Speech Management for Children with Cleft Lip & Palate: State-of-the-art

*Webinar series by the **Cleft Palate & Craniofacial Committee***

Webinar #3

Intervention: Cleft Palate Speech / Velopharyngeal Dysfunction

5th May 2022, 12.00-13.30 BST

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Dr. Valerie Pereira, UK

TOPICS FOR TODAY

- Decision tree
- Review of Terminology
- Uk Framework (also Americleft)
- Contributing factors to errors
- Service Delivery Models
- Intervention Frameworks- evidence
- Case Studies
- Guiding Principles

TREATMENT DECISION MAKING

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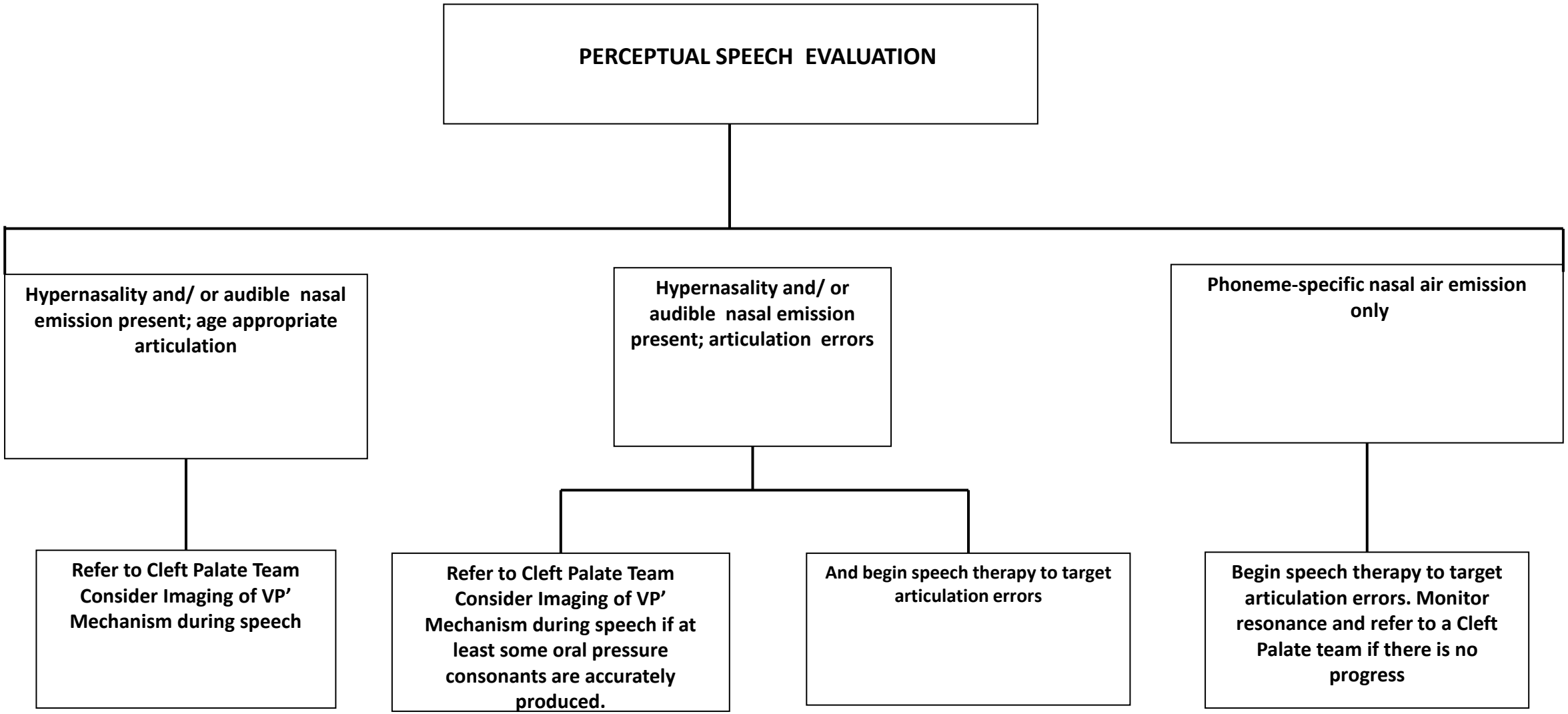

