



Specimen Dilution

Specific gravity and creatinine are validity tests used to determine specimen dilution. Creatinine is a breakdown product of creatine phosphate in the muscle, and is produced at a fairly constant rate in each individual. The specific gravity of urine is a measurement of the particles in the urine, including minerals, salts and compounds, compared to water. Water has a specific gravity of 1.0000.

A diluted specimen is a urine sample with both creatinine and specific gravity values which fall below acceptable ranges, 20mg/dL and 1.0030 respectively. Both are tested routinely on every sample by the TASC laboratory and are reported accordingly. These are guidelines established by the Substance Abuse and Mental Health Services Administration (SAMHSA).

There are several reasons which may lead to a diluted sample. The most common is the intentional or unintentional ingestion of excessive amounts of water/fluids. The idea behind diluting a specimen is to lower or dilute the drug concentration in the urine and therefore test below the cutoff level or negative. Typically ingesting 1-2 liters or more within an hour of testing is sufficient to dilute most specimens for a 2–6 hour period. Diuretics such as caffeine and cranberry juice and some medications, including water pills may cause diluted urine samples. There are also some medical disorders, such as diabetes that may cause an increase in urine production leading to diluted specimens.

There is an abundance of products available to the public that proclaim to mask the presence of drugs in urine, or to flush drugs out of the system. Some examples are Emergency Detox Capsules or XL capsules for those over 200 pounds effective in 45 minutes, Rapid Clear Lemon Lime Detox Drink, Detoxify Xxtra Clean Tropical Fruit, Total Eclipse Detox Maximum Strength and Super Flush Magic Potions. Drinking bleach or vinegar, diluted with large amounts of liquids may also be attempted. These products work on the principal of dilution. Instructions indicate to drink copious amounts of fluids and urinate frequently prior to taking a drug test thereby diluting the specimen. There is no ingested substance that will remove the drug from an individual.

Another way to dilute a specimen is to add a liquid directly to the sample container during the collection process. TASC utilizes visual monitoring so additives are not an effective way to dilute a sample at TASC collection sites.

If a client provides a diluted specimen, it is recommended that it be discussed with the client. Their diluted sample(s) may be explained by medications they are taking or

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medical conditions such as diabetes. The body naturally produces approximately 0.5-1.0 mL of urine per minute; TASC requires a minimum of only 30 mL of urine for a drug test. Therefore the client does not need to drink excess fluids to ensure they can provide a sample when needed.

When evaluating a diluted result, TASC recommends reviewing the donors testing history for patterns. Is the person missing test dates and/or routinely testing diluted? These questions may help to determine if the person is purposefully diluting their sample in an attempt to “beat” their drug test. TASC considers diluted samples as non-compliant. It is recommended to retest the client as soon as possible. Provide clear and concise instructions to the client at the beginning of a program as to how diluted results will be interpreted and affect their program. Make the client accountable for their actions and their drug testing program.

If there are any questions or concerns please contact the TASC Laboratory at (602) 257-7588