WHAT CAN THERAPIES OFFER PEOPLE WITH MND? Speech and Language Therapy

Hannah Broadhurst

Specialist Speech and Language Therapist

Swansea Bay UHB

What is the role of Speech and Language Therapy

Speech and language therapy provides life-changing treatment, support and care for individuals who have difficulties with communication, or with eating, drinking and swallowing. (RCSLT)

How can MND affect a person's speech?

- Initial symptoms often dysarthria- motor speech disorder
- Subtle slurring of words/ imprecise articulation, nasality quality
- Progressively getting worse, leading to varying degrees of intelligibility.
- Affective communication often relies on joint:
  - context and shared topic,
  - careful listening from communication partner an
  - conducive environment

Reduced phonation/ length of vocalisation

There may be a change in cognitive thinking/ behaviour with

Impact of loss of communication

- Social relationships
- Engagement with health/social care
- Loss of identity
- Isolation
- Loss of control
- Fear/anxiety
- Frustration
- Misunderstanding

Management of communication disorders in MND

- Intelligibility strategies
- Voice banking and message banking
- Alternative and Augmentative Communication (AAC)

PAST

PRESENT

FUTURE

Intelligibility Strategies

- Adapting speech can prolong ability to continue using speech
- Reducing rate of speech
- Pausing frequently
- Ensuring mouth is clear of saliva
- Emphasising keywords and break them into distinct syllables
- Using short sentences
- Key words
- Environment – noise, position of conversation partner
- Gesture

Voice Banking

- Recording voice using computer software to generate a synthesised version of patient own voice
- Message banking – recording short phrases or messages for use on communication devices
- Can also be used to record stories

- I Will Always Be Me – world's first e-book that banks your voice is launched | MND Association

Alternative and Augmentative Communication (AAC)

- Refers to range of techniques that support or replace spoken and/or text based communication
- Can be no tech (gesture), Low tech (paper/pen or alphabet chart), hi tech (computer based, voice output)

Low Tech AAC

1	A	B	C	D	to	for	New word
2	E	F	G	H	the	with	Start again
3	I	J	K	L	M	N	Space
4	O	P	Qu	R	S	T	please / thanks
5	U	V	W	X	Y	Z	.
6	What	When	Who	Why	How	Yes	No

High Tech AAC

Important considerations

- Rate of deterioration
- Timeliness
- Information vs overwhelming
- Patient vs family wishes
- Behavioural issues
- Communication environments
- Individual needs of patient
- MDT
- Specialist Centres (Rookwood)
- Training
- Cognition

NICE Guidelines

- Recognises people may need more than one device
- High priority for people with MND
- Improved communication may avert instances of health risk, which may lead to a reduction in healthcare professional engagement, hospitalisations, and risk of death.
- Improves quality of life - by reducing anxiety and/or depression as well as improving the individual's ability to perform usual activities.
- Provision of equipment needs to be appropriate to the individual, regularly re-assessed, and utilised to its full functionality for it to be cost effective.
- Equipment is to be targeted to the individual according to need and by means of a timely and comprehensive assessment in order to maximise cost-effectiveness.

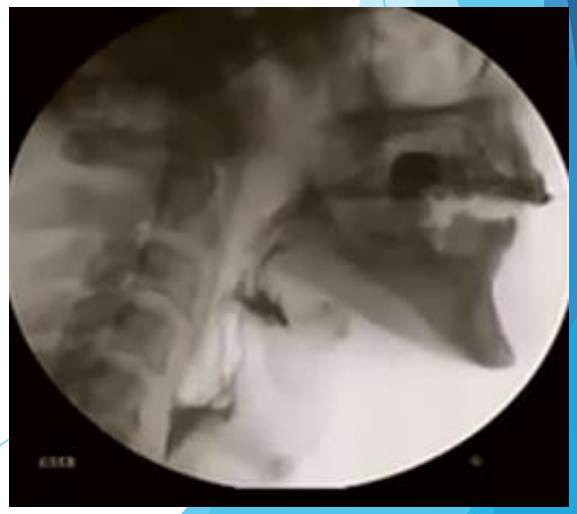
Dysphagia in MND

Speech and language therapists provide full dysphagia assessment and advice, aiming to **reduce aspiration**, **maximise safety** and **prevent hospitalisations** caused by the consequences of **dysphagia**.

