Using Music to Enhance Speech and Language Skills in Young Children ©
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Using Music to Enhance Speech and Language Skills in Young Children

Abstract

Learn how to use music to reach specific speech and language goals with children as young as infants and toddlers. Music can be used to improve imitation, articulation, and sound blending; to promote social interaction; and to encourage home practice of target skills. Best of all, music can transform even the most reticent child into an active verbal partner. We’ll review the developing research literature on the topic, and also experiment with techniques for writing songs and lyrics to support specific goals. Warning—actual singing (with props) will occur!

After completing this session, you will be able to:

- Describe at least three research studies related to the use of music and learning.
- List 3-5 components of a verbally enticing song for young children with limited verbal skills.
- List and use 5-10 songs that emphasize imitation skills, articulation, sound blending, and social interaction.
Disclosure Statement

Rachel Arntson is owner and creator of all Talk It Rock It products (formerly known as Kids’ Express Train) and receives compensation for products sold including music CDs.

Although this seminar is intended to teach others about the power of music and how to develop your own songs, materials such as free lyrics, pictures, and examples of Rachel Arntson’s music will be used to demonstrate specific techniques.

Contact information – Talk It Rock It, LLC

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Rachel@TalkItRockIt.com

Facebook.com – Go to Talk It Rock It
The Benefits of Music
My BRAIN is on fire!

Research - music electrifies the brain
"Music rearranges your molecular structure."

Carlos Santana

Musicians’ brains – What’s different about them?

- Neuroplasticity of the brain

What’s going on in there?

- Motor, Sensory, Auditory, Prefrontal, and Visual cortices
- Hippocampus
- Cerebellum
- Corpus Callosum
- Amygdala
The studies of other researchers on music – Please look at the bibliography at the end of this seminar

- Oliver Sacks – *Musicophilia, Tales of Music and the Brain*
- Gottfried Schlaug – Recent study on melodic intonation therapy
- Robert Zatorre – Emotional responses and dopamine release during musical listening.
- Nina Kraus – Studies how music tones the brain for auditory fitness.
- Aniruddh Patel – *Music, Language, and the Brain: The relationship between music and language and studying that relationship with brain imaging, behavioral experiments, theoretical analyses, acoustic research, and comparative studies with nonhuman animals.*
- Daniel Levitin – *This is Your Brain on Music*
- Many other studies – See bibliography.
The Emotional Benefit of Music

Your Journey - What’s your song?

**Emotion**
- Like/Dislike Comparison
- Excitement/Relaxation Comparison
- Music is a euphoric inducing stimulant
- Memory is enhanced by how much we CARE about something
- Caring leads to attention, alertness, mood, and neurochemical changes
- Increased interest in music in adolescence
  - My personal experience

**Research**
- Lullabies/Play songs – Trehub
- COWS? - Uetake
- NICU – Strandley
- Detecting Affect in Music - Heaton
  - Do you recognize this jingle?
The Emotional Benefit of Music

- Music has a “stuck in your head” component
  - The “song-stuck-in-my head” (SSIMH) phenomenon has positive practical and emotional effects on ELL students, building greater confidence to produce speech. Sounds, words, phrases, and sentences of the second language may suddenly pop out and insistently ring in the student’s head through the use of music. The SSIMH phenomenon, along with corresponding visuals, can greatly condense what may have taken several hours of standard language drill and practice for second language learning.
  - See Bibliography on English Language Learners

Let’s get EMOTIONAL!!!
The Benefits of Music for Imitation, Articulation, and Sound Blending

Gross Motor Imitation

Research: Thaut - Gait training in Parkinson’s disease

Verbal imitation, articulation, and sound blending – CAS literature

- Give sound blending practice.
- Slow the rate of a child’s speech to allow for better sound production.
- Use intonation and rhythmic flow.
- Focus on core words in a child’s vocabulary.
- Use cues that children can feel and see.
- Implement frequent repetition and frequent verbal practice that is enticing and motivating.

(Blakeley, 1983; Davis and Velleman, 2000; Pannbacker, 1988; Strand and Skinder, 1999).

