Table 2. Study Characteristics – Slikfunctiebehoud via prehabilitatie en revalidatie

#	First author (year), country	Cancer diagnosis and treatment	Number of subjects - Intervention (I)/Control group (C)	Population characteristics			Intervention (timing, content & frequency)	Control (timing, content & frequency)	Outcome (timing & effect) measures
				Gender and age	Cancer staging	Cancer treatment characteristics			
Start of the intervention before the initiation of cancer treatment.									
1	Wu, 2023	Oral cavity or oropharyngeal carcinoma – surgery	I/C: 59/62	Male/Female: I: 40/19 C: 44/18 Mean age (SD): I: 51.5 (13.8) C: 49.4 (14.2)	Primary tumor location: *Buccal:* I: 8/59 C: 10/62 *Mouth floor:* I: 2/59 C: 4/62 *Tongue:* I: 13/59 C: 14/62 Root of tongue: I: 0/59	*Surgery:* I: 59/59 C: 62/62	Content: Nurses performed oral sensory and active motor training on patients once a day in the morning and afternoon; passive motor training was added on the eighth postoperative day. The exercises began on the 6th day after surgery and ended on the 15th day after surgery. So, before the start of (chemo)radiotherapy if this was indicated. Frequency: Two sessions/day.	Content: The control group received routine nursing measures and swallowing-related health education after surgery; that is, patients were closely observed for changes in their condition after surgery to maintain their oral cavity hygiene and diet, and ensure effective coughing. Frequency: Unclear. Total duration:	Battery of measures at baseline (6th day after surgery) and 15th day and 1 month after surgery before the start of (chemo)radiotherapy if this was indicated. *Clinical assessment of swallowing:* -Mann Swallowing Assessment-oral cancer (MASA-OC) HRQOL: *HRQOL questionnaire:* -UW-QoL v4

					C: 1/62 *Palate:* I: 9/59 C: 9/62 *Maxillary gingiva:* I: 10/59 C: 10/62 *Mandibular gingiva:* I: 17/59 C: 14/62 Cancer stage grouping: *Stage I:* I: 10/59 C: 16/62 *Stage II:*		Duration: unclear. Total duration: Ten days. Adherence: Guidance and supervision by expert nurse – no specific information. Blinding: No blinding of therapists, patients, and study staff.	Unclear. Adherence: Unclear. Blinding: No blinding of therapists, patients, and study staff.	Aspiration pneumonia: -Chest X-ray Nutritional status: *Weight:* -Kg *Tube feeding:* -Time of nasogastric tube removal

					I: 17/59 C: 17/62 *Stage III:* I: 11/59 C: 13/62 *Stage IV:* I: 18/59 C: 16/62 *Stage unclear/missing:* I: 2/59 C: 0/62 *Stage not reported by authors:* I: 1/59 C:0/62				
2	Zhang, 2022	Oral cavity or oropharyngeal	I/C: 34/34	Male/Female:	Primary tumor location:	*Surgery:* I: 34/34	Timing:	Timing: Unclear.	Battery of measures at baseline (6th day after surgery) and

		carcinoma – surgery		I: 23/11 C: 22/12 Mean age (SD): I: 51.00 (13.12) C: 54.32 (12.04)	*Buccal:* I: 7/34 C: 4/34 *Mouth floor:* I: 3/34 C: 2/34 *Tongue:* I: 8/34 C: 7/34 *Palate:* I: 6/34 C: 5/34 *Maxillary gingiva:* I: 3/34 C: 5/34 *Mandibular gingiva:*	C: 34/34	The exercises began on the 6th day after surgery and ended on the 15th day after surgery. So, before the start of (chemo)radiotherapy. Content: Swallowing education, monitoring oral hygiene, guiding eating, carrying out effective coughing, and conducting supraglottic swallowing training for patients with coughing after eating and drinking and targeted oral sensory stimulation and targeted oral exercise training. Frequency: Two sessions/day. Duration: unclear. Total duration:	Content: Swallowing education, monitoring oral hygiene, guiding eating, carrying out effective coughing, and conducting supraglottic swallowing training for patients with coughing after eating and drinking. Frequency: Unclear. Total duration: Unclear. Adherence: Unclear. Blinding: No blinding of therapists,	15th day and 1 month after surgery before the start of (chemo)radiotherapy if this was indicated. Swallowing function: *Clinical assessment of swallowing:* -Mann Swallowing Assessment-oral cancer (MASA-OC) HRQOL: *HRQOL questionnaire:* -UW-QOLv4; only at 1 month after surgery Nutritional status: *Weight:* -Kg *Tube feeding:*

					I: 7/34 C: 11/34 Cancer stage grouping: *Stage I:* I: 1/34 C: 2/34 *Stage II:* I: 10/34 C: 11/34 *Stage III:* I: 10/34 C: 8/34 *Stage IV:* I: 9/34 C: 10/34		Ten days. Adherence: Guidance and supervision by expert nurse – no specific information. Blinding: No blinding of therapists, patients, and study staff.	patients, and study staff.	-Duration

