Performance Task

Bioethics Concepts and Skills: Steroid and Performance Enhancing Drug Abuse in Athletics

Modeled after Smarter Balanced ELA Performance Tasks (High School)
Bioethics Concepts and Skills:  
Steroid and Performance Enhancing Drug Abuse in Athletics

Introductory Classroom Activity (25 minutes)

- Present on a projector (or distribute a handout of) images of athletes that have personally admitted to using steroids to enhance their athletic ability.
- After giving students a moment to look at the images, ask, “Have you heard in the news about athletes that have admitted to using steroids to enhance their athletic performance?” “If a particular athlete set a record while under the influence of steroids, do you think that they should be stripped of that record or for if they are an Olympic athlete, their medal(s)?”
- Let Students know that they are going to watch three video clips that address the issue around the use of steroid abuse. The first video from 60 Minutes: “The REAL Truth about Steroids” is the fact that both the media and the majority of sports fans have biased steroid use to baseball players. But what about all of the other sports that have had athletes admit to the use of steroids to enhance their performance? The second video (BBC) entails interviews with the athletes that competed against the former Olympic athlete, Ben Johnson and his 1988 positive drug test for Stanozolol/Winstrol - a banned anabolic steroid-performance enhancing drug which meant the Canadian’s Gold Medal, time and competition license was stripped from him. The third video entails track and field athlete Marion Jones (who broke Olympic records) admitting to the use of performance-enhancing drugs. This is her 2007 press conference, in which the disgraced athlete offered a very teary apology outside the courthouse of her trial.
- Present on a projector the three video clips:

  http://www.youtube.com/watch?v=58K JzRQpRU

  http://www.youtube.com/watch?v=25JqCbCOi3c

  http://www.youtube.com/watch?v=DkQpTdVK1cc

- Following the three videos, engage students in a brief classroom discussion using some of the following as discussion questions:
  - Why do you think the media has biased the illegal use of steroids to mainly baseball players?
  - What are the risks of using anabolic steroids or performance enhancing drugs?
  - Do you think that it should be legal for professional athletes to be able to take steroids or performance enhancing drugs while they are competing?
  - If an athlete is found to be under the influence of steroids and or performance enhancing drugs and they set a world record, are awarded an Olympic medal, etc., do you think they should be stripped of their honor(s)?

- Say to the students, “In the performance task that you are going to be participate in this week, you will learn more about steroids and performance enhancing drugs and the debate over their pros and cons of being allowed in athletics. Eventually, you will need to take a position on whether we should allow their use, and you will defend your position in an argumentative essay. It is important to know that, as some of the resources you will be using point out, some people support their use while others are adamantly opposed to allowing them.”
Bioethics Concepts and Skills:
Steroid and Performance Enhancing Drug Abuse in Athletics

Task:

In your health class, you have been discussing the risks of steroid and performance enhancing drug abuse and about the role they have played in athletics. You have learned about some of the potential side effects that can occur if they are used, as well as how some professional athletes have admitted to their use and have been stripped of their medals, times and athletic honors. As part of your research on this issue, you have found four sources giving additional information about steroid and performance enhancing drug abuse and their role in athletics.

After you have reviewed these sources, you will answer some questions about them. Briefly review these resources and the three questions that follow. Then, go back and read the sources carefully so you will have the information you need to answer the questions and complete your research. You may take notes in the margin as you find information in the sources to capture your thoughts, reactions and any questions you might have, as you read.

In Part 2, you will write an argumentative essay on a topic related to the sources.

Directions for Beginning:
You will now examine several sources. You can re-examine the sources as often as you like.

Initial Questions:
After examining the research sources, use the rest of the time in Part 1 to answer the questions about them. Your answers to these questions will be part of your score for the reading portion of this assessment. Also, your answers will help you think about the information you have read and viewed, which should help you write your argumentative essay. Both your margin notes and your answers to the questions will be available to you as you work on your letter.
Source #1: Steroid Background Information
This article, from the National Institute of Health, provides background knowledge on what steroids are, as well as the potential risks involved for an abuser of steroids. It also notes that not all medical doctors agree on whether steroids provide that much advantage to an athlete.

