

*Music Therapy with  
preterm infants –  
Theoretical approach and  
first practical experience*

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*Introduction*

As a student of music therapy, I already noticed that an increasing number of prematurely born children with subsequent developmental delays came for music therapy. Therefore I asked myself whether the difficulties of these children are rooted in their earliest time in life and whether it would be possible to offer adequate assistance and therapy in this initial phase of human existence.

For my diploma thesis “Music therapy approaches in the care of preterm infants – literature review and observations from practice”<sup>1</sup>, I studied the subject from a theoretical perspective. I acquired first practical experiences on the intensive care unit (ICU) of the neonatology department of the Essen University clinic. A preterm infant is a child born before the 37<sup>th</sup>. Week of pregnancy or weighing less than 2500grams. In Germany,

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1. “Ansätze der Musiktherapie in der Betreuung von Frühgeborenen – Literaturübersicht und Beobachtungen aus der Praxis”

approximately 40,000 children are born preterm, 6% of all births, and this number is rising.

Today, very young premature infants can survive because of advances made in medicine. Many vital body functions are taken over or supported in intensive care (Figure 1 on page 2).

**FIGURE 1. Intensive medical care and treatment**

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Incubator

Facilitation of breathing and artificial respiration

Artificial alimentation

Blood transfusion

**FIGURE 2. The preterm infant in a technical environment**

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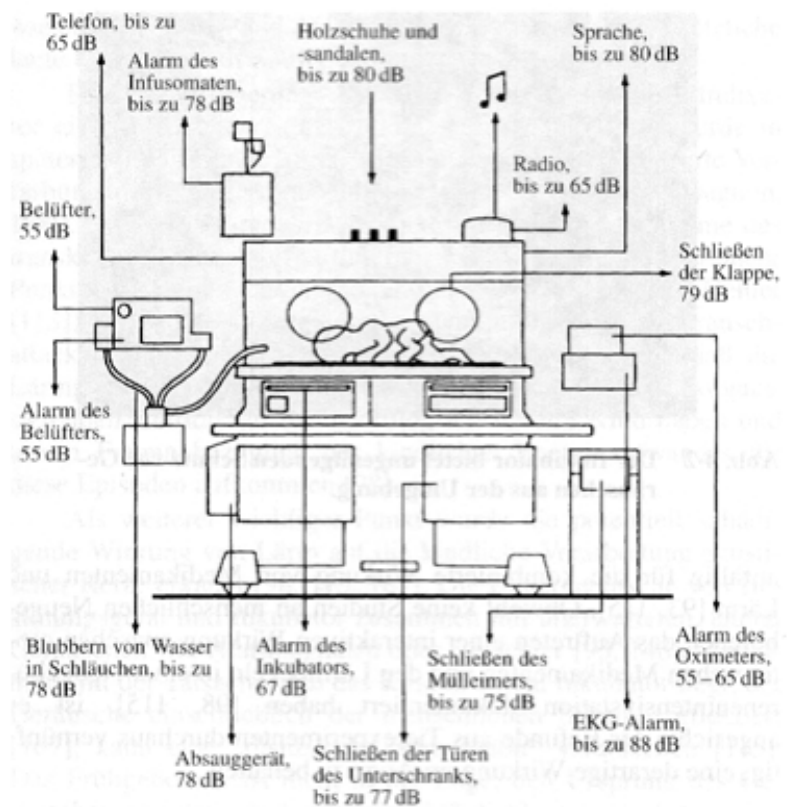
On the one hand, intensive care allows preterm children to survive (Figure 2 on page 2). On the other hand the treatment of preterm infants does not remain without consequences. For a long time the fact was ignored that preterm infants are exposed to many external influences and try to process them. On the ICU there are many stimuli/irritations that are not present in the mother's body. Preterm infants are forced to exchange their perfectly cared-for existence in the uterus with a technical environment. They are at the mercy of irritations which are mostly abrupt, artificial and extreme.

To mention only a few examples:

- negative tactile experiences like injections and sucking
- bright neon light, which may affect eyesight
- auditive irritations that are often unexpected, loud and unfeeling.

Basically, there is always a background of beeping, hissing or pumping noises from machines (Figure 3 on page 4).