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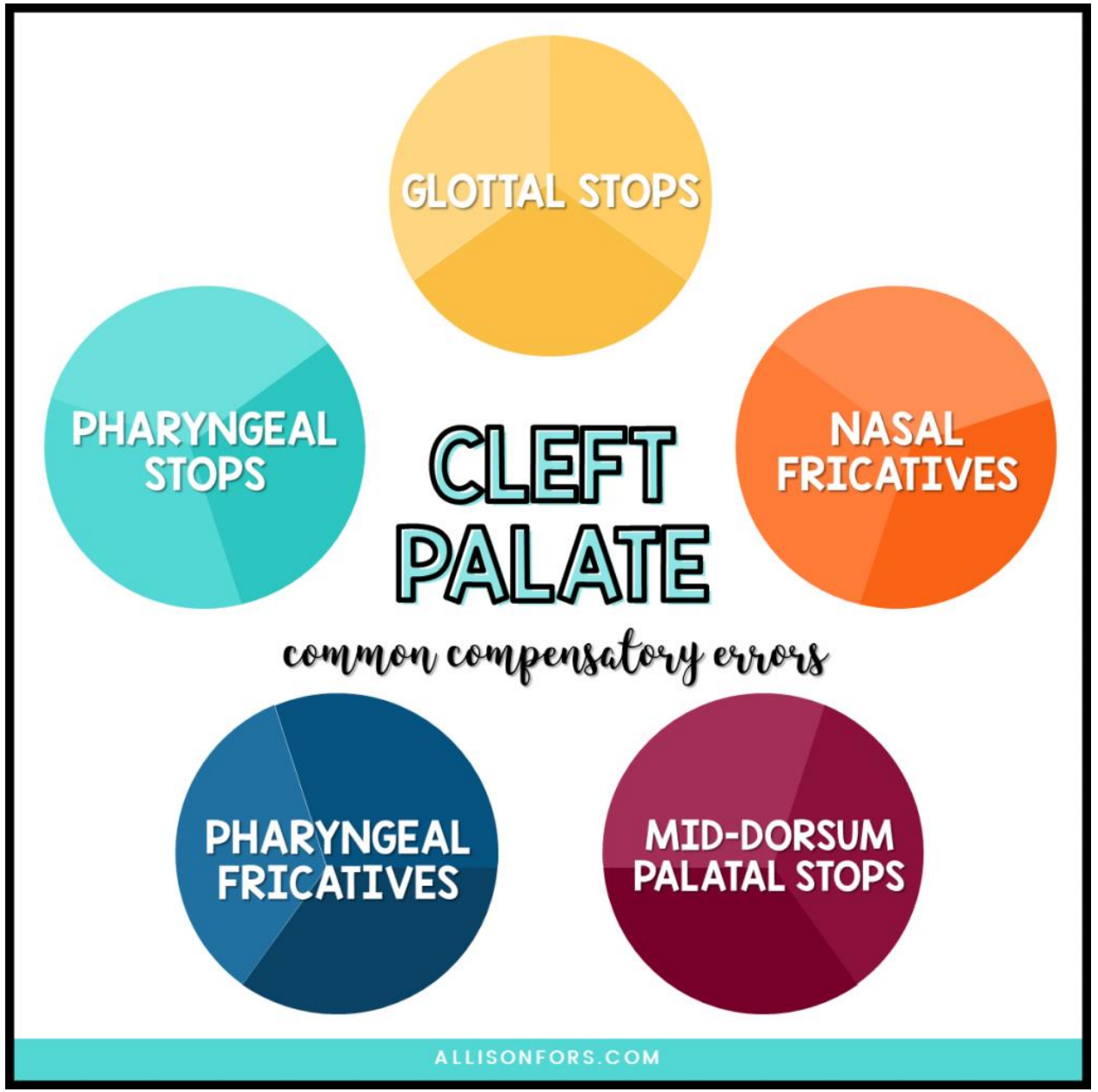
TERMINOLOGY

- Hypernasality: resonant alteration of vowels and vocalic consonants due to abnormal coupling of the oral/nasal cavity
- Nasal emission: associated with poor VP closure; it affects high pressure consonants and may be audible or inaudible

- Obligatory-normal articulatory placement, but distortion of speech sounds due to a structural abnormality
- Compensatory articulation: atypical patterns of articulation development usually due to a clef.t (vpd, fistula, malocclusion).



