Dysarthria Treatment

- SLP has dedicated more time and energy to defining and describing the dysarthrias than on developing treatments for them (Rosenbek & LaPointe, 1985).
- Nonetheless, most clinicians today believe that persons with MSD can benefit from Speech Rx.

Primary Goal

- Maximize the effectiveness, efficiency and naturalness of communication.
- Keys to above: restore, compensate and adjust.

Restore

- Focus on impairment level.
- Success related to etiology and course, type and severity.
- I.e., UUMN dysarthria—excellent prognosis.
- Duffy, 1995—full restoration of normal speech is not a realistic treatment goal in most cases...some degree of improvement is.

Compensate

- Promote use of residual function.
  - Modify rate and prosody.
  - Use prosthetic devices.
  - Modify physical environment.
  - Use contextual aids.
  - AAC.

Adjust

- Reduce the need for lost function.
  - Temporary or permanent.
  - Reorganize life activities...change in social life-style.

Treatment Design

- Focus on maximizing benefit—speech component with greatest influence on speech.
  - Rx’d first.
- Duration—as long as necessary to achieve goal.
- Approaches.
  - Medical intervention: pharmacologic and surgical.
  - Prosthetic management: temporary or permanent.
  - Behavioral management.

Principles/Guidelines

- Management should start early.
- Medical and speech Dx contribute to Rx decisions.
- Restoring physiological support often initial focus.
- Compensation requires “awareness” and conscious effort.
- Improvement requires practice—speaking/drill.
- Feedback is essential.
8  □ Treatment Efficacy (1996 article)
   – Treatment Efficacy (1996 article)
     • review of literature
   – various approaches, clinical populations, various treatment outcome measures
     • strongest evidence: LSVT: evidencing improvement in Parkinson’s patients

9 □ RX Approach
   • speaker-impairment orientation
   • directed toward each speech process
   • general and specific

10 □ Respiration
   • usually does not require attention
   • abnormal respiratory functions does not mean inadequacy for speech
   • if patient has adequate loudness and capacity for flexible breath pattern during speech, does not require RX
   • If rx’d, types of tasks
     – 1. producing consistent subglottic air pressure
       • blowing into manometer--goal: sustain 5 cm pf pressure for 5 seconds

11 □ Respiration continued
   • maximum vowel prolongation--goal: steady vocal output for 5 seconds
   • increasing length of phrases/sentences on single breath
   • pushing, pulling etc

12 □ Respiration continued
   • Postural adjustments
     – 1. Adjustable beds, wheelchairs, etc
     – 2. Positioning--supine or sitting (pts with greater expiratory than inspiratory difficulty may be better in supine
   • Prosthetic assistance
     – 1. Abdominal binders or corsets (poor posture, weak stomach..i.e., spinal cord injury
   • Behavioral compensation -practice inhale/exhale

13 □ Phonation-Medical Rx
   • laryngoplasty--phonosurgery for persons with VF paralysis
   • recurrent laryngeal nerve resection--spasmodic dysphonia--rx for adductor (note: 15-65% of procedures “fail” by 3 years post-op
   • botulinum toxin injection--unilateral or bilateral for neurogenic spasmodic dysphonia or ideopathic spasmodic dysphonia when behavioral rx failed.

14 □ Botulinum toxin injection
   • toxin blocks ACTH: inject thyroarytenoid or posterior cricoarytenoid muscles or both - denervates some of thyroarytenoid muscles fibers
   • some not all permits v’s to approximate but not hyperadduct
   • effect in 24-72 hours post injection lasts 3 months-new nerve sprouts develop and reinnervate muscle
- bilateral injection preferred.
- Side effects: transient breathiness, mild dysphagia

**15 Phonation-prosthetic**
- vocal intensity controller—loudness monitoring device
- portable amplification system
- artificial larynx
- all of above only good with persons who have good artic

**16 Phonation-behavioral**
- goal—to increase utterance length per breath group and/or to get appropriate loudness levels
- for VF weakness/paralysis—effort closure techniques—grunting, pushing, lifting, pulling
- often not done cuz so difficult to modify, doesn’t improve intelligibility

**17 Resonance**
- surgical—pharyngeal flap (note: in literature, prosthesis preferred).
- Palatal lift prosthesis
  - Yorkston, Beukelman & Bell (1988)—more reports of successful management of VP function than any other aspect of dysarthria.uset reported for all types of dysarthria—results variable
- goal: increased intelligibility, decreased hypernasality and improved articulation.

**18 Appliance Candidates**
- fundamental clinical question: will patient’s intelligibility significantly improve with device
- significant VP weakness that’s stable, not progress
- supporting dentition
- do not have significant spasticity or hyperactive gag reflex
- motivated/tolerant and able to manage device

**19 Resonance- Behavioral**
- not advocated
- neither stimulation or strengthening exercises help VP function
- no justification for blowing, icing, brushing, stroking, electrical stimulation
- some compensatory speaking behaviors: increase oral opening during speech, increase loudness, reduce demands for intraoral pressure

**20 Articulation-Medical**
- neural anastomosis—occasionally used to restore a nerve (i.e., branch of XII to restore VII)
- botox injection as Rx for hemifacial spasm, spasmodic torticollis and oral mandibular dystonia—to decrease hyperkinetic dysarthria
- antispasticity med (Librium, valium, dantrium and lioresal) used to decrease limb spasticity but
effects on artic uncertain

21 Artic-Prosthesis
- aids to artic limited
- bite block--small piece of acrylic held between lateral upper and lower teeth (use with pts with poor jaw control)

22 Artic-Behavioral
- nonspeech strength training - controversial, work on neuromuscular basis; -- absence of data
- relaxation-to improve muscle tone (i.e., chewing to increase relaxation and decrease hypertonus in jaw or tongue muscles
- stretching -foundation for managing spasticity in limbs, applied to jaw, tongue, lip

23 Biofeedback
- training to reduce excessive muscle activity
- EMG to reduce hemifacial spasm, lip movement

24 Traditional approaches
- traditional methods of artic Rx
  - integral stimulation (watch and listen)
  - phonetic placement
  - phonetic derivation (using intact nonspeech gesture to establish a target..blow to get /u/
  - emphasis on exaggerated articulation
  - compensated articulation
  - intelligibility drills

25 Rate
- the most powerful single, behaviorally modifiable variable for improving intelligibility
- rate modification--all dysarthria types:
  - facilitates artic precision and intelligibility by allowing time for full range of movement, increased time for coordination and improved linguistic phrasing.
  - easier to achieve than other goals

26 Rate Modification Techniques
- DAF--delay slows rate
- pacing devices: pacing board, alphabet board supplementation (first letter approach, hand/finger tapping, visual feedback, rhythmic cueing
- monitor prosodic “naturalness”

27 Prosody and Naturalness
- naturalness--"a perceptually derived, overall description of prosodic adequacy" Y, B & B, 1988)
- pitch, loudness, durational characteristics
- strategies: work at level of breath group--prosodic pattern during single exhalation; chunk utterances into natural syntactic units, contrastive stress tasks
Communication Oriented Rx

- what can be done to enhance communication
- focus on interactions between listeners and speakers and environments
- independent of dysarthria type

Speaker Strategies

- use contextual cues
- modify content and length
- monitor listener comprehension
- alphabet board supplements

Listener Strategies

- modify physical environment
- maximize listener hearing and visual acuity
- learn active listening

Interaction strategies

- maintain eye contact
- establish methods of feedback sometimes it helps to be more explicit
- establish what works best when