

A Test for Alcohol -- And Its Flaws

*A new screen detects Sunday's gin in Monday's urine
but it may be ensnaring some innocent people too
Beer or Hand Sanitizer?*

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HARRISBURG, Pa. -- The state of Pennsylvania this year suspended Nancy Clark's nursing license, saying the recovering addict violated her agreement to remain free of alcohol. Its evidence: a new type of urine test that Ms. Clark flunked.

The new analysis "is the gold standard of testing," Shawn E. Smith, a lawyer for the state, argued during a June 7 hearing here on Ms. Clark's fate.

Ms. Clark counters: "I didn't drink."

Throughout history, few questions have prompted more lies than, "Have you been drinking?" For decades, the truth has been obtainable through urine tests and breathalyzers. But since alcohol dissipates from the system in a matter of hours, that truth always has been as fleeting as drunkenness itself. Whether a person is drunk this moment can be documented. But how about last weekend?

Now comes a test that can answer that question. Known as EtG, the test is being administered by the industry that searches the urine of millions of Americans annually for illicit drugs. Because alcohol is legal, EtG testing is being performed only within a hidden society of people who aren't supposed to drink at all -- and are required to provide regular urine samples to prove it.

A breakthrough for the \$4 billion-a-year urine-testing industry, the new test doesn't screen for alcohol. It screens for ethyl glucuronide, or EtG, a byproduct of the metabolism of alcohol, which remains in the system for about 80 hours. Now that Sunday's gin can be detected in Monday's urine, about 10% of people who had been passing conventional urine screens are testing positive for alcohol, say administrators of the test.

About 20,000 urine samples a month are now being tested for EtG, which was introduced about two years ago, and that growth is continuing exponentially. At \$25 -- compared with about \$7 for a standard drug screen -- EtG represents an important new source of revenue for the urine-testing industry, whose largest players include Quest Diagnostics Inc. and National Medical Services.

Little advertised, though, is that EtG can detect alcohol even in people who didn't drink. Any trace of alcohol may register, even that ingested or inhaled through food, medicine, personal-care products or hand sanitizer.

The test "can't distinguish between beer and Purell" hand sanitizer, says H. Westley Clark, director of the federal Substance Abuse and Mental Health Services Administration's center for substance-abuse treatment. His office intends to study EtG and issue a statement on its use in the fall. "When you're looking at loss of job, loss of child, loss of privileges, you want to make sure" the test is right, he says.

Because EtG is simply a molecule that any laboratory can identify, nobody owns the test. Urine-testing companies are marketing it to courts, which increasingly demand abstinence from drunk-driving defendants. The test is also being marketed to boards or companies that license workers in health care, aviation, law and other professions. These boards routinely require urine monitoring of professionals who are recovering addicts. About 4,500 physicians alone in the U.S. are subject to urine monitoring.

The urine-testing industry doesn't need federal approval for tests that aren't used to monitor federal employees and aren't sold over the counter. Testing firms say it is up to their clients -- the courts and licensing boards -- to decide how to use the results.

"It's a powerful tool," says Doug Lewis, president of United States Drug Testing Laboratories Inc. near Chicago. "But it's only a tool."

Some in sobriety enforcement contend any alcohol, however ingested, could trigger a relapse in recovering addicts. "They must abstain from alcohol in any form," says Kevin Knipe, manager of a Pennsylvania state program for monitoring physicians, nurses, pharmacists and others.

Yet critics worry that growing acceptance of the EtG test is punishing those who haven't relapsed or aren't problem drinkers. They argue it's unfair to demand addicts produce urine free of any trace of alcohol because there is no comprehensive list of products that contain it. Mouthwash and cold medicine are sources of alcohol. It can also be found in pastries, perfume, salad dressing, insecticide, ripe fruit, lunch meat, vanilla extract, ice cream and automotive fuel.

Such critics have gained an unusual ally: the physician who pioneered EtG testing in America. "Use of this screen has gotten ahead of the science," says Gregory Skipper, an Alabama addiction specialist and recovering addict. He says he has received about \$10,000 in consulting fees, mostly from urine-testing firms, in connection with the test.

