

## **INFORMATION ON AUDITORY PROCESSING**

### **Auditory Therapy for People with Autism**

Auditory therapy is designed to use a set sound sequence to acclimate a person to sound and to make it easier for them to build up resistance to over-stimulation.

In auditory therapy, tones are played for a set duration every day. In theory, the person gets used to the sounds and develops a better ability to cope with other sounds.

Auditory therapy has not had any full studies done and the results are ambiguous at best on the partial studies that have been carried out. Very few of the studies had control groups, or were done with a large enough group to give statistical information. However, auditory therapy has not shown to do any harm and there is the possibility that it could positively influence some people.

There are two basic methods of auditory therapy. Auditory Integration Training, or AIT, and the Tomatis method, which is called auditory training or listening therapy. The difference between the two is that the AIT method is based on a physiological approach and the Tomatis method is based on an emotional approach. AIT tries to improve a person's ability to perceive sounds. The Tomatis method tries to improve listening and communication.

### **Background Theories**

Over forty years ago, a French ear surgeon, Dr. Alfred Tomatis, made a series of groundbreaking discoveries about the role of the ear and hearing in brain development and organization. We now know that, before birth, the human brain's first sensory experiences are the rich sounds inside the womb. Tomatis showed that our auditory nerve is fundamental to human neurology; it helps to regulate not only balance and spatial orientation, but even vision and our tactile senses. He also discovered that sound is a "nutrient " that can stimulate and feed the brain. One of his greatest innovations was to find new ways to stimulate the ear and brain that can improve hearing, learning, and behavior.

Pasted from <<http://www.rmlearning.com/auditoryprocessing.htm>>

Berard Auditory Integration Training or Berard AIT was developed by Dr. Guy Berard, an otolaryngologist (Ear, Nose and Throat or ENT physician) in Annecy, France. Dr. Guy Berard originally invented AIT to rehabilitate disorders of the auditory system, such as hearing loss or hearing distortion (hypersensitive, hyposensitive, or asymmetrical hearing).

After 35+ years of clinical practice and study, Dr. Berard determined that, in many cases, distortions in hearing or auditory processing contribute to behavioral or learning disorders. In the large majority of Dr. Berard's cases, AIT significantly reduced some or many of the disabilities associated with autism spectrum disorders, central auditory processing disorders (CAPD), speech and language disorders, sensory issues including

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auditory, tactile or other sensory sensitivities (hyper or hypo), dyslexia, pervasive developmental disorder (PDD), attention deficit disorder with or without hyperactivity, anxiety, and depression.

Pasted from <<http://www.aithelps.com/>>

The Berard approach. The Berard method is based on a physiologic- educational, not emotional, approach (Berard, 1982). Berard argues that behavioral and cognitive problems may arise when people perceive sounds in a "differential" manner. That is, when certain frequencies are perceived much better than other frequencies, sounds are perceived in a distorted manner and may lead to difficulties in comprehension and behavior. Through auditory training, Berard claims that distorted hearing and hypersensitivity to specific frequencies are reduced and that, ideally, all frequencies can be perceived equally well. Thus, environmental sounds, including speech, are perceived normally.

The Tomatis approach. Tomatis takes a psychological-emotional approach in explaining how people may benefit from his program (Tomatis, 1974, 1978). Unlike Berard, the Tomatis method does not claim to reduce hypersensitivity, but rather, it claims to improve a person's listening and communication skills.

Pasted from <<http://www.autismwebsite.com/ari/treatment/tomatis.htm>>

### **Adverse Reactions**

Neither the Berard nor Tomatis approach is harmful. Both consist of music and voices played through earphones at levels much quieter than many environmental sounds commonly heard. Yet some individuals report rather mild--not severe--side effects during and after the training sessions, including irritability, mood swings, hyperactivity and fatigue. No hard empirical data is available.

Pasted from <<http://www.autismwebsite.com/ari/treatment/tomatis.htm>>

In children, auditory problems may be identified by speech and language problems, sensitivity to sounds, poor attention, difficulty following directions, difficulty expressing oneself, difficulty with listening comprehension as well as reading comprehension, difficulty with social interactions, or auditory self-stimulation, such as constant humming or self-talk. Children who have had a history of ear infections or chronic middle ear fluid are at a higher risk for having difficulties in auditory perception and processing.

In adults, auditory problems may manifest as difficulty retaining auditory information, inattentiveness, sound sensitivity, or speech/language and voice concerns. For individuals who have hearing loss, an auditory stimulation program is important to aid in improving the functional use of their hearing. Actual hearing levels may remain the same (as indicated on an audiogram), TLP may help to train the individual's listening skills so that existing hearing may be used more efficiently.

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AIT was designed to normalize hearing. Distortions in hearing can sometimes be a significant contributing factor in the conditions listed above. Individuals with the abovementioned disorders can often have hearing that is disorganized, asymmetrical, hypersensitive or otherwise abnormal.

One possibility is that some of these individuals are hypersensitive to certain frequencies of sound. For example, one individual might be hypersensitive to the frequencies of 1,000 and 8,000 Hertz while her perception of all other frequencies falls within the normal

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range. In this case, the individual might become over-stimulated, disoriented or agitated in the presence of sounds at 1,000 and 8,000 Hertz.

Another consideration is that an individual's hearing might be asymmetrical (significantly different between the two ears). When the right and left ears perceive sounds in an extremely different way, problems with sound discrimination can occur.

Pasted from <<http://www.vision3d.com/adhd/>>

### **Home Program Ideas:**

Sound and Beyond, created by Cochlear, is a self-paced program that allows implant recipients to develop their listening skills in the comfort of their own home! There are 8 modules included in the program, such as; environmental sounds, music appreciation, everyday sentences, etc. Unlike many listening exercises, you don't need a partner to practice. This program monitors progress and recommends what skill level should be practiced. It provides instant feedback regarding performance at the end of each training session or test. Training sessions remain challenging, as the material for each session is randomly selected from the database. To learn more about this software, visit:

<http://www.cochlearamericas.com/Support/169.asp>.

### **Other “self help” aural rehabilitation ideas include:**

[http://esl.about.com/library/courses/blcourses\\_beginner\\_listening.htm](http://esl.about.com/library/courses/blcourses_beginner_listening.htm)

<http://www.esl-lab.com/index.htm>

<http://www.manythings.org/pp/>

<http://www.englishlistening.com/>

<http://pbskids.org/lions/songs/>

Pasted from <<http://www.letthemhear.org/hearing/auditory.php>>

## **ADDITIONAL RESOURCES**

### **Society for Auditory Integration Techniques**

Berard Method

[www.berardaitwebsite.com](http://www.berardaitwebsite.com)

### **Georgiana Institute (AIT)**

<http://www.georgianainstitute.org>

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