There are two major types of steroid hormones, anabolic steroids (which build up muscle mass—such as testosterone, a sex hormone) and catabolic steroids (which break down muscle and reduce inflammation—such as cortisone and prednisone). Catabolic steroids are widely used in medicine and help individuals with asthma, arthritis, and skin conditions.

Synthetic substances that are similar to the sex hormone testosterone, anabolic androgenic steroids, have been used by bodybuilders and athletes to increase their muscle mass. The term “androgenic” means that the steroids increase what have been thought of in the past as “male characteristics,” such as muscles. Hereafter, androgenic steroids will be referred to as “steroids” for short.

Although anabolic steroids might be prescribed by doctors for people who don’t make enough testosterone on their own, using anabolic steroids without a prescription in order to build muscles is currently illegal in the United States. Steroids can be taken in pill form or injected. The costs of steroids vary widely depending on type, quality and source. Tablets are available illegally for $10 each or less, while liquids (such as testosterone) can cost as much as $150 per 10 mL.

Steroids can help build muscle mass, “six-pack” abs, and bulging biceps and can enhance sports performance. They can also speed up recovery time from injury. Steroids only work, however, if the athlete continues to work hard; they are not a substitute for training. And, these benefits can come at the expense of a steroid user’s health and well-being. One serious side effect is stunting growth in adolescents. Because the body naturally stops growing once certain hormone levels have been reached, increasing hormone levels artificially with steroids can shut down the body’s growth earlier than normal.

Other serious side effects have to do with the fact that steroids are sex hormones. They can cause me to grow breasts. Women who use steroids can grow excessive hair all over their faces and bodies, and their voices can become deeper. Men can experience shrunken testicles and reduced sperm counts. Both sexes can have increased acne and baldness.

Steroids travel—to and damage—cells throughout the body. Livers can grow tumors and develop cancer. Arteries can become clogged with fat deposits, this condition, atherosclerosis; can block blood flow to the heart and brain and cause heart attacks and strokes. Steroids also affect the immune system, weakening the body against
attacks by diseases. Injecting steroids with shared needles can increase the risk of contracting HIV and hepatitis.

Steroids can also affect mood, because they act on the part of the brain that balances mood and emotions (the limbic system). They can cause a wide range of emotions, from feeling very happy to feeling extremely depressed, and they can even cause someone to become delusional. Steroids may cause users to go on “roid rages” – violent and angry outbursts. Stopping steroids suddenly has caused users to go into deep depressions or have suicidal thoughts. Steroid use has also been tied to shortened life span.

However, some individuals argue that the evidence supporting the dangers of steroids is insufficient and that the dangers have been greatly exaggerated. Dr. Norman Frost, a pediatrician and director of the medical ethics program at the University of Wisconsin, believes that not enough long-term studies of steroid use have been conducted to determine whether the effects of steroids are reversible in adults. In addition, he notes that many sports carry risks far greater than those posed by steroids. “The major risk of disability form the lure of fame and fortune of sport is the sport itself,” Frost says. “Steroids are just way, way low on the list in terms of risk of getting hurt or dying.”
Source #2: Tour in Tatters: Team Ousts the Race Leader

This article, from the July 26, 2007 edition of The New York Times, discusses how a Tour de France cyclist was removed from the race due to his riding under the suspicion of doping, as well as missing and then failing numerous drug tests.

PAU, France, Thursday, July 26 — Chaos and disgrace enveloped the Tour de France early Thursday after the event's overall leader, Michael Rasmussen, was removed from the race by his Rabobank team for lying about where he was training.

The announcement came hours after Rasmussen, who had already been riding under suspicion of doping, won the 16th stage Wednesday and appeared to be in position to claim the championship of cycling’s most prestigious event on Sunday in Paris. The news came shortly after the withdrawal of a second team in two days from the Tour amid the ever-widening doping scandal that has rocked the sport since last year’s champion, Floyd Landis, was found to have failed a drug test on his way to the title.

This year’s Tour has lost at least two teams, the winners of four stages and the overall leader. But organizers have so far said the event would not be canceled. Doing so, said Patrice Clerc, the president of the company that organizes the Tour, would mean victory for the riders who violate the rules.

