

# Science Debate Kit: Drugs in Sport



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## Debate Kit: Drugs in sport Should ALL drugs be banned in sport?

A structured practice debate on a controversial topic. The different 'rounds' of the debate help students think through the issues and reconsider their opinions. The structure also shows them how to build a discussion and back up their opinions with facts.

You can use all eight characters, or fewer, as you wish.

The minimum is the four essential characters (**in bold**), this gives two for and two against.

### Characters

For banning

- **Helen Ayres – Sports historian**
- **Edgar Fortescue – Retired sportsman**
- Reg Curtis – Dad
- Alina Dent – Sister

Against banning

- **Chrissie Batchelor – Archer with asthma**
- **George Clarkson – Sports journalist**
- Hiba Halifi – Ethiopian sports coach
- Ross Gentley – Sports counsellor

### Facilitation tips

Ensure pupils know there is no right or wrong answer. Be observant of ones who want to speak and are not getting a chance. Encourage students to give a reason for their opinions.

**Designed for KS4.  
Can be used with ages 11-18**

For groups who may need extra support you can put the following prompt sentences upon the board:-

*"I think ALL drugs should/shouldn't be banned because....."*

*"I think ..... is the most important point to think about."*

## Learning notes

### Learning objective:

- To practise discussing and debating issues and expressing an opinion
- Understand more of the science and ethics around performance enhancement in sport.

### Other learning outcomes:

- Consider social, ethical and factual issues in an integrated way
- Think about different points of view
- Learn to back up their opinions with facts

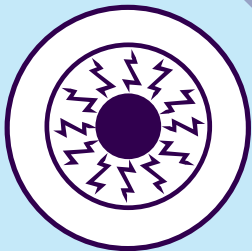
### Curriculum points covered:

- HSW:
- Using data to draw conclusions
  - Societal aspects of scientific evidence
  - Developing an argument
- Substantive:
- Evaluate the use of drugs to enhance performance in sport and to consider the ethical implications of their use.

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# **Drugs in Sport**



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# Debate

## Alina Dent – Sister



Oscar was my big brother, he always looked out for me. He got into weightlifting when we were teenagers. I remember him coming home with his first trophy, he was so proud. He died suddenly of a heart attack three years ago. He was 24. We found out afterwards he'd been taking steroids.

**Fact:** Steroids can cause heart damage and high blood pressure, mood swings and aggression, acne and liver damage. They can also cause impotence in men.

**Issue:** There's so much pressure on athletes. Oscar really wanted to win and make us all proud. I also think his coach pushed him into it.

**Question:** Is it fair to expect athletes to resist the pressure to take drugs on their own, or should we make regulation as strict as possible to back them up?

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# Debate

## Ross Gentley – Sports Counsellor



I work at the football academy of a Premier League club, giving pastoral care. The students are talented teenagers who hope to become professional footballers. I help them adjust to the pressure of being away from home, training full time. I listen to them and try to help with their problems. They are lovely kids - brave and determined - but I worry they miss out on a normal childhood.

**Fact:** Caffeine, alcohol and aspirin are all drugs and could be banned under this proposal.

**Issue:** Training is hard on them physically. And on top of that is all the mental stress – from their coaches, from the team, from their parents.

**Question:** Is it fair to place more restrictions on young sportspeople that other kids their age don't have?

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# Debate



## Reg Curtis – Dad

I had dreams of being a runner, but a knee injury as a teenager took that away from me. My son takes after his Dad and he's a great runner. I've coached him for years, taking him around the country to competitions. Last year he made the national finals for the under 15s 100 metres. I was really proud, but he lost to a boy who was taking asthma drugs. I don't think that boy had asthma, I think his Dad had bribed the doctor, so he could cheat!

**Fact:** In the 1984 Olympics whole teams of Modern Pentathletes were prescribed beta-blockers.

**Issue:** If people with certain illnesses are allowed to take drugs that may help them win, then some people will pretend to have those illnesses. Doctors can be fooled!

**Question:** It may be unfair to people who really need the medication, but every set of rules will be unfair to someone. Why leave such an obvious loophole?

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# Debate



## *Hiba Halifi – Ethiopian Sports Coach*

I coach Ethiopia's top young athletes and some of them have real world-beating potential. But the decks are stacked against them - money brings better equipment, trainers, and even chemists. Everyone knows that some sportspeople are probably taking designer drugs that can't be detected or aren't widely known about yet. You can get round the bans if you really want to.

**Fact:** Some American athletes spend £100,000 a year on their training. Here in Ethiopia a basketball costs over one month's wages for most people.

**Issue:** At the moment it's not who's the best at their sport, it's who's got the best chemist.

**Question:** Isn't sport supposed to be sporting? At the moment it's easier for rich countries to win at the Olympics.

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# Debate

## Helen Ayres – Sports historian



I'm writing a book on a 19th Century boxer called Bendigo. He was just a poor boy from the slums, but he had grit and skill and he won fights. Today I think sport is a joke. Some athletes have a team of expert nutritionists, physiotherapists and psychologists. I think we should ban everything and make sport real again.