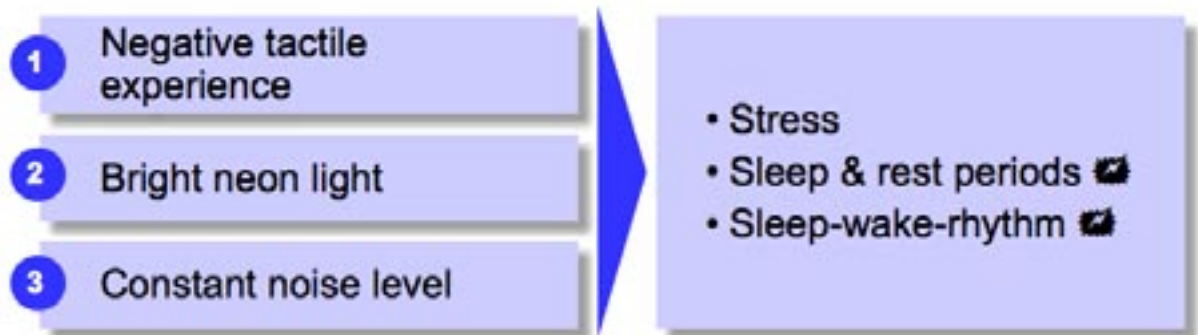
**FIGURE 3. Environmental noise and the preterm infant (Young 1997).**



This continuous over-stimulation causes stress, and disturbs sleep and rest periods that are of such importance, and a proper sleep-wake rhythm cannot develop (Figure 4 on page 5).

**FIGURE 4. Dangers of over-stimulation and their consequences**

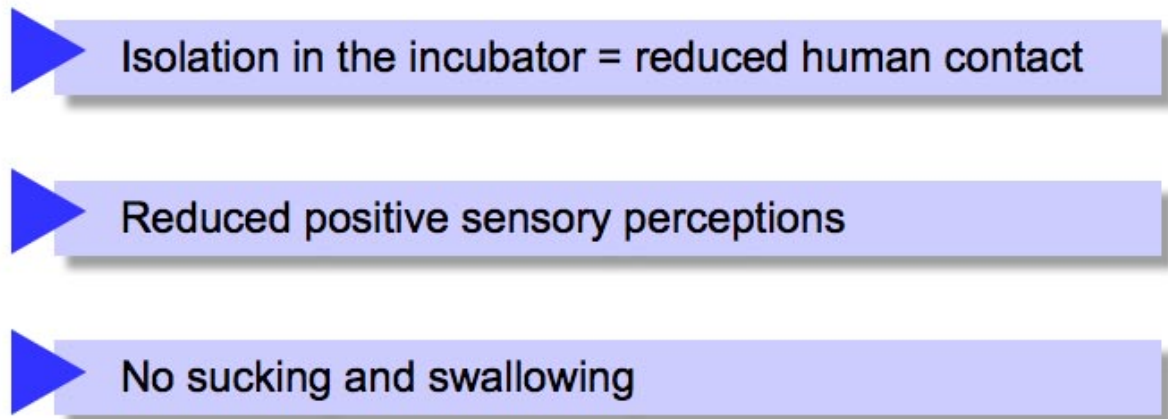
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On the other hand there is a danger of deprivation of stimuli. Mother and child have been separated very early. Any human contact, which is essential in this initial phase, is seriously obstructed by the necessary isolation in an incubator. A preterm infant still lives in a world of feelings exclusively and can make only few positive sensory experiences on an ICU. It is hard for the children to find their bearings in the world. Artificial alimentation offers no stimulation for sucking and swallowing; in some cases, eating disorders can be the consequence.

**FIGURE 5. Dangers of deprivation of stimuli**

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With such conditions in mind that may affect preterm infants, I would like to explicate the focus of my study:

Overstimulation and deprivation on the ward must be counteracted with adequate human stimulation as well as direct contact.

Practical steps that the music therapist can take before beginning are to confer with the medical staff; gain consent from the parents and make a detailed interview; and ensure that the basic condition is one of silence with the infant in a safe and recumbent position.

The duration of the therapy needs only to be ten minutes at the based uppn careful observation (see Figure 6 on page 7).

**FIGURE 6. Practical steps in therapy**

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Place hand on chest

Observe respiration, mimic expression and gesture

Translate respiration, mimic expression, gestures into music

Duration 10 minutes maximum

Continuous and at the same time of day

*Nelly*

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- [Qucktime Video Nelly1.mov \(1.8 MB\)](#)
- [Nelly1.mpg4 \(408kb\)](#)

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*Nelly*



Nelly was born in the 25<sup>th</sup> pregnancy week with a weight of 815 g, hyperbilirubinemia, and apnoe-bradykardie-syndrome / RDS. Four weeks later I started with music therapy when she was in a somewhat more stable condition (15 sessions, 3 times per week for approximately 10 minutes around noon, because this turned out to be the most peaceful time on the intensive care unit). As already outlined in the theoretical approach, it was very important for me to offer therapy on a continuous basis and always at the same time of the day to provide some degree of rhythm and orientation.