Let’s listen!!!
The Benefits of Music for Social Interaction

“Music produces a kind of pleasure which human nature cannot do without.” Confucius

Social Interaction

- Communicative Intent
- Greetings and Commenting
- Transitions, daily tasks, and social questions -
- Answering questions and following directions

Research:

- Improvised Musical Play, increased interaction – Gunsberg, Edgerton
- Musical Social Stories – Brownell
- Daily tasks and Social questions - Sacks
- Is it the connection with people? Patients with aphasia improve with choral singing – Racette, et al.

Let’s hear from a mom who believes in the power of music.
Increasing Active Verbal Participation
The Verbally Enticing Song

“Sing a simple song that kids can simply sing!” Rachel Arntson

- Language or sounds within child’s verbal ability
  
  *Let’s analyze “Itsy Bitsy Spider”*

- Common vocabulary in daily routines and words of high interest.

- Frequent repetition. *Focused Language Stimulation*
  
  - Chains of three – Rock and Roll
  - Interludes of CV practice and sound effects

- Exaggerated and extended sounds and words. (Milk and Juice)

- Simplify the gross motor actions-
  
  *Let’s practice – Baby Blowing Bubbles, Milk and Juice*
Predictability of a song – a distinct beginning, middle, and end.

Universal Chant/Universal rhythm.

Songs that invite participation. (Your turn)

Slower rate and higher pitch.

Calming or exciting music? What is best?

Natural “musical tone” of the words and phrases.
Let’s practice!

- What happened?
- Where are you?
- I went to the store today. (vary the stress on the word)
- Happy birthday!
- STOP! At the door.
Increasing Active Verbal Participation

Props and instruments

Instruments - create conversations, not performances.

Experiment and know why you’re using them.

- **Shakers**, Blocks, and Bells
- Streamers and **scarves**
- Paper plates
- Plastic eggs
- Bubbles, Horns and Kazoos
- Harmonicas
- **Picture frames** – **Animal Faces**
- Parachutes or Beach towels
- **Microphones**: Try paper towel rolls, plumbing pipes
Increasing Active Verbal Participation - Visuals

- Books with rhythm, rhyme, and repetition and carrier phrases.
  - *I Love*
- Picture song sheets, song choice pictures, and posters.
  - *Bye song, Baby Blowing Bubbles, Wheels on the Bus*
- Objects that relate to the song.
  - *Puppy song*
- Videos/video modeling with songs.
  - Let’s look at examples.
Encouraging Parents to SING!
*The Spontaneous Song All Day Long!*

“Give me a laundry list and I'll set it to music.” Gioacchino Antonio Rossini

- There’s a songwriter in all of you!
- Use spontaneous song during therapy sessions.
  - Rapping dad and J.
  - Diaper time with O. – (My Eyes, eyes, eyes song)
- Ask parents to list their daily routines and their music.
- Brainstorm with parents how to add music to the day.
- A simple, do-able home program increases therapy effectiveness. (Grace)
Common Tunes for Spontaneous Singing
Let’s practice the phrases, “Baby’s blowing bubbles” and “I am walking.”

- Are You Sleeping?
- Camptown Races
- Did You Ever See a Lassie?
- Farmer in the Dell
- For He’s a Jolly Good Fellow
- Goodnight Ladies
- Hallelujah Chorus
- I’m a Little Teapot
- I’m Singing in the Rain
- Jingle Bells
- London Bridge
- Mary Had a Little Lamb
- Muffin Man
- Old MacDonald
- Pop Goes the Weasel
- Rockin’ Robin
- Ring Around the Rosie
- Row, Row, Row Your Boat
- She’ll Be Comin’ Round the Mountain
- Shortnin’ Bread
- Skip to my Lou
- The Ants Go Marching
- The Bear Went Over the Mountain
- This Old Man
- Twinkle, Twinkle, Little Star
- Wheels on the Bus
- Where, Oh Where Has My Little Dog Gone?
Recommended practices for Imitation, Articulation, Sound blending, and Social interaction

Keep sounds moving. Keep them slow with Intonation and rhythmic flow. Core words, Cues to Feel and see. Repetition, Chains of three.


