Working with Children who are Hypertonic

Aspen Mickles, B.S., Molly Santaniello, B.A., Reghan Slater, B.S.

What is Hypertonicity?

- Hypertonicity is the **increase** of muscle tension compared to normal resting tension in an individual's body. Listed below are more characteristics of hypertonicity:
    - All muscle movements fight against increased tension and resistance of muscles
    - Increased muscle tone results in a limited range of motion of the child's joints, jerky movements, and stiff movements
    - Hypertonicity is just not a physical problem; it is a brain and nerve problem in individuals

How can Hypertonicity affect your little one?

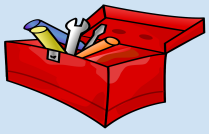
If your child is diagnosed with Cerebral Palsy (CP) or Traumatic Brain Injury (TBI), it results in permanent damage to the brain, which can result in impaired muscle coordination and feeding difficulties

- The impaired muscle coordination can result in your child exhibiting hypertonic muscle movements
- The child with hypertonicity has to make all movements against the resistance of the muscles
- Muscle impairments can affect the child's the ability to chew, suck, and swallow which can create your child to be at a high risk for undernourishment
    - Eating problems limit caloric intake and place the child at risk for inadequate nutrient intake and growth reduction
- The child may exhibit hypersensitivity in the mouth in response to exploring new foods

The following conditions are common in those of CP:

- 86% experience oral-motor dysfunction
- 77% are diagnosed with gastroesophageal reflux (GER)
- 74% report chronic constipation
- 60% present with swallowing disorder

A Toolkit of treatment strategies that could benefit your child:



****Do not Panic!****

"Time and effort spent on feeding children with eating problems is costly, frustrating, and not satisfying because of limited results achieved." (Gisel,1994)

These treatment strategies will be first modeled by a speech-language pathologist (SLP) for you and your family members to learn and ask questions for you to later implement at home with your little one. For pediatric swallowing intervention, the child's SLP should center intervention around the parent-coaching model. As SLPs, we will not always be with your child; therefore, it is important to educate you with new strategies to overcome challenges you face on a day to day basic that can most benefit your child during meal times.

Clinicians working with children who have feeding and swallowing problems frequently incorporate oral-motor exercises (OME) into their treatment plans. There are two main categories of OMEs generally used in clinical practice:

1. **Active exercises**
2. **Passive exercises**

Listed below are three different types of OMEs you can implement during meal times with your little one:

1) **Active OME-Stretching the Oral Muscles**
    - Stretching can increase tone or decrease tone, depending on speed of stretch
        1. **Slow** stretching
        2. **Fast** stretching
    - Moving limb or articulator through full range of comfortable range of motion (ROM)

How to do this strategy:

Know that there is a difference between slow and fast stretching

1. **Slow** stretching can:
    - Inhibits the stretching reflex
    - Decrease muscle tone
    - When muscle tone is decreased, AROM and PROM may be increased

2. **Fast** stretching can:
    - Increase muscle tone
    - Initiate the stretching reflex

Current Views on this strategy:

- Using slow stretch in lip and tongue muscles is not appropriate because they don't have the typical pattern of stretch reflexes
    - No evidence to support use with lips
- Muscles that close the jaw have stretch reflex so targeting jaw movements may be appropriate to reduce muscle tone

2) Passive OME-Tapping and Stroking:

- Can use these techniques with children who exhibit hypertonic and hypotonic muscle movements to increase or reduce tension of muscles
- The use of tapping, pressure, vibration, and speed of input can change tone (Morris & Klein, 2000)
- These procedures are applied to provide sensory input, improve circulation, and preserve or enhance joint flexibility
- It has been theorized that some of these techniques normalize feeding patterns by reducing abnormal oral reflexes, facilitating normal muscle tone, or desensitizing the oral region
- Stimulation of the orbicularis oris muscle improves flexion of the lips for mouth closure and puckering
- Active use of this muscle assists in food containment, straw drinking and closure to provide the negative pressure necessary for transporting food through the oral cavity and swallowing

Important to note: Doing oral stimulation techniques alone provides sensation and movement but typically does not translate into accepting foods.

How to do this strategy:

- Passive exercises may include massage, stroking, stimulation, tapping, vibration, and passive range of motion exercises in which the movement is provided with the assistance of or entirely through the clinician or caregiver with little action rom the individual receiving treatment.
- The caregiver or SLP taps around the child's lips with his or her fingertips
- THe caregiver or SLP can also stroke the muscles around the lips and tap the cheeks to reduce or increase sensory input for hypotonicity

Current Views on this strategy:

- This technique assumes competent oral-motor tongue and jaw movements

- Although the children in this research study increased swallow frequency, increased food acceptance, and increased quantity of food consumed orally, it is unclear from the study results if the oral-motor pattern acquired indirectly would allow the child to continue advancing oral-motor skills with other food textures

Resources Available for <u>You</u>:

1) Cerebral Palsy Group: online resources for those who have been affected by cerebral palsy.
    - https://cerebralpalsygroup.com/support/

2) The Child Neurology Foundation: connects to children and families in the child neurology community, including children with hypertonia. They help to navigate the journey toward diagnosis, management, care, and support.
    - https://www.childneurologyfoundation.org/

References

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Gisel, E. G. (1994). Oral-motor skills following sensorimotor intervention in the moderately eating- impaired child with cerebral palsy. *Dysphagia, 9,* 180-192.