

Ageing Study Yields Powerful Results

One of the most specific studies on singing and health was concluded in 2004. The Levine School of Music in Washington, D.C. formed a Senior Singers Chorale in 2001 as part of a wider study examining how singing could affect the health of people 55 and older.

The three-year study, “Creativity and Ageing: The Impact of Professionally Conducted Cultural Programs on Older Adults,” was led by Dr. Gene D. Cohen, director of the Center on Ageing, Health, and Humanities at George Washington University in Washington, D.C.

It involved groups of seniors in three parts of the country participating in professionally directed cultural programs: painting in Brooklyn, writing in San Francisco, and singing in Washington, D.C. A key requirement for Cohen was that the intervention groups are run professionally, so as to sharpen the impact of the participation. And in each region, a control group was set up to compare results.

Cohen found clear differences in the health of seniors involved in the arts programs and those in the control groups. The intervention group, for example, reported an average of 30 fewer visits to the doctor as well as fewer eyesight problems, less incidence of depression, less need for medication, and fewer falls and other injuries.

Given their advanced ages, it was expected that both groups would show some overall decline in general health measures – what was not expected was the degree to which arts involvement would improve their health.

“My surprise was not a factor of whether the intervention would work, but how big an effect it would have at an advanced age,” said Cohen. “The average age of all the subjects was 80. This is higher than life expectancy, so, realistically, if an effect were to be achieved, one would ordinarily expect to see less decline in the intervention group compared to the control. The fact that there was so much improvement in many areas was the surprise factor,” he said.

Jeanne Kelly, director of the Levine School of Music, Arlington Campus, was asked by Cohen to form the Senior Singers Chorale that was used in the study. Kelly has worked with many choruses and opera companies over the years and was determined to keep standards high, and not make it easy for the new ensemble just because it comprised the elderly.

“The first time I walked in, I told them, ‘I’m going to treat all of you the way I treat all of my students.’ They liked that – they like to be pushed,” said Kelly. “The seniors do not want to sing only soft or easy repertoire – they like music that demands, and displays, energy.”

When the announcement was made that a chorus for seniors was being formed – no experience necessary, no requirement other than being 55 or older – Kelly was not sure how many would respond. However, 65 seniors showed up at the first rehearsal, more than expected. Now in its fourth year, the chorus numbers 93.

The seniors tell Kelly that they undoubtedly feel better because of their singing – both in daily life and specifically when they are singing. They find, for example, that their everyday voice quality is better, that the tone of their speaking voice does not seem to age as much, and they report easier breathing and better posture as well. One chorus member was quoted in a CBS News story saying, “You feel better – you don’t feel that ache in your legs,” noting that she doesn’t have time to think about her ailments because she is too busy thinking about meeting the challenge.

“They especially love the challenge of performing,” said Kelly. The chorus has already appeared at the Kennedy Center four times, in addition to other public performances in the Washington area. They have also performed with Levine School’s Virginia Big Band (composed of students ages 12 to 18) singing jazz favourites such as “It Don’t Mean A Thing,” and “Chattanooga Choo-Choo.”

They probably don't mind the attention either, and not just from enthusiastic family and friends who attend their performances. CBS Evening News, newspapers, and other media outlets have featured the chorus, perhaps in part for the novelty of it, but more because of its serious role in the growing body of evidence linking choral singing and improved health. With the percentage of senior Americans on the rise, the study has even greater implications in caring for an ageing population.

"This study has allowed people to do something that many say they would never have dreamed of doing," observed Kelly. Many of the seniors simply never thought of themselves as choral singers, but for one reason or another they got involved in the study. Now that the study is over – it provided the funding for the chorus for the first three years – the group has obtained funds from other sources to keep going.

From the web site Chorus America - <http://www.chorusamerica.org/>

Singing in Schools

A former UK Education Secretary, Alan Johnson funded a £10 million campaign to encourage singing in schools.

Children have become better behaved since teachers began singing to them in school. Teachers at 70 British primary schools have joined an experimental scheme to improve the performance of their pupils by singing to the children in lessons. Organisers of the scheme say the project brings a whole new dimension to classroom learning and they are hailing it as a success.

At the Oxford Gardens primary school, West London, music has played a prominent role in the school's curriculum ever since the school teamed up with The Voices Foundation. Teachers have found the project so successful that in some classes they only need to sing to restore order.

