Disclosure Statement

Amy Clark, M.S., CCC-SLP, PI

Speaker Disclosure
Financial: Amy Clark receives salary compensation for her role with the PROMPT Institute. Partial financial support for attending the conference was provided by Apraxia Kids.

Nonfinancial: Member of the Professional Advisory Council of Apraxia Kids for which she receives no compensation.

Learning Objectives

• Identify movement patterns and treatment priorities as they apply to the System Analysis Observation (SAO) and Motor Speech Hierarchy (MSH)

• List and explain levels of PROMPT, mass/distributed practice, reciprocal turn-taking and repetitive predictable play routines

• Understand how evidence-based PROMPT research is linked to clinical practice
What is PROMPT?

• P – Prompts for
• R – Restructuring
• O – Oral
• M – Muscular
• T – Phonetic
• T – Targets

PROMPT is used with Children with:

• Phonological delays
• Developmental delays
• Dysarthria
• Childhood Apraxia of Speech
• Motor Speech Disorders
• Hearing impairment
• Autism Spectrum Disorders
• Fluency disorders
• Difficulty acquiring foreign language sounds
• Systems

PROMPT is...

Philosophy
Approach
System
Technique
### Physical-Sensory Domain

<table>
<thead>
<tr>
<th>Areas to observe</th>
<th>General Assessment Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skeletal Structure</td>
<td>How does your client’s skeletal structure and muscular development impact movement?</td>
</tr>
<tr>
<td>Sensation</td>
<td>What is the status of the neuromuscular system?</td>
</tr>
<tr>
<td>Neuromuscular Integrity</td>
<td>What factors impact global motor and speech motor control?</td>
</tr>
</tbody>
</table>

### Cognitive-Linguistic Domain

<table>
<thead>
<tr>
<th>Areas to observe</th>
<th>General Assessment Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception; sensation, discrimination, recognition</td>
<td>How does your client process information and interact with the environment to learn?</td>
</tr>
<tr>
<td>Concept Formation</td>
<td>How does the environment need to be structured for learning?</td>
</tr>
<tr>
<td></td>
<td>What modifications are necessary for the client to learn?</td>
</tr>
</tbody>
</table>
Social-Emotional Domain

<table>
<thead>
<tr>
<th>Areas to observe</th>
<th>General Assessment Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal Interactions</td>
<td>How does your client express their needs and wants?</td>
</tr>
<tr>
<td>Trust</td>
<td>What communicative functions does your client exhibit?</td>
</tr>
<tr>
<td></td>
<td>How does your client use significant others to aid in the acquisition of knowledge</td>
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</tbody>
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PROMPT Tenets

• Restructuring should alternate focus among all domains
• Communication may be disrupted by a breakdown in any or all three domains
• The ultimate goal is to achieve a state of equilibrium across domains to the highest level attainable

PROMPT Assessment

• Caregiver Interview
• Global Domain Evaluation ~ Holistic
• System Analysis Observation (SAO)
• Motor Speech Hierarchy (MSH)
PROMPT Assessment

- Inclusive: brings caregivers into the assessment process
- Strengths and Weaknesses in each domain are carefully identified
- Motor rather than strictly auditory or developmental model
- Bottom Up Motor Assessment

System Analysis Observation

**A. STRUCTURAL - Skeletal (view at rest)**

1. The client’s face is symmetrical in shape.
2. The maxilla and maxilla are in proper alignment, height, shape and size.
3. Dental occlusion is within normal limits, e.g., check occlusal, close for Class I malocclusions
4. The palatal arch and oral dental structures are within normal limits.

**B. FUNCTION - Neuromotor (view in movement)**

1. The client has adequate posture when sitting in performing oral tasks, no upper dentures.

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Name: __________________ Date: __________________
**Movement Patterns to Observe on the SAO**

- **Jaw**: Mandibular Control
- **Lips**: Labial-Facial Control
- **Tongue**: Lingual Control

**PROMPT as a System**

- Complete SAO
- Transfer to MSH
- 3 Motor Speech Priorities
PROMPT Treatment

• Work on Stages/Planes of Movement Rather than single Phonemes

• Work across three stages at once with varying priorities

PROMPT Treatment

• Focus on All Domains

• Treatment is Always Functional

• PROMPTs Faded When Appropriate

PROMPT Treatment

• Functional Lexicon that Matches Specific Motor Level

• Structured activities spotlighting the targeted domain for the child to be available for learning
PROMPT Treatment

- Emphasis on vowels and diphthongs
- “Speech through speech”, no oral-motor
- Close proximity to client and tactile cueing
- All treatment is functional and interactive

Choose a Functional Lexicon

- Based on Motor Speech Hierarchy
- Emphasis on the movement of vowels
- Create motor phoneme links that are appropriate for the client’s motor system
- Functional words that can be embedded into activities

Uses of PROMPT

Cognitive Linguistic
- Perception
- Attention
- Memory
- Language

Physical Sensory
- Skeletal Structure
- Neuromuscular Integrity
- Sensation
- Perception
  - Sensation
  - Discrimination
  - Recognition

