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## Music Therapy & Down Syndrome Fact Sheet

**Definition:** Down Syndrome is a genetic condition caused by the presence of an extra chromosome. In 1959, a French geneticist, Professor Jérôme Lejeune, discovered that Down Syndrome was caused by the presence of an extra copy of chromosome 21, making 47 chromosomes in all. The name 'Down' comes from the English doctor, John Langdon Down, who first described the syndrome in 1866, nearly 100 years before the extra chromosome was discovered. As yet, we do not know what causes the presence of chromosome 21. The most common type of Down's syndrome, Standard Trisomy 21 (*also known as Primary Trisomy 21 or Regular Trisomy 21*), occurs because of an unusual cell division which has produced either an egg or a sperm with 24 chromosomes instead of 23.

**Incidence:** Every day in the United States, between one and two babies are born with Down Syndrome, which means that about one baby in 1000 has the condition.

### Characteristics and Need Areas:

Children with Down Syndrome often have eyes that slant upward and outward. Their eyelids often have an extra fold of skin (*epicanthic fold*) which appears to exaggerate the slant. The back of the head may be flatter than average and many have a single crease across the palm of the hand.

- **COGNITIVE:** People with Down Syndrome all have a certain degree of learning disability (mental handicap). The degree of disability varies from person to person and it is impossible to tell at birth what that degree will be.
- **SPEECH/COMMUNICATION:** The child with Down Syndrome may have a protruding tongue which may impede speech development. This may cause problems with rate of speech, speech intelligibility and expressive communication.
- **MOTOR SKILLS:** Children with Down Syndrome may have poor muscle tone, a single crease in the palm, relatively short fingers, and excessive flexibility. Infants born with Down Syndrome may be of average size, but typically they grow slowly and remain smaller than other children of similar age.



*Katie has Down Syndrome and is pictured here learning social skills through music therapy*

- **SOCIAL:** Children with Down Syndrome can and do grow up to live long and fulfilled lives. They need to develop self-help skills and independence, learning how to interact with others in socially appropriate ways. For instance, the child may need to learn that they cannot greet strangers by kissing them. People with Down Syndrome can thrive well into their fifties and beyond, facing many of the challenges we all encounter.

## **How can music therapy address the need areas for an individual with Down's Syndrome?**

**SPEECH:** Music therapy can be an effective modality for children with Down Syndrome to develop speech and language skills in the areas of: expressive and receptive communication, choice-making, oral motor, sequencing, motor planning, sentence structure, phonemic awareness, speech intelligibility and patterns of language. Specific songs can assist and target oral motor skills to exercise face and tongue muscles and can also help with sounds and speech. For instance, a specific song written to target the letter "b" would develop the pronunciation and oral motor planning needed for this skill. Specific instruments (such as slide whistles) can be incorporated into a fun exercise for the child that targets a specific oral motor skill (developing the orbicular oris muscle). Visual aides, sign language and augmentative devices are incorporated into music therapy sessions to facilitate communication. Co-treatment with speech therapists also enhances the effectiveness and rate of progress for children and aides in the generalization of skills from the music therapy session to other settings.

### **GOAL EXAMPLE for COMMUNICATION/LANGUAGE**

By (date), given an initial model and rhythmic cueing using a drum or hand tapping, Nicole will produce a 2-3 word phrase or multi-syllable word at the designated pace in 2 out of 3 opportunities as measured by therapist records.

*Baseline: Currently, Nicole clearly states 1 word phrases and has difficulty with 2-3 syllable words. She is highly motivated by music and demonstrates increased motivation to complete language tasks when music is present.*

**COGNITIVE/ACADEMIC:** Music can be used as mnemonic device to teach specific academic information such as phone number, address, and other factual information. In addition customized consultation music therapy kits for a specific skill (e.g. learning the letters of the alphabet), when paired with visuals, can provide a multi-sensory, motivating, fun strategy for learning.

**MOTOR:** Music therapy may be useful in improving gross motor skills such as sitting and walking and may improve postural alignment. Children may also benefit from music therapy to develop fine-motor skills, self-help skills, upper extremity strength, and coordination. For instance, the music therapist may prescribe specific musical instrument exercises such as a playing a drum with a mallet to develop a fine motor skill of grasping. Co-treatment with physical and occupational therapists can enhance the effectiveness of treatment and transfer of skills to other settings.

**SOCIAL:** In order to be more effective and successful in our society, we need to be social. Music therapy provides an opportunity for social training by giving children with Down Syndrome a positive experience with other peers and adults. This provides a success-oriented, normalized experience for children, giving them a more positive self-image. By participating in music groups and performances, they feel more productive and engaged with society. Music therapy interventions apply the inherent order of music to set behavioral

expectations, provide reassurance, and maintain structure. Children can learn how to take turns using various instruments, can partner with other students to play instruments, take leadership roles within a group music therapy session, contribute to a songwriting activity and participate in improvised drum circles. In addition, specific social song stories can target specific skills (making eye contact, having a conversation) which improve and enhance social skills.

## **RELATED RESEARCH & READINGS:**

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## **NATIONAL ORGANIZATIONS**

### **American Music Therapy Association (AMTA)**

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Silver Spring, Maryland 20910, USA  
Phone: (301) 589-3300  
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[www.musictherapy.org](http://www.musictherapy.org)

### **Down Syndrome Association**

155 Mitcham Road,  
London SW17 9PG.  
24-hour help-line: 0181 682 4001  
Fax: 0181 682 4012

### **National Down Syndrome Society**

(800) 221-4602, [www.ndss.org](http://www.ndss.org)  
(*music therapy is listed under "Down's Syndrome and the Arts"*)  
<http://www.ndss.org/content.cfm?fuseaction=InfoRes.SchEduarticle&article=719>