



Clinical Science News

**CLINICAL SCIENCE
LABORATORY**

Volume 1, Issue 1
August 2001

Oxycontin, The Newest Drug of Choice

You can pick up any newspaper and read about the crime surrounding its popularity or view a news cast on the indictments it has caused. The craze is getting bigger by the minute. Pharmacies are getting robbed and broken into in great numbers, only to obtain this newly popular drug, Oxycontin.

Oxycodone is a generic name for a synthetic opiate that has been known and prescribed for pain relief most often associated with cancer treatment. Usually prescribed under the brand names Tylox, Percocet, or Percodan this drug has been used by heroin addicts to supplement their dose of heroin until they can get their next "fix". Typically the pills available under the above brand names contain 5 or 10 mg (milligrams) of this medication.

More recently, within the last five years, a Connecticut pharmaceutical company has marketed a time release form of oxycodone under its brand name Oxycontin.

This medication originally aimed at pain relief for those undergoing the pain of cancer and its treatment, has time-release capabilities that permit the dose to be given over an extended pe-

riod of time even though only one pill may be taken. Abusers have found that crushing the pills will destroy the time release capabilities and make all the oxycodone present available immediately rather than slowly, over time.

Since the Oxycontin tablets typically contain from 10 to 160 milligrams, there is a considerable amount of drug available for ingestion. The higher levels of oxycodone found in the 100-160 mg tablets is sufficient to produce an effect very similar to that obtained from a similar amount of heroin. Therefore, this specific medication, Oxycontin, has become a significantly sought after and abused drug.

Analytically, the immunoassay that is performed to detect the presence of opiates in the urine can produce a positive result due to the presence of oxycodone. However, the cross-reactivity is low. It takes from 10 to 35 times as much Oxycontin to produce the same positive as morphine. So it would take about 5000 ng/ml of oxycodone to produce the same result as about 300 ng/ml of morphine.

This means that individuals can take therapeutic (and above) levels of oxycodone and NOT produce a positive urine immunoassay drug screen result. Abusers have

also gotten to know this weakness in the immunoassays that are being used throughout the country.

Here at Clinical Science we have developed a test that has high reliability for the detection of Oxycontin. This method is both less expensive and less time consuming than GC/MS. Nonetheless, each sample takes about 15 minutes for analysis. Hence, not all results can be guaranteed overnight. But, highly specific results are available in less than 48 hours for most samples.

Unlike immunoassays that can react with any opiate, this assay



looks only for oxycodone, and is therefore, far more useful for its detection than the non-specific immunoassays currently in use by most other laboratories.

If you are interested in adding Oxycontin to your drug screening profile, please contact Don Baker or Lynn Costigan.

Adulterants: The Hidden Facts

Adulterating a urine screen is almost an art. You have to know how to do it and get creative about it pulling it off. At Clinical Science Laboratory we see all kinds of attempted adulterations. But, we're smarter than the average "Joe". When we receive samples, we do more than simply

test for drugs. We evaluate each sample individually. We can automatically test for adulterants: did this person add something to the urine or ingest something that will make the test come out negative? People will often go to extreme measures in order to hide the fact that they are us-

ing medication or drugs. Confidentiality, the potential of the loss of freedom, or of their children, can force them to take extreme measures to avoid detection. Clinical Science can provide sensitive liquid crystal thermometer strips for each collection. These temperature strips will indicate

Inside this issue:

<i>Adulteration—Cont'd</i>	2
<i>Methadone Blood Levels</i>	2
<i>Did You Know?</i>	3
<i>Be a Contributor</i>	3
<i>Frequently Asked Questions</i>	3
<i>Please Step Into our Laboratory</i>	3
<i>Free is for Me!</i>	4

Points of Interest:

- Eating a poppy seed bagel might provide a positive test.
- How to determine methadone blood levels.
- Team work makes the difference in a smooth running operation.
- CSL provides all materials needed to transport your specimens to us.

