



## SKITTLES ROOM

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**THE SUBJECT OF CHESS AND DRUG TESTING** is not new to **ChessCafe.com**. Two years ago, Hans Ree's *Dutch Treat* column examined these issues, and more recently, Ian Rogers took a close look. In addition, there have been at least two Bulletin Board threads discussing the subject. We are now pleased to present an article from the scientific perspective.

After earning his B.S. in chemistry from Wayne State University, Eugene Adler entered the field of forensic toxicology. During the next 28 years, he was employed at the state Crime Laboratories for Michigan and Arizona, where he performed countless toxicological analyses of biological specimens, trained new toxicologists, testified in approximately 1,000 court cases, lectured widely throughout the U.S., and became a Diplomate of the American Board of Forensic Toxicology. Mr. Adler has served as a consultant to the National Highway Traffic Safety Administration and the American Prosecutor's Research Institute, has written a chapter for the "Drug Information Handbook for the Criminal Justice Professional", and was the second recipient of a national award for "Outstanding Research in the Area of Drug-Impaired Driving". Retired in 1999, his interests include sailing, hiking, classical music and chess.

We hope you enjoy...

## Chess and Drug Testing: A View from the Toxicology Laboratory

Eugene V. Adler, B.S. DABFT

After 28 years of analyzing blood and urine--enough to fill a swimming pool--for drugs, alcohol, and poisons, and after testifying in courts about one thousand times, I retired. No more drug testing *by* me (on suspected criminals), or *on* me (by a suspicious government). How nice not to think about drug testing for a while, and to just play chess and read about chess. In the tournament hall, I would find a perfect world of logic and justice, and...urine drug testing. But not just any drug testing. What FIDE now contemplates is extremely suspect, as we shall see.

Drug testing in chess is not just a matter for chess players and organizers; the dialogue must include toxicologists, the folks who "analyze biological specimens and apply the findings to the purpose of the law". Their input is crucial on this issue. Scientists are the natural allies of those who want clear explanations and justifications. So far, you are not getting them.

Forensic toxicologists have tried for decades to correlate urine drug concentrations to human performance, but finally, reluctantly, gave up. This deeply rutted road led to the inescapable conclusion that urine drug levels don't mean much in terms of demonstrating drug effects.

For the unique drug alcohol, there are useful correlations between blood alcohol concentration and drug effects. Unfortunately, the "alcohol model" does not work for most other drugs. The intuitive analogy fails (for fundamental pharmacological reasons).

There are scientific principles and guidelines which are true for all persons in all places...except international chess federations. FIDE has apparently discovered a secret method of figuring out from a urine specimen who has or hasn't been affected by caffeine.

This raises serious questions: Has the method been published in the formal scientific literature? Who are the scientific experts who will stand behind the method? Shouldn't the method be subject to the usual scientific scrutiny that other analytical methods receive? Should organizations just make up their own convenient science?

The defects in the proposed drug testing scheme are explained more precisely in the following statement. This is intended as a formal challenge to the proposed urine drug testing in chess, and is presented in the spirit of scientific inquiry. Errors are exposed over the chessboard; how about in the chess boardroom?

### **A Scientific Critique of the Proposed Drug Testing of Chess Competitors**

FIDE's proposed drug testing program for chess competitors appears to be based on the belief that urinary drug concentrations demonstrate drug-related performance enhancement. For most drugs, however, correlations between *blood* drug concentration and performance have not been established. Drug concentrations in *urine*, by definition, have no correlation with performance, because whatever is in urine already has been excreted from and, therefore, cannot affect the body. The primary purpose of urine drug screens is to reveal recent use of illicit substances, and it is unclear what purpose they could serve with a licit substance.

I understand that a positive (failing) test for caffeine is to be defined as a urinary concentration exceeding 12 micrograms per milliliter. Again, the presence of a drug in urine means only that the person has ingested or has been exposed to the drug at some prior time. It provides no information about drug dosage, time of use, or effects. Any interpretation of drug concentrations in urine requires knowledge of urine volume (water intake), urine pH, metabolism, and time since drug use, as well as the drug dosage.

Drug *analysis* and *interpretation* of the findings differ markedly. The analysis is factual information; quality laboratories can accurately identify and measure chemical substances in biofluids. Interpretation of results often is problematic and may require expert opinion.

There is formal consensus among forensic toxicologists that drug concentrations in urine do not establish the presence or absence of a drug effect. Guidelines of the American Academy of Forensic Sciences and the Society of Forensic Toxicologists specifically exclude urine as an acceptable specimen for "human performance testing".

The chess organizations embracing drug testing appear not to appreciate the limitations inherent in *interpreting* drug test results. Administrative decisions based on blood caffeine tests would be extremely difficult, and decisions based on urine caffeine tests would be indefensible in a court of law. Lacking a scientific basis, FIDE's proposed testing for caffeine in the urine of chess players is invalid.

I contacted Dr. Marcelline Burns, the director and co-founder of the Southern California Research Institute, one of the world's foremost authorities and researchers on drugs and human performance. (A description of the Institute's work may be found on SCRI's website.) Dr. Burns graciously agreed to allow me to quote her assessment of the proposed drug-testing program for chess:

"This strikes me as absurd and unwarranted. There are no scientific data to support testing for caffeine. We have conducted experiments with caffeine's ability to offset alcohol effects. It is a complex relationship, dependent on amounts of both substances. A moderate amount of caffeine awakens and alerts, as does any stimulant. That's why tea and coffee and colas are popular beverages. Too much (an ill-defined quantity, specific to substance and individual) degrades performance as the individual becomes over stimulated, wired, impulsive, disorganized, etc. I can't imagine that any serious chess competitor would be motivated to take a large quantity, and unless the use of traditional beverages is going to be banned, what possible cutoff could be established?

"Although there are data to support banning performance-enhancing drugs for physical competitions, I don't know of anything that boosts mental performance sufficiently to

merit drug testing.

"I could be wrong, but that is my opinion."

The envisioned drug-testing program appears incapable of demonstrating drug-related performance enhancement in chess competitions.

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