

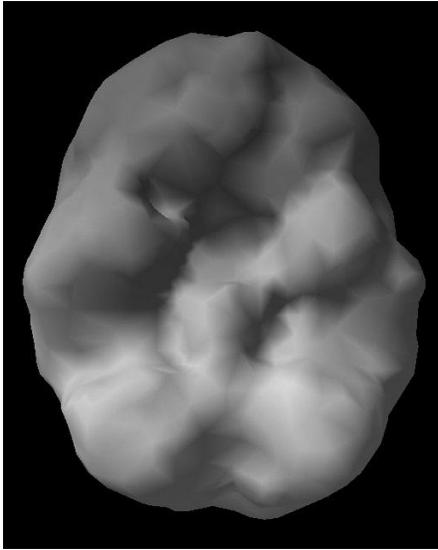
Gratitude Makes Your Brain Better

Daniel G. Amen, MD

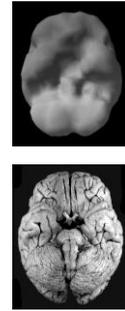
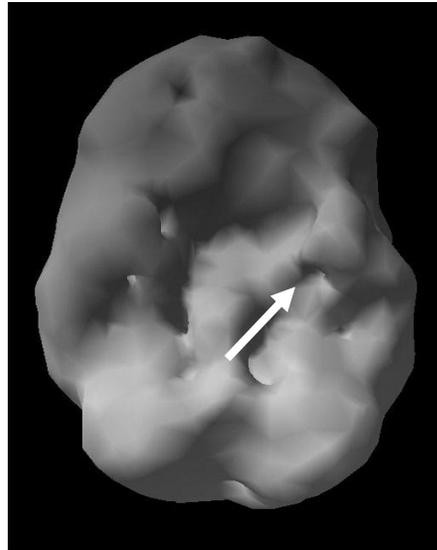
One of the most interesting scan sets that I have done through the years involved a psychologist, Noelle Nelson, who was writing a book titled *The Power of Appreciation* (now in print). She wanted to be scanned after she had spent a half hour meditating on all the things she was thankful for in her life. Her brain looked healthy. In talking to her about the scan I convinced her to do one more scan thinking about all the things she hated in her life. I felt that we needed a comparison study to really show the differences that an attitude of gratitude can make in the brain. Reluctantly, she agreed. She was hesitant because she knew that thinking about the things she hated in life would make her feel bad. She was right. She thought about her fears, such as what if she got sick, couldn't work, couldn't support her animals, and thought that if her dog got sick and died because she was out of work, she would get depressed and never recover. Her second scan was very different than the healthy, gratitude scan. When she thought about all the things that could go wrong in her life, both her cerebellum and left temporal lobe deactivated. Decreased cerebellar activity is associated with decreased motor coordination and thought coordination. People get clumsier and less able to think their way out of problems. Lowered left temporal lobe activity is associated with dark thoughts and memory problems. Negative thought patterns change the brain in a negative way. Being grateful for the wonderful things in your life literally helps you have a brain to be grateful for.

Images 1-4

Grateful 1

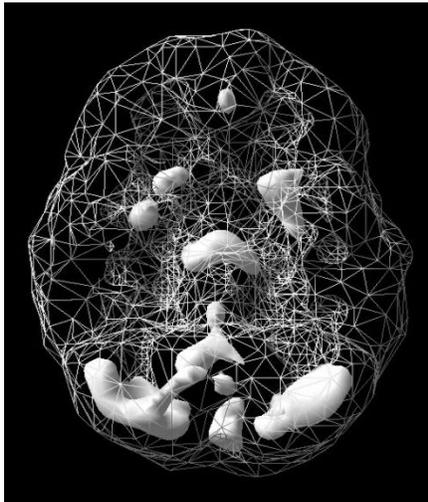


Hateful 2

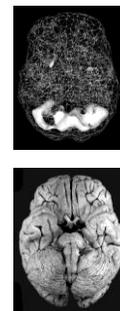
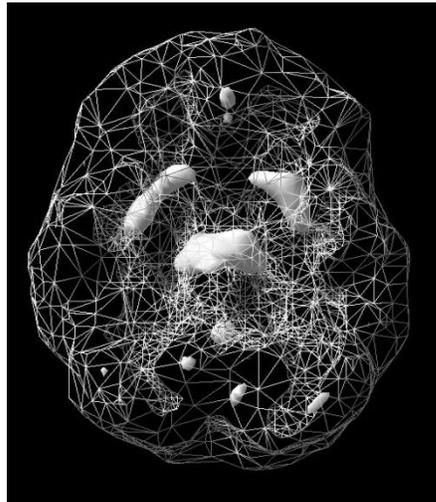


