A sonata a day keeps the doctor away

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The music they listen to doesn't have any lyrics that tell them to grow, but new research from Tel Aviv University finds that premature babies who are exposed to music by 18th-century composer Wolfgang Amadeus Mozart gain weight faster -- and therefore become stronger -- than those who don't.

A new study carried out by Dr. Dror Mandel and Dr. Ronit Lubetzky of the Tel Aviv Medical Center affiliated with Tel Aviv University's Sackler School of Medicine has found that pre-term infants exposed to thirty minutes of Mozart's music in one session, once per day expend less energy -- and therefore need fewer calories to grow rapidly -- than when they are not "listening" to the music.

"It's not exactly clear how the music is affecting them, but it makes them calmer and less likely to be agitated," says Dr. Mendel, a lecturer at Tel Aviv University.

In the study, Dr. Mandel and Dr. Lubetzky and their team measured the physiological effects of music by Mozart played to pre-term newborns for 30 minutes. After the music was played, the researchers measured infants' energy expenditure again, and compared it to the amount of energy expended when the baby was at rest. After "hearing" the music, the infant expended less energy, a process that can lead to faster weight gain.

A "musical environment" for preemies

When it comes to preemies, one of the main priorities for doctors is to get the baby up to an acceptable body weight so he or she can be sent home. At the hospital, preterm babies may be exposed to infections and other illnesses, and a healthy body weight keeps them immune to other problems in the future.

While the scientists are not sure what occasioned the response, Dr. Mandel offers one hypothesis. "The repetitive melodies in Mozart's music may be affecting the organizational centers of the brain's cortex," he says. "Unlike Beethoven, Bach or Bartok, Mozart's music is composed with a melody that is highly repetitive. This might be the musical explanation. For the scientific one, more investigation is needed."

The study came about through an international project led by the U.S.-based consortium NIDCAP, whose goal is to create a set of standard practices to optimize the health and well-being of neonates. A number of environmental effects, such as tactile stimulation and room lighting, are already known to affect the survival and health of these very susceptible babies.

The TAU study is the first to quantify the effect of music, specifically Mozart, on newly born children. "Medical practitioners are aware that by changing the environment, we can create a whole new treatment paradigm for babies in neonatal care," says Dr. Mandel. "That's our main goal -- to improve their quality of life.

"The point of our research is to quantify these effects so that standards and care-guides can be developed. We still don't know the long-term effects of the music, or if other kinds of music will work just as well."

Is music "brain food" too?

The research is based on a controversial 1993 study showing that college students improved their IQs by listening to a Mozart sonata for 10 minutes. When the study was reported, parents in the U.S. started buying Mozart CDs, hoping to boost their children's brainpower.

Soon the Israeli researchers will start exploring different kinds of music to see if they can measure any similar effects on premature babies. One Israeli researcher suggested that rap music might evoke the same response as Mozart, since the pulsating and repetitive frequency in Mozart's music can be found in contemporary urban music as well.

The researchers will also survey mothers to discover what kind of music their babies were exposed to in the womb. They will then expose other neonates to the same music to scientifically verify any effect. The pieces to be played to the preterm babies will include ethnic music, rap music, pop music, and, of course, classical music like Bach, Beethoven and Mozart, says Dr. Mandel.

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