

1. Introduction

Bioethics, as the name suggests, is the application of ethical principles to life's critical biological choices, with particular focus on how advances in the biological sciences may impact those choices. It is not so much an area of law as it is a discipline that crosses a variety of fields. Bioethicists can be not only lawyers and law professors but philosophers, physicians, and clergy. Bioethicists ask questions that do not always have answers; indeed, they often question whether the answers themselves are relative to time and place and context. What is right in the world of sports may or may not be right outside the arena. But the sports world is often a good laboratory for issues that perplex society as a whole.

As with most of life's controversies, when disputes arise as to the questions bioethicists ask, judges may provide the answers to those questions based on the value both the law and the community place on concepts such as individual autonomy, the sanctity of life, the greater good, and human dignity. Because sports is by its nature an exploration into the limits of human physical potential, bioethics has played and will continue to play an ever-increasing role in sports law.

2. The Role of the Team Doctor

In virtually every organized sport, a physician is required to be present during the practices as well as the contests. For example, Article 39 of the National Football League's collective bargaining agreement (CBA) expressly obligates each club to carry a board-certified orthopedist and either a board-certified internist or a physician specializing in one other relevant field. In addition, while the CBA requires hiring the physician to be "the responsibility of the club," it states that the physician's duty with respect to care, confidentiality, and disclosure shall be to the player.

Such language, however, may not solve all potential conflicts of interest. Consider a soccer match in England between Chelsea and Swansea. After being tripped, Belgian Chelsea player Eden Hazard lay on the grass writhing in pain. Team doctor Eva Carneiro felt ethically bound to run out to attend to what looked like a serious injury, which meant Hazard could not return to the field. Consequently, Chelsea was left one player short for the rest of the contest, which ended in a 2-2 tie. After the game, Chelsea's manager, Jose Mourinho, was not happy, commenting that the physician was "impulsive and naïve" and "did not understand the game." He then announced Dr. Carneiro would not be on the sidelines in the upcoming match against Manchester ([BBC, 2016](#)).

As this incident makes clear, the role of the team physician is rife with conflicts of interests. Who is his or her master? The doctor is hired by the team but theoretically has a doctor-patient fiduciary relationship with each player he or she treats. Coaches may believe, as Vince Lombardi famously said, that "winning is the only thing." Owners, however, may want to protect their investment and not risk a valuable asset. This is particularly true at a time when a trade is imminent. Further, the player may want to avoid risk at a given moment to keep his own salary value high for the

next contract or he may want to conceal an injury from his coach and teammates. To whom or to what can the physician turn in such circumstances?

One choice might be the Code of Medical Ethics, propounded by the American Medical Association. Opinion 10.03 provides that the physician employed by a company, which would include a professional sports team, must “(1) Evaluate objectively the patient’s health or disability” and not be “influenced by the preferences of the patient-employee, (or) employer,” and has a responsibility to “inform the patient about important health information or abnormalities that he or she discovers during the course of the examination” (*AMA Code, 2001*).

At bottom, the team physician must conform to the standard of care of any doctor treating a patient with a similar injury, regardless of the urgency of the competition. The physician’s duty is primarily to the player, with one caveat. This duty includes the following ethical obligations:

1. **1.** Assess properly the athlete’s condition;
2. **2.** Provide the player with full disclosure as to the nature and extent of his injuries and the risks of continuing to play;
3. **3.** Aim to protect athletes from injury, reinjury, or permanent disability; and, generally,
4. **4.** Practice good medicine consistent with the standard of care.

The caveat is this: While physician-patient confidentiality still exists with respect to treatment that has no impact on the player’s ability to perform, if it would have such impact either presently or in the future, the team physician may also have a duty to disclose the nature of the player’s injury to the team so that all parties can make a decision as to whether the player should play, rest, or be put on the disabled list. In addition, league rules may require disclosure of a player’s injury to the public and other teams.

Courts have had varying responses to the issue of what duties teams and their physicians owe with regard to a player’s health. Most courts agree that a special duty exists between the team and the athlete. With respect to professional sports, that duty is specifically defined by the athlete’s individual player contract as well as the CBA. But colleges and high schools also have a special duty to their athletes over and above the duties owed to the student population as a whole.