Adulteration—Continued

whether the sample is within the accepted normal physiologic range of 90-99 degrees Fahrenheit. The combination of our laboratory tests and the use of temperature measurement devices to detect possible tampering produces optimal reliability for the samples tested.

Adulteration can come in many disguises. In many cases, the sample is diluted by adding water to it or by drinking large amounts of water shortly before donation.

Where collections are not as closely observed, donors can put numerous adulterants into urine, such as bleach, chromates, nitrites, glutaraldehyde, etc. It is probably not possible to detect every single adulteration, but we at CSL know our tests for all of

the above, and more, make for highly reliable screening results. Any suspicious sample is run through our adulterant panel to check for dilution and for the substances listed above.

CSL offers one of the most comprehensive adulterant panels in New England for samples that deserve such scrutiny. Our highly trained technicians perform initial screens for adulteration that indicate when further testing when is needed. We are usually able to outwit the cheaters. It's all part of paying attention to detail.

Some Adulterants Include:

- Golden Seal
- Puriblend Tea or Capsules
- Water
- Vinegar
- Tums
- Bleach
- Salt
- Oxidants (Stealth/Chromates)
- Windex

If you suspect an adulterant—mark it on the sample. We would be happy to research it.

We are always researching new ways to catch the cheater. It makes our job more interesting



The therapeutic range for methadone is usually considered to be from 0.10 to 1.00 mcg/ml.

Methadone Blood Levels

From time to time, we receive inquiries regarding serum methadone levels. Interpretation of these levels frequently gets confusing.

The therapeutic range for methadone is usually considered to be from 0.10 to 1.00 mcg/ml. Since some literature and laboratories report serum methadone levels using nanograms per milliliter (ng/ml), the difference in units can be disconcerting. If you have trouble making this conversion, our technical people will be more than happy to help you.

For patients who have attained a steady state with their methadone dosing, serum levels should vary between peak and trough by no more than 0.1 to 0.2 mcg/ml. Greater variation usually suggests that a steady state has not been attained or that there may be problems with the dose "holding" the client sufficiently.

We find that most methadone clients have therapeutic levels that

are successful in the 0.2 – 0.5 ng/ml range. Most levels are at the lower end of that range. However, some people tolerate and/or require higher levels. This should always be remembered when looking at serum level results.

Trough levels are collected within an hour or so before the next dose is administered.

Peak levels typically can be collected about 2-4 hours after oral dosing (as long as a non-sustained release formulation is employed). Levels at or below 0.3 mcg/ml usually indicate there is ample room for dosage increases where deemed necessary. Levels of 0.1 mcg/ml or less are usually less successful in terms of therapeutic efficacy.

Levels at or about 0.1 mcg/ml also must be evaluated relative to whether the full dose is being taken, whether it is sufficient for full efficacy and the appropriateness of the timing of the collection. Similarly, levels above 0.7 mcg/ml

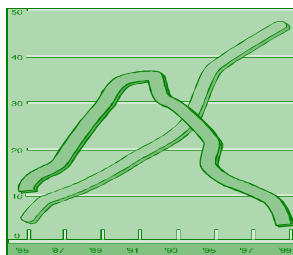
need to be evaluated. Such a level is fairly high, but well within acceptable levels for peak samples.

If the sample is a trough, the level may suggest too high a dose has been taken.

For the most reliable evaluation to occur, it is usually preferable to obtain both a peak and trough level. With such data, better evaluation can be made in dosing or dosage.

Urine methadone levels as opposed to serum levels are much less helpful in making any kind of therapeutic determination. Screening to detect the presence of methadone and/or metabolites is useful for evaluating compliance, but seldom proves reliable in determining either the efficacy of the dosing program or the likelihood that a dose can be increased.

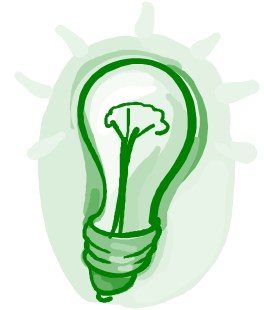
If you have specific questions or need additional information,



Did You Know??

