

More than a Feeling How the Arts Affect Your Health

For thousands of years, people have searched for the meaning and beauty of life in music, painting, poetry and other arts. Now scientists are finding that the arts can benefit both your mental and physical health.

Current research is following a number of paths. Some scientists measure the natural substances your body produces when you're listening to music or otherwise exposed to the arts. Others look at what happens when you are active in the creative process. Researchers are now investigating how the arts can help us recover from disease, injury and psychological trauma. Many scientists agree that the arts can help reduce stress and anxiety, improve well-being and enhance the way we fight infection.

Let's start with music. "There is a reward system in place for learning music," says Dr. Daniel Levitin of McGill University in Montréal. Music can activate the same brain areas as chocolate, opium and orgasm. Of course, at different intensities.

Music plays an important role throughout our lives. Parents worldwide sing and coo to their babies. And let's not forget the other end of the life cycle: Levitin says that music

"may be the last thing to go" in those with severe memory loss from Alzheimer's disease. "Even if they don't know their own spouse, they can sing the songs of their youth."

Recent studies have found evidence that singing releases substances that serve as the brain's own natural painkillers. Singing also increases the "bonding hormone" that helps us feel a sense of trust. And when we listen to music, levels of molecules important for fighting infection can rise.

Many of us intuitively use music for relaxation and enjoyment—to socialize, exercise or change our mood after a hard day. But music therapy is sometimes used in the clinic as well, requiring a certified therapist to interact with the patient.

To measure the effects of such therapy, one study showed how levels of an important brain chemical that relays signals between cells increased after 4 weeks of music therapy. It then decreased after the therapy was halted.

And a recent report from Finnish scientists showed that listening to music helps **stroke** patients recover both memory and focused attention. The researchers also found that music can reduce post-stroke **depression**



and confusion. Other studies suggest that stroke patients may improve faster if they sing, rather than speak, as part of their rehabilitation.

Scientists are also studying how
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Definitions

Depression

An illness that brings a persistent sad, anxious or "empty" mood; feelings of hopelessness and pessimism; and other symptoms that interfere with your ability to function and enjoy life.

Stroke

When blood flow to the brain is interrupted, brain cells die, causing sudden numbness or weakness, confusion and other symptoms.



Wise Choices Arts for Health

The arts may bring more than intellectual benefits. Recent research suggests they may help your physical and mental health. Try these for a start:

- Write for at least 15 minutes a day, for at least 3 consecutive days, about something that worries or bothers you. If it makes you feel too upset,

simply stop writing or change topics. Experiment to find what works best for you.

- Listen to music to reduce stress and improve quality of life.
- Try a dance class or Tai Chi, a sequence of slow, graceful body movements. These kinds of movements can help reduce stress.
- Try doodling or drawing as a way to work out tension.

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art therapy can help to ease pain and stress and improve quality of life. Megan Robb, a certified art therapist at NIH's Clinical Center, says, "When traumatic memories are stored in the brain, they're not stored as words but as images. Art therapy is uniquely suited to access these memories."

Once you draw or paint these images, she explains, you can then progress to forming words to describe them. This externalizes the trauma—moves it out of isolation, onto the page and into a positive exchange with the therapist. This process, Robb says, gives you "an active involvement in your own healing."

Several small studies, some of which were supported by NIH, have suggested that art therapy can help improve health status, quality of life and coping behaviors. It can improve

depression and fatigue in cancer patients on chemotherapy, and help prevent burnout in caregivers. It's also been used to help prepare children for painful medical procedures, as well as to improve the speech of children with cerebral palsy.

And then there's writing. Expressive writing—writing about traumatic, stressful or emotional events—has been shown to have a number of health benefits, from improving symptoms of depression to helping fight infection. Dr. James W. Pennebaker of the University of Texas at Austin has designed several studies to show the links between writing and health.

"Writing about emotional upheavals in our lives can improve physical and mental health," Pennebaker says. "Although the scientific research



Web Links

For links to more information about mind and body connections, see this story online:

- http://newsinhealth.nih.gov/2008/June/docs/01features_01.htm

surrounding the value of expressive writing is still in the early phases, there are some approaches to writing that have been found to be helpful."

In a series of exercises, healthy student volunteers who wrote about traumatic experiences had more positive moods, fewer illnesses and better measures of immune-system function than those who wrote about superficial experiences. Even 6 weeks later, the students who'd written about what upset them reported more positive moods and fewer illnesses than those who'd written about everyday experiences.

In another study of students vulnerable to depression, those who did expressive writing exercises showed significantly lower depression symptoms, even after 6 months, than those who had written about everyday matters.

Arts that involve movement, such as dance, can also bring health benefits. Researchers already know that physical activity can help you reduce stress, gain energy, sleep better and fight depression and anxiety. NIH-funded researchers are now studying Tai Chi—a sequence of slow, graceful body movements—to see how it affects fitness and stress in cancer survivors.