In *Kleinknecht v. Gettysburgh College*, a lacrosse player suffered cardiac arrest during practice. No trainer or physician was present, nor did anyone present have CPR training. In the days before cell phones were omnipresent, the coach did not even have a radio and the nearest phone was two fields away over an eight-foot fence. Kleinknecht died before the ambulance even arrived. In denying the motion to dismiss, the Court of Appeals for the Third Circuit concluded that colleges owed an athlete “a duty of care in his capacity as an intercollegiate athlete engaged in school sponsored intercollegiate athletic activity for which he had been recruited” (3d Cir op: p1369).

With respect to the specific duties owed by team physicians, the case of *Krueger v. San Francisco Forty Niners*, is quite instructive. After he retired, Charlie Krueger

sued his former team, alleging that its physicians had concealed the true nature of his knee injuries and the potential adverse effects of the steroid injections he was given to keep him in the game. Krueger insisted that this substandard care resulted in his suffering traumatic arthritis and a crippling degenerative knee condition. The court observed:

In its desire to keep (Krueger) on the playing field, (the 49ers) consciously failed to make full, meaningful disclosure to him respecting the magnitude of the risk he took in continuing to play a violent contact sport with a profoundly damaged left knee (p584).

The team argued that its physicians did not misrepresent the risks of continuing to play; they simply did not tell him what those risks were. This, the court said, was not sufficient given the ethical duties of a physician to his patient. The court stated:

A physician cannot avoid responsibility for failure to make full disclosure by simply claiming that information was not withheld (p583).

With respect to the defense that Krueger was making his own choices, the court cogently responded:

(Krueger) demonstrated throughout his football career a courageous—some might say foolhardy—willingness to endure pain and injuries for the sake of his team and employer, but no credible evidence suggests that he ever assessed and accepted the prospect of permanent disability (p584–585).

Other players did not fare so well in the courts, though the cases were a harbinger of things to come. In *Zimbauer v. Milwaukee Orthopaedic Group*, the court dismissed the claim of a Milwaukee Brewers pitcher that the team physician failed to properly diagnose and treat his shoulder injury, holding that “plaintiff’s occupation as a pitcher invoked particular concerns that fall within the specialized realm of sports medicine: the appropriate level of pain the plaintiff could expect to experience and physical therapy tailored to his profession as a major league pitcher” p965. In *Stringer v National Football League* (2007), the court dismissed the complaint of the Estate of Korey Stringer, who died of heat stroke during Minnesota Vikings training camp. The court concluded that the claim that the team and its physicians had a duty “to use ordinary care in overseeing, controlling and regulating practices ... to minimize the risk of heat-related injuries” (p687) was preempted by Section 301 of the Labor Management Relations Act of 1947, also known as the Taft-Hartley Act. Chicago Bear linebacker Richard Dent’s suit was also dismissed on preemption grounds. In what some called the “drug pushing class action,” Dent had claimed team doctors and trainers had given him and other players thousands of injections and pills to keep them playing while they concealed dangers of repeated drug use. The court stated,

No decision in any state (including California) has ever held that a professional sports league owed such a duty to intervene and stop mistreatment by the league’s independent clubs and that it was only through the CBAs (that) players’ medical rights have steadily expanded.

(*Dent v. National Football League*, 2014 U.S. Dist. LEXIS 174448).

Such a view was soon to change as a result of the various class actions brought by retired National Football League (NFL) players suffering from long-term brain injury, called chronic traumatic encephalopathy (CTE) as a result of concussive and subconcussive head injuries experienced both in games and practice. The players claimed the league as well as team physicians and trainers understood what the long-term impact was of such injuries and fraudulently concealed it from the players. Perhaps even more egregiously, the players contended that the NFL contributed to false and errantly researched scientific literature, which had the effect of misleading the public as to the risk of anyone playing or allowing their children to play sports where the chance of concussive injuries is significant (*Brody (2014)*).

