

“One bout of writing about test anxiety can substantially increase students’ test scores and prevent the dreaded choke.” —SIAN BEILOCK

The write stuff for test anxiety

Fearful students score better if they jot down their worries

By Bruce Bower

High school and college students can go from choking to smoking on big tests by writing about their exam fears beforehand, a new study suggests.

In what amounts to a Heimlich maneuver for choking under pressure, writing down test-related worries for 10 minutes before taking a major exam appears to dislodge those concerns and clear the way for higher achievement, say psychologists Gerardo Ramirez and Sian Beilock of the University of Chicago.

Writing about unspoken fears of failure and related anxieties lets students reevaluate such concerns and

keeps worries at bay during a test, Ramirez and Beilock propose in the Jan. 14 *Science*.

“One bout of writing about test anxiety can substantially increase students’ test scores and prevent the dreaded choke,” Beilock says.

Ramirez and Beilock provide the first evidence of people reaping immediate benefits from expressive writing, remarks psychologist James Pennebaker of the University of Texas at Austin. His research has linked writing about personal conflicts and traumas over several days at the start of a college semester to improved physical health and final grades by semester’s end.


Researchers have also found that depressed people who write about distressing personal experiences over several months ruminate progressively less about melancholy topics.

Over two consecutive school years at a Midwestern high school, Ramirez and

Beilock had teachers randomly assign one of two writing exercises to a total of 106 ninth-graders about to take final exams in biology. Each student had 10 minutes to write either thoughts and feelings about the upcoming exam or a description of a biology topic that they suspected wouldn’t be on the exam.

On questionnaires administered six weeks before the final exam, 54 of the students had reported constant worries about taking — and potentially failing — tests.

Among test-anxious students, those who wrote about exam-related feelings scored an average of 6 percent higher on the final than those who wrote about biology topics. Expressive writers received a B+ average on the final, versus a B- for biology writers.

It’s unclear whether students plagued by test anxiety can repeatedly raise their test scores via expressive writing, Beilock notes. 

Recalling a taste of the Iron Age

Barley grains offer savory insights into ancient Celtic malt

By Bruce Bower

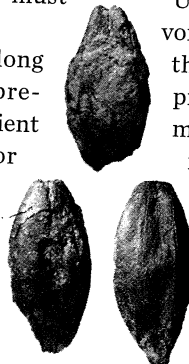
Early rulers of a community in what’s now southwestern Germany liked to party, staging elaborate feasts in a ceremonial center. The business side of their revelries was in a nearby brewery capable of turning out large quantities of a beer with a dark, smoky, slightly sour taste, new evidence suggests.

Six ditches at Eberdingen-Hochdorf, a 2,550-year-old Celtic settlement, were used to make high-quality barley malt, a key beer ingredient, says archaeobotanist Hans-Peter Stika of the University of Hohenheim in Stuttgart, Germany. Thousands of charred grains unearthed in the ditches came from a large malt-making enterprise, Stika reports in a paper published online January 4 in *Archaeological and Anthropological Sciences*.

Stika bases that conclusion on a close resemblance of the ancient grains to barley malt that he made by reproducing several methods that Iron Age folk might have used. He also compared the ancient grains with malt produced in modern facilities. Upon confirming the presence of malt at the Celtic site, Stika reconstructed malt-making techniques there to determine how they must have affected beer taste.

“Stika’s experiments go a long way toward showing how precisely barley was malted in ancient times,” says classics professor Max Nelson of the University of Windsor in Canada, an

These charred barley grains from a site in Germany were the basis of an Iron Age beer.



authority on ancient beer. The oldest known beer residue and brewing facilities date to 5,500 years ago in the Middle East, but archaeological clues to beer’s past are rare (*SN: 10/2/04, p. 216*).

At the Celtic site, barley was soaked in the specially constructed ditches until it sprouted, Stika proposes. Grains were then dried by fires at the ends of the ditches, giving the malt a smoky taste and a darkened color. The growth of lactic acid bacteria stimulated by slow drying of grains added sourness to the brew.

Unlike modern beers that are flavored with flowers of the hop plant, the Eberdingen-Hochdorf brew probably contained spices such as mugwort, carrot seeds or henbane, in Stika’s opinion. Beer makers are known to have used these additives by medieval times. Excavations at the Celtic site have yielded a few seeds of henbane, a plant that also makes beer more intoxicating. 