



# Doença de Parkinson



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# DEGLUTIÇÃO

# Prevalência/Incidência

- ? 18.5-100%
- ? Aspiração silenciosa -  $\frac{1}{3}$  doentes
- ? Maioria dos doentes não relatam alteração
  - ? Défice no insight sobre alterações neurológicas

# Patofisiologia

- Causa da disfagia não está bem definida
- Pela tríade: rigidez, hipocinesia, tremor
- Rigidez e bradicinesia
  - Mastigação e escape anterior
- Hipocinésia
  - reduz n.º de movimento de deglutição espontânea
  - lentificação dos movimentos sequenciais envolvidos

# Diagnóstico

- Anamnese completa
- VFS
  - melhor método para avaliar envolvimento motor e sensorial de todo o mecanismo de deglutição

# Diagnóstico - alterações esperadas

- Manipulação do bolo - movimento pumping lingual
- Escape oral anterior
- Tremor lingual
- Limitação e lentificação movimento mandibular
- Deglutição fragmentada
- Escape posterior prematuro
- Atraso reflexo de deglutição
- Resíduo após deglutição
- Tempo trânsito faríngeo diminuído
- Contração anormal/atraso contração paredes faríngeas
- Estase paredes faríngeas
- Movimento epiglote com déficit e posição alterada
- Estase em valéculas e seios piriformes
- Excursão e elevação laríngea lenta
- Penetração, aspiração
- Descoordenação EES

# Outras alterações associadas

- Fenda glótica
- Escape anterior
- Dificuldades engolir saliva até 70%
- Problemas coordenação R-D para pequenos volumes

# Complicações

Risco morte secundária a pneumonia na DP é 6X maior do que nas pessoas sem DP

- Pneumonia de aspiração - causa principal



# Tratamento

Levodopa - tratamento gold-standard DP

- Não há estudos que mostrem eficácia desta medicação na deglutição ou no mecanismo R-D
- Estudo estratégias compensatórias
  - maior incidência de pneumonia líquido a mel, do que com néctar
- Estudo - treino músculos expiratórios
  - após 4 semanas melhora significativa na segurança da deglutição (diminuição penetração/aspiração) e melhora eficiência da tosse
- Estudo: LSVT, pistas verbais, exercícios tradicionais deglutição, modificação do bolo
  - tratamento adequado disfagia

## Fase Oral

- “Drooling” (babar)
- Tremor da língua/ mandíbula
- Peristalse lingual alterada (movimentos lentos e de reduzida amplitude)
- Dificuldade em iniciar os movimentos da língua – Bradicinesia lingual
- TTO aumentado
- “Pumping” Lingual – região posterior da língua mantém-se elevada
- “Rolling” – movimentos repetitivos antero-posteriores da língua
- Deglutição fraccionada

## Fase Faríngea

- Atraso no desencadeamento da resposta faríngea – muitas vezes desencadeada ao nível das valéculas
- Redução peristaltismo faríngeo
- Diminuição do relaxamento faríngeo após deglutição
- Resíduos na faringe e seios piriformes – aumento do risco de aspiração após a deglutição
- Encerramento glótico incompleto – aumento do risco de aspiração durante a deglutição
- Elevação laríngea diminuída

## Fase Esofágica

- Redução do peristaltismo esofágico

## Intervenção na Disfagia na DP

- **Exercícios miofuncionais x controle motor oral (com aumento de *input*)**
- **LSVT (*Lee Silverman Voice Treatment*)**

Aumento da adução glótica, aumento do TMF, aumento da extensão vocal, melhoria da qualidade vocal

Modifica a fase oral e faríngea da deglutição, modifica o desempenho motor oral, proporciona mudança favorável do tempo de trânsito oral

No mínimo 6 meses para determinar a duração de qualquer eficácia.

- **Deglutição de esforço, deglutição múltipla seguida de tosse voluntária, mendelshon, manipulação de consistência, flexão de cabeça e Supraglótica**
- **Tornar a deglutição sobre controlo voluntário**

**STUDY PROTOCOL****Open Access**

# Lee Silverman voice treatment versus standard NHS speech and language therapy versus control in Parkinson's disease (PD COMM pilot): study protocol for a randomized controlled trial

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**Abstract**

**Background:** Parkinson's disease is a common movement disorder affecting approximately 127,000 people in the UK, with an estimated two thirds having speech-related problems. Currently there is no preferred approach to speech and language therapy within the NHS and there is little evidence for the effectiveness of standard NHS therapy or Lee Silverman voice treatment. This trial aims to investigate the feasibility and acceptability of randomizing people with Parkinson's disease-related speech or voice problems to Lee Silverman voice treatment or standard speech and language therapy compared to a no-intervention control.