The players argued that, as the medical community grew concerned about the long-term effects of head injuries in contact sports, the NFL created the Mild Traumatic Brain Injury Committee (MTBI) to obfuscate the connection between head injuries and CTE, a connection the scientific community as well as the league knew then and now accepts as fact. The MTBI was purportedly composed of independent researchers and physicians but arranged for the publication of ghost-written and at times demonstrably false articles in medical journals. The NFL ultimately settled the cases for approximately \$1 billion to cover the care of 20,000 retired players over the next sixty-five years (*Brody (2014)*). Concussion litigation involving other sports and sports organizations will likely have similar results.

What is clear from these cases and the billion-dollar NFL settlement is that teams and their physicians and trainers have not just an ethical but a legal obligation to disclose to the players under their care the full nature of any injury they suffer, to provide treatment consistent with the standard of care irrespective of the exigencies of competition, and to disclose the risks of any such treatment as well as of returning to the field of play.

3. Performance-Enhancing Therapies

New technologies have always played a role in the advancement of athletic achievement. Everything from the playing surface to a player's clothing and shoes to the equipment used to strike the balls to the makeup of the balls themselves to advances in training equipment have allowed athletes to run faster, jump higher, hit further, and endure greater. Advances in medical therapies have had no less an impact, though not without considerable if not uneven controversy.

Near the end of the 1974 baseball season, Dodger left-hander Tommy John heard his arm snap after throwing a pitch and knew he had torn a ligament in his elbow, an injury that ended most pitching careers. Fortunately for John, the Dodgers employed orthopedic surgeon Frank Jobe as a special consultant. With John's consent, Jobe snipped a six-inch tendon from the pitcher's right arm and wove it through holes he made in John's elbow to replace the ligament destroyed by a career of overuse. It worked so well for John that Pete Rose remarked: "I know they had to give Tommy John a new arm. But did they have to give him Koufax's?" (*LA Times, 1989*). Since then, fully a third of major league pitchers have undergone ulnar collateral ligament (UCL) reconstruction, what is now known as "Tommy John surgery." Absent a

patient's need to be able to pitch a baseball at the major league level, however, one cannot imagine any physician performing such a procedure.

Another surgical innovation impacting performance in sports, though one the general public also enjoys, is Laser-Assisted in Situ Keratomileusis, or Lasik for short. In a procedure that takes about an hour, the surgeon creates a thin flap in the cornea using a laser, folds it back, removes corneal tissue, and lays the flap back in place.

The first and most prominent athlete to take advantage of the procedure was Tiger Woods in the fall of 1999. Prior to the surgery, Woods had not finished first in sixteen straight events; afterward, he won seven of the next ten including the Masters. Dr. Mark Whitten, Woods's eye surgeon, has said of the surgery "Golfers get a different three-dimensional view of the green after Lasik (and) can see the grain ... small indentations. It's different. Lasik actually produces, instead of a spherical cornea, an aspherical cornea. It may be better than normal vision" (Slate, 2005).

Not to be outdone, a number of golfers soon underwent the procedure, as did numerous players in virtually every sport where better than 20/20 vision is an advantage, even some who did not have impaired vision and for whom Lasik surgery was not medically indicated (Slate, 2005).

Without question surgeries such as that performed on Tommy John and Tiger Woods are performance enhancing, as are new training techniques to improve cardiovascular conditioning and muscle tone, specialized diets, and dietary supplements. So why the obsession with performance-enhancing drugs (PEDs)?

The use of elixirs thought to be performance enhancing is not confined to the current era. As far back as the Ancient Greek Olympic Games, athletes brewed a tea to improve their strength and endurance made of crushed animal testicles—in other words, testosterone tea, though nutritionists today consider ingesting crushed testicles an inefficient means of boosting testosterone levels (Yesalis and Barke, 2002).

What the Ninth Circuit, in reviewing the conviction of Barry Bonds, called "the Steroid Era" (*United States v. Bonds*) really began in 1889 with French American physician Charles Brown-Sequard, known as the Father of Endocrinology. This branch of medicine deals with the body's system of endocrine glands, its diseases, and its production of hormones. That year Brown-Sequard developed an animal testosterone mixture, which he tested first on himself and later on James "Pud" Galvin, baseball's first 300-game winner for the Pittsburgh Alleghenys (now the Pirates) and the St. Louis Browns (now the Baltimore Orioles). In his first game after becoming a human research subject, Galvin pitched a complete game shutout and excelled at the plate to the cheers of the crowd and the local media. Shortly after the public learned of Brown-Sequard's potion, the *New Haven Register* announced: "The discovery of a true elixir of youth by which the aged can restore their vitality and renew their bodily vigor would be a great thing for baseball nines. We hope the discovery ... is of such a nature that it can be applied to rejuvenate provincial clubs" (Pud Galvin, 1889).

