35th ASIAN RACING CONFERENCE HONG KONG 2014

Fair Competition and Drug Control

Speaker:

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Leveling the Doping Field

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Outline

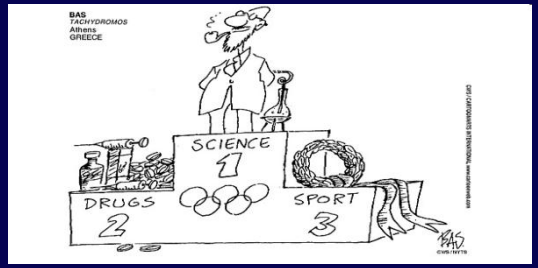
The Doping Field

- Evidence for Loopholes
- Expert Opinion
- Politics

NADO	Year	Tests IC	Tests OOC	Tests Total	Total rule violations IC	Total rule violations OOC	Total rule violations[#]
Czech Republik	2005	930	342	1272	31 (3.33%)	13 (3.8%)	44 (3.46%)
	2006	1037	372	1409	27 (2.6%)	1 (0.27%)	28 (1.99%)
	2007	1085	316	1401	30 (2.76%)	1 (0.32%)	31 (2.21%)
	2008	1046	344	1390	32 (3.06%)	1 (0.29%)	33 (2.37%)
	2009	1065	345	1410	27 (2.54%)	2 (0.58%)	29 (2.06%)
	2010	966	318	1284	16 (1.66%)	3 (0.94%)	19 (1.48%)
Germany[7]	2009	4878	9040	13918	34 (0.7%)	11 (0.12%)	45 (0.32%)
	2010	5132	8108	13240	48 (0.94%)	9 (0.11%)	57 (0.43%)
Ireland[3]	2009	346	483	829	3 (0.87%)	0	3 (0.36%)
	2010	321	434	755	3 (0.93%)	0	3 (0.4%)
Poland	2009	1383*	1261*	2644*	34 (2.46%)	3 (0.24%)	37 (1.4%)
	2010	1392*	1304*	2696*	25 (1.80%)	2 (0.15%)	27 (1.0%)
Russia	2009	6632	7868	14500	n.r.	n.r.	89 (0.61%)
	2010	7400	7400	14800**	75 (1.01%)	16 (0.22%)	91 (0.61%)
Serbia	2009	49**	20	69	2 (4.08%)	0	2 (2.9%)
	2010	329	72	401	n.r.	n.r.	19 (4.49%)
South Africa	2009/10	1148	1137	2285	15 (1.31%)	3 (0.26%)	18 (0.79%)

Data from the „Testing System“

- Unresolvable contradictions
- Further challenges for core assumptions



Proportionality of Testing

- Informed consent
- Evidence for benefit
- Reliability of testing including proper reporting

Loopholes: The Analytical Part

"While there may well be some drugs or combinations of drugs and methods of which the anti-doping community is unaware, the science now available is both robust and reliable. The real problems are the human and political factors."[1]

Theory ⟷ *Praxis*

- *Excellent detectability by doping tests*

  Anabolic Steroids, Stimulants, heterologous blood transfusion, old (>20 years) clinical pharmaceuticals except body's own hormones

- *Non-detectable application of*

  EPO, Testosterone, hGH, cortison, insulin, unknown designer steroids…

- *Not detectable by doping tests*

  IGF1, insulin, blood transfusion, designer steroids, metabolic modulators like Aicar, gene doping[2] …

[1]WADA Working Group headed by Richard W. Pound, MONTREAL, 16 April 2013
[2]Beiter, T. et al. *Gene therapy*, March 2011,18(3):225-31