Rasmussen, a 33-year-old Danish rider, was awarded the race leader’s yellow jersey for nine consecutive days, and, with his second stage victory of this Tour, he extended his lead to more than three minutes over his closest competitor. Almost from the time he gained the lead, however, questions have dogged him about his training and about why he missed at least three drugs tests this year after antidoping officials could not locate him.

On Wednesday, members of seven teams staged a protest at the beginning of the stage in Orthez, refusing to ride out with the other teams for a few minutes to bring attention to what they said was their united effort to combat doping. They soon joined the race, a 136-mile stage to the top of the Col d’Aubisque in the Pyrenees.

With Rasmussen gone, the new overall leader will be Alberto Contador, a Spanish rider for the Discovery Channel team who has fought a fierce battle with Rasmussen in the Pyrenees over the last three stages. The Rabobank team spokesman, Jacob Bergsma,
said the team would announce later Thursday morning if the remaining riders would complete the Tour.

Many fans greeted Rasmussen with as many boos as cheers when he was introduced at the start of the stage Wednesday, and he was booed as he rode along the course and at the finish. Asked about the fans’ reaction at a post-race news conference, Rasmussen said he believed fans were taking out their frustration at the fact that another race favorite, Alexander Vinokourov, had failed a blood test. The actual race has become an afterthought amid the growing scandal.

Last year, Landis was found to have failed a drug test near the end of the race. In May, Bjarne Riis, the winner of the 1996 Tour, admitted that he used performance-enhancing drugs that year.

This year, Patrik Sinkewitz, a German rider for the T-Mobile team, which has heavily promoted its internal antidoping regimen, was told during the race that he had failed a drug screening administered by German antidoping officials’ weeks before the race began.

The Cofidis team, based in France, withdrew from the Tour after Wednesday’s stage when it was announced that an Italian rider for the team, Cristian Moreni, had tested positive for manufactured testosterone after the 11th stage.

That followed by one day the withdrawal of the Astana team, which is based in Switzerland but which is sponsored by a consortium of Kazakh companies, after its leader, Vinokourov, failed a blood test after the first of his two stage victories this year. Vinokourov tested positive for the presence of another person’s blood cells, which if confirmed by a second test would be considered a sign that he violated antidoping rules by having a transfusion during the race.

Tour officials, who have openly said that they would have tried to exclude Rasmussen from the Tour if they had known before it started that he had missed drug tests this spring, expressed satisfaction at the team’s decision. “We cannot say that Rasmussen cheated, but his flippancy and his lies on his whereabouts had become unbearable,” Christian Prudhomme, the director of the Tour de France, told the Associated Press.
Pat McQuaid, the president of the International Cycling Union, the sport’s governing body, said he supported the decision. “I can only applaud that,” he said. “It’s a zero-tolerance policy, and it’s a lesson for the future.”

On Tuesday, Rasmussen said he committed an “administrative error” by not informing cycling officials, as required, of his whereabouts this spring. He said at the time he was training in Mexico, near the home of his wife’s family.

But a Danish news report Wednesday quoted a former Italian rider saying that he had seen Rasmussen training in the Dolomite Mountains in Italy in mid-June, days before the Danish antidoping agency went to conduct a test on him at a different address. Confronted with the information by the Rabobank team manager Wednesday night, Rasmussen confessed, according to the team spokesman. A statement on the team’s Web site said Rasmussen had been fired.

Rasmussen’s story aroused suspicion from the beginning because it seemed to subtly shift each time he told it. Initially, he said he had missed only one drug test. Then, Danish antidoping officials revealed that he had in fact missed at least three — two by their agency, and one by the cycling union.

The missed tests came as antidoping officials showed up to test Rasmussen and could not find him at the address where he had said he would be. Professional cyclists must notify antidoping authorities of their whereabouts at all times so they can be tested outside of competition, a move designed to discourage doping by making sure that riders never know when they will be tested.

Rasmussen was also late in filing paperwork on his whereabouts with the cycling union in April 2006, which the organization also considered a missed test and which led to a formal warning.

Three missed tests are considered the same as a failed drug test, but the rules state that the three test attempts must be made by the same organization. Because Rasmussen’s missed tests were from two different organizations, he received only a warning from the cycling union. But the Danish authorities barred him from participating on the national team either in this year’s cycling world championships or the 2008 Olympics.
Rasmussen also said Tuesday that in April 2006, when he filed his forms late, he had spoken by telephone with the head of the cycling union’s antidoping agency, Anne Gripper. Informed Thursday that Gripper did not work for the agency at that time, Rasmussen said he must have been mistaken, and he also revised the date on which he said he talked to someone at the agency.