**Methods/Design:** The PD COMM pilot is a three arm, assessor-blinded, randomized controlled trial. Randomization will



## PAPER

Swallowing and voice effects of Lee Silverman Voice Treatment (LSVT<sup>®</sup>): a pilot study

A El Sharkawi, L Ramig, J A Logemann, B R Pauloski, A W Rademaker, C H Smith, A Pawlas, S Baum, C Werner

*J Neurol Neurosurg Psychiatry* 2002;**72**:31–36

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2001

**Objective:** To define the effects of Lee Silverman Voice Treatment (LSVT<sup>®</sup>) on swallowing and voice in eight patients with idiopathic Parkinson's disease.

**Methods:** Each patient received a modified barium swallow (MBS) in addition to voice recording before and after 1 month of LSVT<sup>®</sup>. Swallowing motility disorders were defined and temporal measures of the swallow were completed from the MBS. Voice evaluation included measures of vocal intensity, fundamental frequency, and the patient's perception of speech change.

**Results:** before LSVT<sup>®</sup>, the most prevalent swallowing motility disorders were oral phase problems including reduced tongue control and strength. Reduced tongue base retraction resulting in residue in the vallecula was the most common disorder in the pharyngeal stage of the swallow. Oral transit time (OTT) and pharyngeal transit time (PTT) were prolonged. After LSVT<sup>®</sup>, there was an overall 51% reduction in the number of swallowing motility disorders. Some temporal measures of swallowing were also significantly reduced as was the approximate amount of oral residue after 3 ml and 5 ml liquid swallows. Voice changes after LSVT<sup>®</sup> included a significant increase in vocal intensity during sustained vowel phonation as well as during reading.

**Conclusions:** LSVT<sup>®</sup> seemingly improved neuromuscular control of the entire upper aerodigestive tract, improving oral tongue and tongue base function during the oral and pharyngeal phases of swallowing as well as improving vocal intensity.

# 7th International Conference on Spoken Language Processing

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## Oro-Facial Changes in Parkinson's Disease Following Intensive Voice Therapy (LSVT)

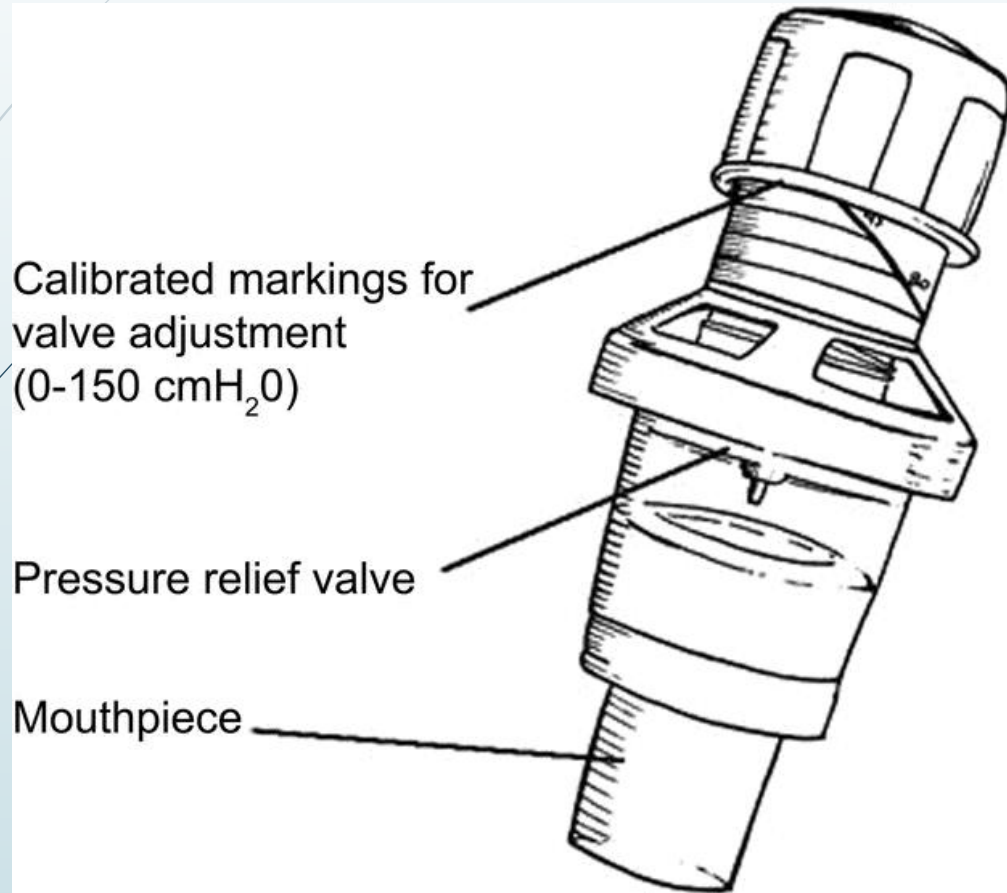
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Parkinson's disease (PD) is associated with multiple communication deficits which affect both verbal and nonverbal abilities, including vocal loudness, articulatory precision, and facial expression. This paper addresses the effects of intensive voice therapy (Lee Silverman Voice Treatment, LSVT) on communicative acts in PD involving significant oro-facial movement, specifically speech articulation and spontaneous facial expression. Both acoustic measurements and perceptual judgments are presented. The underlying mechanisms thought to be responsible for treatment-related changes are proposed and discussed.

