

483 F.3d 865 (2007)

**UNITED STATES of America, Appellee,**  
**v.**  
**Mark Lou MEYER, Appellant.**

[No. 06-2961.](#)

**United States Court of Appeals, Eighth Circuit.**

Submitted: February 13, 2007.

Filed: April 25, 2007.

Michael L. Mollman, argued, Cedar Rapids, IA, for appellant.

[866\\*866](#) C.J. Williams, argued, Cedar Rapids, IA (Patrick J. Reinert, on the brief), for appellee.

Before O'CONNOR<sup>[\*]</sup>, Associate Justice (Ret.), WOLLMAN, and SMITH, Circuit Judges.

O'CONNOR, Associate Justice (Ret).

Mark Lou Meyer appeals the district court's revocation of his probation. Because the district court's factual findings on the two grounds on which it justified revoking Meyer's probation were not clearly erroneous, we affirm the judgment below.

## **I.**

On January 22, 2004, Mark Lou Meyer was indicted for being an unlawful drug user in possession of a firearm, in violation of 18 U.S.C. § 922(g)(3). After Meyer pleaded guilty to this charge, the district court sentenced him to a term of three years' probation on September 2, 2004. As relevant to this appeal, Meyer's probation came with two conditions. First, Meyer was prohibited from possessing or using unlawful drugs. Second, Meyer was prohibited from leaving Iowa's Northern District without first obtaining permission from a probation officer or the court.

While he was on probation, Meyer participated in two distinct methods of drug testing. Under the first method, a probation officer affixed sweat patches to Meyer's skin to monitor whether he was using illegal drugs. The sweat patch technology at issue here is a relatively novel drug testing device. The sweat patch, which is "marketed by PharmChem, Inc., is composed of an absorbent pad and an outer membrane. After the skin is cleaned with alcohol, the patch is applied to the wearer[], and the absorbent pad collects the wearer's sweat, over a period of a week or more." [United States v. Bentham](#), 414 F.Supp.2d 472, 473 (S.D.N.Y.2006). "The [wearer]'s sweat wets the pad, the water in the sweat eventually evaporates through the non-occlusive membrane, and any drugs remain in the absorbent pad. Once the sweat patch is removed from the [wearer], it is returned to PharmChem for analysis." [United States v. Snyder](#), 187 F.Supp.2d 52, 58 (N.D.N.Y.2002). "If the absorbent patch is removed from the skin, it cannot be

reattached." *Id.* "The patch has been `cleared' by the Food and Drug Administration for use as a drug testing device and is used widely in the criminal justice system because of its perceived advantages over other forms of drug testing, *e.g.*, its non-invasiveness, resistance to intentional adulteration, and ability to detect drug-use over relatively long periods." [Bentham, 414 F.Supp.2d at 473.](#)

Beginning in November 2005 and ending in June 2006, Meyer submitted some sixteen sweat patches for drug testing. The first seven patches that Meyer submitted revealed no illegal substances. Because the eighth patch that Meyer submitted somehow managed to come dislodged from his skin, the district court declined to treat it as a drug test (even though this patch did, in fact, test positive for cocaine). Each of the remaining eight patches that Meyer submitted tested positive for cocaine and benzoylecgonine, a cocaine metabolite. The presence of benzoylecgonine indicates that Meyer's body had processed the cocaine.

In addition to submitting sweat patches, Meyer simultaneously participated in a urinalysis program while he was on probation. From March 2006 until June 2006, Meyer submitted numerous urine samples, which were tested for controlled substances. [867\\*867](#) In contrast to the sweat patches that Meyer submitted during this same period, none of the urine samples that Meyer submitted indicated that he had been using unlawful drugs.

