



Julie Guy, MT-BC & Angela Neve, MT-BC
PO BOX 710772, San Diego, CA 92171-0772
info@themusictherapycenter.com
1.877.620.7688 fax & VM

Music Therapy & Angelman Syndrome Fact Sheet

Definition:

Angelman Syndrome (AS) is a genetic disorder caused by abnormal function of the gene UBE3A, located within a small region (q11-q13) of chromosome #15. This region is deleted from the maternally derived chromosome in approximately 80% of individuals with Angelman Syndrome. For the remaining 20%, genetic testing can often identify other abnormalities that disrupt UBE3A function. Some individuals in this latter group, however, still have normal genetic laboratory results: for these, the diagnosis is based solely upon clinical findings.

Incidence:

Angelman Syndrome affects males, females and all racial/ethnic groups equally. AS has prevalence among children and young adults between 1/10,000 and 1/20,000.

Characteristics and Need Areas:

- **COGNITIVE:** Developmental delay, functionally severe
- **SPEECH/COMMUNICATION:** Speech impairment, none or minimal use of words; receptive and non-verbal communication skills higher than verbal ones
- **MOTOR SKILLS:** Movement or balance disorder, usually ataxia of gait and/or tremulous movement of limbs



*Luke, 24-year old with
Angelman Syndrome, with an
ocean drum*

- **SOCIAL:** Usually socially adept, readily participate in group activities and respond to most personal cues and interactions; establish rewarding friendships and communicate a broad repertoire of feelings and sentiments; behavioral uniqueness, any combination of frequent laughter/smiling; apparent happy demeanor; easily excitable personality, often with hand flapping movements; hypermotoric behavior; short attention span

How can music therapy address the need areas for an individual with Angelman Syndrome?

SPEECH: The nonverbal language skills of AS children vary greatly. Some are able to learn sign language and others learn to use aids such as picture-based boards. Music therapy can be an effective modality for children with Angelman 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. 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 melodic cueing and picture cards, Luke will demonstrate receptive language skills by making a choice via hand reach between a field of two (musical instrument vs. nonpreferred item) for 75% of opportunities with minimal prompting.

Baseline: Luke currently reaches for preferred items for 75% of opportunities. Due to his increased motivation when music is present and need for a symbolic communication method, music provides an enhanced way for Luke to transition from real-object presentation to symbolic representation.

COGNITIVE: 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 kits for a specific skill (i.e. brushing your teeth) provide a visual picture schedule with a motivating, fun musical song to rehearse and check for understanding of the skill.

MOTOR SKILLS: Music therapy can be effective in gait training by providing a steady, rhythmic structure for the children to improve walking, gait, and stride abilities. Music and movement activities may include following simple directions in song (clap hands, stomp feet). In addition, using instruments (such as paddle drums) can be a motivating way for children to purposefully improve hand use, cross midline, and reach high/low. Co-treatment with an occupational or physical therapist also may enhance the effectiveness of music therapy strategies.

SOCIAL: Attention span can be so short that social interaction is prevented. For this reason, music therapy provides a motivating structured way for children to interact with other peers and others. Children can learn how to take turns using various instruments, 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:

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NATIONAL ORGANIZATIONS

American Music Therapy Association (AMTA)

8455 Colesville Road, Suite 1000
Silver Spring, Maryland 20910, USA
Phone: (301) 589-3300
Fax: (301) 589-5175
Email: info@musictherapy.org
www.musictherapy.org

Angelman Syndrome Foundation (ASF)

3015 E. New York Street, Suite A2265
Aurora, IL 60504-5162
800-432-6435
FAX: 630-978-7408
info@angelman.org
www.angelman.org