Compare that sentiment to an editorial appearing in the same newspaper more than 100 years later during the 2016 Rio games. In a piece titled “Shaming could be the best fix for Olympic Doping,” the legal scholar Cass Sunstein asks:

Will it work? The challenge is that here, as elsewhere, people’s behavior is a product of numerous incentives, not just one. A spot in the Olympics, or a shot at gold, can be hard to resist; if a drug really would make the difference, some athletes will always be tempted. In these circumstances, it’s not entirely pleasant to see Olympic gold medalists acting as village elders or self-appointed drug police—but if we want a level playing field in the future, it’s probably a good idea.

(Rio, 2016)

Gavin, the first baseball player to experiment with what today are called PEDs, was easily voted into the Hall of Fame. The same, of course, cannot be said of more recent PED users who include the game’s all-time home run leader, arguably its best right-handed pitcher and numerous other stars whose career numbers would otherwise have ensured enshrinement in the Hall.

The most common PEDs fall into three main categories. The first and perhaps most notorious are anabolic steroids or, more accurately, anabolic-androgenic steroids (AAS). These are laboratory-produced derivatives of the hormone testosterone, far more effective at building muscle, called an anabolic effect, than crushed testicle tea. Such steroids are different than corticosteroids, those steroids typically prescribed to the general public to treat inflammatory, immunological and allergic conditions (Fahey, 1998).

Whether ingested or injected, AAS attach to androgen receptors of muscle cells promoting muscle growth, regeneration, and repair. AAS may also reduce muscle soreness associated with strenuous physical exercise, enabling the athlete to work harder to achieve his or her goals. Under the Controlled Substances Act (21 U.S.C. §§ 801 et seq.), they are a Class III drug, meaning they can only be obtained with a physician’s prescription, and have a currently acceptable medical use and a potential for abuse. Like many drugs, AAS pose a risk of side effects, some quite serious, including liver and heart damage, as well as psychiatric and sexual dysfunction.

A related substance favored by some athletes is human growth hormone (HGH). Growth hormones, made up of 190 amino acids, occur naturally in the body and are produced by the pituitary gland. They spur the liver production of the hormone called “insulin-like growth factor-1” (IGF-1). Together, these hormones regulate the growth of muscles, bones, and other organs through cell multiplication. Physicians prescribe synthetically produced HGH to treat mostly growth-related disorders in children and adolescents. Advertised by proponents as “the Fountain of Youth,” the drugs have been used by athletes who believe they help them not just repair their injured bones but keep them young (Saugy et al., 2006).

Like steroids, the use of HGH carries risk because too much HGH is as bad as too little and can increase the risk of disease and lead to conditions such as bone deformities, arthritis, vision problems, and heart failure.

The third most common PED is blood doping or the artificially induced means of increasing the blood's ability to bring oxygen to muscles. This is accomplished in one of three ways. Before a competition or practice, an athlete can get an autologous transfusion of his or her own blood removed and stored for later use, or a homologous transfusion of the blood of someone else with the same blood type. The third type of blood doping, and the easiest to detect, is the injection of synthetically produced erythropoietin or EPO, a hormone naturally produced by the kidney that regulates the production of red blood cells (FIFA, 2004).

Each of these methods increases the amount of the body's hemoglobin, the protein that transports oxygen in the blood to the muscles. When athletes are engaged in long-distance events such as bicycling or marathons, they tire as the heart struggles to continue to deliver blood-carrying oxygen to the muscles. Boosting the concentration of hemoglobin and blood mass slows muscle fatigue and improves stamina.

Blood doping, too, is not without its risks. Artificially increasing the number of red blood cells when no increase is warranted may end up damaging the heart, thickening the blood, and increasing the chance of a heart attack, stroke, phlebitis, or pulmonary embolism.