Attention, Engagement, Playing with you! Learn Words, Take Turns, and Imitate, too.
Follow Directions, Answer, and Ask. Social Skills and Daily Tasks.

Music and Gross and Fine Motor

- Paper Plate songs – William Tell Overture
- Scarf songs –
  **Fish, Birds, and Bunnies**, © Rachel Arntson and Chez Raginiak

Wave your scarf like a fish in the sea. Wave it now. Wave with me. Swim, swim, swim in the sea. Swim, swim, swim with me.
Wave your scarf like a bird in the sky. Wave it now. Fly, fly! Fly, fly, fly! We’re free! Fly, fly, fly with me.
Shake your scarf like a bunny on the ground. Shake it now all around. Hop, hop, hop on the ground. Hop, hop, hop all around.
Music and Gross and Fine Motor Imitation

**Roly Poly**, Author Unknown

Roly poly, roly poly. Up, up, up. Up, up, up.
Roly poly, roly poly. Down, down, down. Down, down, down.
Roly poly, roly poly. Put hands in your lap, lap, lap.

**Walking Elephants**, © Rachel Arntson 2013

Walking elephants. Walking elephants. Flap your ears. Flap your ears.
Walking elephants. Walking elephants. Pick some grass and eat, eat, eat. (elephant noise)
Music and Gross and Fine Motor Imitation

I Am Walking Slowly (Pop Goes the Weasel) © Rachel Arntson, 2007
(Use a mesh scarf.)
I am walking slowly. You are walking, too.
We are walking slowing. Ah ah choo! (throw your scarf in the air.)
(Other endings – Boo, got you. I surprise you. Ya hoo!

Monkeys in a Tree, Author Unknown
Five little monkeys swinging in a tree,
Teasing Mr. Crocodile, “You can’t catch me. You can’t catch me.”
Along comes Mr. Crocodile as slowly as can be. Snap!
Music and Verbal Imitation, Articulation, and Sound Blending

“All the sounds of the earth are like music.” Oscar Hammerstein

- Spontaneous jamming during play creates vocalizing during motor tasks – use egg shakers, blocks
- Humming, vowels, and consonant-vowels to any song

Noisy, Noisy, Noisy © Rachel Arntson and Chez Raginiak, 2002
Noisy, noisy, noisy. Someone’s being noisy. Is it you?
Noisy, noisy, noisy. Someone’s being noisy. Is it you?
Someone’s sneezing. Is it you? (ahchoo)
Coughing
Kissing
Blowing
Yawning
Music and Verbal Imitation, Articulation, and Sound Blending

Who Are You? (Rachel Arntson and Chez Raginiak 2010)
Tune – 99 Bottles of Pop – Use animal face posters

Who is the cat today? Rachel is the cat today?
And what does the cat say? Meow (your turn) Meow

With younger children, simplify the lyrics

Who is the cat today, and what does the cat say? Meow (your turn) Meow

Let’s watch a video
Music and Verbal Imitation, Articulation, and Sound Blending

- The Power of Rock and Roll
  - Staying Alive – Ben
  - The Lion Sleeps Tonight

**Monkey Song** (Rachel Arntson and Chez Raginiak, 2002)
- Combines gross motor with vowel imitation

Monkey, monkey, swinging in a tree.
Monkey, monkey, he’s talking to me.
Oo oo oo oo ee ee. Oo oo oo oo ee ee. (your turn)
Oo oo oo oo ee ee. Oo oo oo oo ee ee.
Monkey, monkey, monkey, he’s swinging in a tree.
Music and Verbal Imitation, Articulation, and Sound Blending

Vowels © Rachel Arntson and Chez Raginiak, 2005
Drop your jaw. Say ah, ah, ah (ah, ah, ah, ah, ah, ah, ah)
Round your lips. Say oh, oh, oh (oh, oh, oh, oh, oh, oh, oh)
Now smile like me say ee, ee, ee, (ee, ee, ee, ee, ee, ee, ee)
Pucker real tight say oo, oo, oo. (oo, oo, oo, oo, oo, oo, oo)
Ah, ah, oh, oh, oo, oo, ee. Now you can sing that with me.
Ah, ah, oh, oh, oo, oo, ee. Great job, kids, singing with me!

