

PRE-EMPLOYMENT DRUG SCREENS

A young pilot recently failed a pre-employment physical examination for a large airline. The examiner refused to explain why, so the pilot will never really know the reason for his failure.

He suspects, however, that he may have failed the urine drug screening test.

He told me that he had used Sudafed, an over-the counter decongestant which contains pseudoephedrine, for a cold the night before the examination. He told the airline examiner this and asked if he should postpone the exam. The doctor assured him that there would be no problem, so he went ahead with the examination.

A week later I performed an FAA Class I physical examination on this pilot and certified him. He was a healthy, normal-appearing, conservative young man.

I called the largest commercial medical laboratory I know and spoke to the chief of toxicology. His laboratory performs

drug screening tests for many other commercial firms, so he is an expert.

He sent me a two page list of 500 medications which can cause false positive results in urine drug screen tests.

Some of the drugs which give a false positive test for amphetamines include Primatene, Tedral, Actifed, Chlr-Trimeton, Drixoral, Novahistine, Nyquil, Sinutab, and Sudafed.

Drugs that contain codeine, such as Naldecon-CX, Robitussin A-C, and Pediacof cough syrup, will give a false positive test for opium.

Even something you eat can cause a false positive drug test. One teaspoon of poppy seeds well chewed and swallowed contains enough morphine to produce a positive test.

No national standard for drug screening tests yet exists. Some laboratories may use tests that are less than optimal in that they produce many false positive results on initial testing. Good laboratories will do additional confirmatory testing that will eliminate many of the aberrant false positive tests.

When you judge the accuracy of drug screening tests you must determine how specific and how sensitive the tests are.

The Council on Scientific Affairs of the American Medical

Association (Journal of the American medical Association, June 12, 1987) stated the following:

"The selection of the population for testing is crucial, since the prevalence of drug use varies among populations, and the prevalence greatly affects the positive predictive value of the test - that is, the percentage of true-positive results in all the positive results. For a drug test that has 90% specificity and 99% sensitivity, if the prevalence of use of the drug is 1%, the predictive value is 9%.

"Thus, if 10,000 people are screened and 100 (1%) use a certain drug, 99 of these 100 would test positive (99% sensitivity) and 990 of the 9900 non-users would test positive (10% positive, or 90% specificity). so that the predictive value would be 99/1089, or 9%.

"Conversely, 91% of the positive results, on confirmation, would be found to be false. The predictive value increases to 50% at a 10% prevalence....

"Forensically acceptable testing programs must include highly specific, technically more complicated, and more expensive confirmation techniques, which unequivocally establish the identities and quantities of drugs....

"Results that may have an impact on the life, liberty,

property, reputation, or employment of the person being tested must be able to withstand the scrutiny of litigation and therefore must meet forensic standards.

"Forensic confirmations must 1) unequivocally establish the identity of the compound(s) detected, 2) quantitate the compounds(s) detected, and 3) document a chain of custody."

A final specific corroborative test can be done if the urine tests positive - but such a test costs more money. At present, apparently, no law requires corroborative testing of an initial positive drug screening test.

What lessons can be learned from this?

1). Never take any prescription or over-the-counter drugs for perhaps as long as one month before undergoing a drug screening test. The half-lives of some drugs are extremely long and you have no way of knowing which drugs may show up in the urine days and even weeks later.

2). Remember that pilots must be at their best when flying. You should not take any medication which interferes with your reflexes, judgment, level of consciousness, or skills.

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