Loopholes: The Human and Political Factors

Theory ⟷ *Praxis*

„The cheaters are always ahead of science“
Financials behind this assumption

Science

Approx. 6 mio. US$ for developing new detection procedures per year

⟷

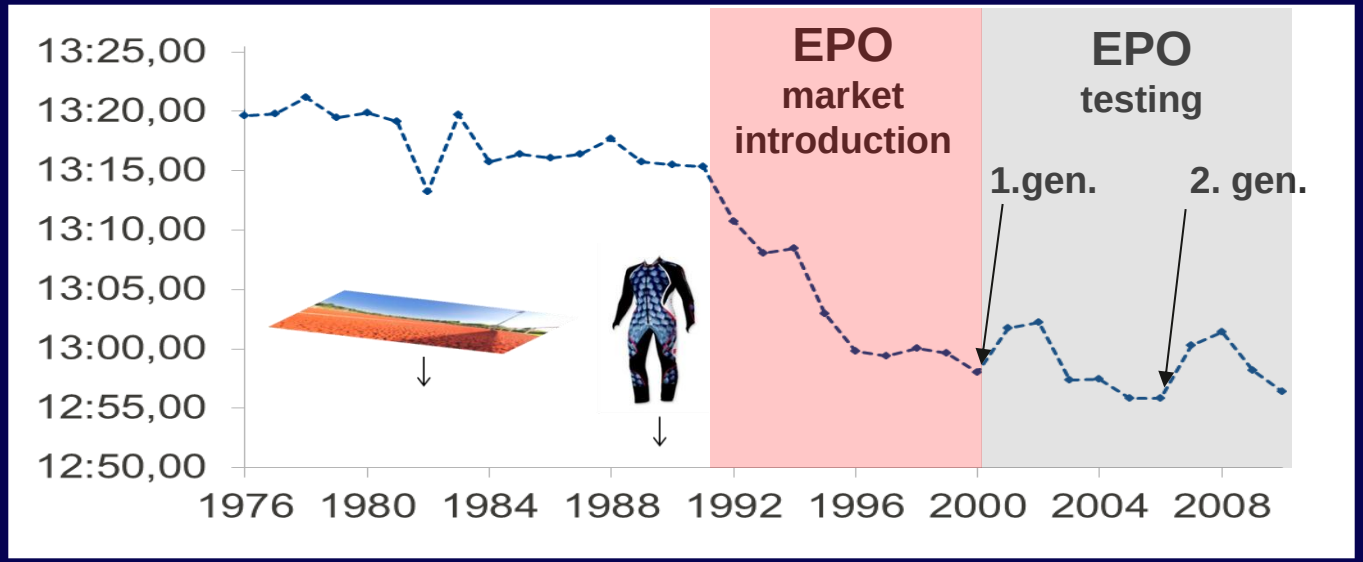
Elite sports

Total revenue 130 billion US$ and 350 million US$ for doping tests

Aggravation of doping

Epidemiological and Empirical Evidence for Doping

5000m: Average Time of the World‘s Top 20



Ernst and Simon *Drug Testing and Analysis* 2012

Epidemiological and Empirical Evidence for Doping

Research article

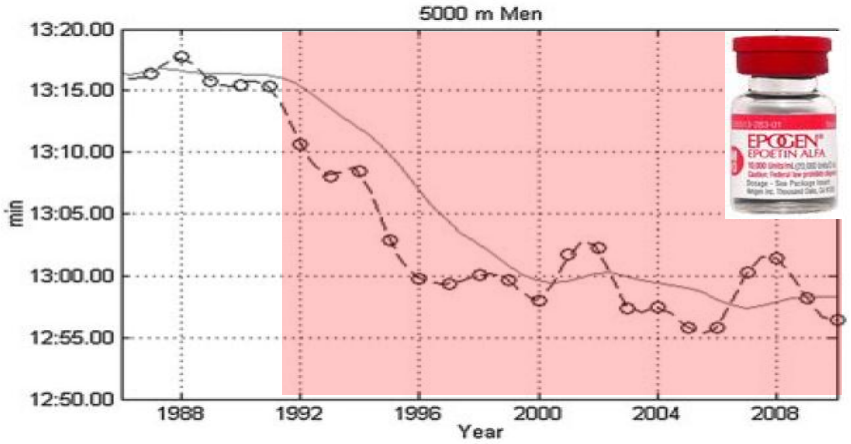
Drug Testing and Analysis

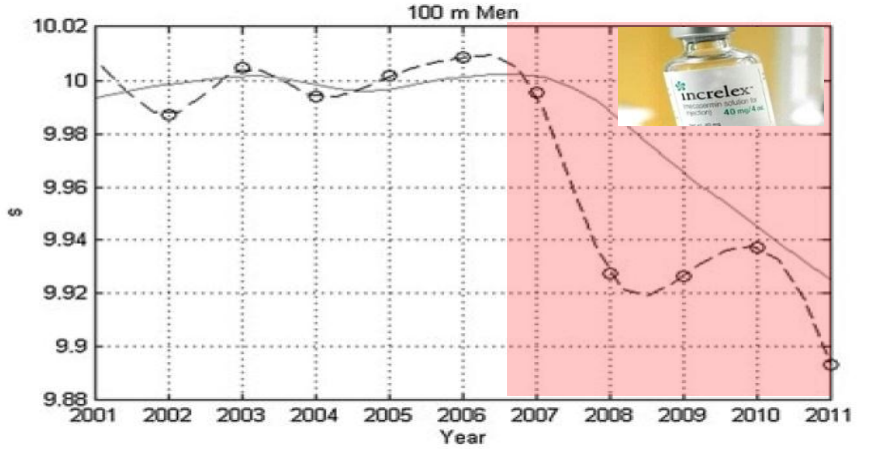
Received: 10 April 2012 Revised: 3 July 2012 Accepted: 25 July 2012 Published online in Wiley Online Library

(www.drugtestinganalysis.com) DOI 10.1002/dta.1406

A quantitative approach for assessing significant improvements in elite sprint performance: Has IGF-1 entered the arena?

Simon Ernst and Perikles Simon*





Epidemiological and Empirical Evidence for Doping

	n	Prevalence M1, n (%)	Prevalence M2, n (%)		n	Prevalence M1, n (%)	Prevalence M2, n (%)
Males	4028	12 (10–15)	12 (10–15)	Females	3261	18 (15–21)	18 (15–21)
Country A	205	48 (35–63)	78 (54–99)	Country A	445	46 (35–58)	50 (35–68)
Country B	352	3 (1–11)	1 (0–2)	Country B	130	8 (4–34)	2 (0–11)
Country C	257	23 (15–30)	28 (17–36)	Country C	147	12 (4–20)	14 (1–28)
Country D	208	6 (3–19)	5 (0–17)	Country D	103	1 (0–11)	0 (0–3)
Country E	160	18 (11–30)	18 (7–28)	Country E	106	11 (7–20)	8 (1–14)
Country F	148	6 (1–25)	2 (0–22)	Country F	110	6 (3–19)	0 (0–13)
Country H	160	39 (20–54)	51 (21–87)	Country H	65	36 (13–62)	36 (5–66)

