AUDITORY-VERBAL THERAPY

For Young Children with Hearing Loss and Their Families, and the Practitioners Who Guide Them

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PREFACE

In the 21st century, Auditory-Verbal Therapy (AVT) continues to develop along with advances in newborn hearing screening, sophisticated hearing technologies, systems of family-centered intervention, creative service delivery models, the enhancement of continuous professional improvement, and the prevalence of evidence-based information.

Auditory-Verbal Therapy is now more widely accepted than ever and promoted around the world by many practitioners and parents of children with hearing loss, all who share the same desired outcomes. Today, many children with hearing loss can acquire unprecedented listening skills and spoken language equivalent to the quality and quantity of their peers with typical hearing, interact more easily in their communities, achieve higher levels of academic performance, realize an extensive range of careers and greater employment security, and experience fewer limitations in the personal and social aspects of their lives.

The charted course of the pioneers of Auditory-Verbal Therapy continues in *Auditory-Verbal Therapy for Young Children with Hearing Loss and Their Families, and the Practitioners Who Guide Them* as the contributors share comprehensive knowledge, skills, and collaborative work with those who are willing to listen anywhere, anytime.

Auditory-Verbal Therapy for Young Children with Hearing Loss and Their Families, and the Practitioners Who Guide Them is relevant to a broad range of practitioners worldwide: auditory-verbal practitioners, administrators, teachers of children with hearing loss, special educators, teachers in typical schools, audiologists, speech-language pathologists, physical therapists, occupational therapists, psychologists, physicians, surgeons, and university students. Likewise, the content is applicable across most settings where young children with hearing loss are learning to listen and talk and taking their place in a variety of environments, including early intervention programs, preschools, community speech and hearing centers, hospitals, private practices, and family homes. By applying the theories, strategies, and practices discussed in these pages, we anticipate that any practitioner will be better prepared to coach and guide families at any point on the listening and spoken language journey of their children.

Families of young children with hearing loss who embrace Auditory-Verbal Therapy need to be well informed about its principles, expectations, and evidence of expected outcomes. We anticipate that many parents around the world will find this book to be a source of comfort, inspiration, and hope. Through coaching and guided practice, parents and caregivers, the consumers of Auditory-Verbal Therapy, become engaged as their child's first and most enduring teachers of listening and spoken language. Following an evidence-based and evidence-informed framework, *Auditory-Verbal Therapy*

for Children with Hearing Loss and Their Families, and the Practitioners Who Guide Them demonstrates how auditory-verbal practitioners work in partnership with the family and a number of interdisciplinary teams, to integrate listening and spoken language into the child's everyday life.

This book supports the belief that all children with hearing loss deserve the opportunity to acquire spoken language if that is the desired outcome of the family. For this to happen, purposeful plans need to be developed, implemented, adjusted, readjusted, and evaluated throughout the family's lifelong journey. At the heart of it all is the partnership between the parents and the practitioners—one that is built on shared knowledge, trust, mutual commitment, and respect.

Auditory-Verbal Therapy for Young Children with Hearing Loss and Their Families, and the Practitioners Who Guide Them is a comprehensive exploration of Auditory-Verbal Therapy where the reader will find the most current research relevant to Auditory-Verbal Therapy and associated themes, including the power of hearing, listening, and the brain; the application and support of audiology; hearing aids, implantable hearing technologies, assistive hearing and access technologies; stages of development; to encourage listening, talking, and thinking strategies in coaching and guiding parents; a blueprint for typical sessions; detailed session plans; children with complex hearing needs; inclusion at school; powerful partnerships; and family journeys from around the world.

In 2015, the World Health Organization estimated that 360 million people worldwide had moderate to profound hearing loss in both ears, and 80% of those lived in low- and middle-income countries. So, even though a great deal of progress has been made, there is still much to do. We hope that in the near future, all bar-riers to equitable services for young children with hearing loss will disappear, and that *Auditory-Verbal Therapy for Young Children with Hearing Loss and Their Families, and the Practitioners Who Guide Them* will play a pivotal role in building a worldwide community of parents and practitioners that will bring the gifts of listening and spoken language to young children with hearing loss and their families everywhere.

EDITORS

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10

STRATEGIES FOR LISTENING, TALKING, AND THINKING IN AUDITORY-VERBAL THERAPY

Ellen A. Rhoades, Warren Estabrooks,
Stacey R. Lim, and Karen MacIver-Lux

INTRODUCTION

Many language facilitative strategies have been studied specifically for outcome effectiveness with children who have typical hearing and language delays/disorders. Consequently, there are considerable evidence-based strategies targeting that large pediatric population. Yet, for children with hearing loss, evidence-based strategies to facilitate listening and spoken language skills remain relatively scarce. Nevertheless, there are many *evidence-informed* strategies that the auditory-verbal (AV) practitioner can use to facilitate listening and spoken language (Nevo & Slonim-Nevo, 2011). The purpose of this chapter, therefore, is to present these *evidence-informed strategies* in detail.

