

Brain-Based Strategies to Reduce Test Stress

 [edutopia.org /article/brain-based-strategies-reduce-test-stress-judy-willis](https://www.edutopia.org/article/brain-based-strategies-reduce-test-stress-judy-willis)

4/7/2017

Brain-Based Learning

A neurologist shares ideas for beating stress before and during test time.

By [Judy Willis MD](#)

April 7, 2017



Credit: ©Shutterstock.com/Syda Productions

- 1.2K shares
- read later [Bookmark](#)

We live in a stressful world, and the stress is heightened for students and educators when it's time to prepare for high-stakes tests. When test scores are tied to school funding, teacher evaluations, and students' future placement, the consequences of these stressors can be far-reaching.

From a neurological perspective, high stress disrupts the brain's learning circuits and diminishes memory construction, storage, and retrieval. Neuroimaging research shows us that, when stresses are high, brains do not work optimally, resulting in decreased understanding and memory. In addition, stress reduces efficient retrieval of knowledge from the memory storage networks, so when under pressure students find it harder to access information previously studied and learned.

Get the best of Edutopia in your inbox each week.

Students (and their parents) often interpret suboptimal standardized test scores as a measure of the students' limitations in intelligence and potential. The consequence is a loss of confidence, further activating their brains' stress response, making it more difficult for them to employ their cognitive resources and knowledge during the tests themselves.

Deeper Learning Is the Best Test Prep

When the goal of learning is only test preparation, students will not be prepared to apply their learning to novel questions or problems. But engaging students in authentic performance tasks and project-based learning helps deepen their understanding on both the factual and conceptual levels. In addition, when students experience their learning as personally meaningful, their intrinsic motivation strengthens long-term, durable memory networks. These are far more accessible for test retrieval (and longer term access) than rote memory.

Here are some examples of personally relevant learning experiences that can help students with test preparation:

- “Design your own food pyramid based on your likes and a body’s nutritional needs.”
- “You are Queen Isabella, and you get daily text updates from Christopher Columbus. Respond to him with your concerns and revisions regarding his exploits in the New World.”
- “To limit the devastation of the Black Death, what interventions from modern science would you take back to the 14th century?”

It’s the personal relevance that enables the brain to effectively store these memories and make them more retrievable.

Build Students’ Positive Mindset

During test prep time, you can help take some of the pressure off by giving students some perspective. Before the test, share frequently made errors from previous years’ top students (not by name, but by descriptions of the mistake). This will not only help them keep an eye out for potential mistakes but also boost their confidence. You can also share the subsequent academic or professional stories of these former “mistake makers” to show that these tests aren’t the be-all and end-all of their lives.

Another way to help them develop a strong test-taking mindset is to guide them to look for patterns of their most frequent types of errors and keep these on a reminder list.

Finally, you can calm their anxiety and build self-efficacy by increasing their understanding of the limitations of any single test while building their awareness of their knowledge. Here are some discussion topics to build students’ positive test mindsets:

- “No single test can demonstrate how much you know. You will know more than any specific test measures. A single test only measures how much you remember about the specific questions chosen for the test.”
- “Let’s consider all the things you’ve done—portfolios, homework, reports, group projects, quizzes, and notes—that demonstrate what you do know during this unit.”
- “Your brain does not do its best when you’re very stressed about the test you’re taking. Let’s talk about times when you felt very nervous about a test and made careless mistakes or couldn’t remember things you had studied well.”

Test Day Tips

Practice relaxing rituals with students (e.g., mindfulness strategies, calming breathing, stress-busting visualizations) so these will be readily available for them to activate immediately before or during tests when they are feeling

stressed.

1. **Tell a joke or personal anecdote about your own exam experiences.** Humor releases dopamine, a brain chemical that reduces stress and increases memory and motivated effort.
2. **Remind students to recall their common mistakes and how they correct them, so they don't intrude during the test.** Such errors might include: prematurely selecting an answer without reviewing all the options, not looking carefully at what is asked, not using estimation to see if a math answer is reasonable, and forgetting to check that the number where they're marking their answer corresponds to the question number.
3. **Encourage students to create a "mental suitcase" on scrap paper.** Students will reduce stress and increase memory retrieval if they begin the test by writing on scrap paper the most important points, formulas, anagrams, procedures, or other information they think they'll need for the test. Their retrieval efficiency increases when they're not trying to hold that important information in working memory throughout the test.
4. **Visualize their own successful performance.** Just as visualizing a tennis swing or soccer kick activates critical motor brain networks, their visualizations will increase confidence, reduce stress, and preheat the memory circuits they'll want to access.
5. **Reinforce test-taking tips you've previously shared with them.** For example, tell students that if they don't know an answer, they should go on to the next question—they may find information that triggers related memories in other questions.

When you guide students with strategies to reduce test stress, you also help them build emotional resilience, learn more efficiently, and activate their highest levels of cognition, while promoting their success in activating their brain's best resources during tests.