All	7289	14 (12–16)	14 (12–16)
All nonendurance	1329	3 (0–8)	1 (0–3)
All endurance	4999	18 (15–22)	19 (16–22)

The IAAF Blood Passport System (BPS)

-> At least 14% of athletes in the BPS practice blood doping

Sottas et al. *Clinical Chemistry* 2011

The Epidemiological Evidence: Politics

New York Times, August 22, 2013

Antidoping Agency Delays Publication of Research
By TIM ROHAN

“Doping experts have long known that drug tests catch only a tiny fraction of the athletes who use banned substances ….

More than 2,000 track and field athletes participated in the study, and according to the findings, which were reviewed by The New York Times, an estimated
29 percent of the athletes at the 2011 world championships and
45 percent of the athletes at the 2011 Pan-Arab Games
said in anonymous surveys that they had doped in the past year.”

Lessons from the Court of Law

- Use of multiple drugs (IGF1, MGF, insulin, hGH, EPO, THG, testosterone)
- Use of highly specialized doping procedures (THG, blood transfusions)
- Athletes initially resistant to doping have to give in during their career
- Higher then expected prevalence in defined training groups and teams
- Higher then expected prevalence in defined sports medicine departments and associated with certain managers
- Spread of doping to different sports disciplines within certain regions (BALCO)

Irrational Laboratory Testing Figures

Article 14.4 of the WADAC requires all NADOs to publish and submit annual reports on testing statistics

Walter Palmer, Simon Taylor and Andrew Wingate Adverse Analyzing, May 12, 2011 UNI Global Union

"Only nine NADOs distinguish between in and out of competition testing in their reports."

