

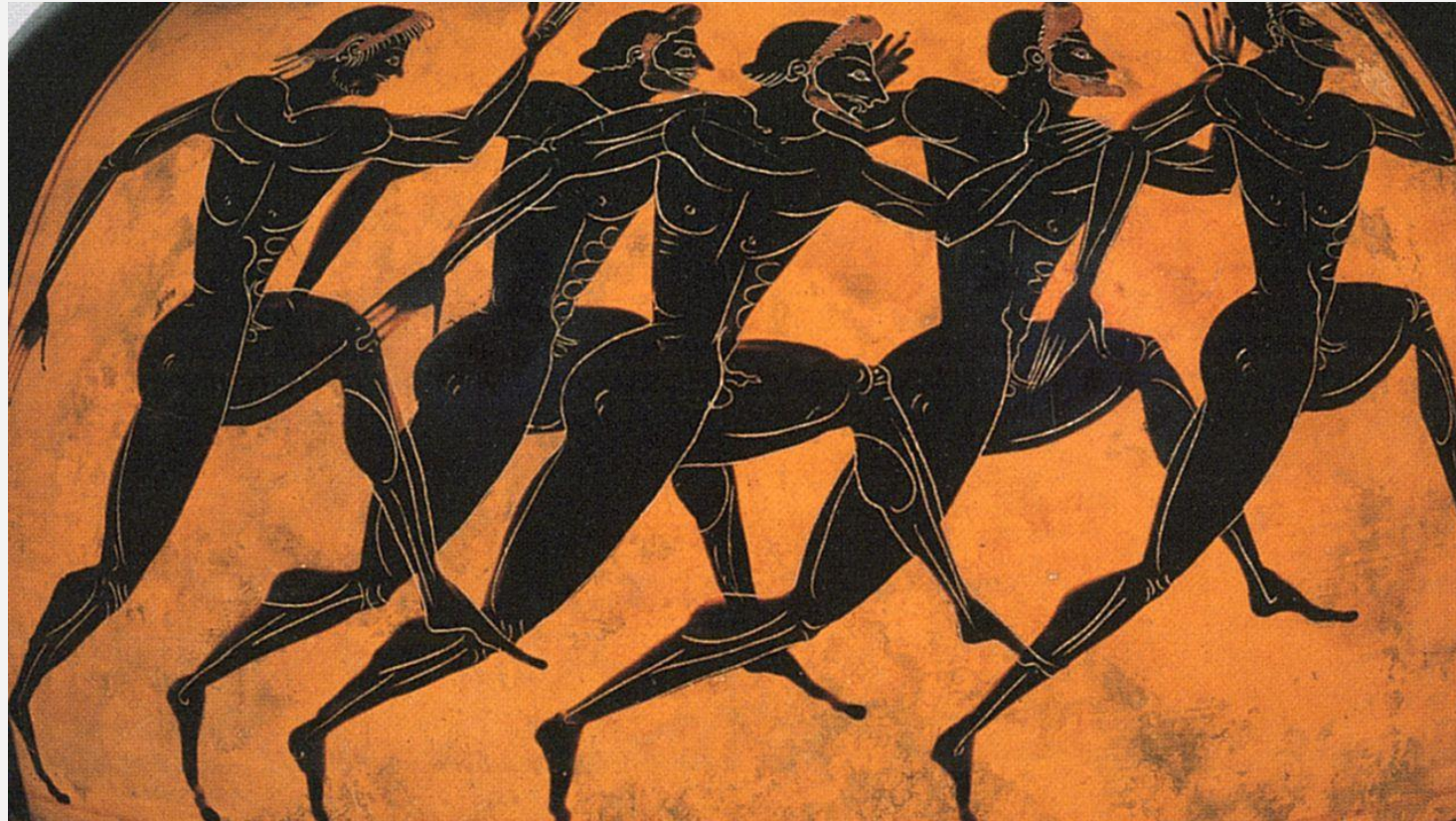


**SPORT AND
CHEMISTRY**