An unfair monitoring test could dissuade addicts from entering monitoring programs voluntarily. After Ms. Clark, the Pennsylvania nurse, confessed her addiction to her supervisor, she entered a state-monitored program, requiring attendance at two 12-step meetings a week. On average, she has attended three a week, her sponsor says. She also has to phone a toll-free number each weekday morning to find out whether a urine sample is required that day.

In five years, she has never failed to call or submit a specimen, according to court testimony. She pays the \$120-a-month cost of monitoring. According to testimony, after

getting sober, Ms. Clark joined a church, entered its ministerial program, started a program to entertain patients and raised three children.

In 2004, the state of Pennsylvania introduced the EtG test. After flunking it, she says she read the label of every imaginable product -- edible and inedible -- only to flunk it again. "I don't know what else I could have done," says Ms. Clark, 49, who has practiced nursing since 1978. She recently passed a polygraph test asking whether she has drunk alcohol.

In January, the state suspended her license, costing Ms. Clark her job of eight years as an assessor of patient care in a hospital. She is spending thousands of dollars to fight her suspension. Her witnesses include her boss at the hospital, who describes Ms. Clark as indispensable, and Dr. Skipper, who doesn't believe her positive EtG scores represent proof of drinking.

The purpose of urine monitoring has always been to prevent -- or provide early warning of -- relapse. Preliminary evidence suggests monitoring programs may increase success: Addicted physicians subject to urine monitoring relapse at a rate of 25% over five years, studies show, compared with a rate among the general population of 75% in a single year. No comparison exists for unmonitored physicians.

Despite innocent positives, some courts and licensing boards are digging in their heels. They are arguing that a participant "must produce a negative urine" sample, says Mr. Lewis, the drug-testing company president. "Trying to argue that you're an innocent victim -- good luck."

Indeed, the state of Pennsylvania isn't saying that Nancy Clark drank, only that she failed to produce clean urine. "This case is not about relapse," said Mr. Smith, the lawyer for the state, in the June argument against her appeal.

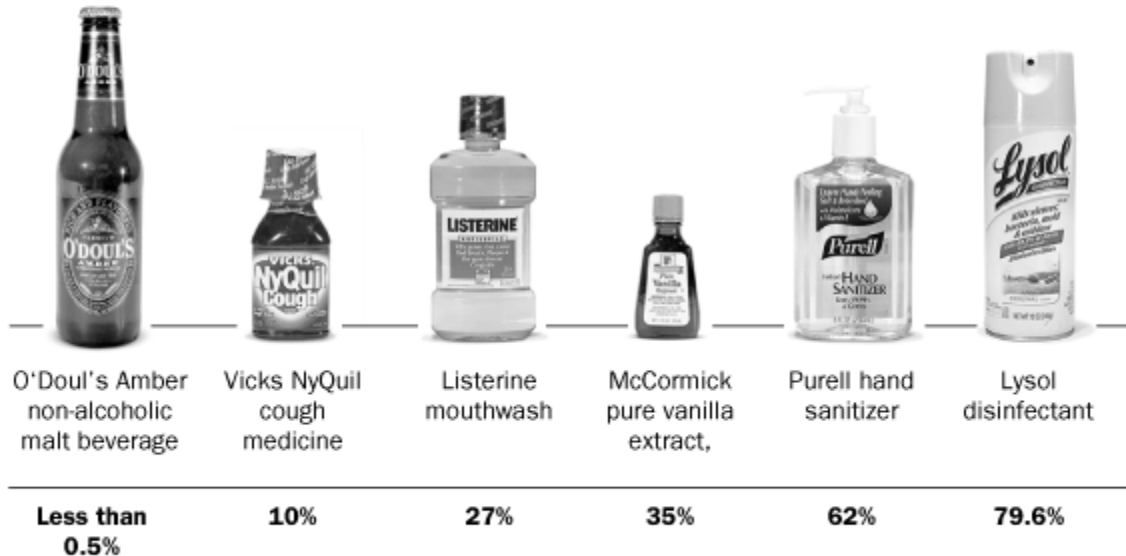
Until the EtG test, a determined drinker could deceive monitors, because, unlike illicit drugs, alcohol dissipates from the system in a matter of hours. Recovering alcoholics say they could easily drink weekends -- when random tests typically aren't required -- and could also drink weekdays if they stopped early enough.