Prevalence of Adverse Analytical Findings

13,738 Tests IC		**17,166 Tests OOC**
222	**:**	**28**
14	**:**	**1**

Athlete Whereabouts Requirement?

Irrational Laboratory Testing Figures

NADO	Year	Tests IC	Tests OOC	Tests Total	Total rule violations IC	Total rule violations OOC	Total rule violations[#]
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Prevalence of total rule violations

Tests IC (0,76%) **Tests OOC (0,18%)**

4,3 : 1

Irrational Laboratory Testing Figures

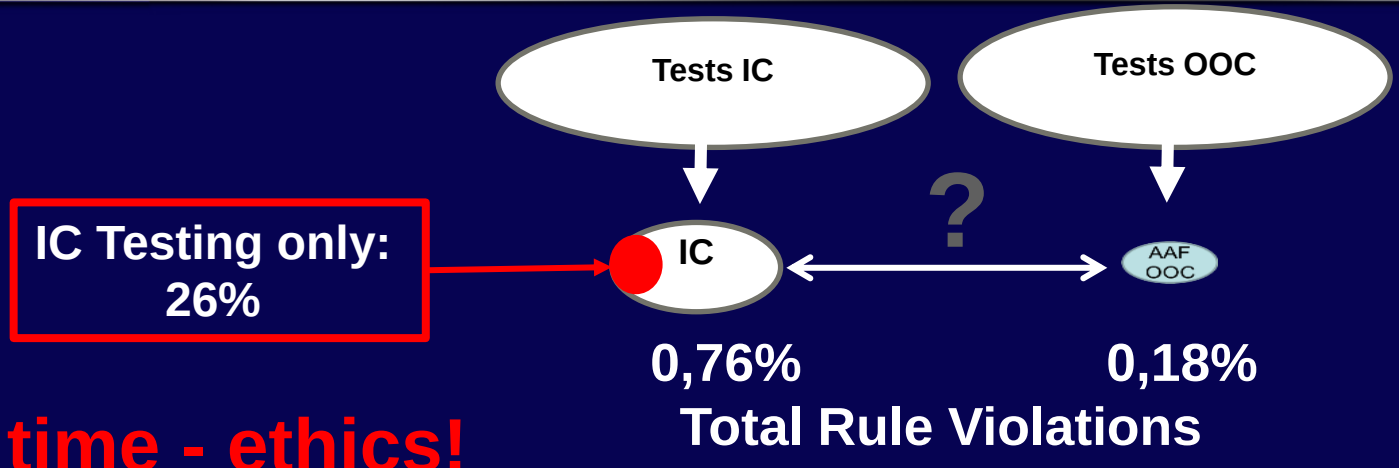
2011 *Adverse Analytical Findings and Atypical Findings*
Reported by Accredited Laboratories

Table E Number of Prohibited Substances Identified in Each Drug Class (All Sports)

Substance Group	Number*	% of all reported findings*
S1. Anabolic Agents	3,325	59.4%
S6. Stimulants	718	12.8%
S8. Cannabinoids	445	7.9%
S5. Diuretics and Other Masking Agents	368	6.6%
S9. Glucocorticosteroids	274	4.9%
S3. Beta-2 Agonists	225	4.0%
S2. Peptide Hormones, Growth Factors and Related Substances	125	2.2%
S4. Hormone Antagonists and Modulators	70	1.3%
P2. Beta-Blockers	21	0.4%
S7. Narcotics	20	0.4%
P1. Alcohol	5	0.1%
M2. Chemical and Physical Manipulation	3	0.1%
M1. Enhancement of Oxygen Transfer	1	0.02%
TOTAL	**5,600**	

In competition only + In particular sport only = 26.5%

Athlete Whereabouts Requirements?



Next time - ethics!

- Reliability including proper reporting
  - Code violation -> WADAC Article 14.4
  - Low figures -> Chance of false positives needs to be determined[1,2]

- Informed consent and evidence for benefit
  - Testing based on improper or unlikely assumptions

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Thank You !