					Stage unclear/missing: I: 4/34 C: 3/34				
3	Mortensen, 2015	Oral cavity, pharyngeal, laryngeal or unknown primary carcinoma – (chemo)radiotherapy	I/C: 19/20	Male/Female: I: 17/2 C: 17/3 Median age (range): I: 58 (39–77) C: 59 (40–74)	Primary tumor location: *Oral cavity:* I: 0/19 C: 4/20 *Pharynx:* I: 11/19 C: 10/20 *Larynxc:* I: 3/19 C: 4/20 *Unknown primary:* I: 5/19 C: 2/20	*Conventional radiotherapy or IMRT (hyperfractionated):* I: 19/19 C: 20/20 *Concomitant chemotherapy:* I: 12/19 C: 7/20	Timing: Before the start of (chemo)radiotherapy and up to eight months after cancer treatment. Content: Range of motion drills to maintain and improve the range of motion of relevant structures and muscle groups, and resistance exercises to strengthen the same muscles. Frequency: Three sessions/day, seven days per week. Duration: 10-15 min per session.	Timing: Before the start of (chemo)radiotherapy and up to eight months after cancer treatment. Content: Usual care, i.e., individualized dietary advice and videofluoroscopic imaging as needed to determine the need for interventions, instructions to continue oral food intake.	Battery of measures at baseline (before (chemo)radiotherapy) and 1, 3, 5 weeks after the start of (chemo)radiotherapy), and 2 weeks, 2, 5, 8, and 11 months after the completion of (chemo)radiotherapy. Swallowing function: *Dysphagia-specific questionnaire (Clinician-reported outcome):* -DAHANCA morbidity scoring system for dysphagia

					Cancer stage grouping: *Stage I:* I: 0/19 C: 1/20 *Stage II:* I: 2/19 C: 1/20 *Stage III:* I: 1/19 C: 3/20 *Stage IV:* I: 16/19 C: 15/20		Total duration: Approximately 10-11 months. Adherence: Patients were seen by an experienced and dedicated occupational therapist at nine different time points. Study dairy/home records on exercise-execution were fully complete for 51% (n =22) of the exercise group. Blinding: No blinding of therapists and patients. Blinding of study staff.		*Clinical assessment of swallowing:* -Mouth opening (baseline (before (chemo)radiotherapy) and 2, 5, 8, and 11 months after the completion of (chemo)radiotherapy) *Swallow imaging:* -Videofluoroscopic imaging: Swallowing Performance Status Scale (SPSS), aspiration (0-2), penetration, cough, residue (baseline (before (chemo)radiotherapy) and 2, 5, and 11 months after the completion of (chemo)radiotherapy) HRQOL: *HRQOL questionnaire:* -EORTC QLQ-C30

									-EORTC QLQ-H&N35 Nutritional status: *Weight* *Tube feeding*
Start of the intervention during cancer treatment.									
4	Fredslund Hajdú, 2021	Oral cavity, oro- or hypopharyngeal, laryngeal or unknown primary carcinoma – (chemo)radiotherapy with or without surgery	I/C: 120/115	Male/Female: I: 94/26 C: 97/18 Mean age (SD): I: 63 (9) C: 63 (9)	Primary tumor location: *Oral cavity:* I: 10/120 C: 5/115 *Oropharynx:* I: 68/120 C: 72/115 *Hypopharynx:* I: 11/120 C: 9/115 *Larynx:* I: 26/120	*Upfront radiotherapy:* I: 45/120 C: 45/115 *Upfront concurrent chemoradiotherapy:* I: 63/120 C: 63/115 *Surgery+(chemo)radiotherapy:* I: 12/120 C: 7/115	Timing: From the beginning of radiotherapy Content: Usual care + progressive resistance training (PRT) + supervised swallowing exercise intervention + self-administered swallowing exercises. The PRT program involved 6 exercises covering lower limbs, upper body and core in a fixed progression model based on repetition maximum. Exercise programs consisted of all or some of the following 14 exercises: reaching	Content: Usual care differed between the two treatment centers. At one center the control group did not receive any intervention (non-active control group). At the other center all head and neck cancer patients were offered an individually tailored exercise plan at beginning of radiotherapy with regular OT follow-up averaging to every other week until 2 weeks after end-of-treatment (active control group).	All outcomes were assessed at baseline, end-of-treatment and 2, 6, and 12 months after end-of-treatment except the primary outcome which was assessed at baseline, and 2 and 12 months after treatment. Swallowing function: *Dysphagia-specific questionnaire* *(Patient-reported outcome):* -MDADI *(Clinician-reported outcome):*

					C: 28/115 *Unknown primary:* I: 5/120 C: 1/115 Cancer stage grouping (%): *Stage I:* I: 27/120 C: 28/115 *Stage II:* I: 25/120 C: 17/115 *Stage III:* I: 19/120 C: 24/115 *Stage IVa:* I: 42/120C: 43/115		tongue back and forth; tongue to cheek, tongue to mouth corners, resistance to tongue, gargle, yawn, mouth opening, jaw side-to-side, jaw undershot, Valsalva, Shaker exercise, Mendelsohn maneuver, Masako maneuver, Effortful swallow. Frequency: Supervised swallowing exercise intervention three times weekly parallel with twice weekly physiotherapy-led PRT. Self-administered swallowing exercises at three sessions/day, seven days per week. Total duration: 5-6 weeks Adherence:		-FOIS Clinical assessment of swallowing: -Mouth opening *Swallow imaging:* Endoscopic imaging: baseline, 2, and 12 months: -- - Penetration Aspiration Scale -YPRS HRQOL: *HRQOL questionnaire:* -EORTC QLQ C-30 -EORTC QLQ-H&N35 Mental health: *Affective symptom questionnaire:* -MDI

