



Performance Enhancing Drugs



In today's session...



- Performance enhancing drugs (20 minutes)
- Ethical matrix (10 minutes)
- Debate (30 minutes)
- Summary (5 minutes)
- Feedback (5 minutes)
- Next week... (5 minutes)

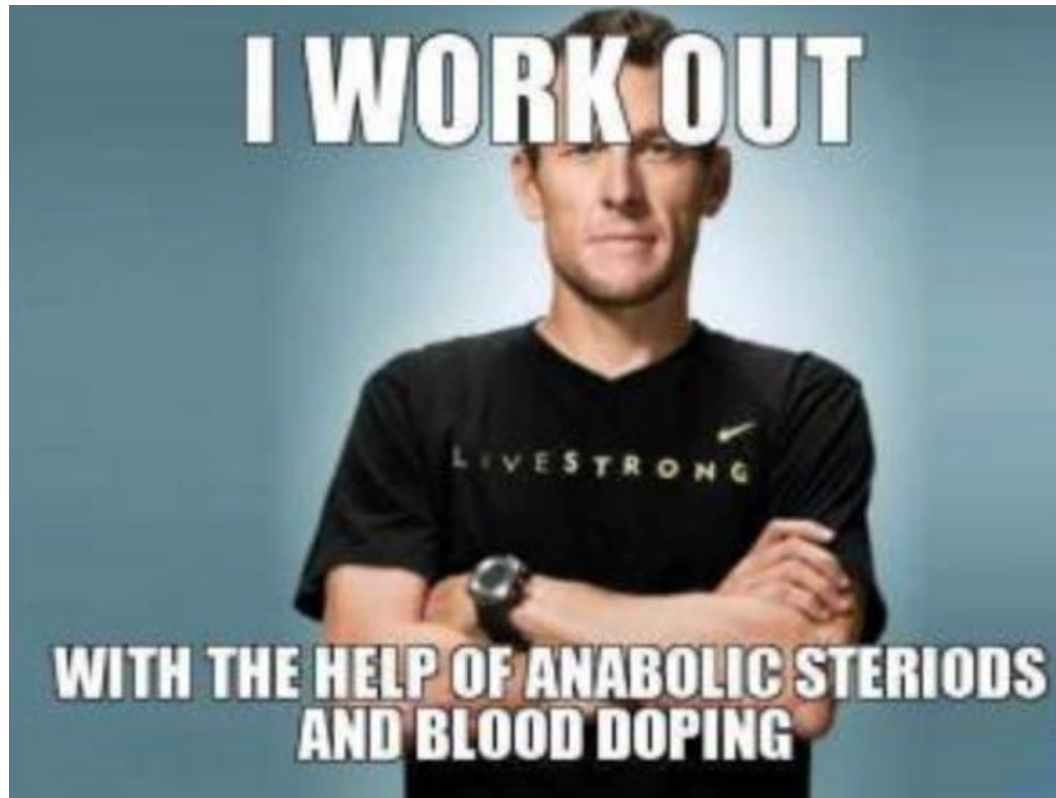


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Definition of Performance Enhancement

“The use of any support or practice that improves athletic performance or physical work capacity. It can be achieved through physical, pharmacological, psychological, nutritional or mechanical means” (Katch et al 2007).

Can anyone name one high profile dooper?



Prohibited Substances...



