

# Anxious searchers miss multiple objects

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A person scanning baggage or X-rays stands a better chance of seeing everything they're searching for if they aren't feeling anxious, according to a new laboratory experiment.

Duke psychologists put a dozen students through a test in which they searched for particular shapes on a [computer display](#), simulating the sort of visual searching performed by [airport security](#) teams and radiologists.

The research was published online June 13 in [Psychological Science](#).

Stephen Mitroff, an assistant professor of psychology and neuroscience who led the experiment, says this area of [cognitive psychology](#) is important for improving homeland security and healthcare. He's begun collaborating with the Transportation Security Agency at RDU airport and radiologists at Duke.

In earlier studies of this type, Mitroff's team had wondered if the anxiety produced by being visible to a long line of frustrated travelers or having to interpret an image in a medical emergency might change a person's performance on these sorts of tasks.

To simulate a [stressful situation](#) in this study, the researchers told the participants they might receive an unpredictable [electrical shock](#) for half of the trials that would be unrelated to their performance. Annoying but not painful electrical shocks are a well-established means of inducing anxiety in the lab. Only tests run without a shock were analyzed, focusing the research on the anxiety produced by anticipating a negative

event. On the other half of the trials, participants heard a harmless tone.

Subjects performed about the same when searching for a single object whether anxious or not. But when the researchers added a second target, participants were more likely to miss the second object when anxious, despite spending the same amount of time looking at the image.

Missing a second target is a well-known issue called "satisfaction of search," Mitroff said, and it's believed to account for about 40 percent of radiology misses. A person finds the first object and then simply fails to see the second one, even though they're still looking.

Anxiety heightened the satisfaction-of-search problem, a finding which has important implications for the way we train and test searchers, Mitroff said.

**More information:** "Anticipatory anxiety hinders detection of a second target in dual-target search," Matthew S. Cain, Joseph E. Dunsmoor, Kevin S. LaBar and Stephen R. Mitroff. *Psychological Science*, June 13, 2011. [doi:10.1177/0956797611412393](https://doi.org/10.1177/0956797611412393)

Provided by Duke University

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