MND		Reason Code
	YES IF YES PLEASE TICK BOX	NO IF NO PLEASE USE REASON CODE	
1. Manual assisted cough	<input type="checkbox"/>	<input type="checkbox"/>	
2. ACET - including huff	<input type="checkbox"/>	<input type="checkbox"/>	
3. Unassisted breath stacking	<input type="checkbox"/>	<input type="checkbox"/>	
4. Assisted breath stacking	<input type="checkbox"/>	<input type="checkbox"/>	
5. Mechanical cough assist device	<input type="checkbox"/>	<input type="checkbox"/>	

**Reasons code for why cough augmentation techniques were not offered**

CODE	REASON
Reason A	Patient declined
Reason B	Medically not indicated, including contraindications
Reason C	Clinical reasoning for not appropriate
Reason D	Cognitive impairment preventing offering technique
Reason E	Lack of therapist education in the technique
Reason F	Lack of therapist confidence to carry out technique
Reason G	Lack of resources to carry out technique
Reason H	Other

### References

- Hough, A. (2014) Physiotherapy in Respiratory and Cardiac Care: An evidence-based approach to respiratory management. 3rd ed. United Kingdom: Cengage Learning.
- Motor Neurone Disease Association P6 (2016) *Evaluation and management of respiratory symptoms in motor neurone disease (MND): A fact sheet for health care professionals*. Northampton: MND Association.
- National Institute for Health and Clinical Excellence (2016) Motor Neurone Disease: assessment and management. NICE guideline (NG42)