



## The Tomatis Pregnancy Program



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### What does the baby hear in the womb?

Music has always had an effect on people of all cultures all over the world. Nightclubs know what kind of music to play in the mid hours of the night to keep their clients going and going. Tribes have always used different forms of natural music instruments to display their sadness or their joy. Each one of us also know what type of music calms or excites us.

When the baby is still in the womb, he / she can hear his / her mother's voice. From the voice box the sounds travel through the spinal column to reach the growing baby. When we were seeing our results in many children using the Tomatis Method, the thoughts always comes back, to what if we could prevent just a small percentage of what our children and families go through?

Giselle E. Whitwell, R.M.T. is a practicing prenatal music therapist in the Los Angelis area who has been a music educator for the past 30 years. She can be reached at [pre\\_natalmusic@yahoo.com](mailto:pre_natalmusic@yahoo.com) . She wrote a great article on "The Importance of Prenatal Sound and Music", which was published in the Journal of Prenatal and Perinatal Psychology and Health, 139304), Spring/Summer 1999, of which we would like to mention some excerpts.

"In the past, women all over the world have sung lullabies to their babies. These were very important because we know the fetus is having first language lessons in the womb. The inflections of the mother tongue are conveyed not only through speech but most importantly through song. The singing voice has a richer frequency range than speech." Dr. Alfred Tomatis was very interested in this area of development. She continues: "What the baby learns in utero are the intonational pattern of sound and the frequencies of a language in his/her particular culture." "When the mother reads out loud, the sound is received by her baby in part via bone conduction. Dr. Henry Truby, Emeritus Professor of Pediatrics and Linguistics at the University of Miami, points out that after the sixth month, the fetus moves in rhythm to the mother's speech and that spectrographs of the first cry of an abortus at 28 weeks could be matched with the mother's. The elements of music, namely tonal pitch, timbre, intensity and rhythm, are also elements used in speaking a language. For this reason, music prepares the ear, body and brain to listen to, integrate and produce language sounds."

Just very recently in 2007, an article in the Science Daily report research from Northwestern university that assists in confirming what Giselle Whitwell was saying here in 1999. The article reports on the study called: "Musicians have enhanced sub cortical auditory and audiovisual processing of Speech and Music" and was to be published online the week of September 24, 2007 in the Proceedings of the National Academy of Sciences (PNAS). (Gabriella Musacchia, Mikko Sams, Erika Skoe, and Nina Kraus). Study participants wore scalp electrodes that measured their multi-sensory brain responses to audio and video of a cellist playing and a person speaking." "The study showed enhanced transcription of timbre and timing cues common to speech and music. The study underscores the extreme malleability of auditory function by music training and the potential of music to tune our neural response to the world around us. Previous research has shown brainstem transcription errors in some children with literacy disorders. Since music is inherently more accessible to children than phonics, the new research suggest, music training may have considerable benefits for engendering literacy skills."

Giselle Whitwell continues: "Uterine sounds form a "sound carpet" over which the mother's voice in particular appears very distinct and which the pre-nate gives special attention to because it is so different from its own amniotic environment. These sounds are of major importance because they establish the first patterns of communication and bonding. Some researchers discovered that newborns become calmer and more-self regulated when exposed to intra-uterine sound (Murooka, et. Al., 1976; DeCasper, 1983; Rossner, 1979)."

"The ear first appears in the third week of gestation and it becomes functional by the 16<sup>th</sup> week. The fetus begins active listening by the 24<sup>th</sup> week. We know from ultrasound observations that the fetus hears and responds to a sound pulse starting at 16 weeks of age (Shahidullah and Hepper, 1992), even before the ear construction is complete. The cochlear structures of the ear appear to function by the 20<sup>th</sup> week and mature synapses have been found between the 24<sup>th</sup> and 28<sup>th</sup> weeks (Pujol, et al., 1991). For this reason most formal programs of prenatal stimulation are usually designed to begin during the third trimester. The sense of hearing is probably the most developed of all the senses before birth.