Sobriety monitors say their main responsibility is to protect the public. "I had one physician walk into my office with a [low-level EtG score] and he said he didn't drink," says Martha Brown, a University of South Florida psychiatrist who monitors addicted professionals. "He looked great. I believed him." Six months later, he admitted he had been drinking all along, she says.

Catching such drinkers wasn't the primary interest of Dr. Skipper when he set about searching for a better screen for alcohol. As director of Alabama's monitoring-and-assistance program for addicted physicians, he wanted to find more convincing proof of sobriety.

Mimicking Drinks

A new urine test can detect alcohol in people who didn't drink. The alcohol derives from products other than liquor. For people whose jobs and freedom depend on passing that test, avoiding exposure to alcohol can be difficult. It is present in hundreds of products, and it is not always listed on the label. Here are some commonly used products and the percentage of alcohol they contain:



Source: the companies

Dr. Skipper, a 56-year-old internist, had a personal interest in such a test: He is a recovering narcotics addict. After entering a chemical-dependency program in 1981, he underwent additional training, received a certification in addiction medicine, and began caring for others. He had a relapse in 1990, and confessed to stealing painkillers from the medical facility where he worked. His license was suspended for a year.

Dr. Skipper says he has been clean and sober since Nov. 16, 1990. He continues submitting voluntary urine samples, and advises other recovering physicians to do the same.

One physician in Alabama's monitoring program says he has been sober 14 years, yet continues submitting urine specimens, expressly for his malpractice insurer. "The only proof of my sobriety is my urine," says James, a gynecologist who asked that his last name not be used.

In 2001, Dr. Skipper attended a conference in Europe and heard a lecture about ethyl glucuronide. It had been discovered nearly a century earlier, but only now was its use as a possible marker of alcohol consumption being explored. Dr. Skipper and the lecturer, a Swiss psychiatrist named Friedrich Wurst, eventually conducted research together. Their studies revealed a powerful connection between alcohol consumption and creation of EtG.

The publication of these results generated much interest among U.S. urine-testing laboratories and their clients.

Lacking funds, Dr. Skipper and colleagues conducted only limited research, most of it focused on this issue: Could drinkers somehow avoid producing EtG? Except for rare cases, the answer was no. Whether alcohol derived from other sources could show up in the test wasn't a central focus of their research.

With all published research on EtG having examined about 1,500 specimens, Dr. Skipper expressed the belief that any level of EtG above 100 nanograms per milliliter of urine -- an infinitesimal amount -- represented proof of drinking.

Some in the urine-testing industry went a step further, saying any EtG is evidence of drinking. A news release from Quest Diagnostics's Northwest Toxicology unit asserted: "EtG is not detectable in urine unless an alcoholic beverage has been consumed." A spokeswoman for Quest says, "That was the best information we had at the time." Before introducing the test, a Quest scientist says that the company "evaluated it on some people here at the lab."

Statements about the infallibility of the test bewildered Lorie Garlick, a California pharmacist who says she is in recovery from narcotics addiction. To comply with an agreement with the California Board of Pharmacy, she says she attended 12-step meetings and avoided drugs and alcohol. When her urine tested positive -- twice -- for EtG in 2005, she went online and discovered the new screen was touted as definitive proof of drinking.

"The first thing that went through my head was that there must have been a mix-up at the lab -- my urine got swapped with somebody else's," says Ms. Garlick, who says she never drank. Her license has been suspended and she hasn't worked in more than a year. The California Board of Pharmacy didn't return phone calls.

She found a Web site with a chat room for addicts claiming to have been victimized by EtG. Its founder: Dr. Skipper. "I'd been hearing from people saying they were innocent, and I wanted to research that," he says.

He became convinced that so-called incidental exposure to alcohol could create higher levels of EtG than he had imagined. His suspicion fell on a product that has been sweeping the halls of health care: hand sanitizers.

The federal Centers for Disease Control and Prevention recommends the use of alcohol-based sanitizers in hospitals, schools and day-care centers. Whether alcohol in these sanitizers could be absorbed doesn't appear to have been deeply studied, says physician John Boyce, who served as chairman of the CDC's hand-hygiene task force. The question also remains uninvestigated by Pfizer Inc., owner of the dominant brand, Purell, the company says.