The mother visited Nelly regularly. She was present at several music therapy sessions but did not want to be integrated into the therapy process herself.



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Nelly's reaction to the music was positive. Her irregular, flat and fast respiration became more regular, calm and slow. Starting from the fourth session, I recognized – in addition to the reassuring effect the music had on Nelly – an increasingly activating tendency. She reacted visibly to my singing.

The first example shows Nelly lying calmly in her incubator, a stomach tube in the nose, eyes closed. In the background we can hear the noises of the machines. I am singing her theme melody with the vowels “ai” and “u”, calmly in the rhythm of her breath. (I usually take half the time of the children's respiration rate due to the fast breathing of preterm infants). Right from the start, I recognize tender movements of sucking, which come out at intervals. After a short time we find a common rhythm. She begins to suck in rhythmic, relatively regular intervals at the end of my phrases. I wait for her, so that a first rhythmic dialogue and a musical contact develop.



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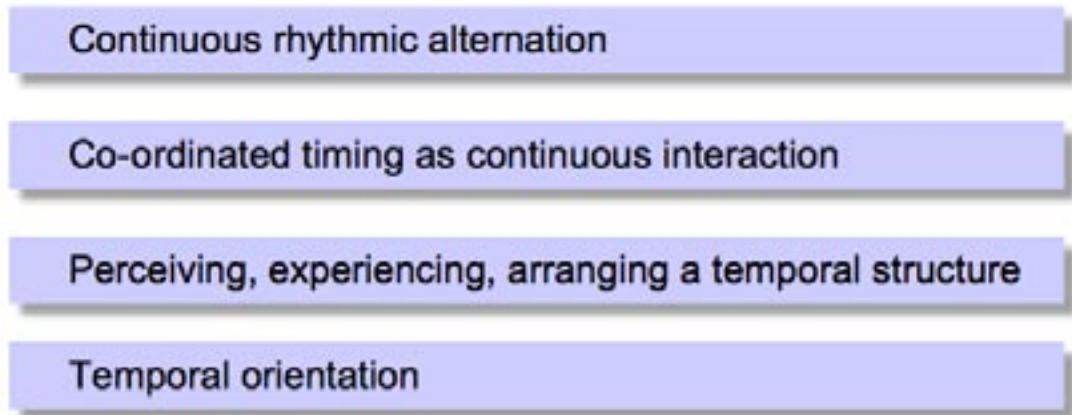
- [Quicktime Video Nelly3.mov \(3,5MB\)](#)
- [Nelly3.mpg4 \(764kb\)](#)

In the following session, Nelly reacted ever more frequently to my singing with sucking movements. This development had a positive influence on her general sucking and swallowing behaviour, so that the stomach tube was removed soon, and Nelly was given a comforter. She sucked even more strongly, as can be seen from the next example of the ninth session.

Here she is lying on her back, and during my session she opens her arms. I sing her theme following her breath, and she sucks in even, rhythmic intervals at the end of my phrases or my break. Her movements are visible from the comforter, and she sucks more strongly and persistently. (8-10 movements at the end of the phrase over 3.5 minutes). In addition, I give her more time and vary my phrases in order to find out whether there is real coordination. And really, Nelly waits for me! Our rhythmic dialogue is getting more intensive. Nelly does not only recognize a temporal structure, she creates this temporal experience. She begins to orient herself, perceives my offer of contact and actively performs a first continuous interaction (see Figure 7 on page 11).

**FIGURE 7. First rhythmic sucking movements**

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Apart from this rhythmical interaction, I recognized something like movements to the music in Nelly, and also in other preterm infants.

The following example dates from the sixth session, when Nelly still received artificial alimentionation. I begin to sing her theme following her breathing while she is becoming aware of the singing. Nelly seems to listen attentively to the music. She begins to move her body to the music, opens her hands, moves her fingers and wrinkles her brow. In one instance she opens her eyes the moment my melody rises, and closes them when my melody falls. She smiles several times and seems to be intensively aware of the music. She is very active mimically. After some time she moves her tongue and mouth, and I try to synchronize her movements with my singing.