In the 1980 Moscow Olympics, before blood doping was banned, trainers transfused Finnish long-distance runner Kaarlo Maanika with two pints of blood and he went on to win two medals in the five and ten-kilometer races. After the 1984 Los Angeles games where the U.S. cycling team won nine medals—the first medals won since 1912—the team revealed that a full third of its athletes had received autologous transfusions before their races. It seemed clear blood doping helped athletes endure the grind of long-distance competition and improved performance.

The next year, the International Olympic Committee banned blood doping, though no test was available at the time, and other sports organizations soon followed suit. In 1999, the United States Olympic Committee (USOC) formed the United States Anti-Doping Agency (USADA) to test and police the use of blood doping in sports. Its most famous action was to strip Lance Armstrong, the world's most well-known cyclist, of his seven consecutive Tour de France titles. Armstrong sued the USADA, alleging it had no jurisdiction over him because he had retired and that its actions violated his right to due process; the court dismissed the suit, holding most of Armstrong's claims were preempted by "The Sports Act" establishing the USOC (*Armstrong v. Tygart*).

All of the major professional leagues and athletic organizations now employ policies restricting the use of these PEDs and numerous other drugs which found their way on an ever-growing list of banned pharmaceuticals. The names of world-class athletes sanctioned for their use is legion. As the 2007 Mitchell Report to the Commissioner of Baseball explained, it is wrong to assert that baseball had not outlawed these substances until 2002, when the league and the players agreed on a testing protocol. To the contrary, the league had since 1971 "prohibited the use of any prescription medication without a valid prescription" (Mitchell Report, 2007). One bioethical inquiry is whether such substances should be banned with a prescription

and under a doctor's supervision, since they undoubtedly have a therapeutic use and might be administered safely under a physician's supervision. After all, is this not a matter of personal choice and decision making?

Policymakers have asserted several arguments to support aggressive testing and policing of the use of PEDs with or without prescriptions: (1) these substances are detrimental to the health of athlete; (2) the use of these substances by some coerce others to use them as well; (3) the use by athletes who are role models will encourage aspiring young athletes to use them; and (4) such performance enhancers cheapen the achievements and records of the past and make it impossible to make a fair comparison of athletes of different eras. Some of these reasons are more convincing than others, but all are undercut by too broad of a brush in their implementation or by their failure to achieve the stated goals.

The most persuasive justification is the concern for player health and the health of youngsters who believe they must use these substances if they are to achieve their goals. Athletes and their admirers certainly should be discouraged from using prescription drugs without a prescription and thus not under a doctor's supervision. Evidence suggests that when players use AAS, HGH, or other PEDs, they use them in doses far beyond what has been suggested by their manufacturer and beyond what has been clinically proven as safe. In addition, athletes have been known to "stack" these substances in an attempt to find the perfect combination to enhance their performance.

But what if a physician prescribes a safe dose of a PED and closely observes the player for any adverse effects? That would eliminate any concern for the player's health. What if a player has been diagnosed ADHD and prescribed Ritalin or Adderall, both of which are on the banned substance list?

Consider the case of Robert Mathis of the Indianapolis Colts and one of the top linebackers in the NFL. He and his wife already had three children but they wanted a fourth grandchild for Mathis's mother after she was diagnosed with stage four cancer. The couple sought the assistance of Atlanta fertility doctor Steven Morgenstern, who prescribed the drug Clomiphene, better known by its trade name Clomid, a selective estrogen receptor modulator (SERM). The drug is on the NFL's banned substance list because it increases testosterone. Clomid is by far the most widely prescribed fertility drug for women and is also prescribed off-label for men. The theory is that if you lower the body's production of estrogen you increase the production of testosterone and sperm counts rise. As soon as Ms. Mathis became pregnant, her husband went off the drug. But a random NFL drug test detected the presence of Clomiphene, which stays in the body for some time after discontinuation, resulting in a four-game suspension for the expectant father.

Is any drug that increases testosterone levels a performance-enhancing drug? Does it matter if the purpose for taking the drug is not performance on the field but at that most critical of human physical endeavors: making babies?

In a written statement, the NFL explained:

A cornerstone of the program is that a player is responsible for what is in his body. Consistent application of the policy's procedures is critical to the integrity of the program.