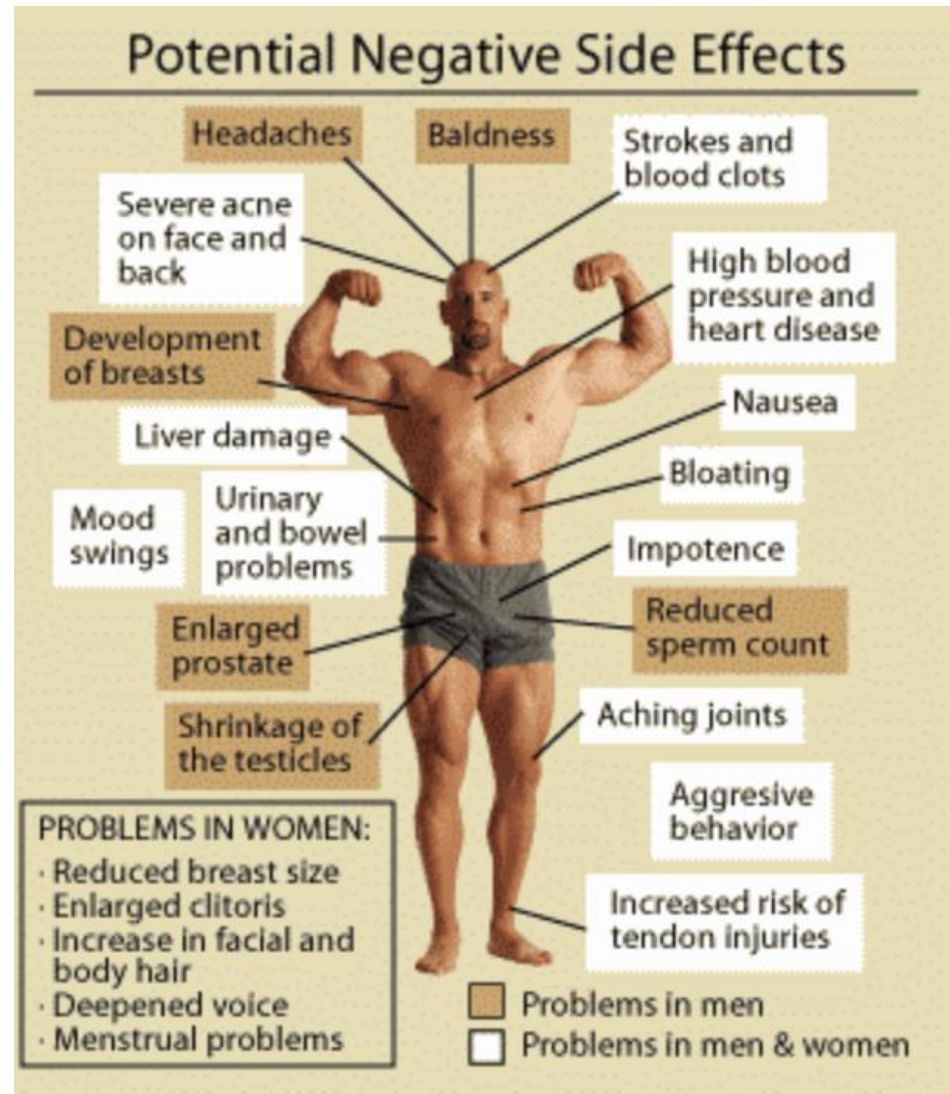
The World Anti-Doping Agency (WADA) publishes a list of prohibited substances and methods known as the WADA code:

- **Androgenic Anabolic Steroids**
- **Human Growth Hormone (HGH)**
- **Blood Doping**
 - Erythropoietin (EPO)
- **Stimulants**
- **Diuretics**



Androgenic Anabolic Steroids

- Around 60,000 people are thought to take them.
- They mimic the effects of the male hormone **testosterone** and are designed to:
 - Increase muscle mass
 - Help sports players train harder and for longer
 - Reduce recovery time

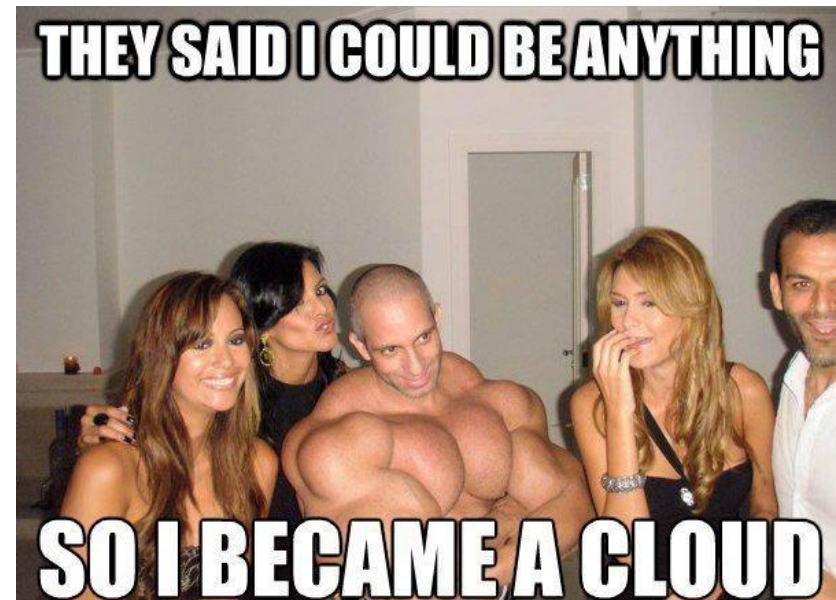


Human Growth Hormone (HGH)

- HGH is produced normally by the pituitary gland and stimulates growth in children and adolescents.
- But, synthetic HGH is also available and some sportspeople abuse it.
- Speeds muscle development, reduces body fat and strengthens muscles.

