

# Operating Under Pressure

What can we learn from sport psychology?

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Golf is often used as an analogy for life, but it is also a useful analogy for eye surgery. At first thought, it may seem like a stretch to compare the two, but careful analysis reveals that, just as a golfer must fine-tune his or her ability to both use and suppress adrenaline, so must the eye surgeon.

## EYE SURGERY IN PUTTING MODE

A golfer uses many different shots during his or her round. Fundamentally, however, golf shots can be broken down into big muscle movements, like driving off the tee and iron shots, and small muscle movements, like chipping and putting. For longer shots, the golfer's adrenaline enhances the distance the ball travels; on the other hand, for shorter chips and putts, adrenaline is potentially a hindrance. In other words, a delicate putt requires fine control, especially under pressure.

Eye surgery should occur in *putting mode*—small, fine, precise, specific, well-controlled, and deliberate movements. Fortunately, these movements are achieved by most of us most of the time. But, when a dreaded complication is encountered, it triggers an instant release of adrenaline. Blood pressure rises, the pulse goes up, a bead of perspiration appears on the brow, and the finest tremor of the surgeon's hand is noted. The room suddenly goes quiet, and, for most surgeons, it feels like someone has suddenly turned the heat up. These are not ideal conditions in which to deal with a complication.

## SCENARIO

Picture the following events: Two surgeons are working in adjacent operating rooms. Both have a cataract surgery list that is going well, and both have equal levels of experience and skill. Suddenly, Surgeon B encounters a ruptured posterior capsule with vitreous

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prolapse into the anterior chamber, with significant lens material still present in the capsular bag. Before he can think, his pulse is racing and adrenaline is flowing through his veins.

Surgeon B does not stop and think—nor does he have a specific strategy devised for the complication—and, as a result, his management of the case is not ideal. Things go from bad to worse when lens material falls into the back of the eye. His adrenaline again surges. Fortunately, at this point, Surgeon B realizes that he is not coping well and terminates the procedure before calling Surgeon A next door to help.

Surgeon A walks in calmly, assesses the situation, and proceeds to manage the complication perfectly. His pulse never rises, his blood pressure is fine, and he is in total control. Observing the procedure, Surgeon B is relieved and grateful for Surgeon A's skill and calm demeanor.

## A DIFFERENCE IN ATTITUDE

If you recall, both surgeons have equal experience and skill sets. The only difference is their attitudes toward the situation, and in this case they had opposite mindsets. Surgeon B believes that he created

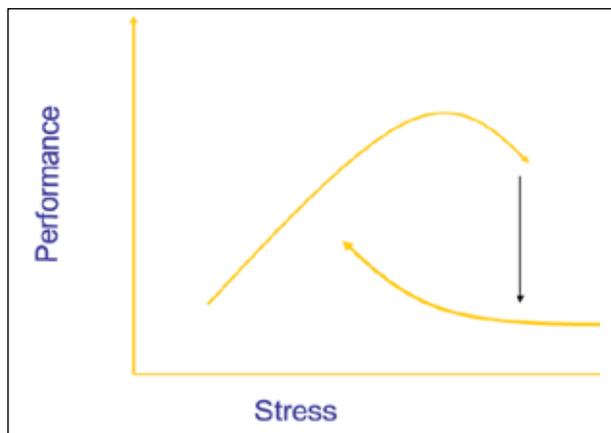


Figure 1. Sporting performance plotted against perceived stress.

this disaster, whereas Surgeon A acts like a hero. Our challenge is to behave like Surgeon A even when, like Surgeon B, it was we who created the situation in the first place.

## SPORT PSYCHOLOGY

Sport psychologists specialize in helping elite athletes maintain optimal performance in stressful situations, such as the cup final penalty shootout or the winning putt in a major golf championship.

Figure 1 illustrates sporting performance plotted against perceived stress. An unstressed player (plotted to the left of the graph) risks becoming inattentive and performing below par. However, mild degrees of pressure engage and sharpen focus and generally improve performance, which is why personal bests are almost always fueled by the adrenaline of competition.

What is perceived as stressful varies from person to person. However, behavioral studies repeatedly show that, when the effective stress is high enough, there is a point (to the right on the graph in Figure 1) at which the performance of even the best athletes can suddenly plummet.

Neuroimaging studies help explain the phenomenon

### TAKE-HOME MESSAGE

- Successful eye surgery is completed with small, fine, precise, specific, well-controlled, and deliberate movements; that is, in *putting mode*.
- Thorough preoperative process and preparation should involve planning for potential errors before the operating list begins, use of a clearly ordered list, ensuring that all IOLs and specialist equipment are available, and use of clear and precise verbal and nonverbal team communication.

of poor performance in over-stressed brains. Functional scans of an optimally functioning brain confirm that the prefrontal cortex initiates complex motor activities. But in the highly stressed brain, this role passes to the amygdala, which is home to our emotional drives. Neural processing efficiency and cognitive performance rapidly suffer as a result, and tasks that require attention and focus are particularly affected.

A study conducted by a university-based sport psychologist in Wales used semi-structured interviews with 10 consultant ophthalmologists to investigate the sources of stress and coping mechanisms for eye surgeons performing cataract surgery.<sup>1</sup> The psychologist found that senior eye surgeons had, during their careers, learned to deal with performance pressure using strategies similar to those used by elite athletes. The psychologist observed that, although elite athletes are commonly tutored in such strategies during their development, eye surgeons appear to have to learn them the hard way.

## THE CONNECTION TO OPHTHALMOLOGY

Sport psychologists assist athletes in developing the effective strategies needed to avoid potential performance-limiting stress through preparation prior to the event and teach them to cope with stress as events unfold. We believe that these same strategies can be readily applied to eye surgery. Organizational dysfunction in sports is a primary cause of stress that can negatively affect performance outcomes. Likewise, the aforementioned study showed that it was not necessarily the complexity of the surgical case that caused stress to the surgeon but rather administrative causes such as missing notes, nontechnical causes such as poor support staff skills, or other related stressors such as operating on a staff's close family member that had the potential to negatively affect performance outcomes. Therefore, it is preferable for management of the operating room to focus on creating the correct environment for the patient, the surgeon, and the operating room team.

In a survey of surgeons, all respondents reported that thorough preoperative process and preparation helped them to avoid stressful situations. Techniques involved planning for potential errors before the operating list begins, using a clearly ordered operating list, ensuring that all IOLs and specialist equipment were available, and using clear and precise verbal and nonverbal team communication.<sup>2</sup>

## ACHIEVE A WINNING MINDSET IN FOUR STAGES

What should we do to achieve the mindset of Surgeon A  
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when coping with stress as it unfolds? Developing a successful approach requires four stages:

**Stage 1.** Acknowledge that complications are reality and that all surgeons encounter them. The only surgeon who does not have complications is one who is no longer doing surgery.

**Stage 2.** Ignoring or wishing complications away does not make them go away. Identify complications as early as possible and anticipate when they will occur.

**Stage 3.** Do not play the blame game when a complication occurs, and do not start blaming or criticizing yourself. There is ample time afterward, if you insist.

**Stage 4.** Consultant surgeons report using the following coping methods to reduce stress in the operating room:

- Stand back and reassess the situation;
- Systematically plan the next steps using imagery and instructional self-talk;
- Engage in motivational self-talk such as, "You can do this;"
- Slow the operation down; and
- Seek support if necessary.

## CONCLUSION

Being aware that you feel stressed in the operating room does not make you a bad surgeon. Rather, knowing that you can deal with the stress and not allowing it to affect your surgical outcomes will make you a better surgeon. ■

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