					Stage IVb: I: 7/120 C: 3/115		From the beginning of radiotherapy supervised swallowing exercise sessions by occupational therapist (OT) were scheduled three times weekly parallel with twice weekly physiotherapy-led PRT. Blinding: -		- SCL-92 Anxiety subscale) Nutritional status: *Tube feeding* -Duration
5	Hsiang, 2019	Oral cavity and oropharyngeal carcinoma – surgery with or without (chemo)radiotherapy (adjuvant)	I/C:25/25	Male/Female: I: 24/1 C: 24/1 Mean age (SD): I: 55.6 (8.6) C: 56.7 (9.0)	Primary tumor location: *Buccal:* I: 9/25 C: 5/25 *Tongue:* I: 10/25 C: 7/25 *Lip:* I: 0/25 C: 1/25	*Surgery:* I: 25/25 C: 25/25 *Adjuvant (post-surgery) radiotherapy:* I: 20/25 C: 15/25 *Adjuvant (post-surgery) chemotherapy:* I: 18/25 C: 15/25	Timing: The exercises began within three weeks after surgery and continued for three months. Probably for the majority of the patients during radio and/or chemotherapy – not clearly reported. Content: Oral exercises including: range of motion exercises of the lips, jaw, and tongue and resistance exercises of the tongue.	Timing: Unclear. Probably for the majority of the patients during radio and/or chemotherapy – not clearly reported. Content: Usual care with swallowing positions and bolus modification. Frequency: Unclear.	Battery of measures at baseline (within three weeks after surgery and three months after the start of the exercise intervention. Swallowing function: *Swallow imaging:* -Videofluoroscopic imaging: baseline and 3 months: Penetration Aspiration Scale; oral and pharyngeal residue.

					Upper gum: I: 1/25 C: 2/25 *Lower gum:* I: 2/25 C: 1/25 *Retromolar:* I: 0/25 C: 2/25 *Hard palate:* I: 1/25 C: 1/25 *Mouth floor:* I: 2/25 C: 0/25 *Tonsil (oropharynx):*		Frequency: Three sessions/day, seven days per week. Duration: unclear. Total duration: 12 weeks. Adherence: Compliance in both groups was encouraged through weekly telephone advisement by the nurse specialist for 12 weeks. Blinding: No blinding of therapists, patients, and study staff.	Total duration: 12 weeks. Adherence: Compliance in both groups was encouraged through weekly telephone advisement by the nurse specialist for 12 weeks. Blinding: No blinding of therapists, patients, and study staff.	

					I: 0/25 C: 4/25 *Primary tumor location not reported by authors:* I: 0/25 C: 2/25 Cancer stage grouping: *Stage I:* I: 4/25 C: 6/25 *Stage II:* I: 5/25 C: 4/25 *Stage III:* I: 7/25 C: 3/25				

					Stage IV: I: 9/25 C: 12/25				
6	Messing, 2017	Pharyngeal or laryngeal carcinoma - chemoradiotherapy	I/C: 30/30	Male/Female: I: 28/2 C: 26/4 Median age (range): I: 55 (44 - 78) C: 58 (39 - 79)	Primary tumor location: *Oropharynx:* I: 24/30 C: 25/30 *Hypopharynx:* I: 2/30 C: 2/30 *Both (oro- and hypopharynx):* I: 0/30 C: 1/30 *Supraglottic:* I: 3/30 C: 1/30 *Glottic:*	*Conventional radiotherapy or IMRT (hyperfractionated):* I: 30/30 C: 30/30 *Concomitant chemotherapy:* I: 30/30 C: 30/30	Timing: During the course of chemoradiotherapy and up to three months after cancer treatment. Content: Oro-motor (mandibular, neck, lingual, labial, pharyngeal) strength/stretch exercises and swallow maneuvers combined with dietary modification. Frequency: Two sessions/day, seven days per week. Duration: 20-30 min per session. Total duration:	Timing: During the course of chemoradiotherapy and up to three months after cancer treatment. Content: No exercises, instructions on prophylactic use of TheraBite without any monitoring/follow-up. Frequency: Unclear. Total duration: Approximately 4-5 months.	Battery of measures at baseline (before chemoradiotherapy) and 3, 6, 12, and 24 months after cancer treatment. Swallowing function: *Dysphagia-specific questionnaire (Clinician-reported outcome):* -Functional Oral Intake Scale (FOIS 1-5 more impaired diet level); baseline, 3, 6, 12, 24 months *Clinical assessment of swallowing:* -Oro-motor assessment containing 69 tasks assessing strength and range of motion of the facial

					I: 1/30 C: 1/30 Primary tumor size: *T-stage:* T1: I: 4/30 C: 5/30 T2: I: 11/30 C: 13/30 T3: I: 12/30 C: 10/30 T4: I: 3/30 C: 2/30		Approximately 4-5 months. Adherence: Patients attended a weekly swallow therapy session which included continued instruction on the exercise protocol and swallow interventions as indicated. Study journals/home records on exercise-execution were fully complete for 66% (n = 19) of the exercise group. Blinding: No blinding of therapists and patients. Blinding of study staff.	Adherence: Unclear.	muscles, tongue, and palate -Mouth opening *Swallow imaging:* -Videofluoroscopic imaging: baseline and 3 months: Oropharyngeal Swallow Efficiency (OPSE), Dysphagia Outcomes Severity Scale (DOSS), Penetration Aspiration Scale HRQOL: *HRQOL questionnaire:* -EORTC QLQ-C30 -EORTC QLQ-H&N35 Nutritional status: *Tube feeding*

