

The Astonishing Power of Belief

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“Help me,” said the young man to the nurse behind the emergency room desk. “I took all my pills.” Then he collapsed. As he dropped to the ground, an empty prescription bottle fell from his hand.

The medical staff rushed to his aid. Though he was still conscious, they noted that he was drowsy and lethargic. He confirmed that he had swallowed all of his medication, which he said was a new experimental drug for depression. The label on the pill bottle had his name on it—Arthur—and confirmed that the capsules were to be taken as part of a clinical trial of an antidepressant medication.

Arthur’s level of fear was high. He was afraid he would die of the overdose. This was the second bottle he’d received. When he had gotten the first batch a month earlier, Arthur had popped one pill a day as prescribed. But when the current batch arrived the previous day, he was in the midst of a crisis.

Two months before, his girlfriend had broken up with him, criticizing him for not being able to make decisions. He began to feel hopeless, though they still saw each other occasionally. When he saw a nearby university’s advertisement for participants in a clinical trial of a new antidepressant, he enrolled.

As Arthur consumed the first bottle of pills, one a day, he felt his mood improving significantly. He had no side effects. But just after getting his second bottle, he and his ex-girlfriend got into a fight. After brooding in his room after she left, Arthur impulsively swallowed the remaining 29 capsules. He quickly realized he was in trouble. He went to a neighbor’s house and got a ride to the hospital.

As the nurses assessed Arthur’s vital signs, his skin was pale and clammy. His heart rate was sky high: 110 beats per minute. His blood pressure had dropped into the critical range at 80/40. He was trembling and breathing rapidly.

The nurses set up an intravenous line, drew blood, and sent it in for immediate testing by the lab. The results showed that all of Arthur’s markers

were in the normal range. His urine screened negative for other medications and drugs. As saline was administered through the intravenous line, his blood pressure rose. But it dropped again whenever the flow of saline was slowed down.

Four hours later, a doctor from the university hospital conducting the antidepressant study arrived and examined Arthur. His heart rate was still high at 106 and his blood pressure was still low at 100/62. The doctor also examined the empty pill bottle, matching it against the hospital’s records. These showed that Arthur was in the placebo control group. He wasn’t getting the real antidepressants. He had swallowed 29 capsules of a completely inert substance.

Arthur was astonished. He teared up in relief. Within just 15 minutes, his heart rate had dropped to 80 beats a minute, his blood pressure was normal at 126/80, and he was fully alert.

Psychiatric testing confirmed that Arthur was depressed but not psychotic. He was discharged with a diagnosis of depression and did well on a subsequent treatment regimen that included psychotherapy and the drug sertraline.

This case history, reported in the journal *General Hospital Psychiatry*, is a dramatic illustration of the role that belief plays in our wellbeing (Reeves et al., 2007). William Shakespeare said, “There’s nothing so but thinking makes it so.” Our thoughts can make us sick and our thoughts can make us well.

While Arthur’s case is an extreme example, this phenomenon is at play every day of our lives.

A recent study found a link between negative thinking and beta amyloid plaques in the brain (Marchant et al., 2020). It included 292 people over the age of 55. Over a period of four years, the researchers examined patterns of repetitive negative thinking (RNT) among the participants. RNT typically takes you out of the present moment, leading to worry about the future and rumination about the past.

Participants’ memory, attention, language, spatial cognition, and cognitive function were

measured before and after the four years, and PET scans taken before and after measured the deposit of amyloid plaques in the brain. These plaques are the signature molecular markers of Alzheimer's disease.

Over a four-year period, participants who scored higher for RNT showed greater cognitive decline as well as memory lapses. These were associated with a greater deposit of amyloid plaques in their brains.

Dr. Gael Chetelat, a coauthor of the study, observed, "Our thoughts can have a biological impact on our physical health, which might be positive or negative. Mental training practices such as meditation might help promoting positive- while down regulating negative-associated mental schemes ... it should be a major public health priority."

We typically give ourselves plenty of leeway when it comes to negative thinking. "Surely getting upset about the government and corporations is justified," we might say to ourselves. Or "I have every right to be mad about how that person treated me." We turn on the news and absorb big doses of negative information. Very few of us have any idea of the huge biological toll this takes on our bodies. The effects don't show up for a long time, but they are cumulative. So when they do show up, they're devastating.

A 30-year study of longevity found that optimists are 60% more likely to reach the ripe old age of 85 years old (Lee et al., 2019). On average, they live 10 years longer than pessimists.

That's 10 years more in which they can enjoy retirement, play with their grandchildren, enjoy the material possessions they've accumulated, volunteer, choose what to do with their time, and all of the other benefits of a long and healthy life.

It's easy for short-term thinking to mislead us into discounting the impact of negative thoughts on our bodies. If we lived every day as though every thought was either killing us or giving us life, we would use our minds very differently.

Belief can produce dramatic and immediate physiological changes, as it did for Arthur. The changes can also be long term and subtle, as they were for the participants in the Alzheimer's study. Either way, we have the superpower to change our bodies with our minds. This should motivate us to choose every thought with care.

References

- Lee, L. O., James, P., Zevon, E. S., Kim, E. S., Trudel-Fitzgerald, C., Spiro, A., ... Kuzansky, L. D. (2019). Optimism is associated with exceptional longevity in 2 epidemiologic cohorts of men and women. *Proceedings of the National Academy of Sciences*, *116*(37), 18357–18362.
- Marchant, N. L., Lovland, L. R., Jones, R., Pichet Binette, A., Gonneaud, J., Arenaza-Urquijo, E. M., ... PREVENT-AD Research Group. (2020). Repetitive negative thinking is associated with amyloid, tau, and cognitive decline. *Alzheimer's and Dementia*, *16*(7), 1054–1064. doi:10.1002/alz.12116
- Reeves, R. R., Ladner, M. E., Hart, R. H., & Burke, R. S. (2007). Nocebo effects with antidepressant clinical drug trial placebos. *General Hospital Psychiatry*, *29*(3), 275–277.