(NFL, 2014)

The league says players should check with it before taking any substance prescribed by a physician. Indeed, the NFL rules provide for a therapeutic use exception (TUE), but a player must first apply with his physician for the right to take a banned substance for therapeutic reasons. Mathis says he never thought whether a fertility drug could be on the banned list and the doctor says he, too, never made the connection. In what job, however, does anyone have to share such personal and private matters with his employers? Should not the decision to have a child under difficult circumstances remain a personal matter even for NFL linebackers?

Another drug that raises interesting bioethical questions is propranolol. This FDA-approved drug is a beta-adrenergic blocking agent that works by inhibiting the effects of the hormone epinephrine, otherwise known as adrenaline. As a beta-blocker, it is safe and effective and has long been proscribed to treat high blood pressure. Because it keeps the heart from racing without any sedative effect, even in the most stressful of circumstances, it soon became known as the “stage fright” drug, prescribed off-label by physicians for patients who were public speakers, actors, musical performers, even surgeons.

Before 2008, when the drug was banned by the IOC (International Olympic Committee), the PGA (Professional Golf Association), and the LPGA (Ladies Professional Golf Association), it was also a favorite of professional golfers wanting to cure what putters called the “yips” as well as of archers and sharpshooters for similar reasons. No one complains if a surgeon has steady hands as a result of a prescription drug, or if an actor or musician can perform beautifully without feeling her heart is about to pop out of her chest. Why restrict the athlete from performing at his or her best in the absence of any health concern?

The argument is that the public, as well as other competitors, want what they call “a level playing field.” As the Mitchell Report stated:

Clean athletes face three choices: (1) compete without performance-enhancing substances, knowing they may lose to competitors with fewer scruples; (2) abandon their quest because they are unwilling to use performance-enhancing substances to achieve decisive competitive advantage; or (3) use performance-enhancing substances to level the playing field.

(Mitchell Report, 2007)

The problem with this argument is that the field is not and has never been level. A variety of economic, social, political, and cultural factors, including race, create competitive advantages for some and disadvantages for others. One need only look at the athletic careers of Jesse Owens, Jackie Robinson, Curt Flood, Joe Louis, and Muhammad Ali to understand how much remarkable athletes have achieved despite a field that is anything but level.

Perhaps the most hypocritical aspect of this obsession with ridding sports of PEDs is the list of drugs that are not included as banned substances. Cortisone, Toradol, Percoset: these and other pain-killers are routinely given to athletes before and during games to keep them on the field playing through pain. As former NFL Coach Tony Dungy has said: "Practically everybody in the NFL is using Toradol." As a result, numerous players have retired from professional sports, not only addicted to pain killers but with crippling permanent injuries as a result of playing their sport when team doctors should have insisted they rest and recover. Yet the league—and the public—seem to pay no mind to this sanctioned if not outright encouraged form of dangerous drug abuse, while condemning the use of other often less harmful drugs characterized as performance enhancers.

And then there is DNA, which makes some of us bigger or stronger or faster than the rest of us. Scientists have already isolated a few genes associated with elite endurance and athletic performance. The angiotensin converting enzyme (ACE) is active in muscle tissue and regulates blood flow. We all carry either an insertion or an absence of a gene sequence called "allele," giving us either high or low ACE levels. The lower the ACE level, the higher the maximum oxygen uptake, the greater the stamina, while a lower ACE level is associated with greater strength. Scientists have isolated two other "performance genes," known as ACTN 2 and ACTN 3, which influence the contraction of skeletal muscles.

What is interesting about these discoveries is not just the idea that genetic makeup plays a part in athletic performance. We probably did not need these discoveries to reach that conclusion. It is clear that an athlete like Usain Bolt is the fastest man alive not just because of technique and training; he is naturally engineered to run fast. But what if some form of gene therapy or gene splicing could alter our DNA to make us better athletes? Such an as-yet purely theoretical future already has a name: "gene doping." In one animal study, researchers experimented with the delivery of gene-encoded EPO (erythropoietin) as a potential cure for anemia. Could the next Lance Armstrong benefit from such a procedure and thus bypass the rules prohibiting artificial blood doping? Would such a procedure be akin to taking steroids or having Lasik surgery? Some say that future is not too far distant. The IOC is concerned enough to have issued the following statement:

Gene therapy holds great promise for all people including athletes competing in Olympic sports. We endorse the development and application of gene therapy for the prevention and treatment of human disease. However, we are aware that there is the potential for abuse of gene therapy medicines and we shall begin to establish procedures and state-of-the-art testing methods for identifying athletes who might misuse such technology. This will require investment in modern detection methods including antigen detection, gene chip and proteomic analysis which are now becoming available. We are confident that we shall be able to adequately monitor abuses and establish the procedures for doing so using ethically acceptable methods. We call upon other sports, medical and scientific organizations to endorse our position.

(IOC, 2001)

Such theoretical procedures involve what is called “somatic cell modification,” meaning they involve the altering of an individual’s existing nonhereditary genetic makeup. Even more ethically problematic: what if, when the technology allows, parents desirous of having a superior athlete undergo performance-enhancing in vitro fertilization so their physicians can produce a designer baby possessing all those genes that are markers for physical ability? Such a possibility, experts agree, is not just the stuff of science fiction.

4. Performance-Tracking Technologies

To return to the present day, if we could agree that sporting competition is better if the performance of athletes is not artificially enhanced, it follows that the leagues must be able to enforce the rules aimed at keeping the games “pure.” But assuming the tests for detecting any of these artificial enhancements are effective, is it ethical to require athletes to take them? Do such tests violate our notions of privacy, of constitutional rights against self-incrimination, of essential human dignity? Should there at least be some reasonable suspicion of the use of PEDs before subjecting an athlete to such a test?

In *Vernonia School District 47J v. Acton*, the U.S. Supreme Court held that random drug testing of high school students as a condition of participating in sports was a reasonable search under the Fourth Amendment. These tests, of course, were not for PEDs but for drugs then illegal in Oregon like marijuana. Nonetheless, the opinion certainly could be read as endorsing randomized drug testing for PEDs as well. The Court’s acceptance of the school district’s reason for drug testing, however, was rather startling. The stated purpose by the school district for implementing the regimen was not to protect the health of student athletes and ensure they stayed away from harmful drugs; it was the idea that student athletes were perceived as role models by the general student population who would then take the athlete’s guide and refrain from drug use. Quite a naive assumption. The Court must not have heard Charles Barkley remark: “I am not a role model. Just because I dunk a basketball doesn’t mean I should raise your kids.”

Not all advances in medical or pharmaceutical research attractive to the sports world necessarily enhance a player’s performance. In 2005, Eddy Curry was in the last year of his contract with the Chicago Bulls when he collapsed during a team practice. Team doctors expressed concern that the 6’11” center had an enlarged heart, a genetic defect called hypertrophic cardiomyopathy (HCM). Boston Celtic Reggie Lewis and college star Hank Gathers had previously collapsed and died during games of this condition, traumatizing fellow players as well as shocked fans. This condition may be confirmed by a DNA test, though not all individuals with HCM test positive for the gene marker.

The Bulls insisted that before Curry could play again he had to submit to DNA testing. Curry refused. The issue was an important one. Could an employer insist on a DNA test as a condition of employment? After all, teams would love the opportunity down the road to know whether their potential players had the performance genes or perhaps genes that suggested a predisposition to gambling, alcoholism, or cancer.

Congress answered that question by a near unanimous vote when approving funds for the Human Genome Project. The Genetic Information Nondiscrimination Act of 2008 (42 U.S.C. Chapter 21F) makes it illegal “for an employer to request, require or purchase genetic information.” Ultimately, the Bulls decided to trade Curry to the New York Knicks, with whom Curry signed a multi-million-dollar contract.

Another new technology with ethical implications is already being utilized by some sports organizations. Teams are experimenting with the use of devices to monitor biometric data about their personnel 24/7. The Seattle Mariners, for instance, issued to players who agreed to participate a device called a Readiband. It is manufactured by Fatigue Science, a name seemingly plucked from a futuristic Cyberpunk novel. The company claims these monitors are “the only scientifically validated tool for measuring the impact of sleep on human performance.”