Evidence-informed practice is guided by research that the practitioner finds in peer-review journals. AV practitioners use the best available knowledge and research to guide strategy selection and implementation, and they try to familiarize themselves with outcome studies across related disciplines such as psychology, general education, child development, neurobiology, reading, and so forth. Research findings concerning all issues in communication disorders, therefore, need to be appropriately incorporated into AVT (Nevo & Slonim-Nevo, 2011). Throughout this chapter, we refer to the AV practitioner although we also expect that *the parents of children with hearing loss* (as a result of ongoing coaching) will learn, practice, and apply the strategies in daily life.

Parents and children with typical hearing usually interact *in tandem* from birth, meaning that their biological rhythms, gaze, affect, and vocal behaviors are coordinated (Feldman, Magori-Cohen, Galili, Singer, & Louzon, 2011). This *natural* parent-child "interaction synchrony," however, may be disrupted when the child does not respond appropriately because of a hearing loss. It is imperative, therefore, that parent-child interaction synchrony be restored.

In general, the best evidence-informed practice is considered to be *naturalistic intervention*. Many characteristics of this are embraced by AV practitioners as it is child-directed, play, based on the child's interests, and involves incidental and responsive teaching. *Naturalistic intervention* includes *strategies* that encourage joint attention, turn-taking, and other reciprocal adult-child interactions (Dunst, Raab, & Trivette, 2011; Snyder et al., 2015). Thus, with the use of strategies that facilitate listening, speech, and language, AV practitioners coach and guide parents to develop the same skills.

STRATEGIES

A *strategy* generally refers to a plan of action or method designed to achieve a goal; it tends to be behavioral or mental in nature. Effective and appropriate strategies are based on good knowledge of the situation/problem with reasonable expectations of outcomes. A *technique* is a way of doing something by using a particular skill or special knowledge. There are sometimes many techniques or ways in which a strategy can be executed. AV practitioners and parents may differ in their techniques when implementing a strategy, and the techniques may vary from child to child. Nevertheless, everyone

needs to work in harmony to achieve the outcomes they want for the child. Sometimes it is difficult to agree on the correct term, so for the purpose of clarity throughout this chapter, the word *strategies* includes both.

One *historical strategy* that has been associated with AVT is the *hand cue* (the adult's "hand over mouth" to eliminate speech reading). For many compelling reasons, however, this is no longer considered an effective strategy. Evidence for this indicates that

- Covering the mouth disrupts sensorimotor input during infancy and may have negative implications for the development of speech motor control (Yeung & Werker, 2013).
- Covering up visual cues (lip movements) in an obvious way can instigate stress in young children which, in turn, negatively affects speech perception (Wang, Lee, Sigman, & Dapretto, 2006).
- Placing one's "hand over mouth" is considered negative body language among adults (Fast, 2002).
- Covering the mouth can alter the child's visual learning and visual memory (Brockmole, Davoli, Abrams, & Witt, 2013).
- Seeing the mouth purposefully hidden from view can detract from full auditory attention, thus slightly delaying speech perception (Musacchia, Sams, Nicol, & Kraus, 2006).
- Obstructing the mouth provides an acoustic barrier for the child with hearing loss. For example, high-frequency sounds tend to distort or diminish in clarity when passing through a barrier or an acoustic filter. High-frequency audibility for children with hearing loss is critical (Stelmachowicz, Pittman, Hoover, Lewis, & Moeller, 2004). Speech directed to young children with hearing loss must not involve degraded spectral content (Zangl, Klarman, Thal, Fernald, & Bates, 2005).

Some practitioners use "speech hoops" (acoustic screens) to cover their faces. Their reason for using these to replace the "hand cue" is to avoid compromising the sound quality. However, preventing adult-child eye contact can negatively affect the child's overall development. The speaker's eyes give children important cues about the direction of visual attention as well as an emotional and/or mental state gaze necessary for joint attention, spoken language, and social skills (Frischen, Bayliss, & Tipper, 2007; Nappa, Wessel, McEldoon, Gleitman, & Trueswell, 2009; Rigato, Menon, Johnson, Faraguna, & Farroni, 2011). *Consequently, the use of the* hand cue *(or any substitute for it) is no longer recommended in AVT.*

A precept underlying *all* strategies presented in this chapter is that sound must be meaningful. The child with hearing loss will learn to "tune out" sound if it is has no meaning since the brain learns to ignore nonmeaningful sounds (Kotz, Opitz, & Friedrici, 2007). A young child wearing hearing aids with ear molds that inadequately fit, for example, may hear a high-pitched squeal and will eventually ignore the acoustic feedback if it persists.

Another example is when, after activation and programming of the child's cochlear implant, an adult calls

the child's name while he or she is happily playing. The child hears his or her name and turns in the direction of the adult. Subsequently, the adult becomes excited, gleefully remarking to the AV practitioner, "See, he heard me! He knows his name!" In fact, there was no *payoff* for the child, and consequently had no real value, except to indicate detection of a sound.

The AV practitioner coaches the parent to call the child's name and make it meaningful by saying something such as: "Yes, you heard me call you. Great! Come here and help me" or "Come here! I want to show you this" *Sound must be meaningful* if it is to be processed and retained by the brain.