NIH is currently funding several studies to learn more about the health effects of expressive writing and other arts. If you're interested in participating, search for clinical trials in your area at <http://clinicaltrials.gov>.

Remember that the arts are no substitute for medical help when you need it. But they can still bring health benefits. If you enjoy writing or any other art, go for it. You don't have to be "good" at them for them to be good for you. ■

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What Makes Your Head Hurt?

Tension is the Most Common Culprit

If you suffer from headaches, you're not alone. Headaches are one of the most common health complaints. They can be simply distracting or completely debilitating. Many headaches fade away without treatment. Some are easily remedied. Still others are stubborn and recurring. But only rarely do headaches warn of a serious illness.

About 95% of headaches are primary headaches, meaning they're not caused by an underlying medical condition. Other headaches, called secondary headaches, arise from medical disorders like swollen sinuses, head injury or tumors.

A headache may feel like a pain in the brain, but it's not. The brain itself lacks pain-sensitive nerve cells. Instead, most headaches originate in the network of nerves and nerve-rich muscles and blood vessels that surround your head, neck and face. These pain-sensitive nerve cells can be activated by stress, muscle tension, enlarged blood vessels and other triggers. Once stimulated, the nerve cells transmit messages to the brain, causing you to feel pain.

If you're feeling stressed, depressed or anxious—or if you're not getting enough sleep—you're at risk for a tension headache. Most diagnosed headaches are related to tension or muscle tightness, usually in the

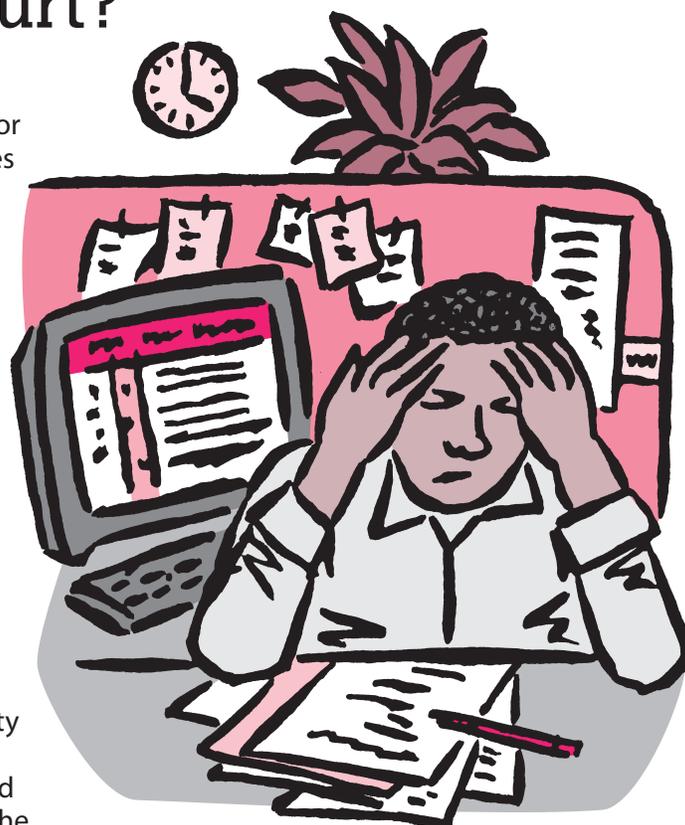
shoulders, neck, scalp or jaw. Tension headaches can cause a sensation of painful pressure on the head and neck. They sometimes feel like the grip of a tight elastic band around your head.

Migraine headaches are the second-most common, striking about 3 times more women than men. Migraine pain is often described as intense, pulsing or throbbing. Migraine sufferers can have extreme sensitivity to light and sound. In some cases, nausea and vomiting accompany the headache. Although the exact cause of migraine pain is unknown, one theory is that it's linked to the widening and tightening of blood vessels surrounding the brain, which irritates the nearby nerves.

A less common but more severe type of headache occurs in "clusters," often at the same time of day for several weeks. These cluster headaches usually begin suddenly as a sharp or burning pain centered around one eye. The pain can last up to 3 hours.

that can trigger migraines, including caffeine, alcohol and processed meats. Relaxation techniques may reduce the occurrence and severity of migraines.

Cluster headaches can be treated or prevented with prescription medications. Nasal sprays that numb the nose and nostrils may also help. Doctors also recommend avoiding alcohol if you're susceptible to cluster headaches.



NIH scientists are working to better understand what causes headaches and how they can be treated. Some researchers are looking at complementary and alternative therapies like acupuncture, which has shown promise in some studies, although results have been mixed.

Most people can relieve headache pain by making lifestyle changes, learning ways to relax and taking pain relievers. If these approaches don't work, your doctor may have more suggestions.