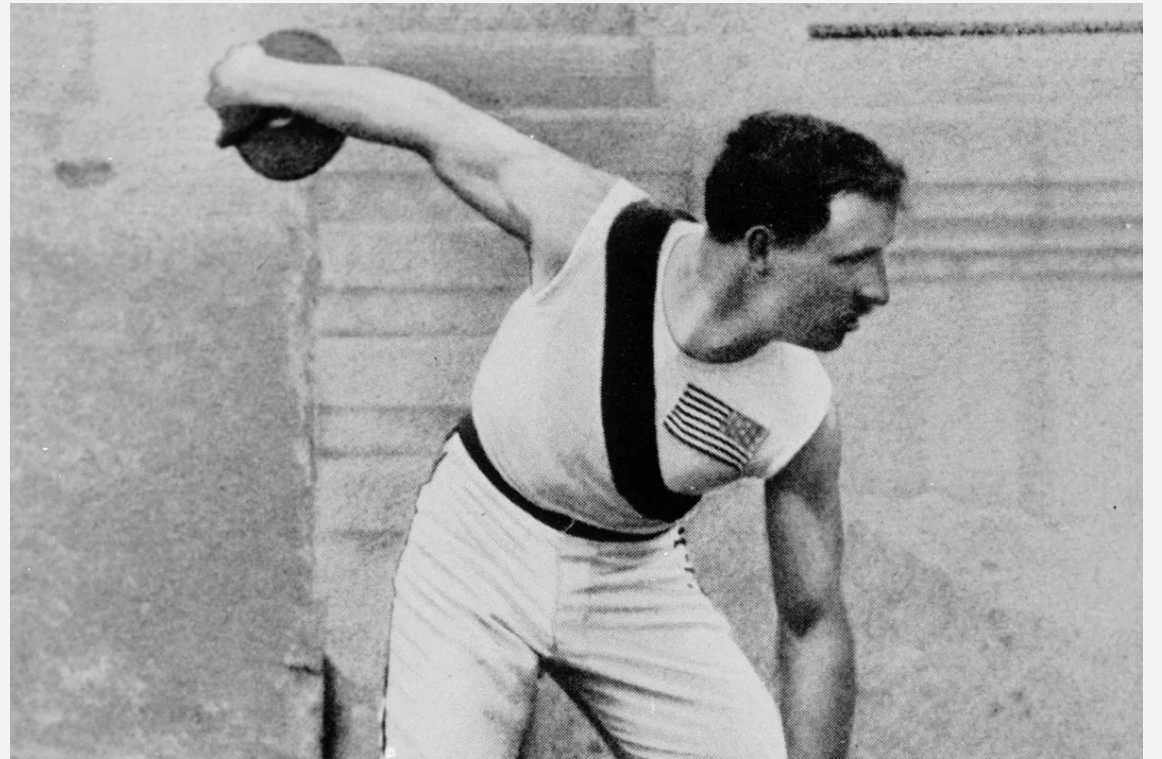
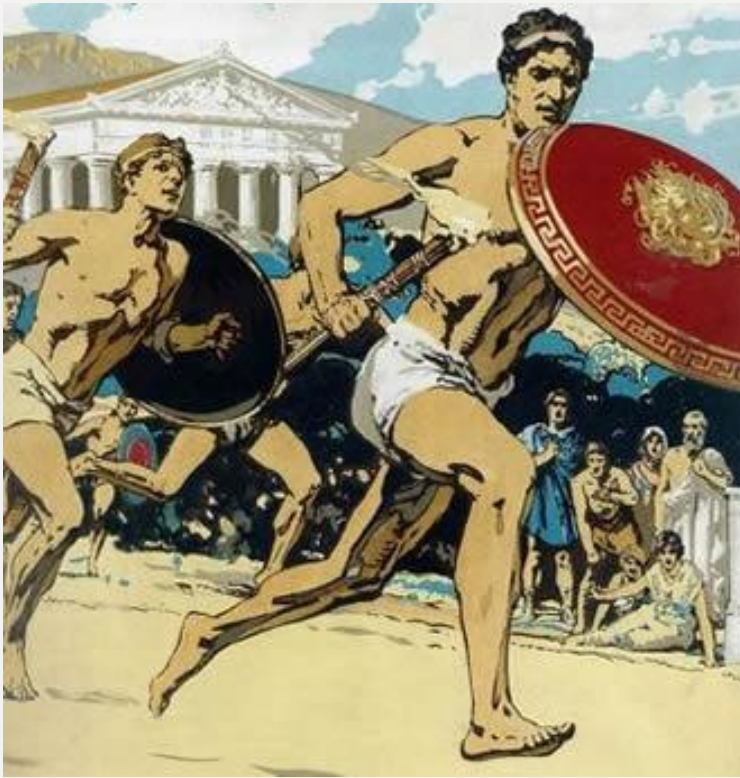
CHEMISTRY AND SPORT:

- **NEW MATERIALS**
- **DOPING**

FIRST OLYMPIC GAMES

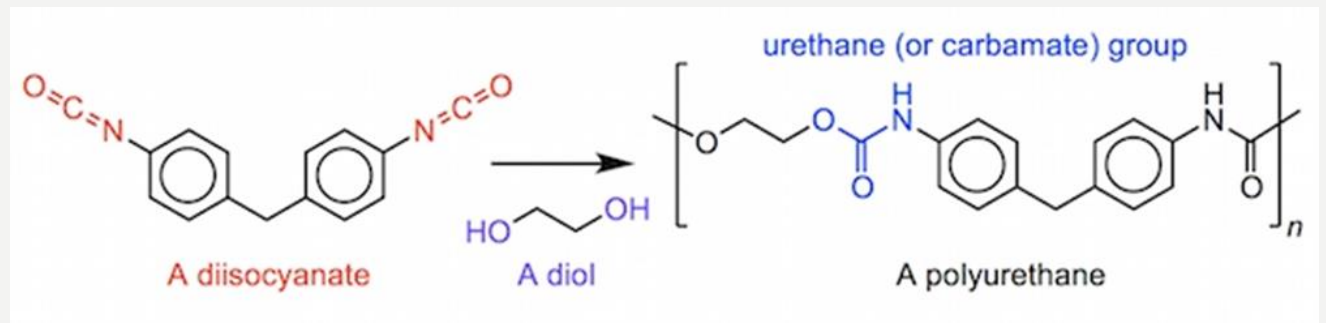


IN THE PAST...



... **AND NOW**





DOPING



WADA 'PROHIBITED LIST'.

- S1. Anabolic agents, Anabolic androgenic steroids (AAS) , Other anabolic agents, including but not limited to clenbuterol, tibolone, zeranol and zilpaterol
- S2. Hormones and related substances Erythropoietin (Epo) Growth hormone (Hgh), insulin-like growth factors, mechano-growth factors (MGFS) Gonadotrophins (LH, HCG), prohibited in males only Insulin Corticotrophins
- S3. Beta-2 agonists
- S4. Agents with anti-estrogenic activity Aromatase inhibitors Selective estrogen receptor modulators (serms) Other anti-estrogenic substances
- S5. Diuretics and other masking agents
- S6. Stimulants (prohibited in-competition)
- S7. Narcotics (prohibited in-competition)
- S8. Cannabinoids (prohibited in-competition)
- S9. Glucocorticosteroids (prohibited in-competition)
- P1. Alcohol (prohibited in particular sports)
- P2. Beta-blockers (prohibited in particular sports)

DOPING SUBSTANCES AND METHODS CLASSIFIED ACCORDING TO THE SUPPOSED ERGOGENIC EFFECTS

Increase of endurance performances and oxygen-carrying capacity of the blood

Erythropoiesis-stimulating substances (e.g. erythropoietin)

Blood transfusions Artificial oxygen carriers

Anti-asthmatic agents

Increase of power performances and muscle mass

Anabolic androgenic steroids (AAS) Recombinant hormones and gonadotrophins (growth hormone, LH and HCG) Other non-steroid anabolic agents (anti-inflammatory drugs)

Sports where concentration, steady action and ability to control movements are required

b-blockers

Calcium channel antagonists Masking agents (e.g. diuretics)

'Transversal' methods

Gene doping

Other substances with unlikely performance-enhancing activity

Stimulants

Narcotics

THANKS FOR YOUR ATTENTION

