Summary of intervention for eating, drinking and swallowing difficulties using randomised controlled trials for people with Parkinson's - DRAFT FOR CONSULTATION

Study (first author/ date, NAME)	Participants (disease level, N=, controls)	Intervention (group-individual)	Primary outcome (main scale)	Results	Follow-up	Comments	Grade	Study limitations
Manor et al. (2013) Video-assisted swallowing therapy for patients with Parkinson's disease.	42 (21 per group); H&Y stage 2; duration: seven years	Video Assisted Swallowing Therapy (VAST) vs conventional therapy (mainly repeated forceful swallows) Six sessions each group One-month follow-up	Degree of reduction of food residue in the larynx using fibreoptic endoscopic evaluation of swallowing (FEES) Quality of life - pleasure from eating scale	VAST (education on the swallowing process using visual feedback from patient's own swallowing) was most effective for amount of pharyngeal residue	No long-term follow up	Very applicable in clinical settings	18/22	Small sample size

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Biajens et al. (2013) Surface electrical stimulation in dysphagic Parkinson patients: a randomized clinical trial.	109; H&Y stage 2; duration: five years	Conventional treatment only vs conventional treatment and Surface Electrical Stimulation (SES)-motor vs conventional treatment and SES-sensory 15 daily sessions for 30 minutes; 85 different therapists.	FEES and Videofluoroscopy (VFS)	Improved swallowing with all treatments No significant differences between treatments.	No follow-up	Difficulty applying SES in the clinic and lack of significant results for PwP	14/22	Too many variables, measurements and therapists Too many muscles in the submental region so high chance for no significance SES tool alone may not be able to trigger changes in the central or peripheral nerve system in PD.

Study (first author/ date, NAME)	Participants (disease level, N=, controls)	Intervention (group-individual)	Primary outcome (main scale)	Results	Follow-up	Comments	Grade	Study limitations
Troche et al (2022) Rehabilitating cough dysfunction in Parkinson's Disease: A randomized controlled trial	N=65 received either EMST N=34 or smTAP (N=31)	Five weeks of training for each therapy with a spirometry set up. Participants were given a subthreshold of capsaicin to allow for training and were directed to 'cough hard'.	Voluntary cough PEFR and MEP	Significant improvement of cough function with smTAP compared to EMST.	No long-term follow-up	Spirometer set up and capsaicin need to be replicated in clinical setting	16/22	Still need to link cough effectiveness to swallowing.
Troche et al 2010 Aspiration and swallowing in Parkinson disease and rehabilitation with EMST: A randomized trial.	N=60 PwP divided in two groups (real and sham EMST device)	Four weeks, five days per week, for 20 minutes per day.	Measures of swallow function (Penetration-aspiration PA scale scores), swallow timing and hyoid movement from VFS images.	Active treatment group significantly improved PA scores.	No follow-up	Very applicable in clinical setting	18/22	High evidence but difficult to implement in a clinic.

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Athukorala et al, 2014. Skill training for swallowing rehabilitation in Patients with Parkinson's disease.	N=10 PwP Follow-up two weeks after treatment and two weeks of non-treatment period.	10 daily sessions of skill training therapy, focusing on increasing precision of muscle contraction using visual feedback.	Surface EMG	Skill-based approach produced functional, biomechanical and swallowing-related quality-of-life improvements.	Two weeks post treatment	Very applicable in clinics and skill-based instead of strength-based	16/22	Small number of patients.

Abbreviations

VAST	Video assisted swallowing therapy
H & Y	Hohn and Yahr
SES	Surface electrical stimulation
EMST	Expiratory muscle strength training
PEFR	Peak expiratory flow rate
MEP	Maximum expiratory pressure
smTAP	Sensorimotor training for airway protection
PwP	People with Parkinson's

Quality assessments of the included studies were performed with the adjusted PD-specific assessment form designed by Den Brok et al. (Mov Disord 2015), which was based on the Newcastle–Ottawa quality assessment scale (Wells et al. The Newcastle-Ottawa Scale (NOS)

for assessing the quality of nonrandomised studies in metaanalysis. [cited 2022 February 20]. Available from ohri.ca/programs/clinical_epidemiology). The scores range from 0 to 22, and higher scores indicate better study quality.