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**PSYCHOLOGY**

**Athletes Can Train to Avoid Choking under Pressure**

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Some sports fans might argue that this year's World Series went to a nail-biting seventh game because Arizona Diamondbacks relief pitcher Byung-Hyun Kim choked, twice. The phenomenon of choking—performing worse than expected under pressure—has long plagued professional athletes and performers, but its cause was unclear. Do performers choke because they pay too much attention to their actions or because they get distracted and pay too little attention? Now a report published in the December issue of the *Journal of Experimental Psychology: General* suggests that it is overattending to a well-learned skill that causes choking.

Sian L Beilock and Thomas H. Carr of the Michigan State University studied golf putting as an example of a task that can suffer under pressure. Fifty-four novice student golfers were trained, under various conditions, to become highly skilled. One group practiced under normal conditions, another group learned to putt while simultaneously performing a distracting secondary task, and the third group was videotaped and told a golf pro would be critiquing their performance, thereby making them feel self-conscious.

After significant practice, the researchers next tested the golfers under high- and low-pressure conditions. The three groups performed similarly on the low-pressure test. Under high pressure, however, the control group and the distraction group both got significantly worse—they choked. But the group forced to practice with a videocamera and the threat of criticism actually improved, the scientists report. "This suggests that adapting to an environment where one is forced to attend to performance from the initial stages of learning," Beilock says, "may provide immunization against the negative effects of performance pressure." —*Sarah Graham*

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The article "Psyched Up, Psyched Out," by Michael Shermer (*Scientific American Presents: Building the Elite Athlete*, Fall 2000), is available for purchase from [the Scientific American Archive](#).