Dysphagia in MND

- Oral loss of food, fluid, saliva
- Difficulty chewing
- Difficulty with oral clearance
- Residues collecting on hard palate
- Changes in food preference & food avoidance
- Coughing with food &/or fluid
- Need for multiple swallows
- Difficulty swallowing medications

- Difficulty with managing secretions
- Weight loss
- Reduced appetite & interest in food
- Fatigue with oral intake
- Longer to complete meals or inability to do so



Impact of dysphagia

- Poor oral intake
- Dehydration
- Malnutrition
- Weight loss
- Poor secretion management
- Aspiration pneumonia and chest infections
- Fatigue
- Loss of appetite
- Loss of enjoyment/pleasure through eating and drinking
- Embarrassment
- Feeding issues
- Difficulty taking medication
- Anxiety
- Social implications

Assessment and Management of Dysphagia in MND

Assessment:

- Cranial nerve assessment and hypothesis for oral trials
- Bedside swallow assessment with oral trials,
- Instrumental assessment if appropriate (FEES/ Videofluruoscopy)
- Trial of equipment and techniques

Management:

- Food and fluid modification (IDDSI)
- Non-oral feeding
- Environmental
- Secretion management

Food and Fluid Modification

Number of level scoops required for thickening* (1 scoop = 1.25g)

IDDSI Frame-work	Level 1 Slightly thick	Level 2 Mildly thick	Level 3 Moderately thick	Level 4 Extremely thick
No. scoops per 200 ml	1	2	3	7

Non –oral feeding

- Depends on the severity of an individuals dysphagia
- Early discussions may be required
- Forward planning
- Joint working tie Dietitians
- Can be used alongside oral intake

Environmental

Secretion Management

Important Considerations

- Patient wishes/preferences (and how wishes may change)
- MDT approach
- Psychological considerations – anxiety, low mood
- Holistic approach
  - Rate of deterioration
  - Timeliness
  - Information vs overwhelming
  - Behavioural issues
  - Training
  - Cognition
  - Social

NICE Guidelines

- Regular assessment of swallowing – diagnosis and MDT assessments
- Dysphagia to be considered holistically – oral health, nutrition, hydration, feeding, weight, gastro symptoms, mood
- Food preparation
- Advice and aids for feeding and seating
- Advise on managing social situations
- Fear/psychological issues
- Individualised management
- Weight loss prognostic indicator and so swallow should be assessed regularly to prevent weight loss
- Cognition
- Role of carers

Research

- Emily K Plowman – University of Florida
- **Impact of Expiratory Strength Training in Amyotrophic Lateral Sclerosis**
- This pilot trial suggests that EMST improves maximum expiratory pressure in ALS patients. Additional investigation is needed to validate these preliminary findings in a larger randomized, controlled trial. Future studies will investigate the long-term impact of EMST on breathing, cough, and airway protection and on global disease progression and survival.

What is EMST?

- Respiratory Muscle Strength Training (RMST) incorporates Expiratory Muscle Strength Training (EMST) and Inspiratory Muscale Strength Training (IMST).
- IMST is used to strengthen the muscles of inhalation used to aid weaning from mechanical ventilation, slowing the progression of respiratory deterioration in individuals with MND and to improve vocal function for those
- EMST is used to strengthen the muscles of expiration used to improve cough, voice and swallow functions

EMST

- Implemented using a hand held device of which there are two types – Resistance or pressure threshold
- Resistance based devices rely on exhalation through adjusting the size of an internal diameter, decreasing the size of the diameter imposes resistance requiring increased respiratory muscle force. There is no load within the device for the user to overcome.
- Pressure threshold devices rely on pressure exerted during expiration. This device improves strength owing to the physiological load set by the amount of pressure

EMST 150 Device

- Calibrated device
- Internal spring loaded valve with adjustable external dial
- Pressure threshold device allows the amount of pressure to adjusted from 0-150cmH20
- Pressure threshold based on individual maximum expiratory pressure (MEP). MEP is measured via high tech manometer (if lucky enough to have access to such an expensive piece of equipment) or low tech means using normative data and progressively turning the dial until the valve fails to release

How does it work?

- EMST is based on principles of exercise and neural plasticity
- Incorporates intensity, repetition, overload, specificity
- Muscles must be challenged beyond their usual activity to promote the desired neuromuscular adaptation for improving function
- Research based EMST protocol for improving swallow/cough functions incorporates the intensity and repetition principles with a training duration of 4-5 weeks, 25 reps per day, 5 days per week
- Pressure threshold load can be increased progressively throughout the training – for overload strength training

How does it improve swallow/cough?

- Although EMST is a non-swallow exercise evidence of transference has been shown in which resp strength training facilitates improvement in swallow
- In studies carried out in 2010 an increase in the duration and amplitude of the submental muscles was found in subjects using EMST.
- In a subsequent study, hyoid displacement increased using the device compared to swallow during VF. These findings led to research of EMST for swallow rehab in several aetiologies (PD, MS, Stroke, MND).

In summary

- SLT's are specialist's with communication and swallowing difficulties and are an important part of the MDT working with individuals with MND.
- AAC technology is hugely beneficial but it cannot replace face to face interactions
- Communication/ eating and drinking are social activities- involving those around the individual can help with support and acceptance
- Anticipatory work is vital in all areas of Speech and Language Therapy when working with individuals with MND
- Helping to maintain an individuals' quality of life and identity is hugely rewarding