

# Auditory Verbal Therapy

Review: January 2019

**Auditory Verbal Therapy (AVT) is a highly specialist early intervention programme which equips parents and carers with the skills to maximise their deaf child's listening and spoken language development with the aim of giving them the same opportunities and an equal start in life as hearing children. It is a targeted-indicated programme for children with hearing loss between the ages of 0-5 years. It is delivered at Auditory Verbal UK (AVUK) centres, and aims to improve children's listening and language skills, and academic outcomes.**

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Evidence  
rating: **2+**

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Cost rating: **4**

AV therapy focuses on the development of spoken language through listening. Through play-based therapy sessions, parents/carers are coached and empowered with the tools to develop their child's listening, talking, thinking and social skills. Children are enrolled on the programme at less than five years of age to maximise the critical period in which 85% of the neural pathways for listening and spoken language are formed.

The programme enables parents/carers to help their child to make the best possible use of their hearing technology (usually hearing aids or auditory implants). It is delivered by Listening and Spoken Language Specialist certified Auditory Verbal practitioners who have undergone additional specialist training after qualification as speech and language therapists, teachers of the deaf or audiologists.

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## EIF Programme Assessment

Auditory Verbal Therapy has **preliminary evidence** of improving a child outcome, but we cannot be confident that the programme caused the improvement.

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Evidence  
rating: **2+**

### What does the evidence rating mean?

**Level 2** indicates that the programme has evidence of improving a child outcome from a study involving at least 20 participants, representing 60% of the sample, using validated instruments.

This programme does not receive a rating of 3 as its best evidence is not from a rigorously conducted RCT or QED evaluation.

### What does the plus mean?

The plus rating indicates that a programme's best available evidence is based on an evaluation that is more rigorous than a level 2 standard but does not meet the criteria for level 3.

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## Cost rating

A rating of 4 indicates that a programme has a medium-high cost to set up and deliver, compared with other interventions reviewed by EIF. This is equivalent to an estimated unit cost of £1,000–£2,000.

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Cost rating: **4**

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## Child outcomes

According to the best available evidence for this programme's impact, it can achieve the following positive outcomes for children:

### Enhancing school achievement & employment

Improved expressive and receptive language ability - based on **study 1**

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Improved maths grades - based on **study 2**

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Improved Hebrew grades - based on **study 2**

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Improved literature grades - based on **study 2**

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Improved English grades - based on **study 2**

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Improved likelihood of high school graduation - based on **study 2**

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Achieving similar rates of progress to typically hearing children in terms of auditory comprehension - based on **study 3**

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Achieving similar rates of progress to typically hearing children in terms of oral expression - based on **study 3**

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Achieving similar rates of progress to typically hearing children in terms of total language skills - based on **study 3**

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Achieving similar rates of progress to typically hearing children in terms of speech skills - based on **study 3**

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## Key programme characteristics

### Who is it for?

The best available evidence for this programme relates to the following age-groups:

- Infants
- Toddlers
- Preschool

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### How is it delivered?

The best available evidence for this programme relates to implementation through these delivery models:

- Individual

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### Where is it delivered?

The best available evidence for this programme relates to its implementation in these settings:

- Home
- Primary school
- Out-patient health setting

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### How is it targeted?

The best available evidence for this programme relates to its implementation as:

- Targeted indicated
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### Where has it been implemented?

Australia, Denmark, Israel, New Zealand, United Kingdom, United States

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### UK provision

This programme has been implemented in the UK.

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### UK evaluation

This programme's best evidence includes evaluation conducted in the UK.

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## About the programme

### What happens during delivery?

#### How is it delivered?

- AVT at AVUK is delivered in between 40 to 60 fortnightly hour-long sessions, over a period of 2–3 years, by one practitioner to parents/caregivers.

### What happens during the intervention?

- Parents are coached by a certified Auditory Verbal practitioner in play-based sessions with their child in how to develop their child's listening so that listening becomes part of their personality.
- Play activities are set at a cognitively appropriate level and may include activities such as instructional activities (e.g. making cupcakes) to develop auditory comprehension and auditory memory skills, role play activities and storytelling (e.g. with dolls or toy people) to develop expressive language, social skills and theory of mind.
- Parents are coached in how to frame these activities to allow their child to develop and improve their listening, thinking and spoken language skills.

### What are the implementation requirements?

#### Who can deliver it?

- The practitioner who delivers this programme is a Listening and Spoken Language Specialist (LSLS) certified Auditory Verbal practitioner, with QCF-6 level qualifications.
- In addition, a family support officer provides two parent consultation sessions per year, and additional support if required/requested, for each family on the programme.