Children sing their two and three times tables in maths classes, appear happier and even go home and sing to their families, say the scheme's organisers. The staff at Oxford Gardens School have seen an improvement in pupils academic success and in their behaviour. Headteacher, Liz Rayment-Pickard, said: "I do feel foolish but it is just one of those things that is so enjoyable and so much fun. (BBC News January 21, 1998)

Singing Improves Pupils' Performance – BBC News

Teachers at 70 British primary schools have joined an experimental scheme to improve the performance of their pupils - by singing to the children in lessons. Organisers of the scheme say the project brings a whole new dimension to classroom learning and they are hailing it as a success.

Under the scheme, set up by the charity The Voices Foundation, teachers take part in a special course to teach them how to take more music and singing into the life of the school.

Young children are then encouraged to sing as much as possible during lessons - including English and maths. Pupils are encouraged to sing the answer to sums in maths classes.

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While it all may seem like a lot of fun for the children, and a little embarrassing for some of the croaky-voiced teachers, the people behind the project say it can have a huge benefit on a pupil's education.

Susan Digby, of The Voices Foundation, which set up the scheme, hopes to see 2000 schools taking part in the scheme within 10 years. "Singing and making music is undervalued in our culture in general," she said. "I think in many schools it is quite hard, given the resources, to implement it in anyway that it has a substantial part in school life."

The staff at Oxford Gardens have seen an improvement in pupils academic success and in their behaviour. Headteacher, Liz Rayment-Pickard, said: "I do feel foolish but it is just one of those things that is so enjoyable and so much fun.

"As a school we have got so much out of the project that it is worth feeling a bit foolish for a few minutes to move yourself and the institution along."

School pupils say they have enjoyed singing during lessons. Music has long been seen as a valuable educational tool and it features in the British National Curriculum for pupils aged between five and 11.

Teachers are required to ensure that their pupils can sing, play some music and understand it as a form of communication. But schools nationally say that they have not got enough resources to provide the specialist teachers that pupils need.

From the web sites -

<http://news.bbc.co.uk/1/hi/uk/49305.stm>

<http://www.voices.org.uk/aboutus/ourhistory/>

Stroke patients regain the power of speech through singing

Scientists have taught stroke patients to talk again by getting them to sing words instead of speaking them. The technique, known as "melodic intonation therapy", led to patients recovering their speech after other attempts at rehabilitation had failed.

Doctors are now testing the therapy in 30 stroke patients to assess how many people who lose their speech after a stroke would benefit.

Gottfried Schlaug, a professor of neurology at Harvard Medical School, found that patients who suffered a stroke on the left side of their brain were unable to speak, but could often be taught to sing words instead.

One patient was unable to speak voluntarily but after therapy could sing the phrase "I am thirsty." Another patient could only manage the letters N and O before receiving the treatment, but after undergoing training sessions was able to sing the words "happy birthday to you".

"This patient has meaningless utterances when we ask him to say the words but as soon as we asked him to sing, he was able to speak the words," Schlaug told the American Association for the Advancement of Science meeting in San Diego.

In Britain, 150,000 people suffer a stroke each year, with around 67,000 being fatal. A fifth of those who survive experience some impairment to their speech.

The treatment appears to capitalise on the "plasticity" of the brain's neural connections, by training different parts of the brain to take over functions that are usually performed in another region.

Brain scans of patients whose stroke affected the left side of their brain showed functional and structural changes on the right side after they had received the therapy. (The Guardian - Tuesday 23rd February 2010)

The Effects of Music on Animals and Plants

Tests on the effects of music on other living organisms have shown that special pieces of music (including The Blue Danube) aid hens in laying more eggs. Music can also help cows to yield more milk. Researchers from Canada and the former Soviet Union found that wheat will grow faster when exposed to special ultrasonic and musical sounds. (O'Donnell 1999)

An experiment on laboratory rats revealed that they have a natural predisposition towards classical music. The experiment consisted in placing two boxes, connected by a tube, playing Bach's 'Air on the G string' in one box, and rock music in the other. Most rats chose to go in the box with Bach's music, even when the music was switched from one box to another. (O'Donnell 1999)

In a study carried out at the University of Wisconsin-Oshkosh, Department of Psychology rats were exposed in utero plus 60 days post-partum to one of the following types of music: –

1. Mozart Piano Sonata in D major (K.448)
2. A Philip Glass composition
3. White Noise or Silence

They were then tested for five days, three trials per day, in a multiple T-maze. By day three, the rats exposed to the Mozart music completed the maze more rapidly and with fewer errors than the rats in the other groups. The difference increased in magnitude by day five. This suggests that repeated exposure to Mozart induces improved spatial-temporal learning in rats.

