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## Real, fake pills both change brain

By Reuters, 1/1/2002

WASHINGTON - Brain scans show that patients with depression have a clear physical response, not only to an active drug, but to a sugar pill, researchers reported yesterday in a study that could help explain the "placebo effect."

However, the response to the fake drug differed dramatically from the response to the real drug, the study found.

"What this study shows, for the first time, is that people who get better on placebo have a change in brain function, just as surely as people who get better on medication," said Dr. Andrew Leuchter, the psychiatrist at the University of California Los Angeles who led the study. The study might show ways for doctors to use the placebo response to improve standard treatments, he said.

It also suggests that treating depression has two important parts - the medications, and the very act of seeking treatment, Leuchter said. He called the effects of medicine and the placebo pills "different and perhaps complementary mechanisms."

"The placebo effect," he said, "is something that is very physically distinct."

Leuchter and colleagues set out to find out what happens to the brain when a patient is given a placebo. They gave 51 patients either a placebo or the antidepressants Prozac or Effexor, which boost the level of the mood-enhancing chemical messenger serotonin in the brain. Using imaging, they saw distinct changes in the brain's prefrontal cortex, the area commonly reflects mood state.

"Overall, 52 percent of the subjects - 13 out of 25 - receiving antidepressant medication responded to treatment, while 38 percent - 10 out of 26 - of those receiving placebos responded," Leuchter's team wrote in today's issue of the American Journal of Psychiatry.

"At eight weeks ... you couldn't tell them apart in terms of mood ratings. What happened at eight weeks plus a day is a bit different."

Once people realized they were not taking real drugs, the placebo effect stopped. But the brain scans showed something even more interesting. "Brain function changed at different rates," Leuchter said. "The medications' effect was virtually immediate. Within 48 hours, we saw there was suppression of prefrontal activity in medication responders."

But it took two weeks for changes to be seen in the brains of people who responded to placebo, and it was an increase of activity in that part of the brain, not the decrease seen with the drugs.

This story ran on page A15 of the Boston Globe on 1/1/2002.

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