



SPORT SNAKE OILS

Can visual training programs improve sport performance?

They come into town, peddle their wares, and then get out before their “snake oils” are discovered to be bogus. They claim that their elixirs will cure cancers, gout, heart problems, venereal diseases, and anything else that ails you. But, in fact, the only proven effect of these wares is that they make the snake oil sellers richer. The great comic actor W.C. Fields played a memorable one in the 1936 movie *Poppy*. The snake oil sellers of today don’t pull into town. Rather, they appear on Internet sites peddling wares such as sport vision training programs. But their only proven effect is the same—the wares benefit only the sellers.

Don’t get me wrong—vision is critically important for success in many sports. For example, drastic improvements in sport performance could be expected from programs that correct structural issues resulting in acuity problems and other visual deficits. However, these vision programs begin to turn into snake oil when they claim to be able to train the person to see better. The idea is actually pretty simple and sounds encouraging to people who are unfamiliar with the research in this area. If one could improve peripheral vision, object tracking, eye–hand coordination, depth perception, and other visual abilities that are important in many sports, then it would certainly be expected that improvements in sport performance would result.

Here is a visual training test comparable to those found on some Internet sites. The display in figure 10.1 is shown on the screen for about two seconds. After the display disappears, your task is to respond as quickly as possible by pressing the keys on your keyboard that match the arrows in the display.

The instructions are unclear at first, which I have a feeling was done deliberately to give the user a feeling of mastery after figuring them out

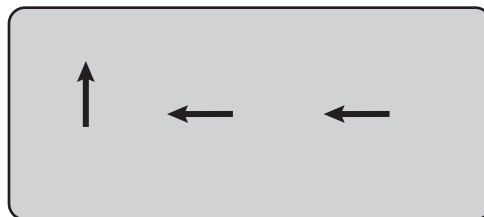


Figure 10.1 Sample A of a visual skills Internet trainer. This display is presented for about two seconds, after which the task is to type the arrow keys in the order displayed (right arrow, up arrow, down arrow key).

through trial and error. But in the end, it is a pretty easy task to perform. For this test, the correct response is to press the right, up, and down arrow keys in immediate succession as fast as possible. After you get a perfect trial, the site then takes you to the screen shown in figure 10.2, which, instead of being displayed for two seconds, is displayed for about one quarter of a second.

Your certain failure in the test in figure 10.2 prompts the website to tell you that although you were unsuccessful in performing the task this time, following completion of the training program you will have a much better chance of being successful. Similar programs are included that will help you train your tracking abilities and something called visual flexibility. There is no indication about how the training program will make you better at the task. Indeed, there is no indication about why or how the program will make you better at anything. Nevertheless, the implications are obvious, and the website lists numerous high school, university, national, and professional teams involved in a variety of sports as previous users of the product.

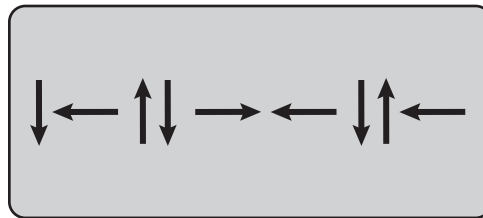


Figure 10.2 Sample B of a visual skills Internet trainer. This display is presented for about one quarter of a second, after which the near-impossible task is to remember and type the arrow keys in the order displayed.

Visual training programs like the one just described have been around for many years and earn their developers piles of money. But do they work? Bruce Abernethy and Joanne Wood, researchers at the University of Queensland in Australia, studied one of these programs using a prolonged intervention, which should have resulted in improved performance if the program had any value. If the benefit of visual training was generalizable to sport skills, which is one of the most important revenue-generating claims of these programs, their study should have showed improved performance following the program. They found that those in the training group did indeed improve their performance, but *only* on the tests of the vision program itself.

We know from over a century of research in motor learning that practice will improve performance in just about any type of task, so Abernethy and Wood's results support this general finding. Most important, though, the researchers found that the motor skills of those who had participated in the vision training program were no better than those of the control group. This

finding is also no great surprise, because years of research in motor learning have taught us a lesson in this regard: Vision is important for providing the brain with information, but to use that information to benefit motor skill performance requires that we practice the specific processes that underlie performance. As discussed later in this chapter, Wayne Gretzky did not become one of the best hockey players of all time by training his visual system, but rather by training the anticipatory and perceptual processes that use vision as information input (see “Wayne Gretzky”).

One further issue deserves comment regarding the Abernethy and Wood research. Suppose the participants in the training group had spent the same amount of time engaged in practice of the skills for their sport instead of participating in the general vision skills program. My guess is that their sport-specific skills would have had a much better chance for improvement than any benefit from the vision-training program. According to this view, these vision-training programs are actually detrimental to learning because they reduce the time that could have been spent in a more effective type of practice (see the rationale in “Zero-Sum Training” in chapter 8). By this view, the vision-training program did not enhance the development of sport-specific skills. It prevented learning.

The snake oil sellers of years gone by would plant an accomplice in the crowd of people gathered around. The task of the accomplice was to claim that the snake oil had worked, thereby lending more credence to the pitch and prompting a flurry of sales. The accomplice was not trained in medicine, had no scientific background, and was no doubt paid to say those things. Next time you see one of these vision training websites and listen to the claims and anecdotes of the athletes who swear that the product worked for them, ask yourself, *So what does modern-day snake oil taste like?*

SELF-DIRECTED LEARNING ACTIVITIES

1. Define *vision training* in your own words.
2. How does the concept of zero-sum training specifically apply to the evaluation of sport vision training programs?
3. Find a sport vision training program on the Internet and summarize the specific benefits the program promises. Is an accomplice listed?
4. How might you conduct a research investigation to evaluate the merits of the vision training program that you discovered in researching question 3?

NOTES

- A sample of W.C. Fields in *Poppy*:
www.tinyurl.com/fieldspoppy

SUGGESTED READINGS

- Abernethy, B., & Wood, J.M. (2001). Do generalized visual training programmes for sport really work? An experimental investigation. *Journal of Sports Sciences*, 19, 203-222.
- Schmidt, R.A., & Lee, T.D. (2011). Retention and transfer. In *Motor control and learning: A behavioral emphasis* (5th ed., pp. 461-490). Champaign, IL: Human Kinetics.