(J S Jenkins - "Improved maze learning through early music exposure in rats" - National Centre for Biotechnology Information - J. R. Soc. Med. 2001 April; 94(4): 170–172)

Sweet Music for Milking

Dairy cows produce more milk when listening to relaxing music, say researchers. They believe farmers could get an extra pint from their charges by playing classical music in the cowshed.

Top hits with cows –

Everybody Hurts, REM
What a difference a day makes, Aretha Franklin
Simon & Garfunkel, Bridge Over Troubled Water
Danny Williams, Moon River
Lou Reed, Perfect Day
Beethoven's Pastoral Symphony

Psychologists at the University of Leicester, UK, played music of different tempos to herds of Friesian cattle.

Beethoven's Pastoral Symphony and Simon & Garfunkel's Bridge Over Troubled Water were a big hit in the milking shed. But when rowdy numbers, like Mud's Tigerfeet and Size of a Cow by Wonderstuff, were played, there was no increase in milk yield.

"Calming music can improve milk yield, probably because it reduces stress," said Dr Adrian North, who carried out the study with colleague Liam MacKenzie.

Some farmers already play music to chickens, as there is anecdotal evidence that it reduces stress. "A lot of farmers seem to think it works," Dr North told BBC News Online. "In essence, we're following their lead."

The study was carried out at LCAH Dairies in Lincolnshire and Bishop Burton Agricultural College in Humberside.

One-thousand-strong herds of Friesian cattle were exposed to fast, slow and no music for 12 hours a day, from 5am to 5pm, over the course of nine weeks.

The researchers found that each cow's milk yield rose by 3% (0.73 litres [1.54 pints]) a day when slow music, rather than fast music, was played.

"We found that slow music improved milk yields perhaps because it relaxes the cows in much the same way as it relaxes humans." ('Sweet Music for Milking' - BBC News - Tuesday, 26th June 2001)

The Effects of Music on Plants

Dorothy Retallack, started researching the effects of music on plants. Retallack tested the effects of music on plant growth by using music styles including classical, jazz, pop, rock, acid rock, East Indian, and country. She found that the plants grew well for almost every type of music except rock and acid rock. Jazz, classical and Ravi Shankar turned out to be the most helpful to the plants. The plants tested with the rock music withered and died. The acid rock music also had negative effects on the plant growth. (Retallack, D. (1973) *The Sound of Music and Plants*)

Carlo Cignozzi is the owner of a picturesque vineyard deep in Tuscan wine country. He has always had a penchant for classical music. His vines now seem to have developed a similar passion.

After four years of playing Mozart and Tchaikovsky through loudspeakers around his vineyards, Signor Cignozzi is convinced that this has made the plants grow stronger and healthier.

The effects of the music therapy on his grape production are so startling that Florence University has started a research project to investigate.

As well as scaring off wild boar and deer, which love young vine leaves, the music apparently also keeps away parasites, moulds and bacteria. In an area of his land deprived of music, they were noticeably more active. Not only that, but Signor Cignozzi's Sangiovese grapes mature within 10 days to a fortnight, as opposed to the normal 20 days. This is a bonus as the alcohol content remains high and the potency of the vineyard's Brunello wine is boosted.

"I don't really know why it works, but I always had an idea it would," Signor Cignozzi, a retired lawyer, said.

He bought the Al Paradiso di Frassina farm, near Montalcino, in the late 1990s. He was surfing the internet one day when he came upon some Chinese and Korean studies into the effect of music on plants. Being a lover of wine and music, the next step seemed obvious.

"The vines really do seem to be healthier," Stefano Mancuso, Professor of Agrarian Pathologies at Florence University, said. "There could be other reasons, apart from the music, so now we have to do some scientific tests that will prove it."

Two parallel sets of experiments have been set up. On Signor Cignozzi's land, ten vines in separate pots will be "fed" music all year, and thirty metres away ten others will be kept in relative silence. The health of the plants and quality of grapes will be measured in a year's time. Meanwhile, in the university laboratories, plants are being exposed to sound at a range of frequencies, to see to which they respond. The tests are under way and, for reasons Professor Mancuso confesses he does not quite understand, some roots are growing towards the source of the sound.

Researchers are also exposing two groups of vines to high quantities of insects and pathogens. One group is helped with music, the other left to cope alone. Professor Mancuso emphasised that it was too early to make any judgments on the experiment, but said it would be no surprise if the results bore out Signor Cignozzi's claims. (Martin Penner - 'Classic Year Promised as Mozart is Heard on the Grapevine' - *The Times* - September 26th 2005)