					Nodal stage: *N-stage:* N1: I: 3/30 C: 7/30 N2a-b-c: I: 17/30 C: 21/30 N3-N3b: I: 2/30 C: 0/30				
7	Kumar, 2016	Oral cavity, pharyngeal, and laryngeal carcinoma – (chemo)radiotherapy (upfront or adjuvant)	I/C: 25/25	Male/Female: I: 19/6 C: 19/6 Mean age (SD): I: - C: -	Primary tumor location: *Oral cavity:* I: 11/25 C: 12/25 *Nasopharynx:* I: 1/25 C: 1/25	*Upfront IMRT/IGRT:* I: 2/25 C: 1/25 *Upfront concomitant chemotherapy:* I: 11/25 C: 12/25	Timing: During the course of (chemo)radiotherapy and up to six months after cancer treatment. Content: Supervised exercises and instructions: (1) Jaw exercise (2) tongue exercise, (3) the Mendelsohn	Timing: Not applicable. Content: No treatment.	Battery of measures at baseline (before (chemo)radiotherapy) and 3 and 6 months after (chemo)radiotherapy. Swallowing function: *Dysphagia-specific questionnaire*

					Oropharynx: I: 6/25 C: 5/25 *Hypopharynx:* I: 4/25 C: 5/25 *Larynx:* I: 3/25 C: 2/25 Cancer stage grouping: *Stage I:* I: 0/25 C: 1/25 *Stage II:* I: 0/25 C: 0/25	*Adjuvant (post-surgery) IMRT/IGRT:* I: 9/25 C: 9/25 *Adjuvant (post-surgery) concomitant chemotherapy:* I: 3/25 C: 3/25	maneuver, (4) shaker exercises, (5) supraglottic exercises (6) tongue hold, (7) mouth opening exercise, (8) range of motion (ROM) exercises. Frequency: Two sessions/day, seven days per week. Duration: unclear. Total duration: Approximately 7-8 months. Adherence: Unclear. Blinding: Unclear.		*(Patient-reported outcome):* -MDADI *Clinical assessment of swallowing:* -ASHA *Swallow imaging:* -Endoscopic imaging: Penetration Aspiration Scale Nutritional status: *Tube feeding*

					Stage III: I: 11/25 C: 12/25 *Stage IV:* I: 10/25 C: 10/25				
8	Van den Berg, 2016	Oral cavity, pharyngeal, and laryngeal carcinoma – (chemo)radiotherapy (upfront or adjuvant)	I/C: 60/60	Male/Female: I: 46/14 C: 43/17 Median age (range): I: 63 (33-83) C: 60 (40-86)	Primary tumor location: *Oral cavity:* I: 12/60 C: 12/60 *Nasopharynx:* I: 3/60 C: 3/60 *Oropharynx:* I: 20/60 C: 16/60	*Upfront IMRT/conventional radiotherapy:* I: 38/60 C: 38/60 *Upfront concomitant chemotherapy:* I: 9/60 C: 10/60 *Adjuvant (post-surgery) IMRT/ conventional radiotherapy:* I: 9/60 C: 9/60	Timing: During the course of (chemo)radiotherapy and up to thirty weeks after the start of cancer treatment. Content: Personalized swallowing therapy: stretching exercises to maximize tongue, jaw and larynx mobility, depending on the specific dysfunction and limited mobility i.c.w. compensatory and swallowing maneuvers, bolus modification, swallowing education,	Timing: During (chemo)radiotherapy. Further timing information is unclear. Content: Standard care meaning dietary counseling. Swallowing therapy was only given on indication following referral of the radiation oncologist.	Battery of measures at week 0 (the first week of (chemo)radiotherapy), week 6 (the last week of treatment), week 10 (one month after treatment), week 18 (three months after (chemo)radiotherapy) and week 30 (six months after treatment). Swallowing function: *Dysphagia-specific questionnaire*

					Hypopharynx: I: 5/60 C: 10/60 *Larynx:* I: 20/60 C: 19/60 Primary tumor size: *T-stage:* T1: I: 0/60 C: 0/60 T2: I: 22/60 C: 20/60 T3: I: 9/60 C: 14/60	*Adjuvant (post-surgery) concomitant chemotherapy:* I: 4/60 C: 3/60	and dietary counseling. Frequency: Three sessions/day, seven days per week. Duration: at least five min. per session. Total duration: Approximately 30 weeks. Adherence: Patients were weekly seen by an SLP during cancer treatment and every two months i.c.w. weekly telephone sessions after cancer treatment. Blinding: No blinding of therapists, study staff, and patients.	Frequency: Dietary counseling every week and during the rehabilitation period at least every two months (or more frequently as needed). Total duration: Unclear. Adherence: Unclear.	*(Patient-reported outcome):* -MDADI *Dysphagia-specific questionnaire (Clinician-reported outcome):* -Performance Status Scale-Head and Neck Cancer (PSS-H&N) -Normalcy of Food Intake Scale for Head and Neck Logopedic Part (NFIS-HN-L) *Clinical assessment of swallowing:* -Swallowing capacity (swallowing velocity and swallowing volume test) Nutritional status: *Clinician-reported outcome*: Normalcy of food Intake Scale

