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## The effects of music therapy intervention in hospitalized children: Biological results

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In pure biological terms there are many examples of perfectly synchronized musical actions organized in a musical form as structured and coherent as that of a symphony. The most basic musical element we find in biology is rhythm. The heartbeat, breathing, the baby's sucking rhythm, the brain waves, the walking movement, all of them are rhythmic actions. There are other musical elements, like melody, that are also present from birth. Crying is its first emotional expression. Music can play a very important therapeutic role in early development with children at risk. The physiological results as a consequence of carrying out a musical intervention for a therapeutic purpose show the importance of the use of music therapy in the hospital setting.

**Study data:** babies from 0 to 6 months of age hospitalized in Pediatric Intensive Care Unit (PICU) until reaching a number of 100 interventions. The study involved 87 subjects.

**The predominant pathologies at these ages were:** Bronchiolitis 38.98%, cardiac patients (with or without surgery) 13.56%, solid organ transplant 1.69% and various pathologies 45.76%.

**Method:** In this study the physiological and psychological responses can be observed as well as the results of the Comfort Behavior Scale test given to babies from 0 to 6 months of age hospitalized in a Pediatric Intensive Care Unit before, during and after the interaction with the responsible adult visiting the Unit, WITH and WITHOUT music. The observation of the above-mentioned responses of the babies WITHOUT music was considered a control group.

**Results:** The decrease in RF (the rhythm of breathing ?) at the end of the adult interaction compared to basal breathing is significant when there is music ( $p = 0.016$ ), whereas it is not significant if there is no music. The decrease in the baby's heartbeat during and after the adult interaction with respect to the time before is significant WITH music ( $p = 0.01$  and  $0.00$  respectively), while it is not WITHOUT music. The increase produced in the SAT (?) O<sub>2</sub> at the end of the adult interaction compared to the basal rate is significant WITH music ( $p = 0.00$ ), whereas it is not WITHOUT music. Musical improvisations of songs known to the child or proposed by the music therapist, immediately change the environment, which in the words of Wallon (1951/1985) will have a direct impact on biology

### Biography

María J Del Olmo is Graduated in Musical Pedagogy, Royal Conservatory (Madrid). Degree as Music Therapist, Center for Music Therapy Research MI-CIM (Bilbao). Member of the Atelier de Musicotherapie de Bordeaux A.M.Bx, France. Founding member of the program RBL (rhythm, breathing and lullabies) Albert Einstein College of Medicine. The Louis Armstrong Center for Music & Medicine. Beth Israel Hospital, NY. Professor in the Music Department at Universidad Autonoma, Madrid. Director of the Music Therapy Master Degree at Universidad Autonoma, Madrid. Collaborates with different training programs in several Spanish and foreign universities. Director of the Music Therapy Program at La Paz Hospital, Madrid. Chairperson of the Music Therapy and Health Foundation, Spain.

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