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Map for High Pressure
sonants

p, b		Bilabial
f, v		Labio-dental
θ, ð		Lingual-dental
t, d, s, z		Alveolar
ʃ		Palatal
		Velar

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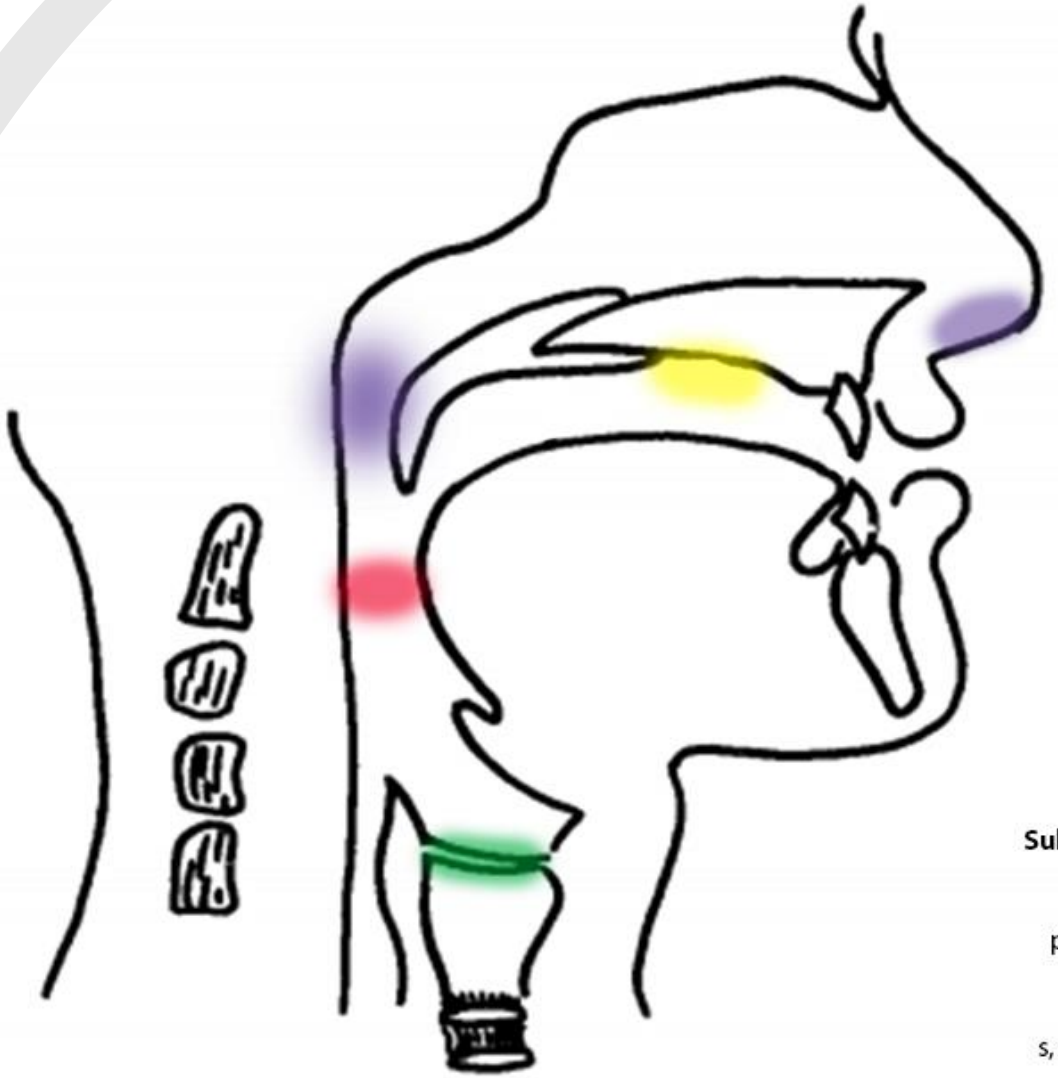

