

Chin-Tec™ Oral Exercise System © ®

Speech and Language Therapists would find Chin-Tec particularly effective for oral-phase disorders affecting the oral preparatory and oral propulsive phases resulting from impaired control of the tongue. Please see below a list of oral-phase swallowing symptoms and disorders and note in bold italics those that involve tongue articulation:

- Cannot hold food in the mouth anteriorly due to reduced lip closure.
- Cannot form a bolus or residue on the floor of the mouth **due to reduced range of tongue motion or coordination.**
- Cannot hold a bolus **due to reduced tongue shaping and coordination.**
- Unable to align teeth due to reduced mandibular movement.
- Food material falls into anterior sulcus or residue in the anterior sulcus due to reduced labial tension or tone.
- Food material falls into lateral sulcus or residue in the lateral sulcus due to reduced buccal tension or tone.
- Abnormal hold position or material falls to the floor of the mouth **due to tongue thrust or reduced tongue control.**
- Delayed oral onset of swallow due to apraxia of swallow or reduced oral sensation.
- Searching motion or **inability to organize tongue movements** due to apraxia of swallow.
- Tongue moves forward to start the swallow **due to tongue thrust.**
- Residue of food on the tongue **due to reduced tongue range of movement or strength.**
- Disturbed lingual contraction (peristalsis) due to lingual dyscoordination.
- Incomplete tongue-to-palate contact **due to reduced tongue elevation.**
- Unable to mash material **due to reduced tongue elevation.**
- Adherence of food to hard palate **due to reduced tongue elevation** or reduced lingual strength.
- Reduced anterior-posterior lingual action due to reduced lingual coordination.
- Repetitive lingual rolling in Parkinson disease.
- Uncontrolled bolus or premature loss of liquid or pudding consistency in to the pharynx **due to reduced tongue control** or linguavelar seal.
- Piecemeal deglutition.
- Delayed oral transit time.

Chin-Tec oral exercise system (existing product)

Chin-Tec oral exercise system has been designed to provide resistance to the movement of the muscle groups of the tongue and lower jaw.

By isolating the tongue in the most effective position centered in the oral cavity. The three graded oral inserts offer resistance to the upward, downward and side movements of the tongue over a 360° range, enabling Speech and Language Therapists (SLTs) to prescribe patient specific exercises to promote oral phase motor skills.

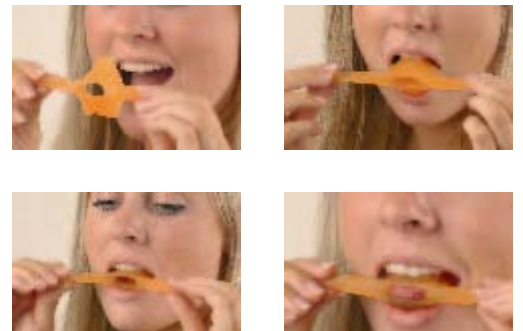
The oral inserts may also be tailored by SLTs to target muscle symmetry disorders by filling the small holes in the rear of the inserts with a medical grade silicone adhesive creating bespoke inserts to meet individual patient needs.



Three graded oral inserts



Tongue orifice and small holes



Chin-Tec oral exercise system in use

Chin-Tec oral exercise system (Product Development)

The oral inserts can also be modified to sense tongue pressures, by embedding quantum tunneling compounds in the base material or by vacuum forming voids in the body of the device that when pressure from the tongue is applied would activate external sensors, which in turn would be linked to a computer running pressure sensing software. Facilitating a means for SLTs to assess and benchmark patient response based on empirical data generated by digitizing applied tongue pressures.

Existing product benefits for SLTs and patients:

- Simple quick and convenient to use
- Versatile
- Cost effective
- Isolates tongue in optimum position
- Can be used by out patient
- SLT can create bespoke inserts
- Targets oral phase disorders
- Strengthens tongue muscles
- Improves tongue articulation and coordination

Developmental product benefits for SLTs and patients:

- Improved efficiency of early screening and diagnosis
- Elimination of subjective assessment techniques
- Data acquisition
- Data analysis
- Improved monitoring of therapy efficacy
- Computer software for oral phase training of out patients

I hope the above has been useful in clarifying how the existing product is used and with further development what could be achieved. Should you require samples or further information please do not hesitate to contact me.



Yours Faithfully

Steve Smith MD UTI Ltd

Web: www.chin-tec.com
 Web mail: info@chin-tec.com
 Tel: 0044 (0) 7769832314

