

# Do high false positive rates linked to functional MRI compromise results in neuroimaging studies?

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Challenging recent claims that inflated false positive rates in the analysis of functional magnetic resonance imaging (fMRI) of the brain may negate the findings of countless previous studies, a new review of this controversial topic takes a fresh look at the analytical tools in question. Scientists from the U.S. National Institutes of Health conclude that the effects of a "bug" in the analysis of functional neuroimages (AFNI) software was greatly exaggerated, according to the new study published in in *Brain Connectivity*.

In the article entitled "fMRI Clustering in AFNI: False-Positive Rates Redux," Robert Cox, Gang Chen, Daniel Glen, Richard Reynolds, and Paul Taylor, National Institutes of Mental Health, NIH, Bethesda, MD, repeated some of the earlier simulations performed using the AFNI tools to assess spatial smoothness and clustering of false-positive results on brain neuroimaging. The researchers reported some, though not a particularly high rate of [false positives](#), and described new approaches that show promise in controlling false positive rates.

"Vigorous scientific debate is a key for scientific progression," states Christopher Pawela, PhD, Co-Editor-in-Chief of *Brain Connectivity*. "This manuscript from Dr. Bob Cox and colleagues at the NIH is an important part of that ongoing discourse, especially in light of the many recent media reports calling into question the validity of the fMRI methodology."

**More information:** Robert W. Cox et al. FMRI Clustering in AFNI: False-Positive Rates Redux, *Brain Connectivity* (2017). [DOI: 10.1089/brain.2016.0475](https://doi.org/10.1089/brain.2016.0475)

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