Place Map for Compens
Articulation Er

Substituted for:		Type of Error:
p, b, t, d, k, g, h		Glottal Stops
s, z, S, tS, dg, f, v		Nasal Fricatives
s, z, S, tS, dg, f, v, k, g		Pharyngeal Fricatives & Stops
t, d, k, g, s, z		Mid-dorsum Pal Stops & Fricati

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REVIEW OF TERMINOLOGY

- Glottal stops /ʔ/ are generally substituted for oral stop consonants /p/, /b/, /t/, /d/, /k/, /g/ and sometimes /h/ but also can replace fricatives and affricates
- Pharyngeal stops are usually substituted for velar stops /k/ and /g/. The place of articulation is the base of the tongue against the posterior pharyngeal wall

- Pharyngeal fricatives can be substituted for oral fricatives or affricates /f/, /s, /ʃ, /ʧ, /ʤ/ and less often for stop/plosive consonants.
- Mid-dorsum palatal stops are substituted for tip-alveolar and back-velar stops. The sound is produced by the mid-dorsum of the tongue contacting the middle of the hard palate in the approximate place of /j/.

Review of Terminology

- Mid-dorsum palatal fricatives are commonly substituted for blade alveolar fricatives /s/ and /z/ and may also replace /ʃ/
- Nasal fricatives are commonly substituted for sibilant fricatives and fricatives or affricates /s/, /z/, /ʃ/, /ʧ/, /ʤ/ but may also replace other high pressure consonants such as /f/ and /p/.

UK Framework (also used by Americleft)

- Anterior-Oral Cleft Speech Characteristics (CSCs): e.g. dentalization, palatals/palatalization. (Obligatory if due to dentition/malocclusion).
- Posterior-Oral (CSCs): e.g. backing to velar (Compensatory)
- Non-Oral (CSCs) : e.g. glottal stops /fricatives to replace oral pressure consonants (Compensatory).
- Passive(CSCs) : e.g. weak pressure consonants , replacing oral pressure consonants with nasals (m/b; [n]/t (Obligatory).

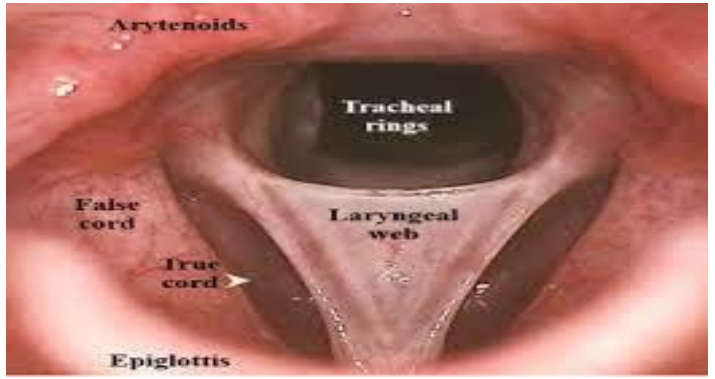
Contributions to Errors in Cleft Palate Speech

VPD

- Short palate, poor pharyngeal wall movement , poor timing

Physical characteristics of vocal tract (laryngeal malasia)

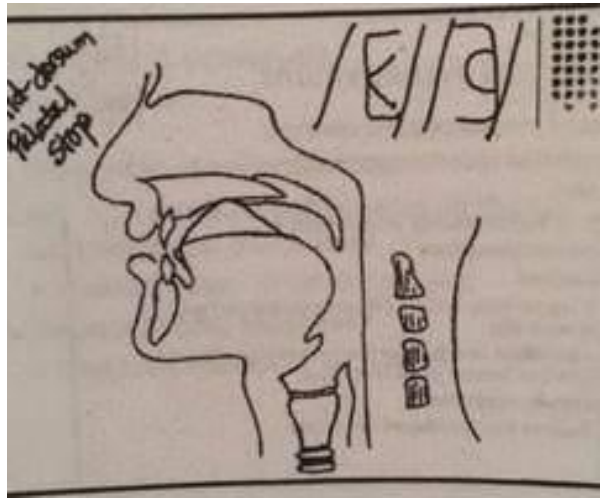
- Laryngeal web:



