

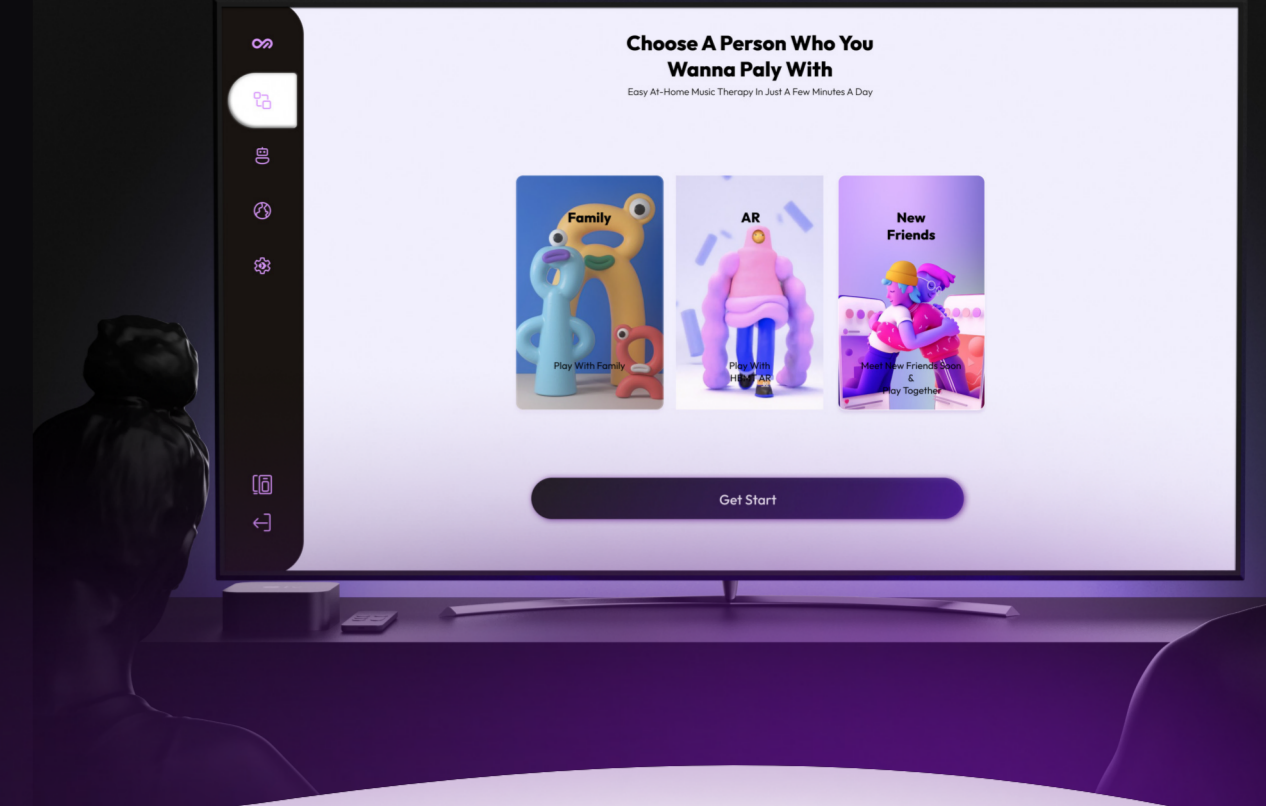
# Discover Home-Based Music Therapy For Down's Syndrome

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**Keywords:**

Down Syndrome, Music Therapy, Home-Based Music Interaction, Music And Parent-Child Attachment, AR

HBMTING is a home-based music therapy for children with Down Syndrome through the flexible and real-time music interaction, especially for cognitive regulation and communication regulation. As well, it promotes parent-child attachment in the family.



## Introduction & Background

Almost every national healthcare system is changing to merge the traditional therapeutic and home care areas. Special populations who need the help of long-term caregivers often have a greater need for home care and therapy. Home-based music therapy (HBMT) programmes have entered this area of health care provision. Neuroimaging studies show that music and speech have common neural resources. The relationship between the quality of parent-child interaction and positive child development has been well documented in many literatures. DS Family is a typical and large group, but previous researchers have not treated them in much details with HBMT. Therefore, the attachment and interaction behaviours of children with DS are of greater concern than any other developmental disability group.

**Down's syndrome (DS)** is a common birth disorder with chromosomal abnormalities and the most common single cause of intellectual disability, with a prevalence of approximately 1/700 to 1/1000. They are generally eager to interact and communicate, and show a fairly individual response to music. However, auditory perception and cognitive processing problems are affecting speech and language development. A large number of families are stressed about parenting their young DS children.

**Cognitive limitations**  
Auditory perception and cognitive processing problems affect delays in language development

**Lower physical fitness**  
Deficits in visual motor integration, agility, muscle strength, motor control, and movement reaction time

## Concept

The design concept is creating an exclusive home music therapy system for Down's syndrome kids. The aim is to enhance the parent-child relationship and to promote the child's developmental skills by songs, musical games and guided play.

The key question behind this project is why does music therapy improve cognitive skills and parent-child interaction with DS?

