

# Want to improve kids' test scores? Help them reduce their anxiety, researchers say

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A large middle school in Midwestern US was about to have a biology test. They were expecting 40% failure rates among low-income children, a steady figure across the years. But with a short 10-minute intervention meant to reduce the kids' anxiety, the failure rate was halved. Now, researchers explain how this simple intervention can make a very big difference.



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If you think about it, there are two main parts to taking a test: how much you know, and how well you can handle the pressure and deliver what you know. Different people handle stress differently, and for some, it can be a big problem — we probably all remember at least one colleague who was well-prepared but stressed way too much for tests.

This is a particularly prevalent problem for low-income students. Education is a strong lever which can offer lucrative opportunities and, in particular, increasing access to Science, Technology, Engineering, and Math (STEM) fields can **create career opportunities** to alleviate poverty and drastically increase the standard of living. Naturally, this prospect is stress-inducing for most children.

Christopher Rozek, a psychologist at Stanford University and lead author of a new study, says simple psychological interventions could increase the grades of many students, and increase their prospects, potentially offering life-changing opportunities.

Rozek and colleagues worked with 1,175 freshman biology students at a public high school in Illinois, 285 of which came from low-income families. At the school, around half of all low-income students traditionally fail their biology exam, compared to only 6% of their high-income peers.

Researchers carried out only two interventions: before the first-semester final examination in January and before the second one examination in May. The intervention was a 10-minute writing exercise where students were randomly assigned one of the following conditions:

- an expressive writing intervention in which students wrote freely about their thoughts before the test;
- a reappraisal intervention in which students were asked to evaluate their symptoms of stress as helpful for test taking'
- an intervention that combines expressive writing and reappraisal interventions;
- and an active control condition that instructed students to ignore symptoms of their stress and nervousness.

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At the end of the study, a minority of children refused to share their data with the study. But out of those who did, 80 were in the control group, and 168 were in the other three groups. After the intervention, 60% of the children in the control group passed the exam — whereas in the other three groups, 82% did (results were similar across all three groups).

High-income students, however, experienced no significant benefit. Rozek suspects that these students were already more adept at controlling their emotions, which would explain a part of the difference between the two groups.

Of course, this is only a small part in bridging the achievement gap between children from different levels of income, but it is a good place to start, Rozek concludes.

The study was published in *PNAS*.

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