In light of the positive sweat patch results, the United States filed a motion to revoke Meyer's probation on May 31, 2006. Meyer denied violating his probation by taking illegal drugs. Accordingly, the district court held three evidentiary hearings in June and July of 2006. Dr. Leo Kadehjian, a biochemist who holds an undergraduate degree from the Massachusetts Institute of Technology and a doctorate from Stanford University, testified on behalf of the government. A consultant to the Administrative Office of the United States on drug testing, Dr. Kadehjian testified that the sweat patch was a scientifically reliable device. While he acknowledged that some academic papers concluded that sweat patches could become contaminated without the wearer having used drugs, Dr. Kadehjian thought that these papers did not correspond to real-world conditions. Furthermore, Dr. Kadehjian noted that laboratories will not report a sweat patch as testing positive for cocaine unless a metabolite of cocaine is found, which indicates that the wearer's body has broken down cocaine.

Dr. Kadehjian further explained how Meyer's negative urine results and positive sweat patch results could be reconciled. Because urinalysis tests will not reveal a drug if there is less than 300 nanograms of the drug per milliliter of urine, Dr. Kadehjian noted, it does not mean that the drug is altogether absent from a subject's system. Rather, a negative drug test simply means that there is an insufficient amount of the drug in the subject's system to trigger a positive result. In addition, whereas sweat patches monitor the individual's drug usage twenty-four hours per day, Dr. Kadehjian explained that urine tests detect drugs for only about two days following cocaine usage. Dr. Kadehjian testified that Meyer's sweat patch results revealed a relatively modest amount of cocaine usage, which could explain why Meyer's urine tests came back negative.

Meyer declined to present expert testimony about the efficacy of sweat patches. In an effort to explain why his sweat patch results started indicating that he had used cocaine, Meyer offered the following:

I've stayed awake at nights trying to figure out what went wrong so it would return a positive without having any drugs in my system, without having done any drugs. I can come up with one possibility, that up until that point I was employed by a company who hauled high-end cars, Corvettes, Mercedeses, Jaguars, Cadillacs, all high end stuff, stuff that was going to clients who were rich people. I changed [to] hauling cars that were repossessed, bought from auctions, they weren't cleaned, they weren't detailed. There would have been any chance and every chance for me to come in contact with contamination from somebody that had done drugs in their cars, touched a steering wheel, touched the gearshift, touched the door handle. Somebody could have been smoking in there. It could have been in the headliner. I came in contact with things like that.

Revocation Hearing Tr. at 109-10.

The district court also heard testimony from Lisa Feuerbach, Meyer's probation officer. Officer Feuerbach testified that she contacted Meyer on May 1, 2006 to request that he provide a urine sample. Meyer informed Officer Feuerbach that he would be unable to do so because he had taken it upon himself to travel to Illinois to submit a hair sample for drug testing. (That hair sample, Meyer noted, ultimately tested negative for drug usage.) Officer [868\\*868](#) Feuerbach testified that Meyer had not submitted a travel request form and further indicated that she had not given Meyer permission to travel outside of Iowa. Although Meyer claimed that he needed to drive to Aurora, Illinois so that a laboratory technician from Omega Laboratories could collect a hair sample, the government introduced evidence from Omega's website indicating otherwise. Omega's website explained that the company sends collection kits to customers and that those customers are responsible for collecting and returning the hair sample.

On July 7, 2006, the district court issued a written opinion finding, by a preponderance of the evidence, that Meyer had violated the conditions of his probation in two ways. *See United States v. Meyer*, No. 04-CR-0010, mem. op. (N.D.Iowa July 7, 2006). First, the district court determined that Meyer's trip to Illinois on May 1, 2006 violated his probation because he did not receive permission to travel outside of Iowa's Northern District. *See id.* at 14. Second, the district court found that Meyer's sweat patch results were in fact reliable, meaning that Meyer had violated his probation by consuming a controlled substance. *See id.* at 18. The district court revoked Meyer's probation and sentenced him to six months' imprisonment followed by two years of supervised release. *See id.* at 22. This appeal followed.

## II.

When a district court revokes an offender's probation, we review the district court's factual findings for clear error. *See United States v. Carothers*, [337 F.3d 1017, 1019 \(8th Cir.2003\)](#). "Revocation of probation requires only enough evidence, within a sound judicial discretion, to satisfy the district judge that the conduct of the probationer has not met the conditions of probation." *United States v. Leigh*, [276 F.3d 1011, 1012 \(8th Cir.2002\)](#) (internal quotation marks omitted). We review the district court's underlying decision to revoke an offender's probation for an abuse of discretion. *See United States v. Shangreaux*, [897 F.2d 939, 941 \(8th Cir.1990\)](#).

