

## EVALUATION OF AUDITORY TRAINING

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Hearing tests have been used, in a limited manner, to select individuals for assignment to auditory training programs. However, there are few studies which have dealt with the importance of such testing in the evaluation of the results of an auditory training program. Lichtenberg (1966) has indicated that investigations of the deaf and hard of hearing have suffered from a lack of adequate measuring devices for the evaluation of progress following auditory training. Hutton *et al* (1959) developed a test to measure auditory, visual and combined auditory-visual intelligibility for use in aural rehabilitation. There is very little in the way of publications, other than what has been mentioned above, that relates to the evaluation of auditory training procedures.

It was decided that a questionnaire approach might be the most convenient and practical means of determining the present status of the evaluation of the results of auditory training.

### Questionnaire

The questionnaire consisted of a series of four basic questions that dealt with methods used in measuring the effectiveness of the auditory training program, the time of testing, reactions to testing procedures and suggestions for improvement of evaluative procedures.

The questionnaire was sent to fifty members of the Academy of Rehabilitative Audiology. Twenty-three individuals returned completed questionnaires.

#### 1. Types of Evaluation

Responses to this portion of the questionnaire are listed in Table 1. Over half of the respondents reported that they used both pre- and post-pure tone and speech reception tests. Pre- and post-discrimination tests were used by twenty of the twenty-three respondents.

TABLE 1

## Types of procedures used to evaluate the effectiveness of Auditory Training

	<u>Used</u>	<u>Not Used</u>
Pre-pure tone tests	13	10
Post-pure tone tests	13	10
Pre-speech reception tests	16	7
Post-speech reception tests	16	7
Pre-discrimination tests	20	3
Post-discrimination tests	20	3

Of especial interest are the additional types of tests that the respondents indicated they used. Four indicated they employed tests which included the use of sentences such as the C.I.D. sentences, Harvard Auditory Test No. 12, and self-developed materials.

Individual and combined tests of auditory and visual ability were used by five of the respondents. Two others utilized discrimination tests with noise. Observation of communicative skills and effectiveness with and without a hearing aid, in the clinic and in the home, and measures of speech, language and academic performance were used by several of the respondents. One respondent utilized such parameters as ease of conditioning, latency of response, extinction rate and strength of response to evaluate the responses of children.

Although the majority of clinicians used traditional discrimination tests they still indicated that there was a need for additional tests that would evaluate broader areas such as general communicative behavior and individual behavior of the individual.

## 2. Pattern of Testing

Eighteen of the twenty-three respondents reported they utilized periodic testing. Three tested during each session,

three tested every six months, one tested every three weeks, one tested twice a year, and three said their testing varied with circumstances. The extent of the testing varied with the age of the subject, the nature of the hearing loss, the degree of auditory ability, and the nature of the communicative problem. As is evident there was no established pattern, and there was no evidence as to which pattern of testing was the most effective method.

Sixteen indicated that they tested individuals at the end of the program, three stated they did not test at the end of the program, and four did not reply. Follow-up testing was done by 10 of the 23 individuals. Three did such testing on an annual basis, three every six months, one every three months, and one every two years.

#### Satisfaction with Methods of Evaluation

All but one of the respondents indicated a dissatisfaction with present methods of evaluation. The major reasons for the dissatisfaction were, the ineffectiveness of present methods of testing in that present measures are gross measures, and also such tests do not evaluate and assess communication function as it occurs in everyday life. The following list of suggestions for improvement of methods of evaluation was extracted from responses on the questionnaire.

- a. Development of a diagnostic test battery which includes phonemic transcription of error performance and a test of minimal pairs.
- b. Development of standardized tests of auditory discrimination which do not involve vocabulary and syntax beyond the comprehension of subjects.
- c. Development of suitable test materials for very young children and individuals with limited auditory skills and capacities.
- d. Development of a video taped test of speech reading which would evaluate auditory, visual and combined performance.
- e. Testing of auditory, visual and combined reception of words and sentences in quiet and in noise.

- f. A need for practical training which utilizes actual real-life situations.
- g. Development and standardization of a test for young children which would follow a developmental pattern from gross sound to phonemic contexts.

#### Summary

A structured questionnaire which included questions relative to types of evaluation in use, patterns of testing and degree of satisfaction with present techniques was sent to 50 members of the Academy of Rehabilitative Audiology. Twenty-three completed questionnaires were returned. An analysis of the questionnaires indicated that a variety of techniques, practices and evaluative measures were in use. Also, 22 of the respondents indicated that they were not satisfied with present testing and therapy procedures.

The following recommendations are made as a result of this survey.

1. There is a need for the development and standardization of tests of discrimination which utilize sentences and samples of everyday speech.
2. Such tests should involve the evaluation of visual, auditory and combined reception of the discrimination materials in quiet and in noise.
3. There is a need for the development and standardization of test materials for use with very young children especially those with limited auditory skills and capacities.
4. There should be continued research in the evaluation of the method by which speech is processed by both the normal and abnormal ear. Also, efforts should be made to correlate etiology of hearing loss and site of lesion with results of auditory training.
5. There is a need for extensive research of ongoing auditory training programs and methods as well as long-range studies of organized auditory training programs with subsequent publication of the results of such research.

#### References

Hutton, C., Curry, E.T., and Armstrong, M.B., "Semi-diagnostic Test Materials for Aural Rehabilitation," Journal of Speech and Hearing Disorders, 24: 319-329 (1959)

Lichtenberg, F., "A Comparison of Children's Ability to Make Speech Sound Discriminations," Volta Review, 68: 426-434 (1966)