A small study of 24 people that Dr. Skipper helped perform found that use of Purell could result in EtG showing up in urine. It concluded alcohol in the sanitizer can enter the body through inhalation, rather than through the skin. That study, presented in May at the scientific conference of the American Society of Addiction Medicine, hasn't been published or peer-reviewed.

At Dr. Skipper's suggestion, Ms. Garlick, 43, entered a treatment center in California and stayed two days under the supervision of counselors instructed to search her and her belongings for any products containing alcohol. Each morning, she provided a urine sample that tested negative for EtG. Then she washed her hands repeatedly during the day with Purell -- and her urine that night had an EtG score of 770. That was more than seven times the cutoff that Dr. Skipper originally thought represented proof of drinking. By contrast, a single drink would produce a peak EtG level of perhaps 6,000 nanograms.

To Dr. Skipper, this finding didn't diminish the value of the test. After all, a negative EtG score provided definitive proof of sobriety. He says he has always believed a low-level score should be regarded as a red flag rather than grounds for prosecution. In his experience, most secret drinkers offered no defense when confronted with EtG scores.

Worried that states are treating low EtG scores as grounds for suspension, Dr. Skipper felt "a moral obligation" to speak out. Last August, he wrote an open letter to state boards that monitor health-care workers, urging them "to refrain from taking action against an employee or licensee based on urine EtG testing alone." He said he now believes incidental exposure to alcohol could create EtG levels as high as 1,500 nanograms -- far above the level that was costing many addicts their professional licenses.

His warning has gone largely unheeded. Licensing boards and other sobriety monitors continue punishing recovering addicts for producing positive EtG scores.

Most laboratories are now recommending cutoff levels of 250 or 500 nanograms. But they say it is up to their clients to decide whether a level above that amount represents proof of drinking or some other exposure to alcohol.

"The industry needs to do some population studies to get a sense of what a reasonable cutoff is," says Dr. Clark of the federal substance-abuse office.

He notes that after an opiate screen was introduced about 20 years ago, some people who tested positive protested they hadn't used opiates. When observers speculated that poppy seeds -- a baking ingredient which is also a source of opiates -- might be the explanation, "labs were saying that poppy seeds could not produce a positive for morphine at the cutoffs used," Dr. Clark says. "A few empirical tests later proved this to be false."

Establishing an EtG cutoff high enough to spare the innocent may involve allowing the guilty occasionally to slip through, concedes Dr. Clark. But the only ethical option is "to err on the side of due process," he says, noting that a true addict will get caught soon enough anyway.

Not everyone being monitored for sobriety is an addict or alcoholic. Tina Schroeder, a home-health nurse in Wichita, Kan., made what she calls the mistake of her life last year. At a going-away party for a colleague, she drank a martini -- even though she had a patient yet to visit. The smell of alcohol on her breath caught the attention either of the patient or a fellow nurse. She promptly found herself seated before her boss, to whom she confessed.

Referred to the state disciplinary board, Ms. Schroeder learned that to keep her license she had to attend 12-step meetings, visit an addiction specialist, abstain from alcohol and submit to random urine testing.

Ms. Schroeder says she has never had a problem with alcohol. Her ex-husband, Craig Schroeder, agrees. He says he never saw her consume more than two drinks at a sitting -- and that would happen once or twice a year. Her boss, Ed Cornejo, says he has seen her at many social functions but never with a drink. He believes the martini was an isolated incident. "In my opinion, she did not have a drinking problem," says Mr. Cornejo, general manager of Interim Healthcare of Wichita. "She's responsible and loyal -- an excellent nurse."

It looked as though she would gain early release from the monitoring program -- until her urine tested positive for EtG. "I didn't drink," she says.

That result meant Ms. Schroeder would remain in the program. It also prompted a letter warning that a second such score would result in immediate suspension.

"Please be aware that [over-the-counter] medications that contain alcohol can cause a positive alcohol screen," wrote Mary Carder, executive director of the Kansas Nurses Assistance Program, which oversees monitored nurses in Kansas. "You should also be cautious of any foods, sauces, pastries etc. that may have alcohol."

Ms. Schroeder says she's in such fear of getting suspended for a positive EtG test that she plans to return to school in the fall to pursue another career.

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