

# Ethical issues derived from imperfect doping tests

**Werner Pitsch**  
**Saarland University**  
**Institute for Sport Sciences**

# Four possible results of doping-tests

By principle doping tests can result in four different ways:

	doped athlete	clean athlete
tests positive	true positive	<b>false positive</b>
tests negative	<b>false negative</b>	true negative

# Quality Parameters of Doping-Tests

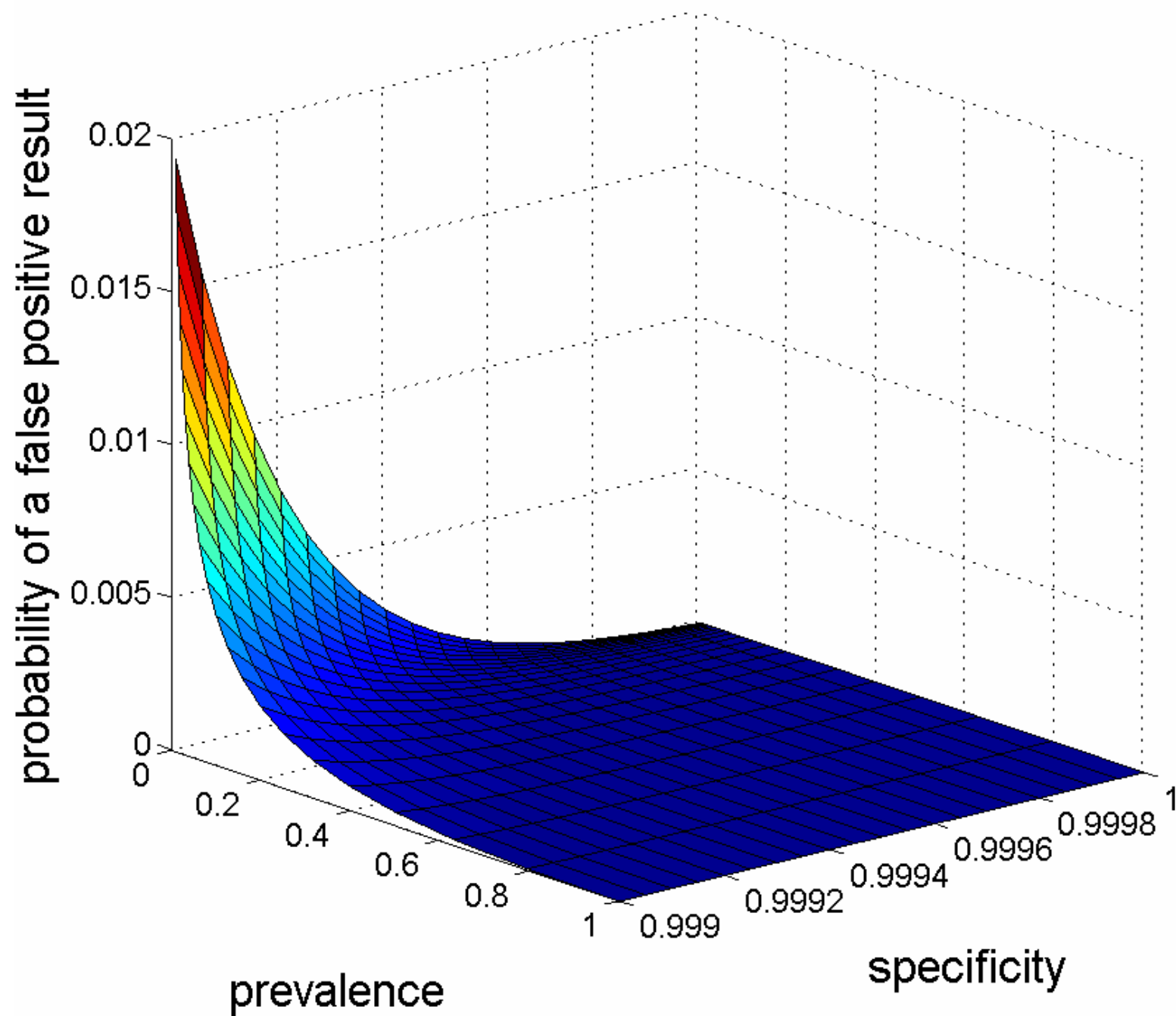
The quality of biomedicine laboratory tests are first and foremost defined by the sensitivity and the specificity of the test:

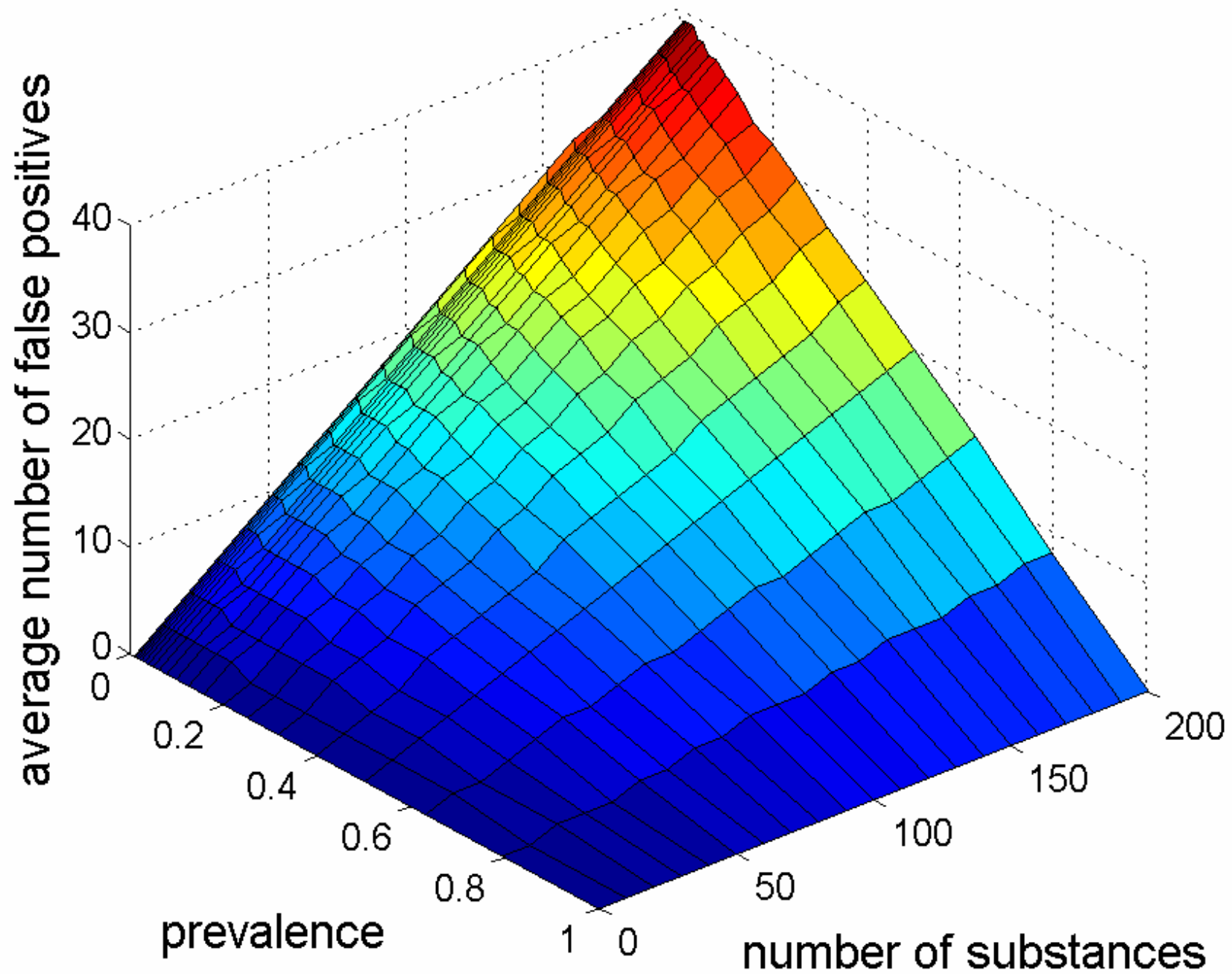
- Sensitivity: The probability that the test results positive if a positive sample is analyzed.
- Specificity: The probability that the test results negative if a negative sample is analyzed.