Side Effects:

- Diabetes
- Muscle/joint pain
- Hypertension
- Cardiovascular disease
- Decreased life expectancy

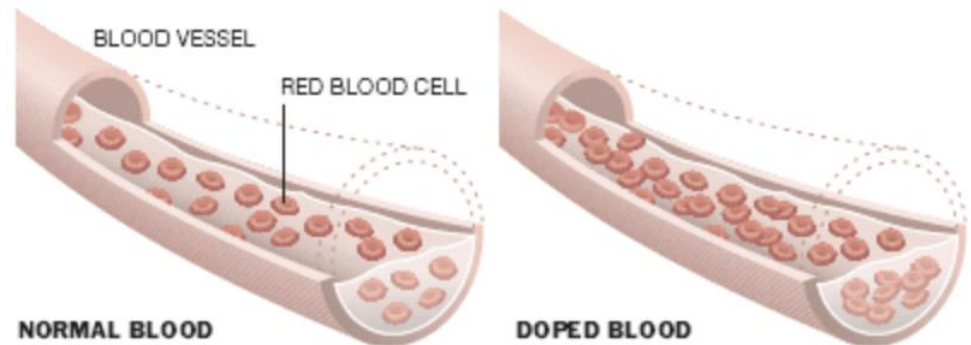


Erythropoietin (EPO)

- A protein hormone produced naturally by the kidney which stimulates the production of red blood cells (RBCs).
- It can also be manufactured and injected into the body.
- Increasing RBCs can dramatically improve an athlete's aerobic capacity and delay fatigue. It also improves metabolism and muscle recovery.
- Side effects:
 - Quick increases in blood pressure
 - Convulsions
 - Influenza-like symptoms
 - Increased cancer risk
 - Liver damage
 - Increased viscosity of blood



Elevated levels of red blood cells found in an athlete's bloodstream can be a sign of blood doping.



Stimulants

- Substances that elevate the level of physiological or nervous action in the body.
- Athletes use various stimulants to increase alertness and boost general performance.
- Examples: adrenaline, amphetamines and cocaine.

Side effects:

- Anxiety
- Headaches
- Hypertension
- Nerve Damage
- Physical collapsing
- Irregular heartbeat
- Increased blood pressure

INCREASE YOUR ENERGY, FOCUS, MOTIVATION AND ACTIVITY



AMPHETAMINES

COCAINE

METHAMPHETAMINE

MEPHEDRONE

PROLINTANE

MDMA

MDPV

DIMETHYLAMYLAMINE

MANY MORE

Diuretics



- Pills that help to rid the body of sodium, taking water with it when it is excreted in the urine.
- It can result in rapid weight loss as your water stores are depleted.
- Most commonly used by sportspeople needing to reach a certain weight class e.g. jockeys and boxers.

Side Effects:

- Headaches
- Muscle cramps
- Dizziness
- High blood sugar levels
- Abnormal heart rhythm
- Fatigue



Ethical Matrix

	Wellbeing (safety, welfare and health)	Autonomy (freedom and choice)	Justice (fairness)
Athletes			PEDs used as a way to level out genetic differences between athletes
Other competitors		Right to choose not to take them which should not be undermined by others	
Olympic Committee		Right to test athletes despite it sometimes being invasive	
Spectators		Right to know about the athletes' drug use	Paying to see true competition or best possible competition

Debate and Discussion

Should the use of performance enhancing drugs be legalised in the Olympics?

FOR

Assign yourselves the following roles:

- 1 athlete on PEDs
- 1 head coach
- 1 spectator
- 1 Olympic committee member

You are all debating **for** the legalisation of PEDs in professional sport.

AGAINST

Assign yourselves the following roles:

- 1 athlete not on PEDs
- 1 head coach
- 1 spectator
- 1 Olympic committee member

You are all debating **against** the legalisation of PEDs in professional sport.

Both groups have 5 minutes to plan your arguments and your reasons behind them.
Then we will have the debate and open the floor to questions.





Summary



- One major challenge concerning the Olympic Games is preventing the use of PEDs.
- PEDs are becoming harder to detect – Lance Armstrong continued for several years before being found out.
- There are a wide variety of prohibited substances, the most common of which we have covered in this lesson.
- Though they can improve sporting performance, many of these drugs go hand in hand with severe side effects e.g. cardiac problems, infertility and cancer risk.
- WADA continues to fight against the use of PEDs in sport – their motto **‘play true’** reflects this.

References



- World Anti-Doping Agency. (2016). *Prohibited List*. Available: <https://wada-main-prod.s3.amazonaws.com/resources/files/wada-2016-prohibited-list-en.pdf>. Last accessed 28th Feb 2016.
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- Stimulants - World of Sports Science 2013. Stimulants - World of Sports Science. Available at: <http://www.faqs.org/sports-science/Sp-Tw/Stimulants.html>. Last accessed 28th Feb 2016.