**Fact:** Blood-doping and training at altitude both make your body make more red blood cells, but one of them is illegal and one isn't.

**Issue:** Why do we fuss so much about drugs, but not all the other things athletes do to themselves? Why should some things be banned and others not?

**Question:** Should sport be about individual athletes, or about who's got the best support team?

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# Debate



## George Clarkson – Sports Journalist

I've always loved sport and I love working as a sports journalist. You can't beat the excitement of a close match or an amazing performance in athletics. Sport is entertainment. It's nonsense to get all holy about it. I actually think all drug-taking in sport should be legalised. Let's really see where we can get to!

**Fact:** 12 out of 23 world records for women's athletics are over 20 years old and current athletes can't reach them. Some think those records were set on drugs, before modern testing. They may never be beaten.

**Issue:** If sport plateaus and we stop getting new world records, audiences will get bored, it'll stop making money, and I'd be out of a job!

**Question:** Isn't the point of science to move humans forwards and go beyond what is natural?

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# Debate



## Edgar Fortescue – Retired Sportsman

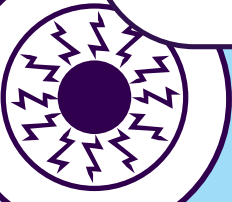
I boxed for England, and played cricket for Somerset, in the 1950s, and I loved every minute of it. I always tell young people, get into sport! It's healthy exercise, it's character building and it's great fun. But sport is supposed to be sporting. These days, with all these performance-enhancing drugs, it's just not right.

**Fact:** There are literally hundreds of known drugs that are allowed in sport (because scientists don't THINK they make you more likely to win). And of course, drugs that the World Anti-Doping Agency (WADA) don't know about yet haven't been banned yet.

**Issue:** I think having some things allowed and some things not is too complicated. There's too many grey areas. We should just ban everything and make it clear.

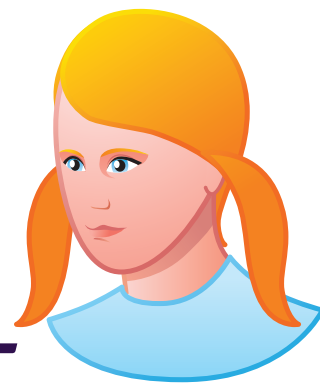
**Question:** What's sport supposed to be about if it's not winning fair and square?

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# Debate



## *Chrissie Batchelor – Archer with asthma*

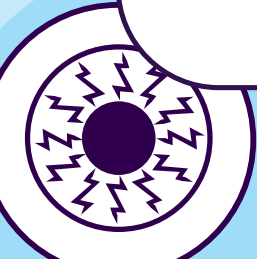
I got hooked on archery after trying it on holiday as a kid. I love it, and now I compete for the county. But I'm severely asthmatic and likely to have an asthma attack when I'm nervous – like when I'm in a big competition. If I couldn't use my inhaler I couldn't compete any more.

**Fact:** Sportspeople with asthma are allowed to take asthma medication, but it's banned otherwise. These drugs open the airways, which could help in sports like running, but probably wouldn't make a difference in archery.

**Issue:** It's bad enough having severe asthma, don't take my dream away too!

**Question:** I just want the same chance to compete as anyone else. Why should I be denied that because of the cheats?

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## Teachers Notes



### **Science Debate Kit: Drugs in sport**

## Lesson plan

The different 'rounds' of the debate help students think through the issues and reconsider their opinions. The structure also shows them how to build a discussion and back up their opinions with facts.

### **Starter: 5 minutes.**

What performance enhancing drugs do the students know about in sport? What are the other ways athletes and sportspeople improve their performance? There are many ways of enhancing performance – some are legal and some are not and this raises practical and ethical issues.

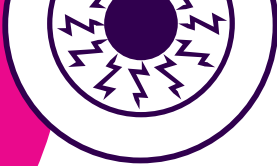
### **Main Activity: 35 minutes.**

- 1) **Split students into as many groups** as characters you want to cover.
- 2) **Give them their character cards** – one per group, and give them a few minutes to read them over.
- 3) Get one student in each group to **read out their first section** to the rest of the class. What are the class's initial thoughts? Is there one position they identify with or reject?

**KS4:** Designed for KS4.  
Has been used with ages 11-18.

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- 4) Take it in turn to **read out** their **fact**. Does it change the way they think?
- 5) **Read** the **issue**. Any different feelings?
- 6) Each team **asks** their **question to the character of their choice**.

**Support:** To help students you can put the following prompt sentences up on the board:

*“I think ALL drugs in sport should/shouldn’t be banned because.....”*

*“I think ..... is the most important point to think about.”*

### **Plenary: 10 minutes**

Vote for which position they agree with most (if there is one). Why? Which arguments were the most persuasive?

