Nutrition and Feeding Rehabilitation Results Table

Author, Year, Country, Design, PEDro score, Rating	**Sample Size**	**Intervention**	**Outcomes and significance:** **(+) significant (-) not significant**
Inal et al., 2017 Turkey RCT 5/10 Fair quality	**N** = 32 children with CP (with tongue thrust & drooling) **Age at enrollment:** 4-6 years **CP diagnosis:** 100% **CP Type:** N/A **GMFCS (Gross Motor Function Classification System) Level:** Level I: 0/32 (0%) Level II: 2/32 (6%) Level III: 10/32 (31%) Level IV: 0/32 (0%) Level V: 20/32 (63%)	Functional Chewing Training (FuCT) (n=16) vs. Classical oral motor exercise programme (n=16) ***Intervention details*:** • 12 weeks of treatment • Five sets (20 minute each)/day • Experienced PT for teaching training program to parents *FuCT:* • Providing optimal sitting posture for children to support oral sensorimotor function • Positioning food to molar area at every meal to stimulate lateral and rotational tongue movements • Gradually increasing the food consistency • All steps carried out with assistance of parents • Requested that parents send videos of training sessions and mealtimes regularly *Classical oral motor exercise programme:* • PROM of lips and tongues • AROM and strength training of lips and tongue	**At post-treatment (12 weeks):** *Chewing function:* (-) Karahuman Chewing Performance Scale *Tongue thrust:* (+) Tongue Thrust Rating Scale *Drooling:* (-) Drooling Severity and Frequency Scale (DSFS): Severity (-) DSFS: Frequency

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Mlinda et al., 2018
 	
Tanzania
 	
RCT
 	
7/10
 	
High quality
	N = 118 children with CP
	
	Age at enrollment: under 5 years old
	
	CP diagnosis: 100%
	
	CP Type:
	(*N=110 because 8 lost to follow-up)
	
	Type:
	
	• Spastic: 62/110 (56%)
	• Quadriplegic: 16/110 (15%)
	• Hypotonic: 18/110 (16%)
	• Mixed CP: 14/110 (13%)
	
	Severity:
	
	• Moderate: 53/110 (48%)
	• Severe: 57/110 (52%)
	
	GMFCS Level: N/A
		Practical nutrition education programme
		(n=69)
		
		vs.
		
		Control group
		(n=49)
		
		***Intervention details*:**
		
		Practical nutrition education programme:
		
		• 6-8 education sessions at clinic
		• At least 1 home visit
		• Group/individual nutrition education
		  - Principles of positioning
		  - Food consistency
		  - specific feeding techniques
		  - Appropriate utensils
		  - Cups, spoons, plates were given to facilitate measuring food and feeding
		• Training of caregivers on positioning during feeding
		  - Pictorial feeding position sheets were distributed
		• Occupational therapy for oral motor and functional skills
		  - Trained caregivers on how best to position and support child during feeding
		  - 30 minutes after each education session
		• home visit where caregivers showed how they feed their child
			At post-treatment (6 months):
			
			Child feeding skills:
			
			(-) Oral motor
			(-) Functional skills
			
			Caregiver feeding skills:
			
			(+) Positioning
			(+) Feeding speed
			(+) Feeding support and child involvement
			
			Caregiver-child interactions:
			
			(+) Child's mood during feeding
			(+) Caregiver stress during feeding

Author, Year, Country, Design, PEDro score, Rating	**Sample Size**	**Intervention**	**Outcomes and significance:** **(+) significant (-) not significant**
		Control: • General routine care at clinic regularly - General health education - Nutritional assessment (weight & height measurement) - Consult with pediatrician for any current illness - Physiotherapy for children with spasticity • Initial assessment and followed ups every 2 months for 12 months - Caregivers interviewed on feeding practices - Assessment of nutritional status was done • At the end of the study, participants received 2 sessions of the education package	
Sigan et al., 2013 Istanbul RCT 5/10 Fair quality	**N** = 81 children with CP who had oral motor dysfunction **Age at enrollment:** 12-42 months **CP diagnosis:** 100% **CP Type:** (N=80 b/c one subject excluded during protocol) Tetraparesis: 33/80 (41%) Diparesis: 28/80 (35%) Hemiparesis: 12/80 (15%) Hypotonia: 6/80 (8%)	Oral motor therapy (n=41) vs. Control group (n=40) ***Intervention:*** *Oral motor therapy:* • 1 hour oral motor therapy by physiotherapist • once a week for 6 months (12 sessions total) • To improve swallowing and chewing: - Tactile and proprioceptive aspect of eating was intended to be increased • To improve mouth function and mouth control:	**At post-treatment (6 months):** *Reflexes:* (-) ATNR (-) Swallowing Reflex *Oral motor function* Oral Motor Assessment Form: (+) Oral motor problems (-) Sucking difficulty (+) Chewing (+) Swallowing (+) Drooling (+) Independent feeding (+) Feeding problems (+) Swallow delay