Let your health care provider know if you have sudden, severe headaches. Get medical help right away if you have a headache after a blow to your head, or if you have a headache along with fever, confusion, loss of consciousness or pain in the eye or ear. ■



Wise Choices Headache Relief

- **Tension headaches** can be treated with over-the-counter pain relievers. Stress management, relaxation exercises or a hot shower may also help.
- **Migraine headaches** can be treated with over-the-counter or prescription medications. Migraines often recur but may be prevented with prescription drugs. Avoid food and drinks



Web Links

For links to more information about headaches, see this story online:

- http://newsinhealth.nih.gov/2008/June/docs/01features_02.htm

Health Capsules

Fat Cell Numbers Stay Constant in Adults

After your teen years, the number of fat cells in your body probably stays the same for the rest of your life, even if you gain or lose weight, according to a new study. The fat cells simply get bigger or smaller as your weight changes. The findings may help to explain why it can be so hard for some people to drop pounds and keep them off.

NIH-funded scientists developed a new technique to estimate the age of fat cells. Then they analyzed fat cells removed from adults during liposuction or other procedures. The researchers discovered that about 10% of fat cells die and are replaced each year, with the total number of cells holding steady.

The investigators then looked at how fat cell numbers change across

the lifespan. They found that overweight children seem to add on more fat cells than normal-weight kids, and fat cell numbers quickly climb through the teen years. But during adulthood, the number of fat cells levels off and stabilizes.

Finally, the scientists looked at how

big weight changes affect fat cells. When normal-weight men gained a lot of weight, their fat cells enlarged but the total number of cells stayed constant. When they later lost weight, their fat cells shrank but did not vanish. Likewise, people who lost weight after stomach-stapling surgery had the same number of fat cells 2 years later. The cells, though, were smaller because they contained less fat, or lipids.

"If you are overweight and you lose weight, you still have the capacity to store lipids because you still have the same number of fat cells," says Dr. Bruce Buchholz, a scientist at Lawrence Livermore National Laboratory in California. "That may be why it's so hard to keep the weight off." ■



Web Links

For links to more information about the topics in these stories, visit this Health Capsules page online:

- <http://newsinhealth.nih.gov/2008/June/docs/02capsules.htm>

Blood Pressure Control and Kidney Disease

Long-term, uncontrolled high blood pressure puts you at risk for kidney disease. Doctors often prescribe blood pressure drugs to protect kidneys. But now a new study suggests that, in people with kidney damage from high blood pressure, even the best efforts to control blood pressure can lead to a continuing decline in kidney function. The decline seems to be gradual in some people but significant in others.

Kidney disease affects about 26 million Americans. It strikes people of all races, but African Americans are at greater risk, mostly because they have higher rates of diabetes and high blood pressure, the two leading causes of kidney disease.

Kidney disease often strikes without warning. It can be prevented or delayed, but if left untreated it can lead to kidney failure or even death.

In the new study, NIH scientists and their colleagues examined 759 African Americans who had kidney

disease due to high blood pressure. The researchers assessed the patients' health for at least 9 years. All the patients took blood pressure medications and tried to keep their blood pressure low.

During the study, about one-third of the patients had a slow weakening of kidney function, similar to the decline seen as healthy people age. But in about one-fourth of participants, kidney disease got substantially worse, even with very good blood pressure control and use of medications.

These findings highlight the importance of early detection and treatment of kidney disease. Talk to your health care provider about your risk for kidney disease and how you can keep your kidneys healthy.

"Despite these sobering results, blood pressure control is still vital in kidney disease and in many other diseases," said NIH Director Dr. Elias Zerhouni. ■



Featured Web Site Asian American Health

<http://asianamericanhealth.nlm.nih.gov>

Asian Americans face many of the same health problems as the nation's overall population. But certain diseases—like liver and lung cancer—are especially common among Asian Americans. This web site provides reliable health information that's particularly relevant for Asian Americans and their families.

The screenshot shows the homepage of the Asian American Health website. At the top, it features the National Library of Medicine logo and navigation links for Home, Contact NLM, and Site Map. The main heading is "ASIAN AMERICAN HEALTH" with a sub-heading "An information portal to issues affecting the health and well-being of Asian Americans in the United States." Below this, there are several menu items: Introduction, Contact Us, Site Map & Search, and About Us. The main content area is divided into several sections:

- Materials in Asian Languages:** Chinese, Filipino, Japanese.
- Behavioral and Mental Health Issues:** Domestic Violence, Mental Health, Substance Abuse.
- Complementary/Alternative Medicine:** Acupuncture, Herbal Medicine, Tai Chi/ Qi Gong.
- Health and Diseases:** Cancer, Diabetes, Heart Diseases.
- Health Organizations:** National, Federal Government, NIMH, NIA.
- Major Asian Populations:** Asian Indian/Pakistani, Chinese, Filipino.

 On the right side, there is a vertical image strip showing various scenes of Asian Americans. At the bottom, there is a footer with contact information and a copyright notice for 2008.



For more health information from NIH, visit <http://health.nih.gov>