One can envision a near future where athletes feel like those astronauts in the movie *Apollo 11*, except the overseers are monitoring not only their heart rate, blood pressure, and temperature but also their caloric intake, muscle growth, and mental acuity. While, of course, still being paid like kings, players may feel more like possessions, objects to be tinkered with, in such a Brave New World.

5. The Use of Animals in Sports

Animals find their way in sports in one of three ways. The first is where they are pitted against each other as in dogfighting or cockfighting or in dog racing, primarily so humans can bet on who will be the victor. The second is where the very purpose of the sport is for the human to kill the animal as in bullfighting or hunting. And the third is where the human and animal work together to compete against other human-animal teams as in horse racing or polo.

To assess the ethics of any of these sports, one need not necessarily engage in the philosophical argument of whether animals themselves have rights. Humans have used animals for a variety of non-sports-related purposes probably since the two first shared the planet together. The issue is really whether the treatment of animals in sport is “humane,” that is, whether it comports to what we as humans consider morally acceptable.

Most of us would agree bullfighting and dogfighting or cockfighting are unethical and indeed such sports run counter to the laws and regulations of every state. Michael Vick was celebrated for years as a quarterback, but his participation in the sport of dogfighting quickly landed him in a federal prison. But is there an ethical difference between bullfighting and hunting, if indeed hunting is a sport? Is it the fact that bullfighting is a spectator sport while hunting is a relatively solitary activity that makes one illegal in most of the nations of the world and the other an accepted recreational activity? Or is it that the bulls seem to have to undergo a slow, torturous if not ritualistic death?

The question of whether horseracing, euphemistically called “The Sport of Kings,” is ethical is more complicated. Certainly, the animals do not participate in the

competition by choice. Most are bred for the very purpose of one day earning money for their owners by outrunning other horses, sometimes urged on by a whip. Yet the champions do seem to revel in the competition, at least that's what their trainers and jockeys tell us. The ethical issues with horse racing stem mostly from the overuse of drugs such as Lasix, which control bleeding in the lungs, and other anti-inflammatory substances which keep the horses racing when they should not. While proponents describe the easy life of past champions put out to stud, many more end up in slaughterhouses after their racing careers end.

6. The Ethics of Being a Fan

It is not just teams, team doctors, and players who should strive to behave ethically. What about the fans? Anyone who has seen the movie *Gladiator* or *Ben Hur* must have wondered how could human beings enjoy watching as sport the suffering of others? Can the same be asked about fans watching NASCAR for the crashes or the National Hockey League (NHL) for the fights? If we know a good percentage of boxers and football players will almost certainly be subjecting themselves to a life after sports of pain and disability, is it ethical to sit and cheer the big hit? What should be the ethical response to such violence: not buy a ticket or merchandise or even, perish the thought, not watch the games?

In his song "Who Killed Davey Moore," Bob Dylan asked the ethical question who was responsible for the death of a twenty-nine-year-old boxer who died as a result of injuries he sustained in a championship fight against Sugar Ramos in 1963. Was it the other fighter, the promoter, the gambler, or the sports writer, or was it the fans who sustained a sport where the outcome depended on how badly one athlete injured another?

We know that professional athletes are paid handsomely for the risks they take. We also know that, for the most part, they willingly consent to participate in the dangerous activity, just like policemen, firefighters, soldiers, and astronauts. Indeed, for many, their lifelong dream is to make it in professional sports. Many of us would trade places with them in a heartbeat if only we had the talent.

Each of us will have to answer these ethical questions for ourselves. Suffice it to say, either answer may be right ethically as long as the players are true volunteers and not coerced into participating or exploited, as long as they are not being deceived or misled about the risks, and as long as care is being taken to protect their health and safety as much as practical without sacrificing the integrity of the game.

7. Conclusion

As science and medicine continue to advance, creating new and safer drugs, as well as developing surgical techniques that can vastly improve one's physical condition, bioethics is sure to play an ever-increasing role in deciding which of these advances comports with the values we hold integral to fair competition. In addition, it seems certain athletes will become increasingly involved in understanding and controlling their critical health decisions. But the question remains open as to whether the future

will be devoid of those sports which destroy rather than showcase the magnificent athletes who choose to participate.

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