# EMST – Expiratory Muscle Strength Training

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The EMST 150 – Handheld device for increasing expiratory muscle strength.



Patient using the EMST 150





## Intervenção na Disfagia na Doença de Parkinson

### *Terapia Indireta*

### **EMST – Expiratory Muscle Strength Training**

- Aumento da coaptação pregas vocais;
- Aumento da intensidade vocal;
- Promove mobilidade laríngea;



Treino isométrico:

4 semanas/ 5 dias por semana/ 20 minutos (5 séries de 5 respirações para um total de 25 respirações por dia)

The screenshot shows the Neurology journal website. At the top left is the Neurology logo with the tagline "THE MOST WIDELY READ AND HIGHLY CITED PEER-REVIEWED NEUROLOGY JOURNAL". To the right is the text "The Official Journal of the American Academy of Neurology". A search bar contains the text "keyword, author" and a radio button option "Only this journal". Below the search bar is a navigation menu with links: Home, Current Issue, All Issues, Ahead of Print, Topics, and WriteClick®. Underneath the menu are links for "« Previous Article", "Table of Contents", and "Next Article »". A CrossMark logo is present with the text "click for updates". The main article title is "Aspiration and swallowing in Parkinson disease and rehabilitation with EMST" in a large, bold, black serif font. Below the title is the subtitle "A randomized trial". At the bottom, the authors are listed: "M.S. Troche, PhD, M.S. Okun, MD, J.C. Rosenbek, PhD, N. Musson, MA, H.H. Fernandez, MD, R. Rodriguez, MD, J. Romrell, PA-C, T. Pitts, PhD, K.M. Wheeler-Hegland, PhD and C.M. Sapienza, PhD".

“...expiratory muscle strength training improved **airway safety during swallowing in people with dysphagia** ..... There was little evidence to suggest changes in communication outcomes after expiratory muscle strength training”

### **Expiratory muscle strength training improves swallowing and respiratory outcomes in people with dysphagia: a systematic review.**

Brooks M, et al. Int J Speech Lang Pathol. 2017.

[Show full citation](#)

#### **Abstract**

**PURPOSE:** To investigate the effects of expiratory muscle strength training on communication and swallowing outcomes in adults with acquired motor based communication and/or swallowing difficulties of any aetiology.

**METHOD:** A systematic review was conducted. Six databases (CINAHL, MEDLINE, EMBASE, SPEECHBYTE, AMED and PUBMED) were searched from inception until end of May 2016. Randomised and non-randomised controlled studies and pre-test/post-test studies published in English that investigated the effects of expiratory muscle strength training were included. Study quality was assessed using the PEDro scale. Data were analysed descriptively and effect sizes and associated 95% confidence intervals were calculated.

# Terapia

Exercícios amplitude de movimentos ativos dos lábios, língua e elevação laríngea

Deglutição esforço

Manobra de Mendelsohn

Manutenção apneia

Exercícios falsetto

Fazer exercícios manhã e noite - 10-12 minutos em cada período