A Whole Body Approach When Using Sound-based Therapies for the Autistic Person

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The Davis Model of Sound Intervention®

- Uses the power of sound to enhance a subtle energy system called the Voice-Ear-Brain Connection which must be balanced in order to demonstrate positive change in learning, development, and wellness. The process uses specific sound-based therapies.

What is sound-based therapy?

- Sound-based therapy uses sound vibration with special equipment, specific programs, modified music, and/or specific tones/beats, the need for which is identified with appropriate testing.
- Sound-based therapy goes beyond hearing, beyond auditory processing, and beyond music. Sound-based therapy utilizes the energy of the person and supports change with the person’s natural form and function by repatterning this energy.

Discussion of terms:

- Sound Healing: Using tones, mantras, various rhythms and sound patterns, and other sounding techniques to support change with the body’s energy patterns
- Sound Therapy: Using specific notes of the musical scales to make change with the body’s energy patterns usually with a sounding source
- Sound-based therapy: already defined
- Music: The Artwork of Sound
- Music Therapy: Using the Artwork of Sound to make change with emotional, behavioral, and physiological body responses

Additional Terms:

1. Hearing is the physical act of utilizing the ear to receive sound
2. Listening involves using the brain in conjunction with the physical act of receiving sound. (Involves a mental process)
3. Perception is how the brain receives and uses sound

Names of Sound-based Therapies:

- Auditory Integration Training
- The Tomatis® Method
- BioAcoustics™
- The Listening Program®
- EnListen®
- Samonas®
- Fast ForWord®
- Interactive Metronome®

All sound therapies are not the same!

- Any sound therapy can make change. It is the correct order of the administration of sound therapies that can make the greatest impact. The order is identified from testing.

How is the order determined?

- By a systematic approach from the results of a diagnostic test battery that determines if, when, how long and in what order any or all of the many different sound-based therapies can be appropriately introduced.

The Tree of Sound Enhancement Therapy Protocol®

- Developmental flow chart for the administration of sound therapy.
While there are many different sound-based therapies that can be administered individually with some level of success, the best outcomes are evidenced when The Tree analogy is used.

The Tree has 6 Parts:

1. **Sense of Hearing**
   - The “Root System” addresses one’s sense of hearing. The therapy at this level is a form of Auditory Integration Training, which reprograms how the auditory nerve muscles in the middle ear respond to sound, subsequently supporting the reception of sound in the cochlea. These therapies are used after the work of Dr. Berard is completed. Changes evidenced are a result of better sound reception.

2. **Body Rhythms**
   - The “Seed” is the foundation for all sound response in the body as it addresses our basal body rhythms, such as the heart beat or breath stream. The programs at this level are modeled after the work of Dr. Tomatis, who established the Tomatis® Method. The changes evidenced are a result of vibrational stimulation through the parts of the ear: cochlea, semi-circular canals, and vestibule, as well as through the bones, circulatory system, nervous system, and soft tissue network of the body.

3. **General Sound Processing Connections**
   - The “Trunk” addresses all responses of the ear for general sound processing stimulation, not just hearing. The programs at this level are called Listening Training Programs and are modeled after the work of Dr. Tomatis. These programs introduce rhythmical patterns to which the body responds physically and emotionally.

4. **Specific Auditory Processing Skills**
   - The “Lower Leaves and Branches” address specific auditory processing skills such as memory, sequencing, and discrimination. These therapies are geared toward the parts of The Tree that support the specific skills, such as the auditory processing centers in the brain. These therapies that address these skills either in a specific skill area such as temporal sequencing, or with general overall auditory processing skills.

5. **Academic Skills**
   - The “Upper Leaves and Branches” address the academic areas such as reading, spelling, and handwriting skills, which can only be maximally achieved when the foundation of The Tree is in place. People can have these skills but not necessarily have all of them in their entirety. The programs at this level are auditory, visual, and kinaesthetic, which work together allowing for full integration of the foundational skills.

6. **Overall body stability and maintenance**
   - The “Overall Maintenance of The Tree” addresses one’s overall body support for maintaining the learning and developmental changes obtained at the various parts of The Tree. The Head, surrounding The Tree reflects the combination of the voice, the eye, the brain supporting each other through changes. Currently the voice identifies the body’s imbalances and their associated changes, the cell’s response to sound, and the brain’s response to hearing.

What becomes the tool to use?

