Corrigendum
Single-Subject Anxiety Treatment Outcome Prediction using Functional Neuroimaging

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In this paper, we used a machine-learning algorithm called random forest to predict cognitive behavioral therapy outcomes for adults with generalized anxiety disorder and/or panic disorder using baseline brain imaging. As reported in the text and Figure 3, activation in largely left lateralized temporal and prefrontal regions during emotion regulation predicted treatment outcome such that individuals with greater activation during cognitive reappraisal showed a better response to 10 weeks of individual cognitive behavioral therapy. In addition to identifying brain regions predictive of outcome, the random forest model also identified symptom metrics, such as overall anxiety severity, anxiety sensitivity, and worry at baseline, as valuable predictors of outcome.

However, the random forest procedure also involved testing the accuracy of these predictors for identifying participants who would respond to treatment. We recently learned that this aspect of our random forest procedure was biased toward over-estimating model accuracy because we did not test it on a separate sample. The procedure outlined in Figure 1 remains sound with the caveat that iterations of the process (ie, the upward arrow from Step 3 to Step 1) should be completed on an independent sample. Thus, the accuracy estimates we make of 69%, 79%, and 73% for the clinical, fMRI, and combined models, respectively (see Table 2 and Figure 2) are likely 5–20% higher than one would expect them to be in an independent sample. Our conclusion that symptom severity and brain activation during emotion regulation may combine to predict psychotherapy response remains sound. However, determining the accuracy will require future testing of our model with a separate, independent sample.