Table 1. Core Components, Principles, and Practical Application Examples of Auditory-Verbal Therapy (AVT)

Core components	Principles of AVT*	Practical application examples
Early identification and diagnosis of hearing loss and immediate use of amplification.	1. Promote early diagnosis of hearing loss in newborns, infants, toddlers, and young children, followed by immediate audiologic management and Auditory-Verbal Therapy.	Newborn hearing screenings. Yearly auditory evaluations.
	2. Recommend immediate assessment and use of appropriate, state-of-the-art hearing technology to obtain maximum benefits of auditory stimulation.	Follow up with audiologist after failed hearing screening. Be fitted for hearing aids as soon as possible. Participate in cochlear implant consultation, as appropriate.
Guide, coach, and support parents as they become the primary agents of change in the process of training a child with hearing loss to use hearing as the primary sensory modality.	3. Guide and coach parents to help their child use hearing as the primary sensory modality in developing listening and spoken language.	Have parents document hearing technology use to achieve maximal amplification during all waking hours.
	4. Guide and coach parents to become the primary facilitators of their child's listening and spoken language development through active consistent participation in individualized Auditory-Verbal Therapy.	Provide parents with weekly objectives to facilitate listening, speech, and language in the home environment.
	5. Guide and coach parents to create environments that support listening for the acquisition of spoken language throughout the child's daily activities.	Limit background noise. Talk through activities such as folding laundry, picking up toys, etc.
	6. Guide and coach parents to help their child integrate listening and spoken language into all aspects of the child's life.	Facilitate diverse language experiences.
	7. Guide and coach parents to use natural developmental patterns of audition, speech, language, cognition, and communication.	Facilitate understanding of developmental milestones of children with typical hearing. Scaffold learning opportunities.
	8. Guide and coach parents to help their child self-monitor spoken language through listening.	Child learns to self-correct speech when necessary. Child identifies need to repair communication breakdowns using their auditory feedback loop.
AVT practitioner's specific role in assessment, progress monitoring, treatment efficacy, and professional collaboration.	9. Administer ongoing formal and informal diagnostic assessments to develop individualized auditory-verbal treatment plans, to monitor progress, and to evaluate the effectiveness of the plans for the child and family.	Complete auditory skills checklists. Document speech productions and progress. Analyze speech and language samples.
	10. Promote education in regular schools with peers who have typical hearing and with appropriate services from early childhood onwards.	Meet with professionals within the child's school environment. Tailor the school environment for optimal listening and spoken language.

* As directly listed in Estabrooks, W., Maclver-Lux, K., & Rhoades, E. A. (2016). *Auditory-verbal therapy: For young children with hearing loss and their families, and the practitioners who guide them*. San Diego, CA: Plural Publishing, Inc. and http://www.agbell.org/principles-of-LSLS/

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Table 2. Articles Selected for Review

Study	Design/level of evidence	Participants/ treatment group	Comparison	Intensity/duration	Language outcome findings
Hogan, Stokes, White, Tyszkiewicz, & Woolgar (2008)	Within-subjects experimental design with no control group/ Level IIb	37 children, mean age = 23 months (range 5–56 months) at start of AVT.	Compared predicted and actual rates of language development (RLD).	Pre-intervention RLD (predicted) and post-intervention (actual) RLD were calculated. Post-intervention data was collected after 12+ months of AVT.	Pre-intervention RLD = .49 (range 0–1.14), post-intervention RLD = 1.36 (range .54–3.12). Over 70% children after 12+ months of AVT had achieved or exceeded the average expected RLD for typical hearing children.
Rhoades & Chisolm (2000)	Within-subjects experimental design with no control group/ Level IIb	40 children, mean age = 44 months (range 4–100 months) at start of AVT.	Compared pre-intervention scores to annual assessment data.	Children assessed yearly after one (n = 40), two (n = 32), three (n = 14) and four (n = 6) years of AVT.	Significant increase in language equivalency scores after the first and second years of AVT. Mean receptive and expressive language growth occurred throughout AVT (1–4 years).
Dornan, Hickson, Murdoch, & Houston (2009)	Longitudinal, quasi-experimental, nonequivalent, matched group design/Level IIa	25 children, mean age = 45 months (standard deviation = 15 months) at pre-intervention test session.	Compared AVT group's language scores to typical hearing (TH) group matched for language (+/- 3 months) at pre-intervention testing.	Post-intervention assessment occurred 21 months after pretesting.	AVT group made language gains at a rate similar to TH group. Majority of AVT group had total language scores in age-appropriate range (n = 21) post-intervention.
Dornan, Hickson, Murdoch, Houston, & Constantinescu (2010)	Longitudinal, quasi-experimental, nonequivalent, matched group design/Level IIa	19 children from Dornan et al. (2009), mean age = 45 months (standard deviation = 15 months) at pre-intervention test session.	Compared AVT group's language scores to a typical hearing (TH) group matched for language at pretest.	Post-intervention assessment occurred 21 months after pretesting.	AVT group continued to make gains on language outcome measures at a rate of progress similar to their hearing peers over 50 months.
Hogan, Stokes, & Weller (2010)	Quasi-experimental, nonequivalent, matched group design/Level IIa	12 children, mean age = 28 months (range 5–42 months), family income less than 30,000 euros.	Compared rate of language development (RLD) to pretest and also to previous study in 2008 with group who paid for own therapy.	One-hour therapy sessions weekly and an initial 90-minute session, pre- and posttest, saw up to four certified AVTs.	Mean RLDs showed increase with children. In comparison to previous study, few notable differences (except for mean age). Income did not affect AVT success, parents as primary agents is a large factor.
Constantinescu et al. (2014)	Quasi-experimental, equivalent, matched group design/Level IIa	14 children, mean age = 6 months (range 3–10 months), 7 children in the eAVT group and 7 in the in-person group.	eAVT program was conducted in the same manner as in person, except therapy was conducted via video conferencing.	Posttesting occurred two years after amplification.	Mean scores for children in both the eAVT and in-person groups were within the normal range as compared to hearing peers. There were no significant differences in language pre-amplification or post-amplification between the two groups.

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