

Preface

Workplace drug testing was initiated by President Ronald Reagan when he issued Executive Order Number 12564 requiring federal agencies to drug test federal employees who are involved in sensitive positions as well as positions involving public safety. In today's business practice, a majority of the Fortune 500 Companies implement some practice of workplace drug testing in their company policies. Workplace drug testing deters employees from abusing drugs. A drug free workplace can lead to increased productivity, less job related accidents as well as improved morale in the workplace. Unfortunately, drug abusers also need employment and often try to beat pre-employment drug testing by ingesting a variety of substances available through the Internet or by adding various adulterants in vitro after collecting the urine specimen. Although ingesting various substances along with drinking plenty of water has some effectiveness in producing negative results, identification of low creatinine in a urine specimen submitted for drug testing is an indication of such an attempt and the toxicology laboratory may not perform the drug testing at all on that specimen and reported the specimen as adulterated. Similarly, adding household chemicals to a urine specimen can be easily identified by using specimen integrity testing (temperature, pH, specific gravity, and creatinine concentration) prior to drug analysis. However, more recently, chemicals can be obtained through Internet sites which, when added to urine specimens cannot be detected by routine specimen integrity testing. Some of these chemicals are also effective in oxidizing the drug and or its metabolite, thus causing false negative test results not only in the immunoassay screening step but also in the gas chromatography/mass spectrometric confirmation test. The test which is most affected is the testing of marijuana as the marijuana metabolite 11-nor-9-carboxy- Δ^9 -tetrahydrocannabinol (THC-COOH). Fortunately, spot tests and various other tests are available to detect the presence of such adulterants (nitrites, pyridinium chlorochromate, glutaraldehyde, peroxidase, etc.).

There is a constant battle between toxicologist and underground chemists who produce such adulterants. Fortunately, many states now ban the use of such adulterants in order to invalidate a drug test. Moreover, toxicologists are winning this battle because of the dedicated efforts of many investigators to stay one step ahead of these cheats. As a practicing toxicologist, I am involved with the pre-employment drug testing of our hospital and I wrote this book covering all major issues concerning

how people try to beat drug tests and defend positive test results, using my experience with pre-employment drug testing in our hospital. In each chapter, an extensive number of references are cited so that more interested readers can get more information on a particular topic that interests them. I hope this book will be helpful to toxicologists, medical technologists, pathologists, human resources professionals, and anyone who is interested in workplace drug testing.

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A Toxicologist's Perspective

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