

Harvey Shapiro, M.D.

2004 Forrest E. Leffingwell Memorial Lecturer

Introduction

By Stephen Jackson, M.D., Editor, CSA Bulletin

I am honored and privileged to have the opportunity to introduce this year's Leffingwell Lecturer, Dr. Harvey Shapiro, who I have had the good fortune to have known both professionally and personally for three decades.

Dr. Shapiro is truly one of the **giants** in the field of anesthesiology. We all know that he is one of the most prominent of the patriarchs of neuroanesthesia. But, as you soon shall hear, Dr. Shapiro has not confined his expertise to neuroanesthesia. Rather, he has ventured well outside its boundaries to lend his creative intellect to more distant, and often, surprisingly adventuresome arenas.

But let's first begin with a recounting of Dr. Shapiro's formal education. After graduating Franklin and Marshall College, he received his medical degree from the University of Pennsylvania, where he also interned in surgery. He then worked as a fellow for two years at the National Institutes of Health's Institute of Neurological Diseases and Stroke. This was followed by a trip across the United States to its most northwestern tip to spend 18 months as a neurosurgical resident at the University of Washington, an experience that would influence his later attraction to neuroanesthesia. Neurosurgery's loss became anesthesiology's gain when he changed specialties and completed a residency in anesthesiology at the University of Washington under Dr. John Bonica's tutelage.

He then again ventured back to the East Coast to his medical alma mater, the University of Pennsylvania, to begin a distinguished career of academia and research, rising to the level of Associate Professor. Several years later, he again crossed the continent, this time to the West Coast's southwestern tip, to the University of California at San Diego (UCSD). Here Dr. Shapiro commenced two decades of academic excellence in which he produced a prolific amount of valuable clinical research, largely, but not entirely confined to neuroanesthesia. His bibliography expanded to number almost 200 items.

In 1986, Dr. Shapiro became Chairman of the Department of Anesthesiology at UCSD, a position he held for a decade, and during part of which he also served as the Dean of Clinical Affairs. His research with his colleagues on intracranial hypertension, cerebral blood flow, high dose barbiturate therapy for brain injury, stroke therapy, intraanesthetic and post-surgical management of cerebral aneurysms, brain function after cardiac arrest, and the role of glucose homeostasis in brain injury outcomes are only some of the extensive list of clinically important subjects to which he lent his creative and innovative mind.

During his research activities, Dr. Shapiro has collaborated with many junior faculty who later became prominent academic leaders. His name became synonymous with neuroanesthesia, as most any textbook and refresher course on neuroanesthesia had his name attached to it. Not unexpectedly, he was a founder—and ultimately president—of the Society of Neurosurgical Anesthesia and Neurologic Intensive Care. Befittingly, he was the recipient of that Society's 2003 Distinguished Service Award.

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And, if the above didn’t seem to provide enough to occupy his time at San Diego, Dr. Shapiro also spent three years as a television broadcaster and commentator on medical matters at the NBC affiliate in San Diego. In fact, he was the recipient of the Jules Bergman Award for Excellence in Medical Reporting presented by the National Association of Physician Broadcasters for his series on the then emerging HIV epidemic.

Dr. Shapiro has a long history as an advocate for humane treatment of animals in medical research. He also found the time to become a councilman—and, ultimately, mayor—of the city of Del Mar.

Dr. Shapiro has helped raise two sons, and, on occasion, has competed in triathlons and rough water swimming events.

In 1996, Dr. Shapiro stepped down as Chairman at UCSD. But, one can trace his medical wanderlust as he moved into other arenas of interest within the broader context of medicine. Importantly, this included his writing articles on the effect of managed care on academic institutions and his authoring one of the first books on managed care, appropriately entitled *Managed Care: Beware*.

Did Dr. Shapiro then quietly slip into retired seclusion in the snow-capped mountains of Utah? Certainly not! In 2002, at the Winter Olympics in Salt Lake City, he served as a Doping Control Officer and was responsible for running this activity at several Olympic venues. And, in keeping with this new passion of his, today we find ourselves at the latest station of Dr. Shapiro’s fascinating odyssey, our 2004 Forrest E. Leffingwell Memorial Lecture. Dr. Shapiro’s presentation is entitled “The High Cost of Winning: Substance Abuse in Elite Athletes.” ... Dr. Harvey Shapiro.

The High Cost of Winning: Substance Abuse in Elite Sports

By Harvey Shapiro, M.D., 2004 Leffingwell Lecturer

The following is a series of excerpts from the 2004 Leffingwell Lecture. Dr. Shapiro’s distinguished career had led him to become officially involved with the Drug Testing Program at the 2002 Winter Olympics. This extraordinary experience led to his choice of “substance abuse in elite sports” for his Leffingwell presentation. This topic not infrequently has headlined our sports pages and most certainly has played a prominent role in the Tour de France and the Summer Olympics. This continued the unique tradition of the Leffingwell’s broad range of topics, often reaching far beyond the immediate and traditional boundaries of anesthesiology.

Doping to artificially gain an advantage in sports is a pervasive and nagging issue. It has broad societal and medical implications. The reach of various performance enhancing drugs (PEDs), substances or techniques extends from junior high school to elite professional sports. PED use is driven by the athlete’s desire to win, huge financial payoffs, and our need, as spectators, to be

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“present” when records are shattered. But, are we watching athletes or pharmacologists compete?

... Fairness in competition is the hallmark of sportsmanship. It depends, metaphorically, on the level playing field. PEDs tilt the playing field and bring with them a sense of unfairness.