Author, Year, Country, Design, PEDro score, Rating	**Sample Size**	**Intervention**	**Outcomes and significance:** **(+) significant (-) not significant**
	Ataxic: 1/80 (1%) **GMFCS Level:** N/A	- Texture of food was gradually thickened - Families were taught proper positioning • Mouth control was performed (when needed) to enable feeding • Methods of spoon feeding were shown to families • Oral stimulation was performed manually • Drinking training: - Moderately dense liquids were used - Correct glass use technique was taught - Middling hand use taught to facilitate independent drinking • Mouth control, positioning and posture control were taught in order to reduce drooling *Control group:* • No additional interventions *Both oral motor therapy and control groups:* • Continued to receive routine physiotherapy	(+) Aspiration (+) Choking (-) Coughing and suffocation (+) Tongue extension, elevation, lateralization (-) Jaw lateralization (+) Jaw stabilization Mouth Function: (+) Spoon feeding (+) Lip wiping (+) Mouth/lip closure (+) Improved tolerated food texture (+) Swallowing evaluation *Drooling:* (+) Reduction in drooling *Feeding skills:* (+) Multidisciplinary Feeding Profile - Functional Feeding Assessment (FFA) Subscale (+) Spoon feeding (+) Biting (+) Chewing (+) Drinking (+) Swallowing *Development:* (+) Bayley Scale of Infant Development II

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Umay et al., 2020
 	
Turkey
 	
RCT
 	
6/10
 	
High quality
	N = 102 children with CP who had oropharyngeal dysphagia symptoms
	
	Age at enrollment: 2-6 years
	
	CP diagnosis: 100%
	
	CP Type:
	
	Spastic: 96/102 (94%)
	Dyskinetic: 5/102 (5%)
	Hypotonic/ataxic: 1/102 (1%)
	
	Motor limb distribution (%):
	
	Hemiplegia: 35/102 (34%)
	Diplegia: 14/102 (14%)
	Triplegia/quadriplegia: 53/102 (52%)
	
	CP Level (GMFCS) (%):
	
	Level I: 0/102 (0%)
	Level II: 18/102 (18%)
	Level III: 21/102 (21%)
	Level IV: 38/102 (37%)
	Level V: 25/102 (24%)
		Sensory level electrical stimulation combined with conventional dysphagia rehabilitation (n=52)
		
		vs.
		
		Sham stimulation with conventional dysphagia rehabilitation (n=50)
		
		***Intervention details*:**
		
		Sensory level electrical stimulation (intermittent galvanic stimulation to bilateral masseter muscles) combined with conventional dysphagia rehabilitation:
		
		• 30 minutes/day, 5 days/week
		• 4 weeks
		• Intermittent galvanic stimulation to bilateral masseter muscles
		• Children positioned at 90° supported/unsupported seating
		• 2 pieces of 3x3cm surface electrodes were placed
		  - The ramus of the mandible
		  - Bell of the masseter muscle
		• Stimulation intensity was based on threshold sensibility
		
		Sham stimulation with conventional dysphagia rehabilitation:
		
		• Received sham stimulation (stimulator was turned off)
		• Electrodes placed in same place as
			At post-treatment (4 weeks):
			
			Dysphagia:
			
			(+) Pediatric Eating Assessment Tool-10
			
			(+) Flexible Fiberoptic Endoscopic Evaluation of Swallowing

Author, Year, Country, Design, PEDro score, Rating	**Sample Size**	**Intervention**	**Outcomes and significance:** **(+) significant (-) not significant**
		intervention group *Both groups:* • Daily care for oral hygiene • Thermal care and tactile stimulation • Head and trunk positioning • Dietary modification • Oral motor ROM and strengthening exercises (lips, tongue, jaw, hyoid, laryngeal elevation) applied to cooperative children	