Let’s watch a visual example of this song. Consider video-taping your students while singing songs.
Never underestimate the power of classical songs for vowel and consonant-vowel imitation.

Camptown Races – I can say the “ah” sound. Ah ah ah ah

Beautiful Blue Danube – Well, I can say “ah” Ah ah ah ah

Skip to my Lou – Ah ah ah ah ah, Oh oh oh oh oh, Oo oo oo oo oo. I can say them. You can, too.

Eine Kleine Nachtmusick – Mozart
Barcarole from “The Tales of Hoffmann” – Offenbach
Tritsch Tratsch Polka – Strauss
For this free vowel picture, go to http://www.talkitrockit.com/pages/FREEResources/
Music and Verbal Imitation, Articulation, and Sound Blending
Consonant-Vowel practice

- Rock and Roll – Why are we attracted to it?
  - She Loves You – (Beatles) Alex
  - Land of 1,000 Dances and Walking (hand cues)
- The New BMW
  - use microphone tubes (use hand gestures/cues)
- Who Let the Dogs Out? – Vary the song with sound practice - Who let the B’s out, b b b b

- If playing a toy xylophone, piano, or drum, model consonant-vowel productions to give children “permission” to sing their own songs that “they can simply sing.” (O and his xylophone app)
Music and Verbal Imitation, Articulation, and Sound Blending
Sing a “Rap”sody.

Let’s Eat, © Rachel Arntson and Chez Raginiak, 2003

Eat, eat, eat (your turn) eat, eat, eat (repeat)
Let’s eat cookies (your turn) cookies (repeat 2x)
Cookies, cookies, yum, yum, yum
Apple (your turn) apple (repeat 2x)
Apple, apple, yum, yum, yum.

Snowman © Rachel Arntson and Chez Raginiak, 2003
Carrot nose, (carrot nose) warm hat, (warm hat)
Black eyes, (black eyes) very fat. (very fat)
I’m a snowman. (snowman)
I’m a snowman.
Music and Verbal Imitation, Articulation, and Sound Blending

Think about the sound possibilities with your songs. These are mine? List yours!

- B – Bye, Bananas, Baby Blowing Bubbles, Bus, Boat, Bike
- P – Puppy
- T, D – Tongue Tip Time, Tiny Tony
- W – Wheels, Ride the Horsie, Bath Time
- Y – Ride the Horsie
- G – Go, Drive a Car
- K – Cake and Cookie Birthday,
- H – Hi, Ha Ha Hiding, Ha-Ha-Ha,
- M – Milk and Juice, Monkey-Moose-Mouse,
- N – No No Nigh Night
- CH – Express Train, Booga Choo Choo, Jump on the Choo Choo
- J – Jump on the Choo Choo
- L – I Love
- S – Hissing Snake
- SH – Fish-Shark-Shells
- F – Fish-Shark-Shells
Music and Verbal Imitation, Articulation, and Sound Blending

Let Me Hear You Say, © Rachel Arntson and Chez Raginiak, 2005

Let me hear you say my key. (my key, my key)
Let me hear you say monkey. (monkey, monkey)

Let me hear you say bye cat. (bye cat, bye cat)
Let me hear you say bike hat. (bike hat, bye hat)

Let me hear you say mess, mess (mess, mess, m
Let me hear you say rake, rake (rake, rake, rake,

Let me hear you say ice water (ice water, ice water)
Let me hear you say house key (house key, house key)
Music, Social Interaction, and Communicative Intent

- Songs for teaching communicative intent can teach:
  - Increasing staying power – number of reps.
  - Establishing shared enjoyment, eye contact.
  - Increasing ability to initiate with gestures or sounds to continue the game or start again.
  - Teaching language in a predictable way.

Kick, Kick, Kick – © Rachel Arntson, 2002 – Be careful when you do this. Do not use with children who have a tendency to kick others. Child lies on the floor as you move his legs. He pushes you over.

