

SURGEONS AND ATHLETES



Game-day tools can benefit young ophthalmologists in their surgical training.

BY AUSTIN R. FOX, MD

Growing up in an athletic family in Alabama, where football is more a religion than a game, sports played a big role in my life. Through countless hours of training on tracks, basketball courts, and football fields, I developed an athlete's mentality, which has been incredibly useful when applied to training in ophthalmology. Although athletes and ophthalmologists serve vastly different purposes, there are many aspects of professional sports training to achieve peak performance that can be adapted to help maximize an ophthalmologist's training.

Surgery is a key aspect of ophthalmology training to which programs and mentors devote tremendous resources and attention. Not surprisingly, studies have shown that trainees raise the risk of complications in the OR.^{1,2} Our mission as trainees should be to decrease this risk by all means possible. This article covers a few game-day tools to benefit young ophthalmologists in their surgical training and to help reduce the risks associated with that training.

FILM

Most collegiate and professional athletes and teams record their games and practices, and they review the films to improve their strategy and optimize performance. Not only do athletes watch films of their own performance, they also watch those of other athletes or teams to emulate a skill or become familiar with their habits and tendencies. Some of the greatest athletes—including Tom Brady, one of my favorites—have

been known to diligently study and devour film, which they credit as a key factor in their elite performance.

Reviewing surgical videos can be an invaluable tool to study strengths, inefficiencies, and complications. Even Atul Gawande, MD, MPH, a talented writer and public health researcher whom most would consider to be a veteran endocrine surgeon, highlights the value of having a “coach” review his surgical performance in the OR.³ Each week, after watching recordings of all of our surgeries, we can choose a few to review with faculty or colleagues to critically scrutinize performance and find areas for improvement.

We can learn something from reviewing every case, and taking the time to evaluate our surgical performance both alone and with a coach is key to improving. Additionally, watching videos by experienced surgeons or of unfamiliar

techniques can be extremely beneficial as we develop our confidence and personal styles in the OR.

(Thank you, Tom Oetting, MD, at www.facebook.com/cataract.surgery, and Uday Devgan, MD, at www.cataractcoach.com, for making all of those videos available!)

SLEEP

The night before a game—regardless of the sport, level, or coaching style—I could always count on being reminded to get a good night's sleep. Although extensive training and practice set an athlete up for success, adequate sleep is crucial for peak performance on game day. As might be expected, studies have noted decreased performance in sleep-deprived individuals among both athletes and surgeons.⁴⁻⁶ Sleep deprivation has been equated to alcohol intoxication in its effects on

AT A GLANCE

- Although athletes and ophthalmologists serve vastly different purposes, there are many aspects of professional sports training to achieve peak performance that can be adapted to help maximize an ophthalmologist's training.
- Film review, sleep, and visualization are useful techniques to improve performance of both athletes and ophthalmology trainees.
- Each trainee's approach to wellness may differ, but learning to value one's well-being as much as other aspects of training is essential to reaching one's full potential and minimizing potential risks to patients in the OR.

“Trainees may not have as much time or as many resources as [Lebron] James, but adopting simple habits such as using ergonomics in the clinic or the OR can help us maintain health and prevent injury for sustainable practice.”



cognitive performance, hand-eye coordination, and reaction times, among other measures.⁷ Whether for the MVP in a playoff game or the surgeon maneuvering sharp instruments within and around a patient’s eye, it is easy to see how lack of sleep can lead to undesirable and potentially devastating outcomes.

VISUALIZATION AND IMAGERY

Often referred to as a *secret weapon* by Olympic athletes, visualization is a technique that athletes can use immediately before and even during a game to boost their performance. In the context of athletic training, visualization is the process of mentally rehearsing a performance through mental images. Sports psychologists prefer the term *imagery*, which can incorporate as many senses as possible.⁷ This technique has been shown to help athletes sharpen their focus and restore their confidence, enabling them to perform at their maximum potential.⁸

Before beginning a case, trainees

may find it helpful to take a minute to envision themselves successfully performing each step of the surgery while practicing the movements with an instrument in hand. One study on visualization even demonstrated that individuals visualizing muscle contractions experienced a change in muscle mass.⁹ (Although this finding may make visualization seem like an easy alternative to exercise, no one has enough brainpower to skip the gym.)

WELLNESS

Film review, sleep, and visualization are useful techniques to improve performance of both athletes and ophthalmology trainees; however, it is wellness that makes it possible for trainees to be fully present, both mentally and physically, for their training and future practice. At one extreme, it has been estimated that NBA star LeBron James spends a whopping \$1.5 million per offseason to take care of his body and mind.¹⁰ Despite enduring incredible physical, mental, and emotional pressure

throughout 16 seasons in the NBA, James continues to perform at his highest level. Trainees may not have as much time or as many resources as James, but adopting simple habits such as using ergonomics in the clinic or the OR can help us maintain health and prevent injury for sustainable practice. (Sitting at the slit lamp or microscope with poor form for 16 seasons could certainly cut a career short.)

One’s approach to wellness (exercise, mindfulness, healthy eating, quality time with friends and family, etc.) may differ from trainee to trainee, but learning to value our own well-being as much as we value other aspects of our training is essential to reach our full potential and minimize the risk to our patients in the OR. ■

1. Campbell RJ, El-Defrawy SR, Gill SS, et al. New surgeon outcomes and the effectiveness of surgical training: a population-based cohort study. *Ophthalmology*. 2017;124(4):532-538.
2. Randleman JB, Wolfe JD, Woodward M, Lynn MJ, Cherwek DH, Srivastava SK. The resident surgeon phacoemulsification learning curve. *Arch Ophthalmol*. 2007;125(9):1215-1219.
3. Gwande A. Personal best: top athletes and singers have coaches. Should you? *The New Yorker*. September 26, 2011. <http://bit.ly/35p5A4x>. Accessed December 9, 2019.
4. Veasey S, Rosen R, Barzansky B, Rosen I, Owens J. Sleep loss and fatigue in residency training: a reappraisal. *JAMA*. 2002;288(9):1116-1124.
5. Fullagar HH, Skorski S, Duffield R, Hammes D, Coutts AJ, Meyer T. Sleep and athletic performance: the effects of sleep loss on exercise performance, and physiological and cognitive responses to exercise. *Sports Med*. 2015;45(2):161-186.
6. Williamson AM, Feyer AM. Moderate sleep deprivation produces impairments in cognitive and motor performance equivalent to legally prescribed levels of alcohol intoxication. *Occup Environ Med*. 2000;57(10):649-655.
7. Maese R. For Olympians, seeing (in their minds) is believing (it can happen). *The Washington Post*. July 28, 2016. <https://wapo.st/2ZM7U4A>. Accessed December 9, 2019.
8. Ungerleider S, Golding JM. Mental practice among Olympic athletes. *Perceptual and Motor Skills*. 1991;72(3):1007-1017.
9. Clark BC, Mahato NK, Nakazawa M, Law TD, Thomas JS. The power of the mind: the cortex as a critical determinant of muscle strength/weakness. *J Neurophysiol*. 2014;112(12):3219-3226.
10. Mayer R. LeBron James spends about \$1.5 million per year to maintain his body. *CBS Cleveland*. November 15, 2016. <https://cbsloc.al/2SPexli>. Accessed December 9, 2019.

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