## A.

This court has not previously expressed a view on the general reliability of sweat patch results. In *United States v. Redd*, the court noted, but explicitly reserved, the question of sweat patch reliability. See 318 F.3d 778, 780 n. 2 (8th Cir.2003) ("[T]his opinion should not be read as a general endorsement or rejection of sweat patch technology."). Courts that have weighed in on this question, however, have concluded that the sweat patch is a generally reliable device. The United States Court of Appeals for the Tenth Circuit, for instance, found sweat patches reliable in monitoring drug usage where an offender did not offer evidence to counter positive sweat patch results. See *United States v. Gatewood*, 370 F.3d 1055, 1060-62 (10th Cir.2004), *vacated on other grounds*, 543 U.S. 1109, 125 S.Ct. 1013, 160 L.Ed.2d 1036 (2005). Federal district courts, both within the Eighth Circuit and in other jurisdictions, have also deemed sweat patches to be generally reliable. See *Bentham*, 414 F.Supp.2d at 473 (concluding that sweat patch results "may sometimes be fallible, but probably not in this case"); *Snyder*, 187 F.Supp.2d at 59 ("[T]he sweat patch is generally reliable for drug testing purposes."); *United States v. Zubeck*, 248 F.Supp.2d 895, 898-99 (W.D.Mo.2002) (revoking defendant's supervised release on the basis of sweat patch results where Kadehjian offered expert testimony about the technology); *United States v. Stumpf*, 54 F.Supp.2d 972, 974 (D.Nev.1999) ("[T]his Court finds by a preponderance of the evidence that the PharmChem sweat patch drug testing device is a reliable scientific method for testing for the presence of controlled substances."). These courts have further noted, however, that there 869\*869 could be some instances where positive sweat patch results might be deemed unreliable. See, e.g., *Snyder*, 187 F.Supp.2d at 60 ("[A]lthough the sweat patch is generally reliable, it cannot be relied upon in situations where it is shown that the possibility of exterior contamination exists due to exposure to a basic solution containing drugs.").

Today, we join the other courts that have previously determined that sweat patch results are a generally reliable method of determining whether an offender has violated a condition of his or her probation. It is important to note that the Food and Drug Administration cleared the Pharm-Chem sweat patch technology back in 1990. Today, the sweat patch is a widely used method for drug testing that is authorized by the Administrative Office of the United States Courts. We also place weight on the expertise of Dr. Kadehjian, who vouched for the general reliability of sweat patch results. And while sweat patches have not been exhaustively studied by scholars, the peer-reviewed academic studies that have been conducted generally support the device's reliability. See *Bentham*, 414 F.Supp.2d at 473.

That is not to say, of course, that positive sweat patch results are invariably a reliable indicator of drug usage. There may well be certain instances where offenders offer compelling reasons to believe that positive test results from sweat patches are erroneous. District courts should make such determinations on a case-by-case basis.

## B.

In that vein, we must now determine whether the sweat patch results in this particular case presented a valid ground for revoking Meyer's probation. Meyer contends that the district court erred in revoking his probationary status because the district court's decision was not supported

by a preponderance of the evidence. While Meyer does not dispute that eight of his sweat patches tested positive for cocaine and a cocaine metabolite, he urges that we are required to reverse the district court's decision in light of his numerous negative urine samples and negative hair sample.

We disagree. At the outset, it is important to remember that sweat patches were applied to Meyer (and returned for testing) without incident on seven separate occasions, covering a period of several weeks. That the sweat patch method initially worked adequately for Meyer would appear to rule out any possibility that he had a physiological condition which caused the sweat patches to return false positives.