The changing stories have created frustration for Tour officials, as well as for Rasmussen’s fellow riders and for cycling fans.

Michael Rasmussen of Denmark won the 16th stage of the Tour de France on Wednesday, but afterward he was removed from the race by his Rabobank team for lying about where he was training. He missed at least three drug tests this year after antidoping officials could not locate him.

Michael Rasmussen leaves the anti-doping car after the 16th stage of the Tour de France.
Olympic Champion Acknowledges Use of Steroids

This article, from the October 5, 2007 edition of The New York Times, discusses how Olympic Track and Field athlete, Marion Jones plead guilty to lying to federal agents about her use of performance-enhancing drugs, while competing at the 2000 Olympics in Sydney, Australia.

The former track star Marion Jones, one of the most accomplished female athletes in the world, is expected to plead guilty today to lying to federal agents about her use of performance-enhancing drugs, two lawyers connected with the case said yesterday. The admission would end years of denial and would likely lead to her being stripped of the record five medals she won in the 2000 Olympics in Sydney, Australia.

Ms. Jones, 31, who won three gold and two bronze medals in 2000, would become the first athlete convicted in the cases arising out of the four-year Bay Area Laboratory Cooperative investigation that has fueled a continuing series of steroid scandals in sports. Five men who manufactured, marketed or supplied the drugs to athletes have pleaded guilty, and three of them have served time in prison.

Ms. Jones is expected to plead guilty to one count of making false statements to federal agents about her use of performance-enhancing drugs and one count of making false statements to federal agents in connection with a separate check fraud case, the lawyers said.

“It's the destruction of a heroine of the day,” said Dick Pound, the chairman of the World Anti-Doping Agency and a member of the International Olympic Committee. “It’s sad at one level, but it's still tawdry cheating at another level.”

Mr. Pound, who said that the I.O.C. had opened a file on Ms. Jones in 2001, said that her Olympic medals would be revoked.

“All the people who have been part of that system have been busted,” he said. “You hope it’s the end of the batch of bad apples and the new generation has learned from it, but we’ll see.”

Darryl Seibel, a spokesman for the United States Olympic Committee, was more circumspect.

“If these reports are true, it is an admission of responsibility from an athlete who owed her sport and the Olympic movement much better than this,” he said yesterday. “It’s too early to say what this might mean with respect to medals and prize money.”

He added, “Once we see what unfolds tomorrow, we can make a determination.”
Barry Bonds, baseball’s career home run leader, is still under investigation in the case, and his former personal trainer, Greg Anderson, remains in jail for contempt of court for refusing to testify about Mr. Bonds’s suspected steroid use.

Ms. Jones wrote to family and friends in a letter that she unwittingly took the designer steroid THG, called the clear that was supplied by her coach for two years beginning in 1999 and lied to federal agents about it in 2003, according to one of the lawyers, who spoke on condition of anonymity.

Ms. Jones is scheduled to appear at the United States District Court in White Plains this afternoon, Clifford Kirsch, the district executive for the United States District Court for the Southern District of New York, confirmed yesterday. “I do know she’s on the calendar,” Kirsch said. “That’s all we know.”

Ms. Jones and her lawyers did not return calls for comment yesterday. The United States attorney’s office in San Francisco, which spearheaded the Balco case, declined comment.

For years, Ms. Jones has repeatedly denied using banned substances and said she passed a lie detector test administered by a former F.B.I. special agent. But she has been contradicted by other testimony to federal agents.

Her former husband, the Olympic shot-putter C. J. Hunter, has said he injected Ms. Jones and watched her inject herself with the performance-enhancing drug EPO. Victor Conte Jr., the Balco founder, who has been convicted in the case, has said he supplied her with an undetectable designer steroid in the weeks leading up to the 2000 Olympics. A trainer, Angel Guillermo Heredia, has said he also supplied her with drugs and a doping plan.

Ms. Jones told investigators that she lied to protect herself and her former coach, Trevor Graham, who is awaiting trial in San Francisco on charges that he lied to federal agents. The trial is scheduled to begin Nov. 26.