*MARK*

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Mark was born in the 29<sup>th</sup> week of pregnancy with a weight of 980 g, hyperbilirubinemia, sepsis, respiratory distress and BPD. Mark's mother

visited him only a few times and did not seem interested in music therapy. After some sessions, Mark became very active and attentive. The following example is from the sixth session.

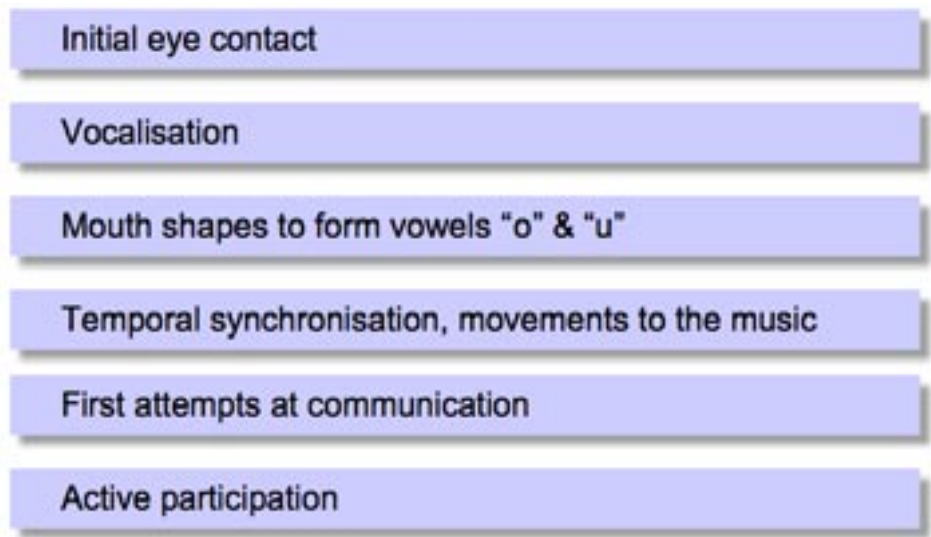


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I begin to sing, while he listens very attentively, and seems to look for the acoustic source. After some time he looks at me, opens his mouth, and I can hear first tender sounds. He plays with his tongue, moves his mouth to form vowels like “o” and “u”, he yawns and also moves his arms and fingers. It seems to me he wants to take part and take up all these movements and to synchronize them musically, to offer human contact (see Figure 8 on page 13).

**FIGURE 8. Parameters indicating contact**

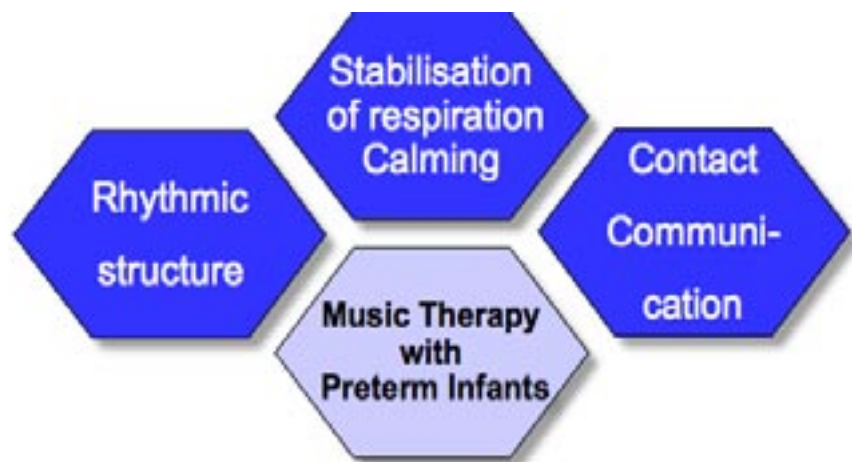


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*CONCLUSION*

I would like to return to my initial theoretical approach concerning the possible effects of music therapy on preterm infants.

**FIGURE 9. Concepts derived from theory**



These theoretical expectations were confirmed by my practical experience, and I was able to add some new aspects.

**FIGURE 10. Concepts derived from practice**

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In my therapeutical work with preterm infants, it is most important for me to offer adequate human contact. This work is both relevant and effective.

**FIGURE 11.**

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**Creative music therapy with preterm infants is....**

relevant

effective



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### *References*

Haslbeck, F. (2002) “Ansätze der Musiktherapie in der Betreuung von Frühgeborenen – Literaturübersicht und Beobachtungen aus der Praxis” in Aldridge, D & Fachner, J. (eds.) Music therapy Info CD-ROM V. Witten: University Witten/Herdecke

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