

Better think positive: Pessimism can block therapy

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Spine surgeon Anders Cohen puts a lot of stock in patients' expectations of pain relief. He prefers to operate only on those who "grab you by the collar and say, 'I can't take it anymore.'"

New brain research proves doctors like Cohen are onto something: [Pessimism](#) can override the effectiveness of even powerful treatments.

You've heard of the [placebo effect](#), the healing power of positive belief. This is the "nocebo" effect, the flip side, almost its evil twin.

And while the self-fulfilling prophecy of [negative thinking](#) isn't nearly as well studied, some scientists say it's time for doctors to start paying a lot more attention to their patients' outlook.

"We all know that many treatments work for some people but not for others," says neuroscientist Dr. Randy Gollub of Massachusetts General Hospital. Instead of stressing only the percentages, "say, 'I have every reason to believe that you could be one of the people who will respond.'"

Scientists already know the placebo effect is real. They can measure it in studies that compare real drugs to dummy pills, where those given the fakes have noticeable improvements to [pain](#) and other symptoms.

But could a gloomy outlook really harm? British and German researchers performed the most sophisticated study yet to tell. They strapped a heat-beaming device onto the legs of 22 healthy volunteers, zapping it until

people rated their pain at nearly 70 on a scale of 1 to 100.

Then the researchers hooked up an IV to give them the powerful morphine-like painkiller remifentanyl. Typically used for surgery patients, it works rapidly but also is metabolized rapidly, able to be switched on and off as researchers alternated between giving the drug or plain fluid.

The volunteers' brains were scanned as they described how much pain, and pain relief, they experienced at different times. When the researchers induced the burn and surreptitiously turned on the drug, the volunteers said their pain improved a fair amount. The painkiller was working, expectations aside.

Here's the mind over matter: The researchers next told the volunteers they were about to inject the painkiller even though they'd never turned it off. Those pain ratings dropped even more - meaning expectations of relief doubled the drug's painkilling benefit.

Finally, the researchers lied again, saying they were stopping the drug and that pain would probably increase. Sure enough, the volunteers' pain levels soared back up to almost their pre-treated level as grim expectations canceled out the effect of a proven and potent painkiller. Anxiety levels fluctuated similarly.

Why? The brain scans tell the tantalizing tale - showing changes in neural pain networks that prove the people really did experience the changes in pain that they reported.

Moreover, expecting more pain fired up sections of the brain that control mood and anxiety, the researchers recently reported in the journal *Science Translational Medicine*. In contrast, anticipating [pain relief](#) fired up different regions previously found active in people given placebos.

It's a small study, dealing just with pain. But the results may apply to a range of drug therapies, especially in chronic diseases because so many of those patients are conditioned by months or years of frustrating treatment failures, concluded lead researcher Dr. Ulrike Bingel of Hamburg's University Medical Center, who teamed with Oxford University researchers for the study.

Learning how anxiety influences pain is crucial to understanding this nocebo effect - how you get the pain you expect, said co-author and Oxford neuroscientist Irene Tracey, in a recent review of the science of expectations in the journal *Nature Medicine*.

It's by no means a novel concept. Previous research has found people given a dummy pill can experience the side effects of the medication they thought they were getting.

While there's a lot yet to learn, for now doctors should at least try building closer relationships with their patients to encourage trust in recommended treatments, said Mass General's Gollub.

"Building these strong, positive expectations for doing well are part of what comes from believing in your treater as someone who cares about you," she said.

Directly managing patients' expectations - spelling out exactly what will happen at different points to take away some of the fear - also can help, said Cohen, chief of spine surgery at Brooklyn Hospital Center in New York. He teaches new doctors not to promise [surgery patients](#) they'll wake up free from pain because - while the old back pain may be fading - they're going to hurt from the operation.

When someone says, "'Wow, it's just like he told it was going to be, this guy told me the truth,' now you've got this bond of confidence," Cohen

said. "You're partnering with your patient."

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