The 10 Most Common Drugs of Abuse are:

- Amphetamines
- Barbiturates
- Benzodiazepines
- Cannabinoids
- Cocaine
- Methaqualone
- Opiates
- Oxycontin (the newest)
- Phencyclidine
- Propoxyphene
- Eating a poppy seed bagel can make a urine test positive for opiates.
- More and more companies are doing pre-employment testing.
- The use of mega-vitamins and herbs can cause false positives.
- Lidocaine, Xylocaine, Benzocaine mostly used as topical anesthetics do not cause a positive cocaine results.
- Over the counter allergy and sinus medication that contain ephedrine or pseudoephedrine can interfere with an amphetamine assay.
- Crack cocaine gets its name from the crackling sound it makes when smoked.
- Our technicians work around the clock to give you fast and accurate test results



Be a Contributor: Write, fax or email us any suggestions or questions you would like addressed in future newsletters. Our goal is to provide you with as much helpful information as possible, so you can make educated decisions. If we use your suggestion, your name appear in that edition of **Clinical Science News!**

Frequently Asked Questions

What is a screening test?

The initial test or screening test, uses an antibody to detect a drug or group of related drugs. It is called an "immunoassay". If the reaction of the antibody with the patient's urine gives a response greater than the cut-off, the specimen is presumptively positive.

What is a confirmation test?

Confirmation testing is done by a procedure that is chemically different from the original assay and must have a greater level of sensitivity and specificity for the target drug. The drugs are extracted and separated so that each can be determined individually. The separation procedure is known as chromatography. When the drug in question is detected, the positive result is confirmed.

How does metabolism affect drug screens?

Metabolism is a process performed by the body to change a compound into a simpler one called a "metabolite". The reason for this is so they can be made more water-soluble in order for the kidney to excrete them. A drug screen may actually look for the metabolite of the drug because the parent compound may not be found.

What is an Immunoassay?

An immunoassay is a test that uses antibodies to detect the presence of drugs and other substances in urine. Each immunoassay uses antibodies that react only with that particular drug for which the sample is being tested. In the test mixture, the antibodies attach themselves to the drug if it is present.

Please Step into our Laboratory

Clinical Science Laboratory (CSL), a Massachusetts corporation, was incorporated in 1974 by Stanley Elfbaum, PhD., DABCC and Louis Amoruso, PhD.

It is located in the heart of Mansfield, MA. With ready access to Boston, Cape Cod, Providence and all surrounding areas.

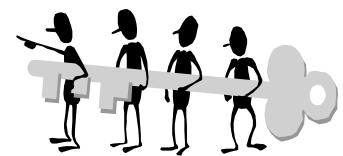
CSL provides our own courier service to pick up from interstate and regional accounts.

The laboratory itself is 8,000 sq. ft., housing both the laboratory and administrative offices. It is close to the train station and trucking routes for easy access of deliveries.

CSL enjoys an excellent reputation nationwide in clinical chemistry and toxicology. It has been servicing the needs of communities, hospitals and substance abuse clinics for over a quarter of a century.

CSL is open twenty four hours a day, 7 days a week. There are over 60 staff members who promote

quality in everything they do. From the front door where visitors are greeted by Heather Keniston, to the back door where Al Zweigman ships supplies to our customers, each staff member is well trained and knowledgeable to help you get the results you need.



TEAMWORK!



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Because Every Result is Important



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FREE is for Me!

Clinical Science Laboratory provides **FREE** overnight shipping from any location nationally.

We use Federal Express service to get all shipments to us safely and quickly.

You receive pre-printed air bills, shipping labels and self-seal boxes and bags to make the job of packaging the samples a **SNAP!**

We also provide everything needed to transport your sample to us including:

- Cups & Caps
- Zip-lock bags
- Requisitions
- Tubes
- Band-aids
- Alcohol Preps

IT CAN'T GET ANY EASIER!



Give us a call or fax when you start to run low and we will gladly ship more!