Ms. Jones said Mr. Graham had told her the chemical was flaxseed oil, but she later realized it was a steroid, the lawyers said. Ms. Jones is listed as a potential witness against Mr. Graham.

Ms. Jones will probably face a maximum of six months in jail, one of the lawyers said. The Washington Post reported yesterday that Ms. Jones has told family and close friends that she will be sentenced in three months under a plea bargain agreement and that she apologized for disappointing them. Cooperation agreements are often a condition of plea agreements.
Ms. Jones, who turns 32 next Friday, has one child by her former partner Tim Montgomery, an Olympic gold medal sprinter who has been barred from competition for doping. She and Mr. Montgomery have been among a group of people also implicated in a check-cashing scheme. Mr. Montgomery has pleaded guilty and faces sentencing Nov. 1.

Ms. Jones has recently been reported to be broke. Last year, she quit the European track tour after testing positive for EPO but was cleared when a backup sample tested negative. On Feb. 24, Ms. Jones married Obadele Thompson, a sprinter from Barbados. She had a baby in July.

One other athlete in the Balco case who denied using steroids, the cyclist Tammy Thomas, was charged last year with three counts of perjury and one count of obstruction of justice. She has pleaded not guilty and will seek dismissal of the charges at a court hearing Nov. 9.

Six other people, including Balco executives and a chemist, have pleaded guilty to various charges. Those who accepted plea agreements in the case are Mr. Conte; James Valente, the former vice president of Balco; Mr. Anderson; Patrick Arnold, a chemist; Remi Korchemny, a track coach; and Troy Ellerman, a defense lawyer.

Many athletes — including the baseball stars Jason Giambi and Gary Sheffield — admitted to steroid use when interrogated by federal agents and a grand jury. They have not been charged with crimes. Their testimony was leaked to The San Francisco Chronicle by Mr. Ellerman, who pleaded guilty to contempt of court and obstruction of justice and was sentenced to two and a half years in prison — the longest sentence in the steroids investigation.

Ms. Jones's explanation of believing the substance was flaxseed oil, a nutritional supplement, echoes the explanation by Mr. Bonds, the baseball slugger, who said he never knowingly took steroids but ingested a chemical he believed was flaxseed oil and rubbed on a chemical he believed was a balm. Authorities believe the chemicals were in fact powerful designer steroids.

Mr. Conte was sued by Jones for $25 million for publicly saying she used performance-enhancing drugs in 2004. They settled out of court.

Reached yesterday, Mr. Conte said, “She made a choice, and there were consequences.” He added, “I feel bad for these athletes and their families who made mistakes and I feel bad for every athlete associated with Balco.”

With her admission, Ms. Jones joins a list of athletes found to have cheated, including the Canadian sprinter Ben Johnson, stripped of his 1988 Olympic gold medal in the 100
meters, and Justin Gatlin, the 2004 Olympic gold medalist in the 100, who tested positive for testosterone and other steroids in April 2006.

In cycling, Floyd Landis was stripped of his 2006 Tour de France title for doping, and Tyler Hamilton, a 2004 Olympic gold medalist, was suspended for two years for blood doping.

Marion Jone’s admission could cost her the record five medals she won in the 2000 Olympics.

**Source #4: The Olympics would be better if athletes were allowed to take drugs**

*This article from the September 7, 2012 edition of the magazine “*WIRED*” gives the perspective that if athletes were allowed to use steroids or other performance enhancing drugs, then the Olympic athletes would be faster and or better at their events.*

Poor old Lance Armstrong. The seven-time Tour de France winner is likely to have all those famous victories taken away from him, after accusations by the United States Anti-Doping Agency that he used illicit performance enhancing drugs. He never tested positive for anything, but his decision not to fight his corner has been taken as tantamount to a confession. And why shouldn't he be punished? Doping is, after all, the ultimate sin of the professional athlete.

Dwain Chambers, the UK's fastest sprinter in the 100m race, was banned from competing in the Olympic Games after testing positive for the anabolic steroid tetrahydrogestrinone -- and even if his ban was overturned, he claimed in his autobiography that at least half of the US racing team at Beijing 2008 were using illegal substances. The battle to control drug use never ever seems to end. So, why don't we accept doping will always happen, and legalize it? It may seem a crazy idea, but a switch to a pro-doping culture might be the inevitable future of sport.