"At around four to six weeks gestational age the vestibular and cochlear systems become differentiated, at seven the auditory ossicles start to grow, and at 4 months the ear of the fetus is already adult like in shape and size. The cochlear system enables the transformation of acoustic vibrations into nervous influx, thus allowing the perception of melodies which carry higher frequencies. Knowing this, one can have a better understanding of the intimate relationship and unity and melody."

"Chamberlain (1998) using Howard Gardner's concept of multiple intelligences, has presented evidence for musical intelligence before birth. Peter Hepper (1991) discovered that pre-nates exposed to TV soap opera during pregnancy responded with focused and rapt attention to this music after birth - evidence of long term memory. On hearing the music after birth, these newborns had a significant decrease in heart rate and movements,

and shifted into a more alert state. Likewise, Shetler (1989) reported that 33% of fetal subjects in his study demonstrated contrasting reactions to tempo variations between faster and slower selections of music. This may be the earliest and most primitive musical response in utero.”

“William Liley, found that from at least 25 weeks on, the unborn child would jump in rhythm with the timpanist’s contribution to an orchestral performance. The research of Michelle Clements (1977) in a London maternity hospital found that 4 to 5 month fetuses were soothed by Vivaldi and Mozart but be disturbed by Beethoven Brahms, and Rock.”

## **Tomatis Research with Pregnant Mothers**

Whitwell’s article continues to site more research and the reader is encouraged to e-mail her if more information is needed. Dr. Alfred Tomatis was always very interested in these early phases of development and research was completed on the effects of the Electronic Ear and the Tomatis Effect on the developing baby in the womb. The use of the Tomatis Method during pregnancy was begun in 1988 at the Maternity of the Vesoul, under supervision of Dr. Klopfenstein and Marie Ouvrard. The results were so strongly in favor of the method that the Tomatis Method has become part of the hospital’s permanent practice.

More recently, Dr. Penet and Madame Tjordman undertook a similar study at the Hospital Foch de Suresnes. Three groups of pregnant women were elected. One group of 245 women had no special maternal care. Another group of 683 women had a maternal program consisting of breathing, relaxation, and a birthing pool. A total of 223 women had the above program and also the Tomatis Method. The results were as follows:

- Decrease in labor time between control groups and groups who were prepared with the Tomatis Method.
- The uterine dynamic of the women in the Tomatis group was greatly improved.
- Babies of mothers in the Tomatis group had a superior birth weight to a gestational age that was more advanced.
- APGAR scores showed the babies from the Tomatis group recouped faster and better than control group babies.
- At Vesoul specifically they found a lesser need to use instrumental intervention with the Tomatis group mothers.

The mothers in the Tomatis group reported the following:

- The quality of their dreams was peaceful and positive.
- They did not experience the usual feeling at the end of pregnancy of being inhibited, strained or “handicapped”.
- The disappearance of back pains
- A normal walk
- Better Listening
- Increase in creativity

- Their “psyche was on top of things”
- The babies were calmer in the womb
- Mothers felt more “well” and calm returning home with their babies.
- The quality of the immediate bonding and mother / child relationship was improved.

So, we need more research in this area, but it is fascinating that we could possibly give a child the opportunity to a better start in life and possibly prevent more early life difficulties than we could even imagine now. Will science ever be able to keep up with the demand for knowledge that exists today?



### Our Tomatis Pregnancy Program

Prospective mothers attend our center for the full Tomatis method or use the Solisten home program in the comfort of their own home for 2 intensives of 10 days each in their third trimester of pregnancy. Mothers listen two hours daily for the 10 days, take a 2- 4 week break, and then complete the second intensive of 10 days, listening 2 hours each day. The therapist will discuss the preferred activities during listening with each individual client.

This program is an important complement for every prospective mother, though also especially for parents who have had experience of **difficult births** before or has had the experience of an **older sibling with special needs**. We are very excited about having this program available for our mothers at our center as this could only enhance their newborn’s life since music has such a profound effect on the life of the child in the womb!!

We also recommend mothers to attend our [Infant Massage Classes](#) as soon as possible after the baby is born to assist with early development, care and most of all, emotional bonding.