I kick, kick, kick. I kick, kick, kick. I kick, kick, kick. Kick me over.
Music, Social Interaction, and Communicative Intent

**Here Comes the Mousie** © Rachel Arntson, 2002 – Go up child’s arm with your finger, tickling him under his chin at the end.

Here comes the mousie living in the housie. Is he there? Is he there? No, he’s THERE!

**Row, Row, Row Your Boat**, © Rachel Arntson, 2003
Adapt the lyrics, release hands, fall to the side, and wait for child to initiate.

Row, row, row your boat. Fishie swim. Row, row, row your boat. We fall in.

**Horsie Go to Town**, Author unknown
Bounce child on your lap. Child falls through your legs.

Horsie, horsie go to town. Horsie, horsie don’t fall down!
Who’s in the Window? (I’m a Little Teapot)  Use a picture frame to give a cue for imitation and to increase eye gaze.

Who’s in the window? Who do we see?
Jacob, Jacob lookin’ at me.
Hi, Hi, Hi, Hi, Hi.

Hello How Are You? (Mary Had a Little Lamb) © Rachel Arntson, 2003,
Hello Erik, How are you?
How are you? How are you?
Hello Erik, how are you?
Who is sitting next to you?
Music, Social Interaction, and Greetings

Hi, © Rachel Arntson and Chez Raginiak, 2005

Use picture sheets. Add names of children as opposed to common object names. Songs like “Hi” can give the repetition needed to learn a skill. Rote learning like “Hi” can be expanded to “real” social greetings.

Hi, Hi, Hi (your turn) Hi, Hi, Hi (children repeat all two word phrases)
Hi table. Hi sun. Hi car. All done.
Music and Social Interaction

“Country music is three chords and the truth.”
Harlan Howard

Use songs for transitions and tough situations. (Harmonica?)

All Done © Rachel Arntson and Chez Raginiak, 2005
All done, all done, all done playing. All done, all done toys. (cha cha cha)
All done, all done, all done working. All done, all done. (cha cha cha)

Fire Drill © Rachel Arntson 2006 (Ring Around the Rosie) Practice for a fire drill before the drill takes place. Teach deep breathing as a strategy for coping with loud noises.

Fire drill, fire drill
Really loud fire drill
Take a breath, oooo ahhh
Time to get in line. (Time to go outside.)
**Dentist Day** © Rachel Arntson, 2005 (Rockin’ Robin or Shortnin’ Bread)
I’m going to the dentist with a great big chair.
It goes up and down, but I won’t be scared.
I’ll open my mouth so the dentist can see,
Lots and lots of teeth in me.
Ch, ch, time to polish my teeth. Ch, ch, this polish tastes so sweet.
Ch, ch, It’s a dentist day. Ch, ch, I’ll be OK.

**Haircut Day** © Rachel Arntson, 2005 (Rockin’ Robin or Shortnin’ Bread)
I’m gonna get a haircut in a great big chair.
It goes up and down, but I won’t be scared.
I’ll sit real still so the lady can cut,
With scissors or clippers.. Cut, cut, cut.
Cut, cut. I’ll see my hair on the floor. Cut, cut Now she’ll cut some more.
Cut, cut, I will be OK. Cut, cut, It’s a haircut day.
Music and Social Interaction - Following Directions, Commenting, and Answering Questions

- Following Directions - Put the, Where is the…and What is he doing? (There’s a Hole in the Bucket)

**What’s That?** (Skip to my Lou) © Rachel Arntson, 2003
What’s that? It’s a boat. What’s that? It’s a boat.
What’s that? It’s a boat. Yes, it is a boat.

**Hooray!** © Rachel Arntson, Chez Raginiak 2010
Puppy, puppy. What do you say? “Woof,” says the puppy in his puppy way.
Hooray!
I’m Going to a Party,  (Tune of Tiny Tim the Turtle) © Rachel Arntson, 2009

I’m going to a party with lots of food and fun.
   I’m going to a party. I’ll stay until it’s done.
Who’s bringing pizza? (I’m bringing pizza.)
   Erik’s bringing pizza. Pizza, pizza, pizza.
Juice, cake, ice cream, bubbles, balls, party hats, etc.