- The Diagnostic Evaluation for Therapy Protocol (DETP®)
- The connections between the voice, the ear, and the brain
- The cell’s response to sound
- The “Tree” analogy
Once the therapy protocol is determined, what is possible?

- Let's determine what and how sound affects the body—we'll review learning, development and wellness issues. All are important as a whole body approach.

### Sound Impacts our Entire Body

- We hear sound through our ears, our skin, our bones, our sense of touch, and our cells.
- It affects our physical well-being, emotions, and response to the world around us.
- We must hear sound correctly in order to process what is being said.

#### Positive
- Calming and relaxing
- Brings into focus
- Creates awareness of world
- Supports language development
- Enhances responsiveness

#### Negative
- Isolation
- Lack of attention
- Hypersensitivity to all sensory stimulation
- Poor social skills
- Weak motor & vestibular skills
- Poor reading skills
- Weak Auditory Processing skills

### Negative Impact on the Special Needs Child

- Will cover ears
- Will turn TV volume up
- Has fear of sound (phobia)
- Will tune out the world
- Dislikes background noise
- Will react sometimes and not others
- May act “deaf”

### The concepts behind the model

#### 3 key points:

1. There are 5 laws which connect the voice, the ear, and the brain. Summarized, the voice produces what the ear hears, and the ear emits the same stressed frequencies as the voice. If one is modified, the other changes and the brain sends the correcting response to the body. These laws are known as The Tomatis Effect and The Davis Addendum® to the Tomatis Effect.

2. Every cell in the body emits and takes in sound frequencies, thereby portraying the body as one’s “Signature Symphony of Sound®”. If there is an “out of tune” frequency, the instruments (cells) of the body are not supporting the symphony and the music is discordant. The “out of tune” frequencies are identified. The sound is introduced to the body and the brain then introduces the correct frequency to the cell to “tune it up.”

### The body is an orchestra comprised of many different instruments.

- It is not just the incoming sound that we receive by hearing or listening that is important. It is how our entire body’s response to sound—both the reception and expression of sound—that keeps us whole.

### As long as the instruments are in tune, the body is in tune.
How can we determine if your body is in tune?

- We use your voice, which reflects what your ear and brain receive and perceive.

3. The ear is viewed as the body's global sensory processor and not just a hearing mechanism, as all of the body's senses are stimulated either directly or indirectly through the ear. Sound vibration is also processed through bone response, cell response, the nervous system, the circulatory system, and the soft tissue network of the body. The body as a whole is considered a vibrational frequency entity.

The Ear is the Major Sensory Stimulator for the Body

- The ear stimulates our sense of:
  - * taste
  - * touch
  - * sight
  - * smell
  - * hearing
- Additionally, it affects our balance, emotions, digestion, and social skills.
- With sound vibration, all senses are stimulated, bringing them into better functional use.
- 10 cranial nerves are directly stimulated with sound and sensations spread throughout the entire body.

Diagnosis doesn't matter

- The diagnosis of the person seeking to make change does not matter, for it is the sound energy patterns of the body that determine the possibilities for change for each individual.
- In other words, sound-based therapies force the evaluator and the client to focus on the energy patterns of the body, not the disability—neither medical nor educational. The symptoms, disabilities and challenges are not what are addressed. Each person is helped as an individual energy entity.

Root Therapy Changes

1. Sense of Hearing
   - Improved hearing
   - Hyper-sensitivity to sound (one type)
   - Decreased hypo-responsiveness to sound
   - Better reception of sound input
   - Improved sense of self
   - More social awareness

Root Therapy Category Name: Auditory Integration Training

- A ten day program listening for ½ hour 2 times a day
- Uses special music and equipment to stimulate a muscle in the middle ear
- Should be done with little additional sensory stimulation

Auditory Integration Training: Hearing Sensitivity Test

- Subject: 259

The Davis Center's Research

1. Measuring pre and post acoustic reflexes
   - Subjects: 259
   - 91% made change from very low to normal
   - 8% made change almost to normal
   - 1% stayed same or regressed

Seed Therapy Changes

2. Body Rhythms
   - More connected with the world around them
   - More focused
   - More relaxed
   - Better concentration
Seed Therapy: REI
- Rhythmic Entrainment Intervention (REI) - a MusicMedicine therapy program
- Uses auditory rhythmic stimulation
- Includes two custom-made audio CDs
- Listen 20 minutes per day for 10 weeks

Trunk Therapy Changes
- General Sound Processing
  - Decreased sensory hypersensitivities
  - Language skills
  - Reading skills
  - Attention/focus
  - Pragmatics
  - Social skills
  - Communication skills
  - Oral motor skills
  - Vestibular, motor, balance skills
  - And sooo much more!