					T4: I: 29/60 C: 26/60 Cancer stage grouping: *Stage I:* I: 0/60 C: 0/60 *Stage II:* I: 22/60 C: 20/60 *Stage III:* I: 9/60 C: 14/60 *Stage IV:* I: 29/60 C: 26/60				for Head and Neck Dietetic Part (NFIS-HN-F) *BMI:* -Kg/m^2

9	Carnaby-Mann, 2012	Oropharyngeal carcinoma – (chemo)radiotherapy	I/C1/C2: 20/20/18	Male/Female: I: 18/2 C1: 15/5 C2: 11/7 Mean age (SD): I: 59.0 (10.4) C1: 54.0 (11.3) C2: 60.0 (12.2)	Primary tumor location: *Base of tongue:* I: 5/20 C1: 3/20 C2: 3/18 *Tonsil:* I: 3/20 C1: 9/20 C2: 4/18 *Unknown:* I: 12/20 C1: 8/20 C2: 11/18 Primary tumor size: *Median T-stage (range):* I: 2 (1-4) C1: 2 (0-4)	*Conventional radiotherapy:* I: 9/20 C1: 9/20 C2: 6/18 *IMRT:* I: 11/20 C1: 11/20 C2: 12/18 *Concomitant chemotherapy:* I: 6/20 C1: 10/20 C2: 6/18 *Neck dissection:* I: 8/20 C1: 8/20 C2: 6/18	Timing: During the course of (chemo)radiotherapy. Content: Standardized high intensity swallowing therapy ("pharyngocise": e.g., falsetto, tongue press, hard swallow, and jaw resistance/strengthening using the Therabite Jaw Motion Rehabilitation System and dietary modifications) and dietary modification. Frequency: Two sessions/day Duration: 45 min per session. Total duration: Maximum of six weeks.	**C1:** Timing: During the course of (chemo)radiotherapy. Content: Usual care –no exercise, supervision for feeding and precautions for safe swallowing (e.g., positioning, slowed rate of feeding) by the hospital speech pathology service. Frequency: Unclear. Adherence: Weekly telephone calls to monitor the swallowing outcome.	Battery of measures at baseline (before (chemo)radiotherapy) and 6 weeks, 6 months after randomization. Swallowing function: *Dysphagia-specific questionnaire (Clinician-reported outcome):* -Functional Oral Intake Scale (FOIS) *Clinical assessment of swallowing:* -Mann Swallowing Assessment (MASA) -Mouth opening *Swallow imaging:* -Videofluoroscopic imaging: scoring unclear

					C2: 2 (1-4) Cancer stage grouping: -		Adherence: Direct therapy by the SLP. Patients completed a daily home record of the exercises conducted between treatment sessions. Blinding: No blinding of therapists and patients. Blinding of study staff.	**C2:** Timing: During the course of (chemo)radiotherapy. Content: Standardized sham therapy (Buccal extension exercises + dietary modifications). Frequency: Two sessions/day - 14 sessions/week. Total sessions: 84 Duration: 45 min per session (90 min/day). Total duration:	-Endoscopic imaging: scoring unclear -MRI of swallowing muscles Regarding videofluoroscopic evaluation and endoscopic imaging: No clear description of the measurement or outcome variables is provided; only pre- and post-intervention numerical values are reported. Due to the poor methodological quality, it is unclear what was actually measured, making the results unreliable. Regarding MRI of swallowing muscles: The studies measured changes in muscle size but did not adequately explain whether

								63 hours in 6 weeks. Adherence: Direct therapy by the SLP. Patients completed a daily home record of the exercises conducted between treatment sessions.	these changes translated into functional improvements. The methodological quality is poor, suggesting a risk of reporting bias. The clinical relevance for swallowing function is unclear due to methodological limitations. Aspiration pneumonia: -Type of assessment unclear Nutritional status: *Weight :* -Kg
Start of the intervention after completion of cancer treatment.									
10	Petersson, 2023	Oropharyngeal, hypopharyngeal, and laryngeal carcinoma – (chemo)radiotherapy	I/C: 25/27	Male/Female: I: 18/7 C: 21/6	Primary tumor location: *Tonsil:* I: 11/25 C: 10/27	*Upfront radiotherapy:* I: 5/25 C: 5/27 *Upfront brachytherapy:*	Timing: More than 6 months post-(chemo)radiotherapy (range 6-36 months).	Timing: More than 6 months post-(chemo)radiotherapy (range 6-36 months).	Battery of measures at baseline (more than 6 months post-(chemo)radiotherapy) and at 2 (8 weeks), and at 12 months after completing the

				Mean age (SD): I: 63.7 (8.4) C: 63.7 (6.7)	*Base of tongue:* I: 10/25 C: 10/27 *Hypopharynx:* I: 1/25 C: 3/27 *Larynx:* I: 3/25 C: 4/27 Cancer stage grouping: *Stage I:* I: 1/25 C: 2/27 *Stage II:* I: 4/25 C: 2/27	I: 10/25 C: 7/27 Unclear who received IMRT or brachytherapy (with or without chemotherapy) in I and C as the brachytherapy patients are not representing a separate independent group – otherwise the total N of I/C would be more then 25/27 *Upfront induction or concomitant chemoradiotherapy:* I: 20/25 C: 22/27 Unclear who received induction or concomitant chemotherapy in I and C	*Time since completion of (chemo)radiotherapy (months):* I: 11.2 (5.9) Content: Shaker head-lift exercises (isometric & isokinetic) i.c.w. usual care, i.e., advice about food, drinking, head position, or swallowing maneuvers, such as the supraglottic swallow, effortful swallow, and the Mendelsohn maneuver during meals. Frequency: Three sessions/day, seven days per week. Duration: unclear. Total duration: Eight weeks.	*Time since completion of (chemo)radiotherapy (months):* C: 13.0 (8.1) Content: Usual care, i.e., advice about food, drinking, head position, or swallowing maneuvers, such as the supraglottic swallow, effortful swallow, and the Mendelsohn maneuver during meals. Frequency: Unclear. Total duration: Unclear. Adherence: Not applicable.	exercise intervention. Swallowing function: *Dysphagia-specific questionnaire (Patient-reported outcome):* -MDADI *Clinical assessment of swallowing:* -Mouth opening -Salivary flow (Measurement method not reported) HRQOL: *HRQOL questionnaire:* -EORTC QLQ-C30 -EORTC QLQ-H&N35