Notice low left temporal lobe activity

Grateful 3



Hateful 4



Notice marked decreased cerebellar activity

Here are four steps to improve your brain and your reality:

1. Do not believe every first thought you have. It is easy to misunderstand or misperceive situations. Think about all of the brain systems involved in communication -- from sight and sound processing to decoding meaning and comparing incoming information with past experiences, you can see how some things can get miscommunicated. Whenever you feel slighted, hurt, or negated by someone else, try to get clarification of the situation. Clear communication can solve many relational problems...feed your brain accurate information, not just gut feelings. Correct your perceptions, change your brain.

2. Realize that your thoughts are extraordinarily powerful. Every time you have a thought, your brain releases chemicals. Every time you have a positive, happy, hopeful, grateful thought, your brain releases chemicals that help you feel better and have more efficient brain function. Whenever you think awful, miserable, negative thoughts, your brain works less efficiently and is likely to put you into an emotional slump. Learn how to direct your thoughts to see the glass as half full...your brain works better with positive thought fuel than negative energy.

3. Thoughts lie, they are easily distorted, and they can rob you of your joy. People who suffer from depression, anxiety, and panic disorders are filled with what I call ANTs, automatic negative thoughts. They tend to predict the worst and focus on whatever is negative about a situation. It is as though they have an ANT infestation sucking the life force out of the physical brain. It is important to develop an internal anteater to rid oneself of these pests and their nests. Whenever you feel sad, mad, or nervous, write out what you are thinking. You will notice many

of those thoughts are irrational and hurtful. The act of writing them down takes away their power by turning off their emotional food supply and eventually choking the life out of the ANTs so you can replace them with more helpful thoughts. Kill the ANTs, change your brain.

4. Your brain takes what it sees and makes it happen. Negative thoughts can make negative things happen, while positive thoughts can help you reach your goals. The expectation of success is a very powerful force by itself. Skilled physicians have known for centuries that positive expectations play a crucial role in the outcome of many illnesses. Until one hundred to one hundred and fifty years ago, the history of medical therapeutics was largely that of the doctor-patient relationship and the "placebo effect" (placebos being inert substances that have no physiologic effect on the problem). Actually, most of the treatments by physicians in times past would have been more harmful than beneficial to the patient, if it weren't for the recuperative powers of the human organism supported by the belief in the healing powers of the physician's prescriptions. The benefits of the placebo effect are determined by the expectations and hopes shared by the patient and the doctor. According to Dr. T. Findley, action, ritual, faith, and enthusiasm are the vital ingredients. Jerome Frank, M.D., after studying the psychotherapeutic process, concluded that the belief of the therapist in his treatment and the belief of the patient in the therapist were the most important factors in a positive outcome to therapy.

Although a placebo is a substance that is considered pharmacologically inert, it is by no means "nothing." It is a potent therapeutic tool, on the average about one-half to two-thirds as powerful as morphine in relieving severe pain. It is now recognized that one-third of the general population are placebo responders in clinical situations relating to pain, whether the pain is from

surgery, angina, cancer, or headache. It is very clear that placebo responses are not simply a result of the patient fooling or tricking himself out of the pain. Placebo administration can produce real physiologic changes. Some of the physiologic pathways through which the placebo effects work have been identified. In a 1978 study done by a University of California research team, it was found that the placebo effect of pain relief in dental patients could actually be blocked by administering these patients naloxone, a drug that neutralizes the effects of morphine in the body. From this study and others, it has become clear that the belief in pain relief stimulates the body to secrete its own pain relieving substance, called endorphins, which act in the same manner as morphine, only they are much more potent. In a brain imaging study, researchers found that when placebo worked for depressed patients, brain function also changed in a positive way. Change your beliefs, change your brain.