



DigiCare® Wellness Series

Power of Music: Musical Practice & Brain Development

By Max Stanley Chartrand, Ph.D.
(Behavioral Medicine)

Children and youth who take weekly music lessons, perform with a band, orchestra, or choir, and who practice individually for at least 25 minutes or more daily:

- **Enjoy incredibly rapid brain development compared to their non-music peers!**
- **Develop higher Cognitive IQ and always rise to the top of their class!**
- **Develop Spatial IQ with advanced eye-hand coordination!**
- **Overcome learning disabilities and developmental delays!**
- **Learn socialization, organizational, and interpersonal skills that last a lifetime!**
- **Graduate and go to college in far higher numbers than non-music peers!**
- **Enjoy greater success in their life, social relationships, and chosen professions!**

More than 40% of all school children suffer from **middle ear infections** or chronic otitis media with effusion (OME) during the first three years of their lives. About 80% of these cases will be of the “silent” OME type, presenting no outward symptoms, such as fever or pain, and go undetected by the adults in their lives. Chronic OME creates **developmental delays**. These delays may appear in the form of speech-language delay, reading difficulties (developmental dyslexia), under-development of central auditory attending and squelching skills (often mistaken for ADD), spatial skills challenges, Aspergers, and mild cognitive deficiencies that affect reading, math, and social development.

The human brain consists of two hemispheres. The **right hemisphere** is used for spatial, emotional, artistic, and holistic skills; the **left hemisphere** is used for logic, deduction, mathematics, and abstract skills. The **only** direct neurological connection between these two areas of the brain is a small band of tissue about the size of a pencil, called the **Corpus Collosum** (CC). All information between these hemispheres travel via the CC. The size and development of features of the CC during early brain development determine gender specificity and brain specialization. Its later development determines degree of intelligence. This is a lifelong process and continues to develop throughout one’s life.

At birth, the CC in male newborns is about 30% smaller and less sensitive than in females. This difference appears to

be help **brain specialization** in males, but places them at risk for delayed cognitive development. Girls, on the other hand, enjoy nearly equal development for both hemispheres (due to the larger dendritic mass of the CC) and are generally able to master language, communication, and fine motor skills earlier and easier than boys (hence, the phenomena of “women’s intuition”). However, boys exhibit superior visual development, faster reaction times, and greater gross total body movement skills.

However, the CC must continue to develop at a specified rate so that boys can “catch up” with girls academically, cognitively, and socially. Boys who suffer from OME during their first three years of life or more will also suffer development of the CC and other developmental areas will be two years behind their peers in reading and math, and in socialization skills. 88-92% of cases of ADHD are boys for this very reason. Contrary to current practice, prescription drugs are not the way to develop the brain. Musical training, a non-microwaved, organic diet, and plenty of sleep and exercise can help both boys and girls overcome ADHD. No caffeine or high fructose corn-syrup. Caffeine and sugar cause tremendous over-diagnosis of ADHD, incidentally.



Therefore, it is absolutely crucial that music programs be put back into primary and secondary schools if America ever hopes to get back on top of the world in math, science, and reading. In fact, the long-standing decline in math and science performance of U.S. school children tracks precisely with the abolition of music programs from the years 1970 onward. Meanwhile, nations at the top of the worldwide math and science survey **ALL** feature music and the arts as core curriculum K-12. In those countries, it is not unusual to find fifth grade symphonies being led by 15-year old conductors that rival their professional counterparts. Their average students compete with our best students.

Albeit the schools that already have music as core curriculum, whether in affluent communities or the poorest neighborhoods—makes no difference—are **always** the top performing schools in their districts and states. Developing musical skills has been found to be considerably more effective than all other forms of therapy. In fact, contrary to popular thought, without musical skills development, other forms of therapy consistently show poor results. *Nothing approaches the effectiveness of taking up a musical instrument, joining a choral group, band, or orchestra, and practicing individually a minimum of 25 minutes a day.* By so doing, children will have a better chance at achieving their true potential. Furthermore, they will come closer to achieving their full potential in life.

For more information: www.drmaxchartrand.org and call 520-509-6380 for a free wellness & developmental assessment on your child today!

SIRCLE® Occupational Therapy & Wellness Clinic

820 W. Cottonwood Lane, Suite #6, Casa Grande, AZ 85122 (520)509-6380 www.sirclepainclinic.com

THE SEARCH FOR EXCELLENCE: The Max Stanley Chartrand Story

The Max Stanley Chartrand story reads like a classic. Born in 1948 in Oregon timber country, life began in a one-room logging shack until age three, when a childhood illness left him severely hearing impaired. By young adulthood he was profoundly deaf.

Even today with a surgically implanted Cochlear Implant, his best-aided hearing-only speech discrimination is about 20-25% in quiet, 0-5% in noise and at distances greater than a few feet. Pitch differentiation is non-existent, but because music was core curriculum in the public schools in the U.S. during the 1950s and 1960s, he enjoyed a strong developmental head start that few American children enjoy today.



Above: Backstage after a recent televised national performance in Kobe, Japan. Included was a symposium on development of young brains through music education, and how to revive memory and cognitive function in older ones.

This allowed his brain to develop so that he could eventually become a renowned scholar, professor, and health scientist with international standing.

At the age of ten, when it came time to choose a musical instrument, he chose the Clarinet and later added the saxophones and other instruments. He went on to play first clarinet in the Denver All-City Band, and Colorado All-State Bands and Orchestras. *"In that day, our elite youth ensembles rivaled some of the top professional groups you hear today. But today music programs in the public schools have been dumbed down or eliminated to the point that one rarely sees that kind of prodigious achievement among American school children today, not that the potential is any less—but because so few children receive advanced music education as core curriculum. As a result, kids today suffer skyrocketing levels of developmental dyslexia, ADHD, Asperger's, and Autism—conditions unheard of in previous generations. The need for music, the arts, and a return to a more organic diet are why I am on a crusade to restore these for our children."*

By age 14, Dr. Chartrand had developed a reputa-

tion as a regional performer and led a jazz band that performed up and down the Front Range of Colorado. He also arranged music for the annual All-School Shows at Rishel Junior High and Denver South High, and many community productions. During the college years he played with several concert orchestras, including the Denver Symphony, the Brico Symphony Orchestra, Community Arts Symphony, etc. He also performed with his popular group *The Blue Max* band until the early 1970s, when his deafness became too profound to hear others play.



During young adulthood, advancing deafness prompted him to change fields from music to the health professions, where he has served now for more nearly four decades as a recognized leader in research and education. Defying the academic odds, he earned two Bachelors degrees, two Masters, and two Doctorates, some of these with Honors.

When asked, years later, how he could play without normal hearing, he replied, ***"I guess someone forgot to tell me that I couldn't do it. But now, it's possible that I continue to play because those special people in my life are determined that I share my message for the benefit of others, and because of the fantastic cochlear implant technology that has restored some of my auditory function."***

In 1994 he was awarded the international *Joel S. Wernick Excellence in Education Award*. His extensive work is published in hundreds of journals and thousands of websites in several languages. As a professor of Behavioral Medicine, his students comprise MDs, PhDs, NPs, Psychologists, and college department chairs. Dr. Chartrand has chaired and served on dozens of research committees tasked



with resolving health challenges in health and human development: learning disabilities, dementias, neuropathies, diabetes, Parkinson's, depression, cancer, and the new polypharmacy-inspired pathologies. Dr. Chartrand welcomes helping young people and their families who wish to go far in life, and to overcome whatever challenges they may face, no matter what it is. With learning music, the odds are in *their* favor.

Personal Communication: www.drmaxchartrand.org,