Learning how to become an effective communicator is a dynamic process that also involves cumulative *practice*. Listening, in part, involves a set of *skills* that can be taught, developed, and enhanced through the use of various strategies (Graham, Santos, & Vanderplank, 2011). This chapter, therefore, identifies SIX GOALS of the AV practitioner and discusses many effective strategies used by the AV practitioner to foster the growth of listening and spoken language across the years 0 to 6.

Table 10–1 provides an outline of these SIX GOALS and strategies recommended for each of them.

SIX GOALS OF THE AUDITORY-VERBAL PRACTITIONER (FOR EVERY AVT SESSION)

There are essentially *SIX GOALS* that the AV practitioner typically addresses in the planning and delivery of every AVT session. Parents usually learn these goals quickly as the practitioner creatively coaches them on using various strategies to accomplish them. Some strategies may be specific to AVT while some are used to help children with a variety of communication disorders. These strategies encourage children to listen and talk in AVT sessions and are not to be confused with general parent guidance and coaching practices found in Chapter 12.

Table 10–1. Six Goals and Selected **Strategies** of the AV Practitioner

GOAL 1: CREATE A LISTENING ENVIRONMENT
Strategies • Controlling the environment; setting the stage • Speaking within earshot; leaning to the child's better hearing side
GOAL 2: FACILITATE AUDITORY ATTENTION
Strategies • Presenting a look of concentration with a verbal prompt • Pointing to the ear and saying, "I heard something!" • Using auditory hooks • Using visual distractors • Preparing the child to "listen first and last"

Table 10–1. *continued*

GOAL 3: ENHANCE AUDITORY PERCEPTION OF SPEECH
Strategies • Speaking parentese • Engaging in vocal play • Associating sounds with objects and words • Whispering • Singing • Stressing selected syllables, words, and phrases
GOAL 4: PROMOTE KNOWLEDGE OF LANGUAGE
Strategies • Focusing on the "knowing" rather than the "using" • Taking turns • Imitating the child's early vocalizations • Verbalizing in synchrony with movement • Speaking the language from the child's angle • Talking before, during, and after the action • Pausing for grammatical spaces or emphasis • Transitioning beyond the comfort zone • Connecting the familiar to the unfamiliar • Recasting, expanding, and expatiating on the child's words • Emphasizing actions, relations, and attributes • Contrasting the meaning of words
GOAL 5: FACILITATE SPOKEN LANGUAGE AND COGNITION
Strategies • Leaning forward with expectant looks • Signaling with objects • Providing self-statements • Asking, "What did you hear?" • Promoting auditory-verbal closure • Waiting for the child's response • Asking stage-appropriate questions • Scaffolding for language production
GOAL 6: STIMULATE INDEPENDENT LEARNING
Strategies • Pretending objects are something else • Creating the unexpected • Talking with imaginary friends • Accepting and making mistakes

SIX GOALS

1. Create a Listening Environment
2. Facilitate Auditory Attention
3. Enhance Auditory Perception of Speech
4. Promote Knowledge of Language
5. Facilitate Spoken Language and Cognition
6. Stimulate Independent Learning

GOAL 1: Create a Listening Environment

Strategies

- Controlling the environment; setting the stage
- Speaking within earshot; leaning to the child's better hearing side

A child with a hearing loss may experience auditory deprivation dating from 3 months before birth (Yang, 2006). The length of sensory deprivation depends on the age of the child when he or she was first fitted with at least one effective hearing device. Once the child has access to sound, it is critical to help the child develop *focused auditory attention* so that the child *learns to listen* as quickly and efficiently as possible.

Listening improves when the child is *still* and attends to the adult who is talking (Schneider, Nelson, & Mooney, 2014). As the AV practitioner and parent help increase the child's auditory attention span (sustained attention), the child is more likely to discriminate between meaningful and nonmeaningful sounds, while "tuning out" irrelevant background sounds (Dalton & Fraenkel, 2012).

Controlling the Environment; Setting the Stage

Noise compromises speech perception and language learning (Newman, Chatterjee, Morini, & Remez, 2015). All children, especially those with hearing loss, benefit greatly from quiet environments with little reverberation (Smaldino & Flexer, 2014). Since AVT sessions may take place in the child's home, the AV practitioner informs parents of variables that create adverse listening conditions. Parents, subsequently, can create the most favorable listening and language learning conditions possible. Parents need to know that household appliances, televisions, music equipment, computers, and other electronic devices add to background noise and their use needs to be minimized. High ceilings and tile floors cause reverberation, so floor, window, and wall coverings are encouraged. Many AVT sessions, however, take place in clinical rooms where *controlling the environment* is more easily managed.

Speaking Within Earshot; Leaning to the Child's Better Hearing Side

A child with hearing loss has a reduced listening range (Anderson & Crowley, 2002). Within this range, adults need to speak clearly in a natural voice at normal conversational levels. The nearer the AV practitioner talks into the microphone of the child's hearing device, the more easily the child will understand the speech signal because the clarity of spoken language improves as the distance between listener and speaker decreases (Souza, 2014).

Speaking within earshot means that the person talking is close enough to