Social Emotional
- Interpersonal Interaction
- Trust
Key Features of Treatment

- Levels of PROMPT
- Online Shaping
- Mass/Distributed Practice
- Reciprocal Turn-Taking
- Repetitive Predictable Play Routines

Levels of PROMPT

- Surface
- Complex
- Syllable
- Parameter

Ryan & Lilly: Parameter PROMPTs

Ryan: 3 Years Old
- Establish a lower mandibular boundary
- Improve mid-line jaw control

Lilly: 4 Years Old
- Improve rounding
- Improve jaw grading
Garrett AKA “Rascal” 3 Years Old

- Born Full Without Complications
- Hearing WNL, No HX of Ear Infections
- HX of Pacifier Use & Thumb Sucking

PROMPT Conceptual Framework

Name: ______________ Date: ______________

SYSTEM ANALYSIS OBSERVATION
Structure, Function, Integration
Hayden 02, revised 2023

A. STRUCTURAL - Skeletal (view at rest)

1. The client’s face is symmetrical in shape.
2. The maxilla and mandible are in proper alignment, height, shape and size.
3. Dental occlusion is within normal limits, e.g. teeth do not rub, close for Class II malocclusion
4. The palatal arch and oral dental structures are within normal limits.
5. Anterior open bite, often sucks his thumb and has a HX of pacifier use
6. High narrow and vaulted Open mouth resting posture. Cheeks are large and appear hypotonic however due to lack of use.

B. FUNCTION - Neuromotor (view in movement)

1. The client’s face is symmetrical in shape.
2. The maxilla and mandible are in proper alignment, height, shape and size.
3. Dental occlusion is within normal limits, e.g. teeth do not rub, close for Class II malocclusion
4. The palatal arch and oral dental structures are within normal limits.
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6. High narrow and vaulted

TOTAL: ___________
Overriding hypernasality present often fixed with jaw up.
Unable to produce and open to close /a/ for up, exhibits too few and too many degrees of freedom.
Jaw often lateralizes to his left and right /dai/ "hi" and "nine".

Asymmetrical retraction. Over retraction on left "three".
All bilabials are driven through jaw.
Lips do not move independently.
Accesses both lips rather than individual "poh"/four.
When attempting to round jaw is clenched.

Exhibits intonation and syllable marking even with jaw is clenched, however timing is not WNL.
Unable to produce a CVC, productions are restricted to CV and CVCV.
Unable to devoice at the beginning of productions.
Groping noted especially when attempting to round.
Priority #1: Mandibular Control

• Achieve an appropriate lower mandibular boundary
• Develop the ability to produce an open to close and close open close in the vertical plane of movement
• Increase degrees of freedom ~ Stop clenching pattern

/m/, /p/, /b/, /æ/, /a/

Priority #2: Labial-Facial Control

• Develop Rounding
• Develop Retraction
• Develop medial 1/3 lip contact
• Achieve Symmetrical movement

/i/, /u/, /o/, /m/, /p/, /b/
Priority #3: Lingual Control

- Develop Anterior Lingual Contraction
- NOTE Garrett will first achieve anterior lingual movements through jaw

/d/, /t/, /n/

Case Study #2: Holly

- 4 Year-Old
- Chromosome 8 Deletion
- Hypotonic
- Plagiocephaly
- Scoliosis
- Significant gross and fine motor impairments
- Left sensorineural hearing loss
Priority #1: Phonatory Control

- Establish the ability to turn voice on for communicative intent
- Establish ability to produce nasal /m/ /a/ for on, off, up /m/ for me, mo/more, mom

Priority #2: Mandibular Control

- Maintain ability to maintain voicing through jaw movements
- Establish ability to move from close to open
- Establish ability to move from open to close

Priority #3: Tone

- Postural Pre-tuning
- High arousal activities
- Co-Tx with PT
- Optimize positioning
Speech Intelligibility

- Speech Intelligibility Measures
  - Performance on single word testing is a poor indicator of speech intelligibility
  - Motor control (planning & sequencing) is more indicative
  - PROMPT focuses on the underlying motor control

Kinematic Study

- Movement changes in response to PROMPT Therapy
- Single-subject multiple baseline across participants: Children with CP
- Improvement in movement resulted in significantly improved speech perception


Cortical Thickness

- Cortical Thickness in Children Receiving Intensive Therapy for Apraxia of Speech
- MRI results showed children with CAS had sig. thicker LSMG
- After PROMPT Therapy, sig. thinning of Left Posterior Superior Temporal Gyrus (Wernicke’s Area)
- 1st study to show experience related structural plasticity after therapy for speech sound disorders
- Why Wernicke’s area? Possible role in Auditory-Motor phonemic representation


VOT and PROMPT

- Significant changes in VOT compared to controls.
- Normalized VOT after PROMPT Therapy which focused on Mandibular control
- Mandibular functioning impacts coordination between phonation and articulation


Current Research

Randomized Controlled Trial
- 44 participants
- Randomly selected
- Control group
- Group receiving PROMPT
- Does PROMPT group exhibit significant change vs. controls
For additional information see: www.promptinstitute.com

THANK YOU!

You are welcome to contact me:

amyc@promptinstitute.com