You can record your classes position on our website at [debate.imascientist.org.uk/sportsdoping](http://debate.imascientist.org.uk/sportsdoping) - after registering your result you can see what conclusion other classes around the country came to.

**Note** – Pupils can stay in roles all the way through debate, or only for the first round if you prefer. If it’s all the way through, give them a chance to express their own opinion at the end and in the plenary.

For groups who are not confident at class discussion, it might help to have them start by discussing the question and/or their character’s position in pairs, and then compare notes in fours. They’ve then had chance to rehearse some of what they want to say before having to do it in front of the whole class.

## Background notes

Doping in sport usually means the use of performance-enhancing drugs, but it can also mean techniques like 'blood-doping' (explained below). The main ethical issues around drug-use in sport are:-

### **Possible harms to the athlete.**

Some drugs, like steroids, can cause serious harm. But it's worth noting that with other drugs the risks to the athlete may be fairly minimal – and often many other things athletes do (punishing training regime, psychological stress, etc) are also potentially harmful.

**Unfairness.** This is both between individual athletes, and between countries (when thinking about the Olympics and other international competitions). For example we know that for decades East Germany had a state policy of doping their athletes, which was reflected in them winning Olympic medals and world records. Also, issues of unfairness exist independent of drugs, for example, access to training facilities, top equipment, sports scientists.

Doping in sport is regulated by the World Anti-Doping Agency, which was set up in 1999. They draw up a list of prohibited drugs and other technologies and regulate drugs testing, etc. Those other technologies are only biomedical ones (blood doping, gene doping). They don't regulate things like what equipment sportspeople might use, although this can make a considerable difference.



Some of the more common performance-enhancing drugs are:-

### **Anabolic Agents**

Anabolic agents (e.g. steroids) are synthetically produced substances which mimic the effects of testosterone, a hormone naturally derived in the body. Anabolic steroids increase protein synthesis and enhance muscle growth. They also have androgenic effects, including the development and maintenance of masculine characteristics such as the growth of the vocal cords and body hair.

### **Stimulants**


Stimulants, for example amphetamine and cocaine, are substances that act on the central nervous system. Stimulants can increase alertness, reduce tiredness, and increase competitiveness and aggression in athletes.

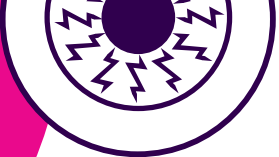
### **Beta blockers**

Beta blockers counteract the 'fight or flight' response and are used medically for some heart conditions, and also for anxiety. For example, they are used by some musicians and performers, to deal with stage fright. Because they reduce tremor they are banned in sports like archery, snooker and darts, but not in many other sports.

### **Erythropoietin (EPO)**

A naturally-occurring hormone which stimulates production of red blood cells. It's used medically to treat some forms of anaemia, and in sports, to increase the number of red blood cells, and hence the blood's ability to carry oxygen (like blood-doping, or training at altitude). There was a spate of young, elite cyclists dying in their sleep in the 1990s. Many think this was caused by EPO use. Increasing your red blood





cell count increases blood viscosity. Elite cyclists have a very low pulse rate anyway, and particularly when they are sleeping. The combination is obviously dangerous. A test for EPO in athletes was developed in 2000 and its abuse is now thought to be less common than it was.

### **Blood-doping**

Not a drug, but a prohibited medical technique. This involves taking some of the athlete's blood some weeks before a competition, extracting the red blood cells, freezing them, and then putting them back into the athlete just before the event. They'll then have a lot more red blood cells than normal, and their blood will be able to carry more oxygen. Training at altitude has a similar effect.

**Guidance note:** Just to warn you, the character Alina Dent talks about her brother who died young of a heart attack from using steroids. She also points out that impotence is one of the side effects of steroid use. Her character may upset students who have been in a similar situation. You can miss out any character, as long as you also miss out one from the other side, so the two sides are still matched.



# Suggested homeworks:

**1. Attitude continuum.** Ask students to write a list of all the methods that athletes might use to improve their performance. Get them to arrange them in order of possible harm to the athlete. Also in order of how unfair they might be (because other athletes may not get the same access to them). Then separate them into things they think should be banned and things they don't. Can they explain why things go in one category and not the other?

**OR**

**2. Research task.** Students to research gene doping (a new technology not yet used on humans, but which is already banned) and write an essay explaining what it is and what ethical problems it raises.

All facts in this kit have been researched. References can be found online at: [debate.imascientist.org.uk/sportsdoping](http://debate.imascientist.org.uk/sportsdoping)

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This debate kit is funded by The Physiological Society. Through its educational website, [www.understanding-life.org](http://www.understanding-life.org), The Society provides interactive resources and competitions to enhance physiology teaching at ages 11-19 as well as information on physiology-related careers. Bringing together over 3,000 scientists from more than 60 countries, The Society also offers schools the opportunity to engage with scientists online, in the classroom or at universities. For further information, please email [education@physoc.org](mailto:education@physoc.org).

