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This Is Your Brain on Optimism

New research reveals the biological roots of positive thinking. How a rosy outlook can affect your health.

by [Sarah Kliff \(/contributors/sarah-kliff.html\)](/contributors/sarah-kliff.html) | October 23, 2007 8:00 PM EDT

We humans tend to be an optimistic bunch. In fact, it's long been established by psychologists that most people tend to be irrationally positive. The optimism bias, as it's called, accounts for the fact that we expect to live longer and be more successful than the average and we tend to underestimate the likelihood of getting a serious disease or a divorce. This tendency is adaptive—many researchers have claimed that a positive outlook motivates us to plan for our future and may even have an effect on our long-term physical health.

Optimism may be so necessary to our survival that it's hardwired in our brains. A new study published in the journal *Nature* further confirms the idea that having a rosy outlook is a personality trait with deep, neurological roots. Researchers found that the brains of optimistic people actually light up differently on a scan than those who tend to be more pessimistic when they think about future events.

The disparity between positive and pessimistic minds is especially prominent in areas of the brain that have been linked to depression. "The same areas that malfunction in depression are very active when people think about positive events," says Tali Sharot, a post-doctorate fellow at University College London, who conducted the research at New York University.

In the study, Sharot had subjects think about emotional events, both positive and negative, like winning an award or ending a romantic relationship. They did this for past events and those that could plausibly occur in the future, while their brains were being scanned in a fMRI. Afterwards, subjects filled out a questionnaire that measured their level of optimism. What Sharot found was that when participants thought about positive future events, two regions of the brain became much more active than when they thought about negative events.

One of those areas (the rostral anterior cingulate) was linked to optimism with such consistency that it surprised Sharot. "You can see it in all the subjects, indicating that it's probably very fundamental to human nature," she says. "[Optimism] is mediated in some very strong way in the brain." And other research has linked abnormal activity in that same brain region with [inherited depression \(http://www.ncbi.nlm.nih.gov/sites/entrez?db=pubmed&uid=17916329&cmd=showdetailview&indexed=google\)](http://www.ncbi.nlm.nih.gov/sites/entrez?db=pubmed&uid=17916329&cmd=showdetailview&indexed=google), suggesting that the tendency toward optimism and depression is regulated by the same region of the brain.

While we can't say for certain why some people respond more positively to life's events, it's increasingly clear that your mental outlook can have a big effect on your physical health. Optimism motivates individuals to take control of their lives, while depression has been found to have the opposite effect. It is often linked to a sense of hopelessness. "The problem with depression is that people are so pessimistic that they don't engage in actions that could make their lives better," says Elizabeth Phelps, one of the study authors and psychology professor at NYU.

For example, those who hold fatalistic beliefs about cancer, have shown to be at greater risk of the [disease](http://cebp.aacrjournals.org/cgi/content/abstract/16/5/998) (<http://cebp.aacrjournals.org/cgi/content/abstract/16/5/998>) because they not take preventative measures like eating vegetables or quitting smoking. On the opposite end, a body of research has linked optimism to better health. A landmark study of 999 elderly men and women found that optimism significantly lowered the risk of death from cardiovascular disease.

The exact nature of the relationship between optimism and good health is still unclear. Martin Seligman, who studies optimism and positive thinking at the University of Pennsylvania says that it might be that, optimists, as opposed to pessimists, are more likely to take care of their health because they believe in the potential positive outcomes. Or, it could be that optimistic people are more likeable and build better social networks, which have been associated with longevity. Another possibility is that optimistic people may have had less trauma or difficulty in their lives (a high number of negative events in a lifetime correlates with bad health). "All of these are plausible," says Seligman.

So does this mean that self-help books that aim to boost your optimism, like "The Secret" or "The Power of Positive Thinking" will make you healthier? Not necessarily. But researchers like Seligman do believe that promoting positive thinking is a promising avenue of medical research. And whether or not you agree with his hopeful outlook may tell you something about your own brain.

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