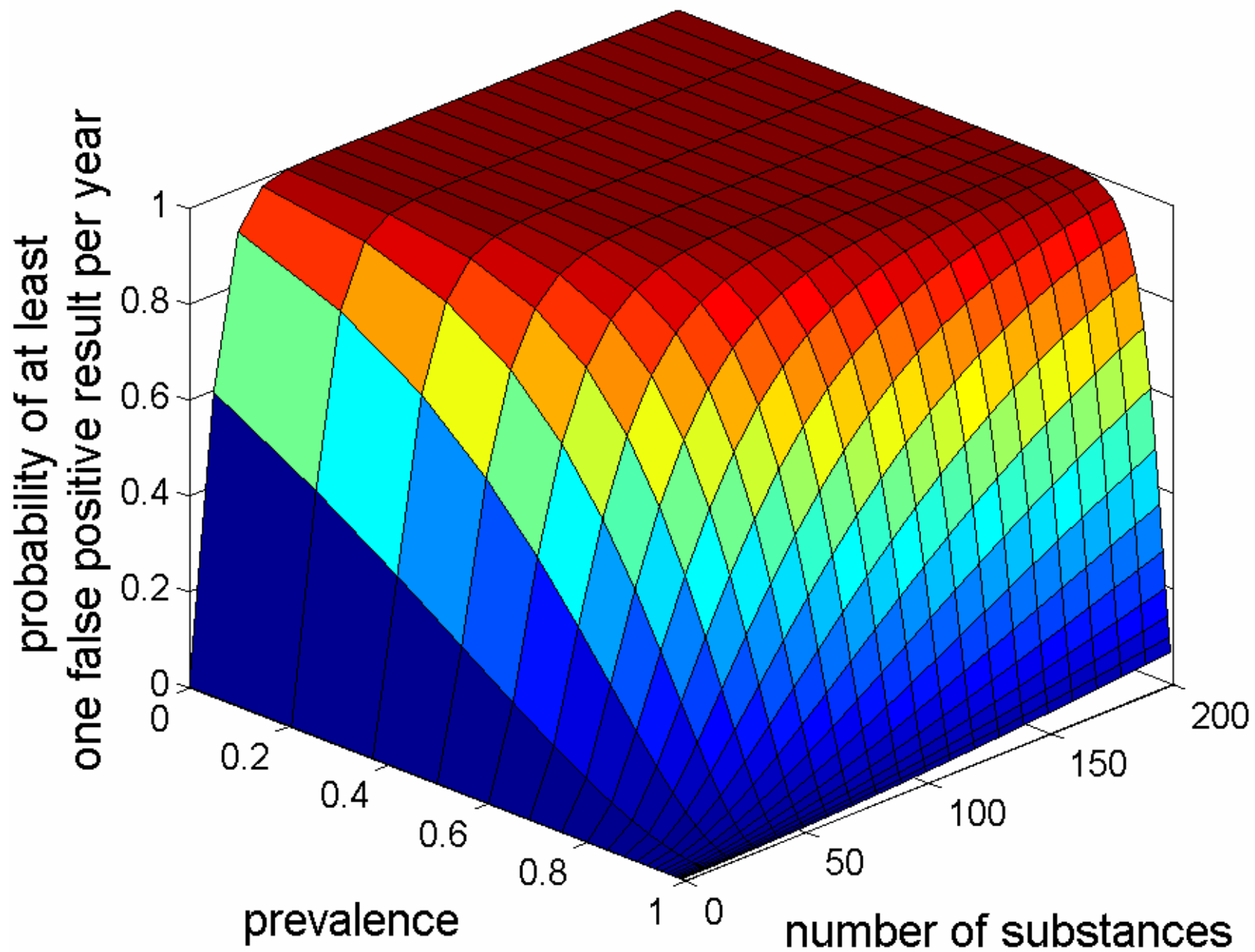
# Quality Parameters of Doping-Tests

The specificity and the sensitivity of doping tests in accredited Anti-Doping laboratories:

1. The „International Standard for Laboratories“ contains no minimum standard values for doping tests.
2. Data which can be used to calculate the quality parameters are collected by the WADA ...
3. ... but are treated as restricted knowledge.







# Summary

1. False positive doping test results cannot be avoided.
2. Consistent positive results of the A- and B-sample analyses are a strong argument for assuming a true positive doping case.
3. Nevertheless the probability of false positive results might be rather high at many plausible parameter values.
4. The restriction of information by the WADA inhibits a profound evaluation if the problem is dealt with seriously or if it is just neglected.

If you are interested in more:

Pitsch, W. (2009). "The science of doping" revisited: Fallacies of the current anti-doping regime. *European Journal of Sport Science* 9, 87-95.

Thank you very much  
for your attention

# Dilemmas of Anti-Doping

Assumption 1: Nearly every athlete uses doping techniques

- The problem of false positive doping tests can be neglected.
- The rate of “adverse analytical findings” (approx. 2 % p.a.) reveals that Anti Doping controlled by the WADA is a paper tiger.

Assumption 2: Nearly every athlete is clean

- The fight against doping has a strong deterrence effect.
- The problem of false positives becomes severe, but a certain amount of positives is necessary to legitimate Anti Doping.

**The tension zone for Anti-Doping:**

Moral hazard



Obvious  
Ineffectiveness