... The use of PEDs and technologies is not unique to sports. Performance enhancement is mainstream in our daily lives. This cultural acceptance carries over into sports and creates a permissive environment, one in which we try to determine the line between good nutrition and training techniques, one-upmanship, and overt cheating.

... In one of the most egregious doping examples, medical professors, team physicians, coaches and the Ministry of State Security collaborated in the East German doping scandal in which young female swimmers were given large doses of a testosterone analogue, diabolol. This was done without the girls’ knowledge. Doping these young women has been compared to Nazi medical experimentation, and left many of them masculinized, infertile, with hepatic tumors, and depressed and dysfunctional.

... Record-breaking athletic performances lead to record-breaking television and huge corporate sponsorship revenues. It won’t be long before the billion dollar mark is reached in TV-Olympics income from the U.S. market alone.

... In today’s sports environment, elite athletes with ample money are always a step ahead of the doping control organizations. They can afford to buy the latest and greatest designer drugs which may be years away from making the banned lists. They can pay for private lab tests to monitor their PED levels, keeping them high, but still under banned levels. If their levels test too high, then they drop out of their next competition by going on the injury list, and then mask or purge the offending drug in their bodies. Usually it is the underfunded and uninformed athletes who get caught in doping surveillance systems. Think of how much one might gain by having a one-to-five percent advantage over a long race like a marathon or a Tour de France.

... In 2000, the Center on Addiction and Substance Abuse report stated “the high financial stakes for Olympic athletes, corporate sponsors, media and sports governing bodies, coupled with the availability of PEDs, the athletes’ drive to win and ineffective policing, all create an environment that encourages doing anything—including doping—to win.”

... Fans fuel the fire. Many of us participate in sports or are spectators. We feed the food chain that is chummed by dollars spent in search of a better golf club,

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a lighter bike, the latest running shoes or tennis racket, fiberglass vaulting poles, slippery swim suits, and our desire to see records broken when we watch sporting events.

... Cycling was in the forefront of PEDs, playing a central role in the postwar explosion of stimulants in sports. Tests revealed the presence of stimulants and other drugs in 40-50% of professional cyclists in the 1960s. Many cyclists pushed so hard that they died. Five time Tour de France winner, Jaques Anquetil, has said, “we could do without them in a race, but we will pedal 15 miles an hour. Since we are constantly asked to go faster and faster and to make even greater efforts, we are obliged to use stimulants.”

... The use of PEDs in the Modern Olympics started in the early 1900s with a stimulant used to give marathon runners a boost. Anabolic steroids first polluted the Olympics in the early 1960s with their use by Soviet weight lifters, and by 1964 they were in common use by all the strength sports. It is estimated that in the pre-1968 Olympic period that a third of the U.S. Track and Field team had used steroids. During the 1968 Olympics in Mexico City, the debate among coaches was not whether or not to use steroids, but which steroid was better. By 1969, the editor of *Track and Field* magazine dubbed anabolic steroids as the “breakfast of champions.”

... In professional sports, cash feeds the designer drug cow, and policing efforts by most big money professional sports organizations have been weak and self-serving. Professional football has managed to decrease cocaine, marijuana and alcohol use, but their PED program allows enough warning to enable players to apply masking techniques, or even bring a clean urine sample with them hidden in artificial bladders. Players weighing over 300 pounds have increased from 27 in 1987 to 240 in 1997. Is all this because of nutritional and training advances? I think not. Yet these athletes often pay the price for PED use with multiple and severe post-career orthopedic problems, depression and shortened lives.

... Baseball's attempts at self-policing has been a laughable joke riddled with self-serving loopholes and lack of independent supervision. Eighty to ninety percent of baseball fans do not seem to care about PED abuse, so there is not an incentive to fix the problem, especially with the veto power vested in the players' union. If one follows the BALCO investigations, one will find that it will reach far beyond baseball into many other sports.

... Now let's focus on adolescents and PEDs. A recent poll indicated that at least one-half of high school students know a student who uses steroids. Almost three percent of eighth grade students have been estimated to use PEDs. Despite the fact that most of the PED's side effects seem reversible, especially in adult males,

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the long-term prognosis is complicated by the age at which PED use is begun, choice of drug, dosing, how they are cycled, and duration of use. There are no studies attesting to PED safety. Spend a few minutes with Google or another search engine and type in anabolic steroids; you'll find so many web sites offering these drugs that you'd be hard pressed as to which one to shop.

... Doping control always will be behind the high technology leading edge in PEDs. And, wait until appearance of the strange looking athletes created by genetic manipulation. The International Olympic Committee recognizes this threat and put genetic doping on its "banned" list.

... I believe that it will be a long time before doping at the elite level will be controlled, and therefore, we should look to educating and influencing our young athletes at the high school and intercollegiate levels. We need to ban all PEDs and create a culture where drug use in sports simply is not "cool." Educate and test for PEDs. Education is effective in reducing teenage pregnancy, and it should work here. Take the conversations about doping beyond the locker rooms. High school athletes are not rich enough to use sophisticated methods of avoiding detection. Beginning with this group of athletes might, over several decades, lead to an altered attitude in both amateur and professional sports.

... I don't believe that most sports fans are upset enough to respond by turning off their TV sets or staying away from the professional stadiums and arenas. Until they do so, fans are simply fanning the fire, and doping is here to stay. Sadly, for those looking for real and fair competition in sport, zero tolerance of PEDs and techniques appears to remain an unenforceable concept. As long as elite sports reap big financial rewards and pharmacological research and development make further progress, I believe that there will continue to be elite athletes "juiced" on something new that we cannot detect.

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