

Hearing Impairment

The ability to communicate is essential. Where it is not possible, isolation with all its inherent hardships, is the end result. A human being unable to interact verbally because of speech or hearing loss is alone in a crowded world isolated from friends, family and society and often cut off from meaningful employment.

Speech and language handicaps respect no racial, social or political boundaries. They are a universal disability and, with some allowance for countries where certain epidemic illnesses are more rampant, affect 5 to 10 per cent of the population. The percentage grows as people age and live longer.

Such handicaps are caused by many factors, ranging from subtle neurological problems during

pregnancy, to a lack of stimulation in the home, head injuries, strokes and viral diseases.

Hearing impairment, besides its obvious problems, is also a major contributor to both speech and language obstacles. Where either problem exists resulting in an inability to absorb the spoken word or responding, learning is impaired as well.

Children slow in developing language skills necessary for understanding and expressing thoughts and ideas are at high risk of developing learning problems in school, since oral language skills – listening and speaking – are the foundation for written language skills. Voice disorders involve improper pitch, tone loudness and quality of speech.

Hearing impairment – something often missed or denied by parents as existing in their child – often manifests itself in the form of poor speech and language development. The longer the impairment goes undiagnosed the more difficult eventual treatment will be.

In Canada, where, according to estimates, more than 10 per cent of six-year-old children starting school have some impairment of speech, language or hearing, several companies have designed and developed sophisticated tools for diagnosis and treatment of such handicaps.

Madsen Electronics (Canada) Limited, of Oakville, Ontario, manufactures a full range of audiometers for testing of hearing levels, including pitch and tone.

A digital screening audiometer makes possible testing for hearing levels ranging from –10 to 190 decibels in five-decibel steps at eight frequencies from 250 to 8 000 hertz. The device, which is portable weighing only two kilograms, operates on both alternating and direct (battery) power

supplies, the latter an option.

A “brain stem responsive audiometer” can be used for both hearing and neurological testing of the auditory brain stem response.

For children suffering from impaired hearing, a speech training device is available to teach control of speaking. It is an aid in both assessing and treatment of voice disorders. The system’s screen is capable of displaying speech behaviour associated with fluency disturbances, such as pausing and rhythm characteristics. The device can also be used to help develop good voice pitch and efficient articulation. It can display the contrast between good and poor articulation characteristics, voice onset, intonation, pause, loudness and rhythm. As an aid to the teacher, who is the ultimate key to improved and effective speech, the system is also useful in teaching consonant and vowel characteristics as well as intonation and stress patterns of another language.

A range of “evoked potential” measurement devices is also available, including a current stimulator to permit neurological investigation. With a visual pattern screen stimulator option, evoked potential investigations can also be performed visually.



This visible speech-training system can be used for hearing impairment problems, teaching a new language, as well as speech and voice improvement.