Sound Therapy!
The Ear
Intricacies of the Auditory System

There is considerable redundancy in the system, so that, if one part is damaged, other parts can be encouraged to provide the necessary control.

Tomatis was the first to discover that many developmental delays and disabilities can be helped by sound stimulation.
Hearing and Position

- Semi-Circular Canals
- Utricle
- Ductus Reuniens
- Scala Vestibuli
- Helicotrema
- Endolymphatic Sac
- Vestibular Aqueduct
- Cochlear Aqueduct
- Saccule
- Scala Tympani
- Scala Media

Alec N. Salt, Washington University
The Ear is connected to the Body and our Emotions

The motivational and emotional need for communication begins with listening.

The ear has a part in sensing all feelings due to the vagus nerve connection linking the ear drum and major body organs.

AA Tomatis, 1974
The 3 Integrators

- Cochlear/Linguistic
- Visual/Spatial
- Vestibular/Somatic
What The Ear Does

- Vestibule analyzes larger movements of muscles of the body.
- Cochlea analyzes smaller movements of sound waves received through bone and air conduction.
- Integrates the vestibular (balancing) and cochlear (decoding of sound) in a single system.
Vestibular Nerve

- Presents itself at every level of the medulla and connects with all the muscles of the body
- Integrates the visual center
- Integrates language
The Ear Has Many Jobs

- Locate sounds spatially
- To perceive sound and transform this from mechanical energy to electrical energy and transmit this energy to the brain
- Establish right lead ear for audio-vocal control
- Establish balance and equilibrium
- Attend and discriminate
- Integrates information from sound and motor movements
Sound Training Applications

- Developed by Dr. Alfred Tomatis over the past 50 years
- Madaule – Toronto
- Joudry – walkman CD’s
- Dr. Berard – AIT
- Steinbach – Samonas
- Tallal and Merzenich – Fast ForWord

Stephen M. Edelson, PhD. And Bernard Rimland, PhD.

23 out of 28 reviews conclude that AIT benefits various population subgroups
A single-subject research design investigated changes in brain functioning following AIT using Positron Emissions Test (PET) Scan technology. The research subject was an 8-year old male with mental retardation and autism. PET scans were conducted prior to a second set of AIT listening sessions (baseline), one day after the listening sessions, and six months later. The results at both the one-day and six-month follow-up evaluations indicated a normalization of brain wave activity, including a decrease in hyper-metabolism in the frontal lobe and an increase in activity in the occipital lobe.
Magnetoencephalography and EEG recordings were used to measure electrical activity in the brain in one child with dyslexia and one high-functioning autistic adult. Baseline recordings demonstrated larger than normal responses in the areas associated with hyperacusis. **Following AIT, a more normalized balance or symmetry in electrical activity was observed.**
Peer Reviewed Articles


- Thompson, BM, and Andrews, SR. “An Historical Commentary on the Physiological Effects of Music: Tomatis, Mozart and Neuropsychology” Integrative Physiological and Behavioral Science (35:3, September, 2000)

Auditory Integration Training and Facilitated Communication for Autism

- AIT and FC are controversial treatment options for autism and other disorders. Although two investigations indicated AIT may help some children with autism,5,6 as yet there are no good controlled studies to support its use.

AMERICAN ACADEMY OF PEDIATRICS
Operating Premise

- Ear and the larynx are part of the same neurological loop and changes in the ear will affect the voice.
- Stimulation to the brain results in increased dendritic branching, increasing metabolism within that area, and thus, increased blood flow.
- Specific frequencies are important for this stimulation.
Sound Training

- Low frequency training can improve coordination by stimulating the vestibular apparatus.
- Mid frequency training, those used in language, stimulate the brain to attune better and block out extraneous “noise.”
- High frequency training can stimulate the brain to sharpen focus and decrease a lot of extra motion these children exhibit.
Improvements Seen With Sound Therapy

- Coordination
- Focus/attention
- Spontaneous language
- Receptive skills
- Articulation
Dr. Guy Berard's Auditory Integration Training (AIT)

- http://www.digitalaerobics.com/
- http://www.georgianainstitute.org/
Welcome!

The purpose of this website is to provide you with information on The Tomatis Method which has helped many people with:

- Attention Deficit Disorders (ADD)
- Attention Deficit Hyperactivity Disorders (ADHD)
- Learning delays
- Autism
- Dyslexia
- Balance and Coordination Problems
- Sensory integration and motor skill difficulties
- Asperger's Syndrome
- Pervasive Development Disorder (PDD)
- Down's Syndrome
Josh and Mozart