					Stage III: I: 1/25 C: 2/27 *Stage IV:* I: 19/25 C: 21/27		Adherence: The patients in the intervention group documented the adherence to the recommended exercise in a diary. The first 2 weeks, the study SLP met with the patient two times per week to monitor training technique. The remainder of the period, technique was supervised once every 2 weeks with follow-ups by telephone in between meetings. Only the intervention group had contact with the study SLP during the initial period. The mean number of training sessions performed by the intervention group during the 8 weeks was 18.7 (89%). After the 8-week follow-up, participants were recommended to exercise once daily, or	Blinding: No blinding of therapists, patients, and study staff.	Aspiration pneumonia: -Type of assessment unclear Nutritional status: *BMI:* - Kg/m^2 *Tube feeding* -Present/absent

							a minimum of three sessions per week for 12 months and the mean number of performed training sessions per week was 3.0. Blinding: No blinding of therapists, patients, and study staff.		
11	Dotevall, 2022	Oropharyngeal, hypopharyngeal, and laryngeal carcinoma – (chemo)radiotherapy (upfront)	I/C: 23/24	Male/Female: I: 16/7 C: 19/5 Mean age (SD): I: 63.0 (8.2) C: 62.7 (6.4)	Primary tumor location: *Tonsil:* I: 10/23 C: 10/24 *Base of tongue:* I: 9/23 C: 9/24 *Hypopharynx:* I: 1/23 C: 2/24	*Upfront IMRT/conventional radiotherapy:* I: 23/23 C: 24/24 *Upfront brachytherapy:* I: unclear C: unclear *Upfront induction chemotherapy:* I: unclear C: unclear I+C: 29/47	Timing: More than 6 months post-(chemo)radiotherapy (range 6-36 months). *Time since completion of (chemo)radiotherapy (months):* I: 11.2 (5.9) Content: Shaker head-lift exercises (isometric & isokinetic) i.c.w. usual care, i.e., advice about food, drinking, head	Timing: More than 6 months post-(chemo)radiotherapy (range 6-36 months). *Time since completion of (chemo)radiotherapy (months):* C: 13.0 (8.1) Content: Usual care, i.e., advice about food, drinking, head position, or	Battery of measures at baseline (more than 6 months post-(chemo)radiotherapy) and 2 months after completing the exercise intervention. Swallowing function: *Dysphagia-specific questionnaire (Patient-reported outcome):* -EAT-10 *Swallow imaging:*

					Larynx: I: 3/23 C: 3/24 Cancer stage grouping: *Stage I:* I: 1/23 C: 2/24 *Stage II:* I: 4/23 C: 2/24 *Stage III:* I: 0/23 C: 2/24 *Stage IV:* I: 18/23 C: 18/24	*Upfront concomitant chemotherapy:* I: unclear C: unclear I+C: 8/47	position, or swallowing maneuvers, such as the supraglottic swallow, effortful swallow, and the Mendelsohn maneuver during meals. Frequency: Three sessions/day, seven days per week. Duration: unclear. Total duration: Eight weeks. Adherence: The patients in the intervention group documented the adherence to the recommended exercise in a diary. During the 8 weeks of training, the patients met the SLP during five sessions for a control of the training	swallowing maneuvers, such as the supraglottic swallow, effortful swallow, and the Mendelsohn maneuver during meals. Frequency: Unclear. Total duration: Eight weeks. Adherence: Not applicable. Blinding: No blinding of therapists, patients, and study staff. Blinded rating of endoscopic imaging.	-Endoscopic imaging: Murray secretion scale, initiation of the pharyngeal swallow, Penetration Aspiration Scale, Yale Pharyngeal Residue Scale, Swallowing Performance Status Scale (SPSS).

							performance with telephone follow-ups in between. Adherence to treatment was between 78% and 93% of the recommended training with on average 2.6–2.9 of the prescribed three training sessions per day. Blinding: No blinding of therapists, patients, and study staff. Blinded rating of endoscopic imaging.		
12	Tuomi, 2022	Oropharyngeal, hypopharyngeal, and laryngeal carcinoma – (chemo)radiotherapy (upfront)	I/C: 25/27	Male/Female: I: 18/7 C: 21/6 Mean age (SD): I: 63.7 (8.4) C: 63.7 (6.7)	Primary tumor location: *Tonsil:* I: 11/25 C: 10/27 *Base of tongue:* I: 9/25	*Upfront IMRT/conventional radiotherapy:* I: 25/25 C: 27/27 *Upfront brachytherapy:* I: 10/25 C: 7/27	Timing: More than 6 months post-(chemo)radiotherapy (range 6-36 months). *Time since completion of (chemo)radiotherapy (months):* I: 11.2 (5.9)	Timing: More than 6 months post-(chemo)radiotherapy (range 6-36 months). *Time since completion of (chemo)radiotherapy (months):*	Battery of measures at baseline (more than 6 months post-(chemo)radiotherapy) and 2 months after completing the exercise intervention. Swallowing function: *Swallow imaging:*

