Acute water intoxication as a complication of urine drug testing in the workplace.
Klonoff DC, Jurow AH.
Department of Medicine, Peninsula Hospital, Burlingame, Calif.

Abstract
Urine drug testing is now mandatory in many industries. We report the first case, to our knowledge, of an adverse consequence of drug testing in the workplace: acute water intoxication. We discuss normal water metabolism and the adverse effects of water loading and impaired renal function on free water clearance. We present a literature review of seven other cases of acute voluntary water intoxication in patients without chronic psychiatric or neurologic illness. For workers undergoing urine drug testing we conclude that risk factors for acute water intoxication include (1) intake of more than 1 L of water and (2) impaired urine dilution. In a recently drug-tested worker, symptoms of cerebral dysfunction should suggest the possibility of water intoxication.

Fatal water intoxication of an Army trainee during urine drug testing.
Gutmann FD, Gardner JW.
Office of the Armed Forces Medical Examiner, Armed Forces Institute of Pathology, Rockville, MD 20850, USA.

Abstract
An Army trainee developed acute water intoxication, hyponatremia, pulmonary edema, and fatal cerebral edema. This is the first report of a fatality related to urine drug testing. This resulted from supervised excessive water ingestion in an attempt to induce a sufficient urine specimen for substance abuse testing. To avoid a similar preventable death in the future, we make several recommendations. These include limiting the volume of ingested fluid to eight ounces every 30 to 45 minutes, not to exceed 40 ounces, and providing a relaxed, reassuring environment when obtaining urine specimens for substance abuse detection.

Water intoxication presenting as a suspected contaminated urine sample for drug testing.
Finkel KW.
Division of Renal Diseases and Hypertension, University of Texas-Houston Medical School, Houston, TX 77030, USA. kevin.w.finkel@uth.tmc.edu

Abstract
A patient was evaluated medically after submitting a urine sample for drug screening that was considered inappropriately dilute. Although it was thought that the dilute urine was the result of purposely adding water, the medical evaluation revealed that the patient had chronic water intoxication from a very strict weight loss regimen. The effect of dietary solute intake on water metabolism by the kidneys and the development of hyponatremia are discussed.