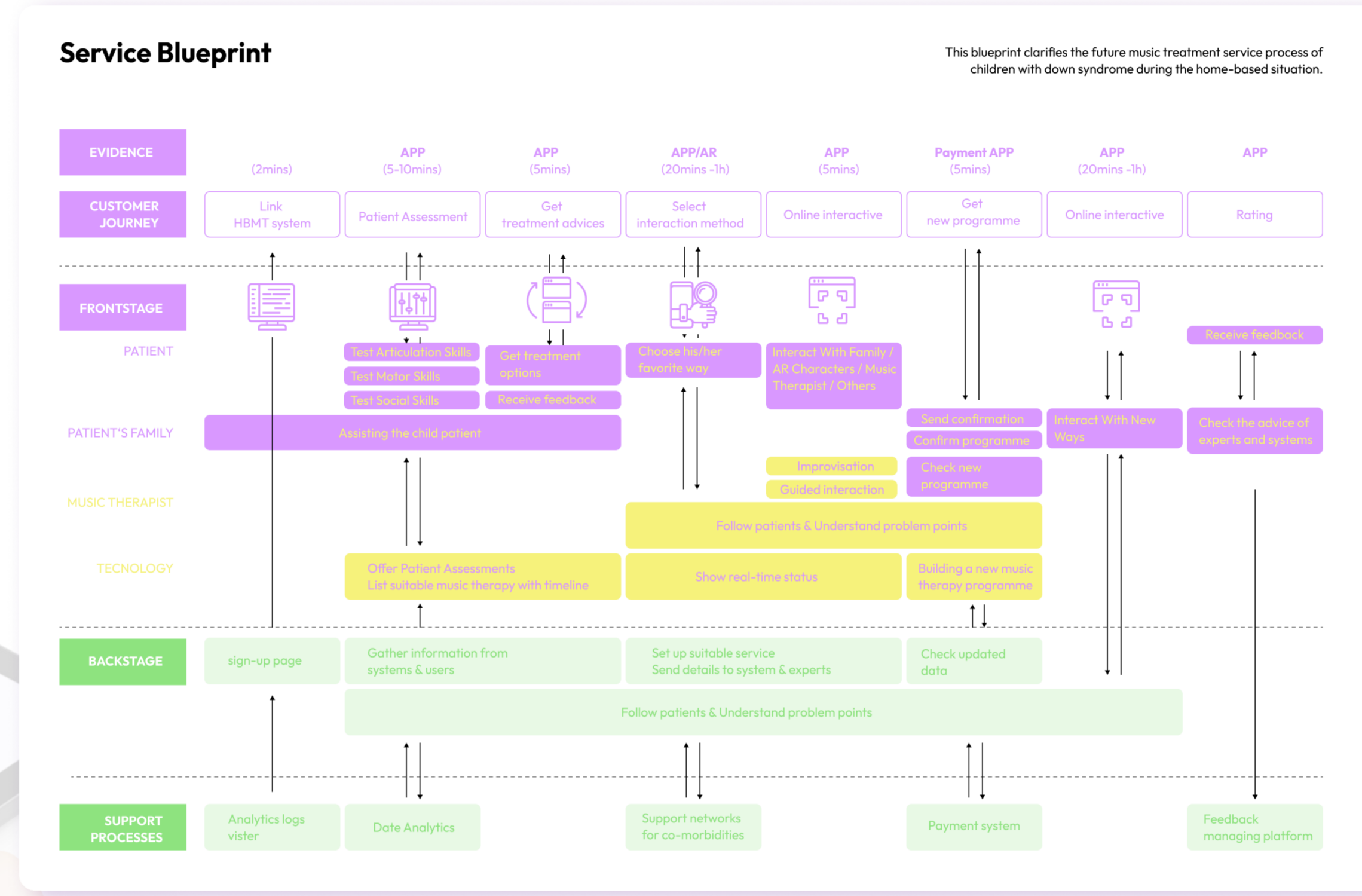
Further questions to guide the investigation include:

- (a) What music therapy techniques are most appropriate to promote parent-child interaction
- (b) How they can be applied to children with DS with different learning motivations and differences

**Operability**  
Simple and easy to use

**Interactivity**  
Guardians to interact and assist

**Professionalism**  
Real time interaction with specialists



## Prototype



## Persona

**Sophia**  
10 Years Old Down's Syndrome Kid

**Quote:** "I want to have fun with family even at home"

**Personality:**  
Extrovert (Introvert)  
Sensing (Intuition)  
Thinking (Feeling)  
Judging (Perceiving)

**Goals:**  
• Improve Attention Regulation  
• Improve Emotion Regulation  
• Improve Cognitive Regulation  
• Improve Behavioural Regulation  
• Improve Communication Regulation

**Needs:**  
• To Meet New Friends  
• To Instrument Play  
• To Sing, Dance  
• To Play With Family  
• To Practice Language Skills

**Motivations:**  
She wants to have fun with others even at home

## Study Methodology

**Lecture Research**  
134

The following electronic database was used to find articles on home-based music therapy.

**Qualitative Research**

- Interviews with primary caregivers (parents)
- Questionnaires
- Field notes
- usability