## **What are the training requirements?**

- The Listening and Spoken Language Specialists have 124 hours of programme training. Booster training of practitioners is recommended.

## **How are the practitioners supervised?**

- It is recommended that practitioners are supervised by one host-agency supervisor (qualified to QCF-6 level), who have received 124 hours of programme training.

## **What are the systems for maintaining fidelity?**

Programme fidelity is maintained through the following processes:

- Training manual
- Other online material
- Face-to-face training.

## **Is there a licensing requirement?**

There is no licence required to run this programme.

## How does it work? (Theory of Change)

### How does it work?

- Optimally functioning hearing technology and Auditory Verbal techniques protect deaf children from deprivation of auditory brain stimulation, underdeveloped listening behaviours and delays in spoken language.
- The programme coaches parents in Auditory Verbal techniques, such as checking and troubleshooting hearing technology, promoting listening behaviours with comprehension and expression of spoken language, together with developing social skills and theory of mind.
- In the short term, deaf children are better able to develop listening and spoken language skills, therefore reducing any existing language delays and develop age-appropriate language.
- In the long term, children will be better able to access a mainstream school curriculum, fulfil their educational potential, make and keep friends at school and access equal opportunities in further education and employment.

### Intended outcomes

Supporting children's mental health and wellbeing  
Enhancing school achievement & employment

### Contact details

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<https://www.avuk.org/>



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## About the evidence

Auditory Verbal's most rigorous evidence comes from two QEDs and a one-group pre-post study which were conducted in the UK, Israel and Australia.

These studies identified statistically significant positive impact on a number of child outcomes.

While the reviewed studies are limited by methodological issues pertaining to the lack of a comparison group which has been sufficiently demonstrated to be equivalent to the treatment group, the programme received a level 2+ on the basis of the weight and context of evidence – in particular, the fact that a large number of studies have assessed the impact of Auditory Verbal and have consistently found large effects across different contexts/countries.

### Study 1

**Citation:** Hogan et al., 2008 | **Design:** Pre-post study

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**Country:** United Kingdom | **Study rating:** 2

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**Sample:** 37 children with permanent hearing impairment, who had attended AVT sessions at Auditory Verbal UK (AVUK).

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**Timing:** Post-test

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**Child outcomes:**

Improved expressive and receptive language ability

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**Other outcomes:**

None measured

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Hogan, S., Stokes, J., White, C., Tyszkiewicz, E., & Woolgar, A. (2008). An evaluation of auditory verbal therapy using the rate of early language development as an outcome measure. *Deafness & education international*, 10(3), 143-167.

**Available at**

<https://www.tandfonline.com/doi/abs/10.1179/146431508790559760>

## Study design and sample

The first study is a pre-post study.

Outcomes were assessed before the intervention was delivered, and at 6-month intervals over the course of treatment, including after completion of the intervention.

This study was conducted in the United Kingdom, with a sample of thirty seven children with permanent hearing-impairment, who had attended AVT sessions at Auditory Verbal UK (AVUK)

## Measures

Expressive and receptive language ability was measured using the Pre-school Language Scale - 3 (direct assessment).

## Findings

This study identified statistically significant positive impact on a number of child outcomes.

This includes children's expressive and receptive language ability.

The conclusions that can be drawn from this study are limited by methodological issues pertaining to a lack of a comparison group, hence why a higher rating is not achieved.

## Study 2

**Citation:** Goldblat & Pinto, 2017 | **Design:** QED

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**Country:** Israel | **Study rating:** 2

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**Sample:** 52 young people with hearing loss, between 18 and 29 years old.

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**Timing:** Post-test

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### Child outcomes:

Improved maths grades

Improved Hebrew grades

Improved literature grades

Improved English grades

Improved likelihood of high school graduation

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### Other outcomes:

None measured

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Goldblat, E., & Pinto, O. Y. (2017). Academic outcomes of adolescents and young adults with hearing loss who received auditory-verbal therapy. *Deafness & Education International*, 19(3-4), 126-133.

**Available at**

<https://www.tandfonline.com/doi/abs/10.1080/14643154.2017.1393604>

**Study design and sample**

The second study is a QED.

This study is a cross-sectional retrospective quasi-experimental study, comparing a group of children who received AVT for at least 3 years in early childhood, to a group of children with hearing loss who had not received AVT and were at least 18 years old.

Data on children was obtained from national records. Children in each group were matched in terms of year of birth, gender, residence, and income of parents.

This study was conducted in Israel with a sample of 52 young people with hearing loss, between 18 and 29 years old.