Trunk Therapy Category: Listening Training Programs
- Modeled after Dr. Alfred Tomatis’s work. He was a French physician and researcher, & developed the “Tomatis® Method” after years of research
- Brain intensive so many sessions are needed. The frequency, duration and intensity of the program helps with the changes.

Listening Training Programs: Sound Processing Test

While listening: Important to Use the Entire Body
- Draw
- Work puzzles
- Play games
- Engage in dialogue
- Activities to integrate reflex and sensory systems
- Motor activities

Draw

Work Puzzles

Play Games

Engage in Dialogue
Sensory Activities

100 Autistic Children: Percent of Positive Change Reported by Parents Post Tomatis

11 AD/HD Children: Percent of Positive Change Reported by Parents Post Tomatis

Leaves and Branches Changes

Lower Leaves and Branches Therapies:
- Fast ForWord®
- Interactive Metronome®
- Earobics®
- And many of the Brain Building approaches that are recently on the market

Head Changes

How can we determine if your body is in harmony?

- We use your voice.

- In reality, each of our body’s ‘instruments’ represent a specific frequency or sound. Every part of our body is made up of atoms and molecules. By their very nature, these particles move. Where there is movement, science knows there is friction. Where there is friction, there is frequency; and where there is frequency, there is sound.
So, our body represents many thousands of frequencies!! The easiest way to determine if our body’s frequencies are staying in tune is through vocal analysis.

**Voiceprint**

- When the frequencies of the body become distorted, the voiceprint will display these distortions.

BioAcoustics explores the potential that the voice is a mathematical representation of the body.

Vocal analysis has supported the notion that the body is a Mathematical Matrix of Predictable Frequency Relationships.

**Frequency Equivalents**

A numeric representation of an element, compound or structure within the body; Including muscles, biochemicals, nutrients, toxins, connective tissue, nerves, organs and pathogens.

Through low frequency sound presentation, the brain perceives, then generates impulse patterns that are measured as brain wave frequencies. These brain wave frequency impulses travel to the rest of the body via the nerve pathways, helping sustain structural integrity and emotional equilibrium.

Before Sound Presentation

After Sound Presentation

**Vocal Analysis Printout**

<table>
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<th>PROVIDER LISTING</th>
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<tbody>
<tr>
<td><strong>Name</strong></td>
</tr>
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<tr>
<td>Jerry</td>
</tr>
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<td>Sarah</td>
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<td>Tense</td>
</tr>
<tr>
<td>Relaxed</td>
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<tr>
<td>Tense</td>
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</tbody>
</table>
Comparison to urinalysis

- **Vocal analysis**
  - Arsenic: H
  - Bismuth: H
  - Boron: H
  - Chromium Picolinate: H
  - Cobalt Hydrocarbonyl: H
  - Copper: Arsenite: H
  - Lithium Acetate: H
  - Potassium: H
  - Sodium: I
  - Strontium: L

- **Urinalysis**
  - Arsenic-present: RR
  - Bismuth-present: RR
  - Boron-present: RR
  - Chromium Pico-linate-present: RR
  - Cobalt: present: RR
  - Copper: present: RR
  - Lithium: present: RR
  - Potassium: present: RR
  - Sodium: present: RR
  - Zirconium: present: RR

Available Therapies

- **TRUNK Listening Training Programs:**
  - Tomati®
  - Enlisten®

- **LEAVES**
  - Fast ForWord® Interactive Metronome®

- **SYSTEM MAINTENANCE**
  - BioAcoustics
  - The Voice

- **ROOT SYSTEM**
  - Auditory Integration Training

**OUR BODIES**

- Our bodies search for stability between external sound sources and internal body vibrations to create balance. Our bodies react physically and psychologically. Sometimes the body cannot make the change by itself and needs a sound-based therapy to accomplish the change.

DETP®

- Provides solutions to understanding the complexities of sound-based therapies

The Davis Model

- The Davis Model of Sound Intervention is a whole body approach to supporting learning, development and wellness changes. The Voice-Ear-Brain Connection provides the foundation to make this happen.

The Voice-Ear-Brain Connection

Additional Information:

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