Contributions to Errors in Cleft Palate Speech

- Fistula

- Tongue Posture



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Contributions to Errors in Cleft Palate Speech

- Dental/Occlusal Status
- Class III
- Crossbite
- Missing teeth
- Collapsed Maxillary Arch
-

Contributions to Errors In Cleft Palate Speech

Learning : Phoneme specific nasal emission (nasal emission on specific phonemes) ; compensatory articulations)

Phonatory disorders: aphonia, hoarseness, intensity (soft voice), and pitch variations

Hearing: mostly conductive hearing loss in clefts; rarely affecting speech; less likely sensorineural hearing loss, but this may be found in syndromes with clefts

Models of Intervention

- INDIVIDUAL – one on one with a therapist; direct intervention ; traditional model
- SMALL GROUP- 3-4 clients with a therapist; may have varying disorders; some peer modeling
- CAMP BASED- a more intensive program which can be based on neuroscience principles of frequency and intensity.
- PARENT LED INTERVENTION

Parent Led Intervention for Articulation Difficulties

- Speech@Home (S@H), an evidenced based, integrated online training and intervention package for use in traditional and hybrid service delivery models

- Underpinned by research - parent focus group *September 2012,* feasibility study *Sweeney et al 2016-2017*, RCT *Sweeney et al 2020,* parent experiences of parent-led articulation therapy *Sell et al 2018,* 2 studies evaluating implementation into clinical practice, *2021*

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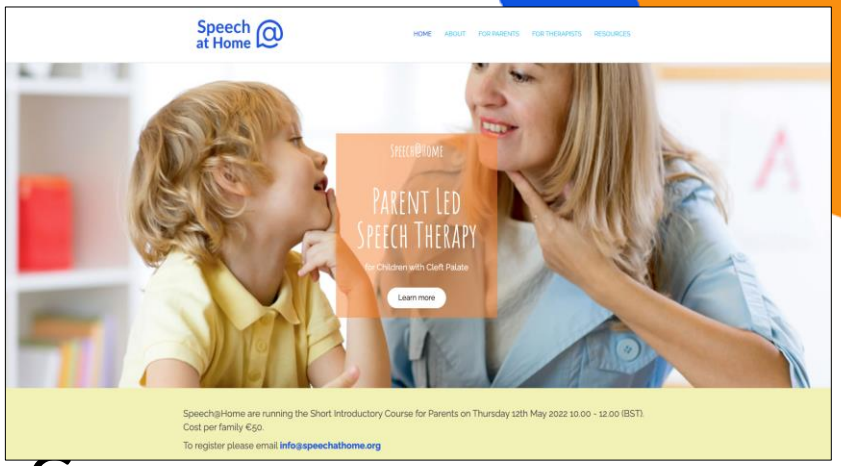
What is Speech@Home?



Parent Training Courses

- An In-depth Course and a Short Introductory Course
- Video recorded lectures, training materials, manuals

Therapy Programme Builder with Resources

- Knowledge based drop down box system for therapists to write child specific therapy programmes with therapy picture and video resources automatically attached

Therapists Training webinars

www.speechathome.org

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What does Speech@Home do?

- Addresses waiting lists while empowering parents
- Offers detailed evidence-based training, a wealth of resources, easy to share with parents
- Indirectly provides training for less experienced therapists, which can lead to a more equitable service
- Allows therapists and parents to work in partnership

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TREATMENT MODELS

FACE TO FACE

- Can read non-verbal cues easier
- Easier to develop a personal relationship
- Can use tactile cues
- Can use a variety of reinforcements/

TELEHEALTH

- Can be scheduled around work and family time (nap time).
- Less time in travel
- Easier access for those in remote areas.

General Goals for Children with Cleft Palate Speech/VPD

1. Establish correct oral articulatory placement and/or airflow direction and pressure build up using behavioral, articulation (motor-phonetic) therapy
2. Maximize intra-oral air pressure build up during speech sound production
3. Teach new motor speech patterns to replace compensatory maladaptive articulation errors