**Measures**

Math grades were measured using parent-reports of child grades.

Hebrew grades were measured using parent-reports of child grades.

Literature grades were measured using parent-reports of child grades.

English grades were measured using parent-reports of child grades.

Matriculation was measured using parent-reports.

**Findings**

This study identified statistically significant positive impact on a number of child outcomes.

This includes improved maths grades, Hebrew grades, literature grades, English grades and matriculation.

The conclusions that can be drawn from this study are limited by methodological issues pertaining to the lack of a comparison group which has been sufficiently demonstrated to be equivalent to the treatment group, hence why a higher rating is not achieved.

## Study 3

**Citation:** Dornan et al., 2009 | **Design:** QED

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**Country:** Australia | **Study rating:** 2

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**Sample:** 29 children with a range of hearing losses, amplified with hearing aids or cochlear implants.

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**Timing:** Post-test

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**Child outcomes:**

Achieving similar rates of progress to typically hearing children in terms of auditory comprehension

Achieving similar rates of progress to typically hearing children in terms of oral expression

Achieving similar rates of progress to typically hearing children in terms of total language skills

Achieving similar rates of progress to typically hearing children in terms of speech skills

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**Other outcomes:**

None measured

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Dornan, D., Hickson, L., Murdoch, B., & Houston, T. (2009). Longitudinal study of speech perception, speech, and language for children with hearing loss in an auditory-verbal therapy program. *Volta*, 109(2-3), 61-85.

**Available at** [https://www.researchgate.net/publication/43521225\\_Longitudinal\\_Study\\_of\\_Speech\\_Perception\\_Speech\\_and](https://www.researchgate.net/publication/43521225_Longitudinal_Study_of_Speech_Perception_Speech_and_Language_Development_in_Children_with_Hearing_Loss_in_an_Auditory-Verbal_Therapy_Program)

## **Study design and sample**

The third study is a QED.

This study is a repeated-measures, prospective quasi-experimental study, comparing a group of children who received AVT to a group of typically hearing children.

Typically hearing children were recruited by families and staff of the AVT programme, and were matched to children receiving treatment in terms of initial language age, receptive vocabulary, gender, and parent education level.

This study was conducted in Australia, with a sample of children between the ages of 2-6 years at the beginning of the programme. The AVT children had a range of sensorineural hearing losses, and used hearing aids and/or cochlear implants to access sound.

## **Measures**

Speech perception was measured using the PLOTT measure; the Manchester Junior Words/Phonetically Balanced List for Kids Words measure; the Consonant-Nucleus-Consonant Words measure, and the Bench, Kowall, and Bamford Sentences measure (direct assessments).

Language was measured using the Preschool Language Scale – Fourth Edition and the Clinical Evaluation of Language Fundamentals measure (direct assessments).

Receptive vocabulary was measured using the Peabody Picture Vocabulary Test (direct assessment).

Speech was measured using the Goldman-Fristoe Test of Articulation, and Computer Aided Speech and Language Analysis (CASALA) (direct assessment).

## **Findings**

The aim of the study is to investigate the extent to which children with hearing loss had improved outcomes over time, and the extent to which their rate of progress for speech and language skills was similar to that of children with typical hearing.

The study identified that rates of progress were similar between children with hearing loss receiving AVT, and typically hearing children, on auditory comprehension, oral expression, total language, and speech skills.

However, typically hearing children progressed at a better rate with respect to receptive vocabulary.

The conclusions that can be drawn from this study are limited by methodological issues pertaining to the lack of a comparison group which has been sufficiently demonstrated to be equivalent to the treatment group, hence why a higher rating is not achieved.

## Other studies

The following studies were identified for this programme but did not count towards the programme's overall evidence rating. A programme receives the same rating as its most robust study or studies.

Auditory Verbal UK (2016). Investing in a sound future for deaf children: a cost benefit analysis of auditory verbal therapy at Auditory verbal.

Constantinescu, G., Phillips, R. L., Davis, A., Dornan, D., & Hogan, A. (2015). Exploring the impact of spoken language on social inclusion for children with hearing loss in listening and spoken language early intervention. *The Volta Review*, 115(2), 153-181.

Constantinescu, G., Waite, M., Dornan, D., Rushbrooke, E., Brown, J., Close, L., & McGovern, J. (submitted). Outcomes of an Auditory-Verbal Therapy programme for young children with hearing loss.

Constantinescu-Sharpe, G., Phillips, R. L., Davis, A., Dornan, D., & Hogan, A. (2017). Social inclusion for children with hearing loss in listening and spoken Language early intervention: an exploratory study. *BMC pediatrics*, 17(1), 74.