It gets to the heart of what it is we want when we compete and watch sport, and also what we consider to be "normal" humanity. An athlete who takes a performance enhancing drug is relying on something that they don't themselves have to improve their
performance -- whether that drug is naturally occurring or designed by scientists, whether that extra help skews their genetics to alter their humanity.

As training, coaching, nutrition and equipment has been perfected, the best times of the best athletes have been increasing at a slower and slower rate. There are numerous estimates of what the fastest possible 100m time will be, based on extrapolating current trends -- the most recent study found that 9.48 was the predicted "fastest" time.

Eventually, natural athletes will reach a wall, and there comes the question of how to keep sport interesting. We could start measuring to the thousandth of a second, say, but how interesting would it be for spectators if every race came down to a difference undetectable to the naked eye? There's no narrative of success there, nothing as iconic as Usain Bolt strolling across the line in Beijing with the swagger of a man who knows he has utterly destroyed his competition. Such accuracy is also difficult to pull off in places like swimming pools, for instance, where distances of a couple of millimeters may be needed to decide a race. The concrete in current pools wasn't built for that kind of margin of error.

That's where doping comes in. After all, it's not like it's going to go away, argues practical ethics professor Julian Savulescu: "The war on doping has failed. Lance Armstrong never failed a doping test, despite being subjected to thousands. Nearly every recent winner of the Tour de France has been implicated in doping. About 80 percent of 100m finalists are or will be implicated in doping. The fact is that blood doping and use of growth hormone have not been possible to detect, and because doping mimics normal physiological process it will always be possible to beat the test." Thus, we should embrace the inevitable, and control doping as best we can.

This is a view echoed by bioethicist professor Andy Miah, who argues that we should have a "World Pro-Doping Agency" to complement the World Anti-Doping Agency (WADA): "At the moment athletes look to find dangerous substances with significant health risks, but with the correct framework in place athletes can know the risks involved."

It makes sense to make sure that athletes know what they are ingesting, as opposed to the current free-for-all which can lead to awful side effects for athletes. Anabolic steroids, for instance, have adverse side effects which range from acne, infertility and impotence, to hypertension, psychosis and cardiovascular disease. A regulatory body that lets athletes know what they're ingesting would improve athletic health.

However, this doesn't address the issue of authenticity and integrity that professional sport is built upon. After all, Bradley Wiggins could easily get up a mountain faster if he was using a motorbike. Our societal conception of sport as competition between opponents rests on a certain sense of human nature -- what will decide the battle is determination, and effort, and grit, and sweat. We can help the honest athlete compete
with the doper by allowing both to use drugs, but that seems to start picking apart why we value sport.

Savulescu doesn't see this as a problem: "Steroids augment the effects of training. They are like more effective training, which has been achieved in other ways. That does not corrupt the nature of sport. Caffeine is a performance enhancer which was banned but is now allowed. The relaxation has done nothing to affect the spectacle, nature or definition of sport. It has just meant we don't have to waste time working out how much Coca-Cola an athlete has drunk."

People still need to train to make the most of their drugs, then. It doesn't help to look at sport as being a battle of wills if, as we've already seen, the natural limits of the human body are increasingly the reason for success. I could try all I want, but I will never make it as a professional gymnast because I'm just too tall and awkward. The same applies to many athletes now who are never going to be able to beat Jessica Ennis, no matter how much they try.

We -- as spectators -- push athletes to be the absolute best, and in the process create the culture where doping is needed to read those heights. It increasingly feels difficult to reconcile the purity of asking athletes to do whatever it takes to win as long as that isn't going beyond an arbitrary definition of "natural". Performance enhancing drugs are that great leveler, that tool for athletes to bridge the unfair natural gap.

Savulescu agrees: "Doping is not against the spirit of sport. It has always part of the human spirit to use knowledge to make oneself better and doping has been a part of sports since its beginning. Doping should only be banned when it is significantly harmful relative to the inherent risks of sport, or against the spirit of a particular sport. For example, drugs to reduce tremor like beta blockers in archery or shooting are against the spirit of that sport as it is inherently a test of ability to control nerves. Drugs which removed fear in boxing would be against the spirit of boxing. But blood doping up to a hematocrit [percentage of red blood cells in blood] of 50 percent is safe and not against the spirit of cycling."