					C: 10/27 *Hypopharynx:* I: 3/25 C: 3/27 *Larynx:* I: 2/25 C: 4/27 Cancer stage grouping: *Stage I:* I: 2/25 C: 3/27 *Stage II:* I: 3/25 C: 2/27 *Stage III:* I: 1/25	*Upfront induction chemotherapy:* I: 4/25 C: 5/27 *Upfront concomitant chemotherapy:* I: 16/25 C: 17/27	C: 13.0 (8.1) Content: Shaker head-lift exercises (isometric & isokinetic) i.c.w. usual care, i.e., advice regarding changing the consistencies of solid food or drinks, head positioning such as chin tuck, swallowing maneuvers such as the supraglottic swallow, effortful swallow or the Mendelsohn maneuver, and eating/drinking slowly, in small sips or bites and with sips of water in between bites. Frequency: Three sessions/day, seven days per week. Duration: unclear.	I: 11.2 (5.9) C: 13.0 (8.1) Content: Usual care, i.e., advice regarding changing the consistencies of solid food or drinks, head positioning such as chin tuck, swallowing maneuvers such as the supraglottic swallow, effortful swallow or the Mendelsohn maneuver, and eating/drinking slowly, in small sips or bites and with sips of water in between bites. Frequency: Unclear. Total duration: Eight weeks.	-Videofluoroscopic imaging: Penetration Aspiration Scale, Yale Pharyngeal Residue Scale modified for videofluoroscopy, Swallowing Performance Status Scale (SPSS), kinematic variables (anterior hyoid movement, superior hyoid movement, thyrohyoid approximation, maximum width of the UES opening during swallowing). HRQOL: *HRQOL questionnaire:* -EORTC QLQ-H&N35 : swallowing & social eating domain

					C: 4/27 *Stage IV:* I: 19/25 C: 18/27		Total duration: Eight weeks. Adherence: The patients in the intervention group documented the adherence to the recommended exercise in a diary. During the 8 weeks of training, the patients met the SLP during five sessions for a control of the training performance with telephone follow-ups in between. Adherence to treatment was between 80% and 93% of the recommended training with on average 2.6–2.8 of the prescribed three training sessions per day. Blinding: No blinding of therapists, patients,	Adherence: Not applicable. Blinding: No blinding of therapists, patients, and study staff. Blinded rating of videofluoroscopic imaging.	

							and study staff. Blinded rating of videofluoroscopic imaging.		
13	Jansen, 2020	Larynx carcinoma – primary or salvage laryngectomy	I/C: 46/46	Male/Female: I: 36/10 C: 41/5 Mean age (SD): I: 65 (7) C: 64 (9)	Primary tumor location: *Larynx:* I: 46/46 C: 46/46 Cancer stage grouping: Unclear	*Primary laryngectomy:* *I: 22/46* *C: 21/46* *Salvage laryngectomy:* *I: 24/46* *C: 25/46* *Neck dissection:* *I: 31/46* *C: 31/46* *(Chemo)radiotherapy before or after total laryngectomy:* *I: 40/46* *C: 38/46*	Timing: *Mean time since laryngectomy (months - SD):* I: 24 (18) *<6 months post-laryngectomy:* I: 10/46 *6 months – 5 years post-laryngectomy:* I: 36/46 Content: Seven flexibility exercises for the head, neck and shoulders, eight range of-motion exercises for the tongue, lips, and jaw, and, in case of facial lymphedema, five additional lymphedema	Timing: *Mean time since laryngectomy (months - SD):* C: 19 (15) *<6 months post-laryngectomy:* C: 10/46 *6 months – 5 years post-laryngectomy:* C: 36/46 Content: A self-care education program providing information and self-care advice on stoma care, voice prosthesis care, speech, smelling,	Measures at baseline (immediately after the intervention), and at three and six months follow-up. Swallowing function: *Dysphagia-specific questionnaire (Patient-reported outcome):* -SWAL-QOL HRQOL: *HRQOL questionnaire:* -EORTC QLQ-C30 -EORTC QLQ-H&N35

							exercises plus a self-care education program providing information and self-care advice on stoma care, voice prosthesis care, speech, smelling, nutrition, and mobility. Frequency: Three sessions/day, seven days per week. Duration: unclear. Total duration: Twelve weeks. Adherence: The patients in the intervention group documented the adherence to the recommended exercises in a diary. During the 12 weeks of training, the patients were contacted weekly by	nutrition, and mobility. Frequency: Unclear. Total duration: Twelve weeks. Adherence: - Blinding: No blinding of therapists, patients, and study staff.	