Let Me See You Walk © Rachel Arntson, 2003
Let me see you walk, walk, walk, walk.
I say let me see you walk, walk, walk, walk.
Walk, walk, walk, AGAIN! Walk, walk, walk! OH YEAH!

Let me see you jump. Let me see you fly. Let me see you shake. Let me hear you laugh, ha, ha, ha. Let me hear you sneeze. Let me hear you snore.
Music and Social Interaction - Detecting Affect

- Moonlight Sonata - Beethoven 😞
  - Combine songs with pictures of faces
  - Sad song

- Waltz No. 1 - Chopin 😊
  - Happy and alerting song

- In the Hall of the Mountain King, Suite No.1, op.46 - Grieg 😈
  - Scary song
Common Rock and Roll Songs

- **Vowels and CV structures**
  - She Loves You
  - Land of 1,000 Dances
  - Barbara Ann
  - Good Vibrations
  - Hey Jude
  - Hey Goodbye

- **Single words**
  - Let It Ride
  - Chain of Fools – Choo choo Train

- **Multi-syllabic words and sounds**
  - Shanana
  - Yummy, yummy, yummy
  - I’m Hooked on a Feeling - Oooga shaka
  - Lion Sleeps Tonight
  - Wild Thing
  - Rockin’ Robin
  - Yodelling
  - Share the Land

- **Phrases**
  - It’s So Easy
  - I Wanna Go Home
  - Let It Be
  - Let’s go to the Hop
  - Taking Care of
  - Help Me Rhonda
  - Under the Boardwalk
  - She’s Got a Ticket to Ride
  - I Feel the Earth Move Under My Feet
  - We Will Rock You
  - Mustang Sally – “Ride Sally Ride”
## Case Studies - Articulation Scoring System

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<th>Imitation Ratings</th>
<th>Description</th>
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<tr>
<td>0.0</td>
<td>No attempt to imitate</td>
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<tr>
<td>1.0</td>
<td>Imitation is attempted, but not accurate in terms of including the targeted word or sounds. In this case study, the 1 was scored as an attempt but with total omission of the initial consonant sound.</td>
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<tr>
<td>1.5</td>
<td>Imitation is attempted and the initial consonant was produced only with a whisper of the entire word.</td>
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<tr>
<td>2.0</td>
<td>Imitation is attempted and the accurate initial consonant is included, but only with a pause between the consonant and the proceeding vowel.</td>
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<tr>
<td>2.5</td>
<td>Imitation is accurate with inclusion of the initial consonant, but still requires a gestural cue to produce it accurately.</td>
</tr>
<tr>
<td>3.0</td>
<td>Imitation is accurate and includes the production that is developmentally acceptable for child’s age.</td>
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Case Study
Cam

Cam
Cam - Case Study

Initial testing

- Expressive Vocabulary – SS – 58, below 1st percentile
- Articulation – SS – 69, 2nd percentile
- Intelligibility of spontaneous speech – (all 1 word utterances) – 16%

Objective 1 of 4 – Two word phrase repetition accuracy

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<td>Probe phrases</td>
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Practice CD given after the session
# Cam - Case Study

Data for sessions focusing on Objectives 2, 3, and 4

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<td>91%</td>
<td>81%</td>
<td>91%</td>
<td>91%</td>
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<td>75%</td>
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<td># 4 (probe) /ʃ/, /s/ initial position</td>
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*indicates when each objective was targeted using songs for home practice.
Jacob - Case Study
### Jacob - Case Study

Articulation changes using music for home practice

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Web Sites

- www.talkitrockit.com
- http://www.literacyspeaks.com/
- www.musica.uci.edu
- www.musicloops.com
- www.partnersinrhyme.com
- www.pbskids.org
- www.zerotothree.com
- www.musictherapy.org
- www.educationthroughmusic.com
- www.niehs.nih.gov/kids/music.htm#index
- http://www.coastmusictherapy.com/how-music-helps/
THANK YOU!

“Every moment is a note, every situation a song, and every person is a player.”

Rachel Arntson

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