Miah also points out that there is a lot of legal doping going on already -- such as altitude chambers, which recreate the experience of training in thinner air to give athletes a bigger oxygen capacity. The WADA approved such chambers in 2006 because they were felt to recreate a natural phenomenon -- but then what's the difference between that and injecting someone with natural growth hormones, for instance?

This points towards the fundamental problem many have with doping -- its implications for what it is to be human. Athletics is at the forefront of that debate. Just look at Oscar Pistorius.
"He symbolizes the coming together of the two Olympic movements," says Miah. "If Pierre de Cobourtin founded the Olympic movement today, seeing how the gap between [the Olympic and Paralympic Games] is closing, there would be only one Games." Pistorius represents a future where our ability to transcend what a "normal" human being is will also herald the end of a distinction between the abled and the disabled -- and drugs are a big part of that.

That's because, as Miah points out, human enhancement will become more and more common in everyday life. "The current problems will become less apparent because the athletes of the future will be enhanced before they even begin training for an event," he says. "Look at the human genome, for instance -- twenty years ago it took thousands of dollars to sequence just one man, now it costs $5,000 (£3,135). That process will only get cheaper. The continual pursuit of enhanced life will lead to these things becoming normalized."

We can see -- from the use of drugs by students to improve studying to the medication of children to keep them calm -- that personal enhancement through drugs is more and more common. As genetic profiling becomes more common, too, that will also herald huge changes as people are screened for diseases at birth that they may only have come to discover in later life. You can already see this as an issue when it comes to so-called "gene doping", where techniques used in gene therapy may be used to switch on or off certain genes associated with, for instance, improved muscle mass, or faster acceleration.

Doping, then, becomes part of the grand question that humanity is beginning to ask itself as nature is increasingly improved upon with technology. Just as innovations in Formula 1 cars eventually filter down to your humble hatchback, those pills and serums that athletes take to shave another 0.01 second off a personal best may well herald a common life enhancing drug later down the line.

"What is a normal human?" asks Miah. "Athletes in the NFL have 20/15 vision, which is better than normal. People are concerned about genetic identification, that the use of genetic tests will be normal. People may recoil from that, thinking that it may compromise what it means to be human, but I don't think it changes any kind of internal human essence."

That may be the crux. If there were to be an Olympiad in, let's say... thirty years' time, then will there be a Paralympiad alongside? Or will there in fact be three, with a new Olympiad for those who choose to enhance their bodies beyond what they were born with? Whatever happens, it will be a reflection of wider society's attitudes towards human enhancement beyond what is natural, or normal.
**Question #1:** As noted in these four articles, the use of steroids and performance enhancing drugs introduces a variety of different moral/ethical issues in regard to athletics. In the boxes below, list at least five major ethical issues that are discussed in the articles and include which article(s) # that the issue was discussed.

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**Question #2:** As described in the four short introductions, each of these articles was taken from websites that are designed to appeal to a very specific audience. Choose one of the articles and analyze how the author’s purpose is reflected in the article’s tone and content. Be sure to include specific quotations from the text.
**Question #3:** None of the four articles directly states a position on whether the use of steroids and performance enhancing drug use in athletics should continue to be banned in the United States. Complete the chart below to reflect the stance you think each of the authors would take if asked if steroids and performance enhancing drug use in athletics should continue to be banned in the United States. Cite specific wording from each article that supports your conclusion.

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<th>Article</th>
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**Part 2**

You will now have the opportunity to review your notes and sources, plan, draft and revise your essay. You may use your notes and refer to sources. You may also refer to the answers you wrote to the questions in Part 1. Now read your assignment and begin your work.

**Your Assignment**

Based on the articles that you have researched and read, determine whether or not the United States should continue to ban the use of steroids and performance enhancing drug use in professional athletics. Write an argumentative essay that takes a clear position, using material from the articles you have read as support. Be sure that your recommendation acknowledges both sides of the issue so that people know that you have considered this recommendation carefully. You do not need to use all the sources, only the ones that most effectively and credibly support your position and your consideration of the opposing view.