Creatine, Creatinine and Diluted Specimens

Diluted specimens from a directly observed test are not the result of the donor "cleaning out their system." Diluted specimens are the result of consuming copious amounts of water (fluid) in a short period of time before the specimen was collected. Products that claim to "clean out the system" or "mask the presence of drugs" always include instructions to drink large amounts of water with the product. It is not the product that dilutes the specimen, it is the large amount of water in a short period of time (usually within one to two hours) of the specimen collection. Although a few of these products contain diuretics, most do not. Products like "Monster" drinks, Green Tea, Cranbury juice, etc. do not have properties capable of masking drugs or diluting specimens. Copious amounts of these products consumed in close proximity to the specimen collection would, however, dilute the specimen sufficiently to mask or prevent the detection of a drug or drugs.

Creatinine is a by-product of muscle contraction. All humans produce Creatinine. Creatinine is not the same as Creatine. Creatine is an organic acid that occurs naturally in humans and helps to supply energy to cells in the body, primarily muscle. Creatinine is a derivative of Creatine. Commercially manufactured Creatine, often consumed by body builders, will not dilute a urine specimen or mask the presence of a drug.

Creatinine levels should average in range of 30 to 300 mg/dL, with any level above 20 mg/dL considered acceptable. Creatinine levels below 20 mg/dL are not typical or normal and indicate that the donor has consumed copious amounts of fluid with one to two hours of the specimen collection. Creatinine levels are not affected when donors consume water throughout the day, but rather when donors consume large amounts of water (or other fluids) in a short period of time just prior to providing a specimen.

Determining what was in the mind of the donor is a more difficult issue. Was the donor attempting to dilute the specimen on purpose – or -- out of concern that he or she would not be able to void on demand? The answer to this question typically is found by looking at the Creatinine levels of the donor's previous tests. If the donor has a history of average (or non-diluted) specimens and a specimen is diluted for no apparent reason, this should raise a flag of suspicion. Donors with diluted specimens and a history of drug use are always suspect and should always be cautioned not to consume large amounts of fluid prior to a drug test.

In summary, it is not a product or substance that dilutes the specimen; it is the consumption of large amounts of fluid immediately prior to the specimen collection.