

Parameters for compositions designed for use with therapeutic activities

The database will be comprised of multiple samples and compositions in a variety of style, tempo, timbre, and length. In creating music for therapeutic purposes, the rhythm will be the most important entity to drive the therapy. A wide range of compositions is needed, but the rhythmic element is always the key element for each composition.

Genre: Each individual's preferred music will be used; so all kinds of different styles are needed. Classical, pop, rock, jazz, country, hip-hop, rap, etc., all styles are welcome

Tempi: Each individual has a "functional tempo" that is optimal for the specific task. We would like to create varied tempi from 60 beats per minute (BPM) up to 120 BPM, in 5 BPM increments (60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, 120 BPM units). Any composition will be arranged in a multitude of tempi (without changing pitch) for as much as is stylistically correct. For example, a pop work could probably have increments of 90 to 120 but wouldn't want to go below 80. A ballad could probably go from 60 to 85 but no higher. We want the widest range of tempi that we can get, and will want to duplicate each piece for tempo variation for the largest variety of tempi that fits within the genre.

Meter: Probably about 95% of music used for walking should be in a meter with a BPM divisible by 2 such as 4/4 meter. Typically, the music cues a kinetic body movement such as the raising of an arm in rhythm or walking to the beat in gait training. So the beat needs to remain symmetrical in the measure for most use, rather than getting into 3 counts, etc. However, it could be that a 3-count measure could be utilized in several developmental or intellectual delay uses for extended movements, so don't rule it out if that's what needs to be created. Also see description under Timbre of the need for strong beats in particular situations.

Note that "complex" meters should be avoided for the most part, but if a meter can be reduced to a simple form (such as 6/8 reducing down to a 2 beat pattern) then this would be acceptable for the higher functioning clients. The meters typically utilized with movement are 2/4, 4/4, 3/4, and 6/8.

Timbre: A variety of timbres are needed, possibly even with different timbre arrangements duplicated for each piece of music. There is a wide range of developmental and intellectual disabilities ranging on the high functioning end (ADHD, Asperger's syndrome, etc.) down to the low functioning end (dementia). Those clients on the high functioning end tend to enjoy a broad stimulus of ranges of all kinds of different timbre, but those clients on the low functioning end or those who may have sensory issues cannot cope with complex arrangements or harsher or louder sounds that would be produced with brass or metallic percussion.

For dementia and the lower end of the spectrum, the simpler the arrangement and timbre, the better. They may have difficulty processing complex stimuli and it needs to be a very simple arrangement. Also, the rhythm needs to be spelled out very plainly for best therapeutic use. Typically, rhythmic intensity in a four-count would be ONE-two-THREE-four, but for this population we need ONE-TWO-THREE-FOUR. Clearly, the music should not sound just metronomic if at all possible, but the idea is to make it sound somewhat interesting without being over-stimulating.

Kids with autism may be sensitive to metallic sounds, so that must be kept in mind for electronic music. Children with autism generally tolerate piano and keyboard; however, typically you don't want too much sound to be present for those with sensory disorders.

If using string sounds, let something else drive the rhythmic beat besides the string sound so that the prevailing element is always the rhythm.

Length: Shortest sample length needed is 5 to 10 seconds. Longer samples could range up to 10 minutes. Ease of accomplishing this could be with a short cadence that could be clipped out of a longer unit, or with use of looping after two minutes, etc.

Range: If the piece can have words sung to it (singing is a wonderful way to encourage individuals to breath while exercising), if possible, keep the pitch value for the melody from A below middle C up to the G above middle C for women, an octave lower for men. Note however, that the compositions in this database will be created without vocals so that they may be added live.

Examples of use:

Case 1: A pop type composition with standard pop notation and arrangement is created with the idea being that it would appeal to young children including children with developmental disabilities or sensory needs. The composition is 3 minutes long. Here are the ways we could create multiple versions:

1. Duplicate the composition going from 90 BPM up to 120 BPM in 5 BPM increments at 90, 95, 100, 105, 110, 115, and 120 BPM
2. Extract short cadences to be used as standalones to create 7 to 8 second pieces utilized in music attention exercises
3. Create a guitar or keyboard only version of the song
4. Loop it 4 times to make a 12-minute version.
5. Create 2 different versions of rhythmic timbres, one with metallic (cymbals, etc.) sounds and one without.

Case 2: A classical style composition notated for piano is created to appeal to an older generation possibly to help with gait. The composition is 5 minutes long. Here are ways we could create multiple versions:

1. Duplicate the composition going from 60 BPM up to 120 BPM in 5 BPM increments.
2. Extract short cadences for standalones in 7 to 8 second pieces.
3. Create a harp or guitar only version of the composition
4. Loop twice to make a 10-minute version.