							the SLP via e-mail or telephone. Adherence to treatment was high in 20 patients (49%), moderate in 4 patients (10%), and low in 17 patients (41%). Blinding: No blinding of therapists, patients, and study staff.		
14	Chen, 2018a	Oral cavity carcinoma – (chemo)radiotherapy (adjuvant)	I/C: 38/38	Male/Female: I: 36/2 C: 37/1 Mean age (SD): I: 53.03 (8.67) C: 51.13 (7.99)	Primary tumor location: *Lip:* I: 0/38 C: 1/38 *Buccal mucosa:* I: 9/38 C: 14/38 *Oral tongue:*	*Adjuvant (post-surgery) IMRT/ conventional radiotherapy:* I: 8/38 C: 10/38 *Adjuvant (post-surgery) chemotherapy:* I: 1/38 C: 1/38 *Adjuvant (post-surgery) concomitant chemoradiotherapy:*	Timing: More than 3 months post-(chemo)radiotherapy up to six months exercise intervention. Content: Swallowing exercise education and practice, including postural changes (chin tuck, head turn, head tilt, and head back), and swallow maneuvers (supraglottic swallow,	Timing: Unclear Content: The control group participants were instructed to follow the usual routine-care regimen at the institution. Frequency: Unclear.	Battery of measures at baseline (more than 3 months post-(chemo)radiotherapy), and 1, 2, 3, and 6 months after completing the exercise intervention. Swallowing function: *Dysphagia-specific questionnaire (Patient-reported outcome):*

					I: 19/38 C: 14/38 *Gingivae:* I: 5/38 C: 3/38 *Mouth floor:* I: 2/38 C: 2/38 *Hard palate:* I: 1/38 C: 0/38 *Retromolar:* I: 2/38 C: 4/38 Cancer stage grouping: *Stage I:*	I: 29/38 C: 27/38	super-supraglottic swallow, Mendelsohn maneuver, and effortful swallow) i.c.w. bolus modification. Frequency: Three sessions/day, seven days per week. Duration: 15-20 min. per session. Total duration: Six months. Adherence: Participants received text messages weekly as reminders, and telephone follow-up was provided biweekly from initiating and participating in this study to 6 months after participating in this study	Total duration: Unclear. Adherence: Unclear. Blinding: No blinding of therapists and patients. Blinding of study staff.	-SSQ -MDADI *Dysphagia-specific questionnaire (Clinician-reported outcome):* -Functional Oral Intake Scale (FOIS) *Swallow imaging:* -Videofluoroscopic imaging: Swallowing Performance Status Scale (SPSS) Mental health: *Affective symptom questionnaire:* -HADS

					I: 3/38 C: 2/38 *Stage II:* I: 2/38 C: 5/38 *Stage III:* I: 6/38 C: 7/38 *Stage IV:* I: 27/38 C: 24/38		Blinding: No blinding of therapists, patients, and study staff.		
15	Tang, 2011	Nasopharyngeal carcinoma – radiotherapy (upfront)	I/C: 22/21	Male/Female: I: Unclear C: Unclear Median age (range): I: Unclear C: Unclear	Primary tumor location: *Nasopharynx:* I: 22/22 C: 21/21 Cancer stage grouping: Unclear	*Upfront radiotherapy:* I: 22/22 C: 21/21	Timing: The postradiotherapy interval was 4.6 ± 1.8 years. Content: The exercises and management of dysphagia include pharyngeal or cervical esophageal dilation,	Timing: The postradiotherapy interval was 4.8 ± 1.6 years. Content: No treatment.	Battery of measures at baseline (after radiotherapy – unclear definition) and 3 months after the exercise interventions. Also not specified – unclear. Swallowing function:

							dietary modifications, postural strategies, thermotherapy, swallowing maneuvers, such as the super-supraglottic swallow and the Mendelsohn maneuver, and therapeutic exercises that target strength and range of motion for lips, tongue, and larynx. Frequency: Three sessions/day, seven days per week. Duration: unclear. Total duration: Unclear. Adherence: Study journals/home records on exercise-execution, an appointed guardian, a rehabilitation calendar. If a patient	Frequency: Not applicable. Total duration: Not applicable. Adherence: Not applicable. Blinding: No blinding of therapists, patients, and study staff.	*Clinical assessment of swallowing:* -Water swallowing test – 30 ml within 5 seconds. -Mouth opening

							missed more than 15% of all days, the patient was excluded – number of exclusion unclear. Blinding: No blinding of therapists, patients, and study staff.		

ASHA, American Speech-language Hearing Association; DAHANCA, Danish Head and Neck Cancer Group; C, control; DOSS, Dysphagia Outcomes Severity Scale; EORTC QLQ-C30, The European Organization for Research and Treatment of Cancer Quality-of-Life Questionnaire Core-30; EORTC QLQ-H&N35, The European Organization for Research and Treatment of Cancer quality of life Questionnaire Head and Neck 35; FOIS, Functional Oral Intake Scale; EAT-10, Eating Assessment Tool-10; HADS, Hospital Anxiety and Depression Scale; I, intervention; MASA(-OC), Mann Swallowing Assessment(–Oral Cancer); MDADI, MD Anderson Dysphagia Inventory; NFIS-HN-F, Normalcy of food Intake Scale for Head and Neck Dietetic Part; NFIS-HN-L, Normalcy of Food Intake Scale for Head and Neck Logopedic Part; OPSE, Oropharyngeal Swallow Efficiency; PAS, Penetration Aspiration Scale ; PSS-H&N, Performance Status Scale-Head and Neck Cancer; SPSS, Swallowing Performance Status Scale; SSQ, Sydney Swallowing Questionnaire; UW-QOLv4, University of Washington Quality of Life Questionnaire version 4; YPRS, Yale Pharyngeal Residue Scale