Dettman, S. J., Dowell, R. C., Choo, D., Arnott, W., Abrahams, Y., Davis, A., ... & Briggs, R. J. (2016). Long-term communication outcomes for children receiving cochlear implants younger than 12 months: A multicenter study. *Otology & Neurotology*, 37(2), e82-e95.

Dettman, S., Wall, E., Constantinescu, G., & Dowell, R. (2013). Communication outcomes for groups of children using cochlear implants enrolled in auditory-verbal, aural-oral, and bilingual-bicultural early intervention programs. *Otology & Neurotology*, 34(3), b451-459

Easterbrooks SR, O'Rourke CM, Todd NW (2000) Child and family factors associated with deaf children's success in auditory verbal therapy, *Am J Otol* 21(3):341-4.

First Voice. (2015). Sound Outcomes: First Voice speech and language data. Retrieved 8th February 2016.

Fulcher, A., Purcell, A. A., Baker, E., & Munro, N. (2012). Listen up: Children with early identified hearing loss achieve age-appropriate speech/language outcomes by 3 years-of-age. *International Journal of Pediatric Otorhinolaryngology*, 76, 1785-1794.

Hitchins, A. R., & Hogan, S. C. (2018). Outcomes of early intervention for deaf children with additional needs following an Auditory Verbal approach to communication. *International journal of pediatric otorhinolaryngology*, 115, 125-132.

Hogan, S. (2016). The Auditory Verbal Approach in the UK: A 10 year audit of outcomes for pre-school children in the UK. British Society of Audiology Annual Conference.

Hogan, S., Stokes, J. and Weller, I. (2010). Language Outcomes for Children of Low-Income Families Enrolled in Auditory Verbal Therapy. *Deafness & Education International*, 12 (4) 204-216.

Kaipa, R., & Danser, M, L. (2016). Efficacy of auditory-verbal therapy in children with hearing impairment: A systematic review from 1993 to 2015. *International journal of pediatric otorhinolaryngology*, 86,124-134.

Percy-Smith, L., Hallstrøm, M., Josvassen, J. L., Mikkelsen, J. H., Nissen, L., Dieleman, E., & Cayé-Thomasen, P. (2018). Differences and similarities in early vocabulary development between children with hearing aids and children with cochlear implant enrolled in 3-year auditory verbal intervention. *International journal of pediatric otorhinolaryngology*, 108, 67-72.

Percy-Smith, L., Tønning, T. L., Josvassen, J. L., Mikkelsen, J. H., Nissen, L., Dieleman, E., & Cayé-Thomasen, P. (2017). Auditory verbal habilitation is associated with improved outcome for children with cochlear implant. *Cochlear Implants International*, 19 (1), 38-45.

Percy-Smith, L., Tønning, T. L., Josvassen, J. L., Mikkelsen, J. H., Nissen, L., Dieleman, E., ... & Cayé-Thomasen, P. (2018). Auditory verbal habilitation is associated with improved outcome for children with cochlear implant. *Cochlear implants international*, 19(1), 38-45.

Rhoades, E., & Chisholm, T. (2000) Global language progress with an Auditory-Verbal approach for children who are deaf or hard of hearing. *The Volta Review*. 102, 5–24

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## Guidebook

The EIF Guidebook provides information about early intervention programmes that have at least preliminary evidence of achieving positive outcomes for children. It provides information based on EIF's assessment of the strength of evidence for a programme's effectiveness, and on detail about programmes shared with us by those who design, run and deliver them.

The Guidebook serves an important starting point for commissioners to find out more about effective early interventions, and for programme providers to find out more about what good evidence of impact looks like and how it can be captured. As just one of our key resources for commissioners and practitioners, the Guidebook is an essential part of EIF's work to support the development of and investment in effective early intervention programmes.

Our assessment of the evidence for a programme's effectiveness can inform and support certain parts of a commissioning decision, but it is not a substitute for professional judgment. Evidence about what has worked in the past offers no guarantee that an approach will work in all circumstances. Crucially, the Guidebook is not a market comparison website: ratings and other information should not be interpreted as a specific recommendation, kite mark or endorsement for any programme.

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## EIF

The Early Intervention Foundation (EIF) is an independent charity and a member of the What Works network. We support the use of effective early intervention for children, young people and their families: identifying signals of risk, and responding with effective interventions to improve outcomes, reduce hardship and save the public money in the long term.

We work by generating evidence and knowledge of what works in our field, putting this information in the hands of commissioners, practitioners and policymakers, and supporting the adoption of the evidence in local areas and relevant sectors.

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