

Tomatis® Listening Tests (more precisely, 'assessment;') & 2 week at-home Listening Programs (minimum of 3 over an approximately 6 month period of time) are designed and programmed based on an individual's goals and supported by the objective data in the Listening Assessment.

Dr Tomatis worked with professional singers, and he was also a physician working for France's jet propulsion laboratories working with those with auditory trauma from working around jet engines.

David Delaney, MA, ACR, LPC works with those who have the desire, dedication and drive to become a virtuoso singing for live audiences! What is a virtuoso and is there any science that we can use to determine this?

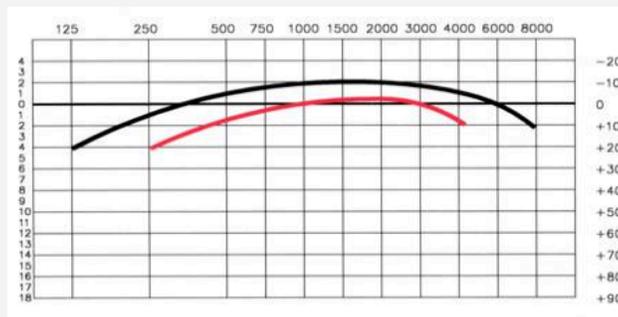
Virtuosic listening skills involves:

- Hearing within normal range.
- Absence of distortion in the response curve.

By measuring and analysing the listening response of great musicians and singers, Tomatis was able to ascertain exactly what constitutes a musical ear. The listening curves illustrated on the following web pages graphically describe the ability to process the various frequencies. These curves show the relation between decibels and frequencies of individual listeners before and after undergoing a course of listening. The ideal listening curve shows a pattern of listening which enables the person to focus on sounds that nourish and charge the body with energy allowing a maximum response to the subtleties of artistic expression and deep connection with oneself and the environment.

Measuring a clients listening response is the first step in a listening course. Further monitoring takes place over the duration of the course.

- indicates ear/air based listening responses
- indicates bone induction listening responses
- blockage in perception



Ideal Listening Curve

Optimum analysis of music involves:

- An **ascending curve** up to the frequencies 3000- 4000 Hz with stabilization at this level and a slight drop in the highest frequencies (see the "Balanced Curve" below)
- An open "**auditory selectivity**," or the ability to analyze and compare sounds of different frequencies as well as the ability to

determine the direction of the variation, or whether one tone is higher or lower than the other

- A precise **auditory spatialization**, which is the ability to identify the source of the sound in surrounding space
- A **right-sided auditory dominance**. (well known researcher: Penfield (1959), works published on neurology, neuro-surgery and neuro-physiology and further Dr. Karl Program's work, have demonstrated the functional differentiation of the cerebral hemispheres for language. Tomatis suggests that the right ear controls and analyzes sounds; that is why the right ear has to be the leading or 'performance' ear with singers and musicians. Other researchers have shown the predominance of the right ear in musicians who followed a long and intensified course of musical training). The left is a more the surround sound ear and manages emotional regulation.

IMPROVEMENT OF THE SINGING VOICE AND THE SPEAKING VOICE

The improvement of the speaking and singing voice can be considered as an historical leap in the application of the Tomatis method.

It was when practicing in occupational medicine that Doctor Tomatis came to make the discoveries which now bear his name and which concern the links between phonation (speech production) and hearing or more precisely, the volitional act of listening. He demonstrated that it was possible to correct these essential functions.

The Tomatis' principles can be stated as follows:

This was the **first principle** which Dr. Alfred Tomatis formulated:

"The voice contains only what the ear hears"

or more scientifically, "the larynx only emits the harmonics that the ear can attune to or receive."

The **second principle** is the corollary of the first:

“If the dysfunctional ear is given the possibility to hear the compromised frequencies accurately, these are instantly and unconsciously restored in the vocal emission.

The **third principle**, the “law of retention” highlights the possibility of being able to rehabilitate/retrain an individual’s listening capacities, and through this education, to modify phonation (voice production).

“The auditory training conducted for a determined period modifies, through a phenomenon known as remanence, the self-listening posture of the subject and in consequence their phonation”.

For Tomatis, a quality vocal emission not only requires good listening to the acoustic message coming from the outside, but also and especially good self-listening, that is to say, the ability to use one’s own voice as the sound source to be analyzed and controlled in terms of accuracy, intensity and quality. This is bone conduction.

This self-listening is possible, provided that the perceived sound vibration is correctly regulated through **bone conduction**, the transmission of sound by all the bones in the body and in particular, by the cervical vertebrae and skull. Bone conduction occurs 10 times faster than conduction of sound through air. This is significant.

This bone regulation itself depends on the harmonious functioning of two muscles situated in the middle ear, whose role is to control and absorb all the vibrations transmitted to the inner ear. They also control all flexor and extensor muscles in the body and are as strong as the stronger muscles in the body.

The purpose of audio vocal re-education under the electronic ear (TalksUp device originally called the ‘Electronic Ear’) is precisely to implement a mechanism of quality self-control.

Thus, depending on the vocal problem being dealt with, the action of this procedure can focus on:

- The lack or loss of the desire or ability to sing
- Difficulty speaking or singing without feeling a need to force or push the

voice

- The lack of verbal fluidity
- The lack of accuracy and precision
- The lack of or the imbalance of timbre, giving rise to voices which are too dull, too high-pitched or too nasal
- The lack of expressivity in the voice, due to an absence of modulation or intonation
- The lack of vocal resonance that comes from using the least amount of breath to get maximum resonance.

Here is what function the Zones play in communication. If there is an imbalance in that Zone, that function will be affected.

Zone 1	Zone 2	Zone 3
125 to 2000 Hertz	500 to 400 Hertz	200 to 16000 Hertz
Vestibular Zone (low frequencies) <i>sensory integration</i>	Communication Zone (mid to higher frequencies) <i>speech and language</i>	Energy Zone (high frequencies sounds) <i>high spectrum/energy</i>
posture, balance, kinesthesia	language, phonemic awareness, speech	high impact on cortical (cortex) recharging
visual-spatial ability	musical analysis & awareness	attentional processes
coordination, body awareness	verbal discriminate learning & precision	creativity
rhythm, laterality, right-left discrimination	verbal working memory	refines analysis mechanisms of Zone 2
praxis (practice of a skill)	selective attention	vocal quality (timbre)
emotional regulation	verbal communication skills	fuel for Zones 1 & 2
gestural communication	vocal control	motivational processes
memory & attention		intuition
motivational processes	<small>David Delaney, MA, ACR, LPC Tomatis Practitioner, Somatic Psychotherapist & Intrinsic Singing Trainer •David@TheSingersCENTER.com •TheSingersCENTER.com •111303-449-2004</small>	