Meyer asserts that a change in his work conditions may have caused him to test positive for cocaine. In his capacity as an employee of a company that hauled cars, Meyer notes that around the time that he started testing positive for cocaine that he stopped working with luxury cars and began working with cars that had been repossessed and auctioned. Meyer suggests that it is possible that he inadvertently came into contact with cocaine in these automobiles, by touching steering wheels, gearshifts, and door handles.

Meyer's effort to support an environmental explanation for his positive sweat patches is wholly unpersuasive. In order to test positive not only for cocaine but also for cocaine metabolite, Meyer would have needed to *ingest* cocaine residue inadvertently from the vehicles that he hauled. Moreover, Meyer returned eight consecutive sweat patches with positive results. And Meyer has proffered not one whit of evidence indicating that any of the cars that he worked with contained any amount of cocaine.

As for Meyer's contention that the negative urine samples demonstrate that the district court erred in revoking his probation, [870\\*870](#) Dr. Kadehjian offered a sensible explanation of how these seemingly differing results could in fact be reconciled. Because Meyer's sweat patches demonstrated a relatively low level of cocaine use, the negative urine samples could have occurred because the amount of cocaine that Meyer consumed was simply too small to register a positive result through urinalysis. A negative urine test does not mean that Meyer did not take cocaine; it means only that the test did not reveal that Meyer had done so. In addition, we note that it is possible for individuals to escape urinalysis detection through any number of devices and methods. See [United States v. Alfonso, 284 F.Supp.2d 193, 196 \(D.Mass. 2003\)](#) ("[B]ecause of the widespread usage of the urine tests, techniques and products have been developed to 'beat' them through dilution, adulteration, and substitution."). Given the eight consecutive positive sweat patch results, we have no trouble affirming the district court's revocation of Meyer's probation.

Nothing in *Snyder*, moreover, requires us to reach a contrary result. See [Snyder, 187 F.Supp.2d at 60-61](#). In that case, the district court noted that some environments could lead to the contamination of sweat patches: "[A]lthough the sweat patch is generally reliable, it cannot be relied upon in situations where it is shown that the possibility of exterior contamination exists due to exposure to a basic solution containing drugs." *Id.* at 60. But the environmental conditions that the defendant confronted in *Snyder* are quite distinct from those that Meyer faced. In *Snyder* the district court noted, "[d]uring the time period of his positive test results, defendant resided

with his mother, an admitted crack cocaine user that smoked with her friends in his house. Defendant also worked in an occupation where he sweated profusely on a daily basis and often rubbed his sweat path in order to relieve the discomfort." *Id.* at 61. It was these facts that prompted the *Snyder* court to conclude that the sweat patch results were unreliable on the facts of that particular case: "[D]efendant's exposure to drugs in his environment and profuse sweating is a sufficient basis for rejecting the reliability of the sweat patch *in this specific instance.*" *Id.* (emphasis added).

In sharp contrast to the defendant in *Snyder*, Meyer does not contend that he lived in a home where cocaine usage occurred, which caused him to test positive for unlawful drugs. Neither does Meyer contend that his occupation caused him to sweat a great deal, which the *Snyder* court intimated could lead to sweat patch contamination. Rather, as discussed above, Meyer contends only that his work brought him into contact with numerous cars which could have at least conceivably contained cocaine. Whatever the merits of *Snyder's* assertions of contamination, it is plain that Meyer's assertions are considerably weaker. See [Gatewood, 370 F.3d at 1061-62](#) (distinguishing *Snyder* because the facts in *Snyder* gave stronger inference to potential contamination).

We close by noting that the negative hair test that Meyer secured is legally meaningless. Quite apart from the shortcomings of hair tests generally, Meyer adduced no evidence establishing that he grew the hair that Omega tested for drugs. Thus, even if hair tests were generally viewed as reliable indicators of drug usage (which they are not), Meyer would have succeeded in demonstrating only that he had somehow procured a sample of drug-free hair that belonged to someone. Thus, we cannot conclude that the district court was clearly erroneous in its factual findings or that it abused its discretion in revoking Meyer's probation.

## C.

Even if Meyer were correct that the sweat patches did not provide sufficiently [871\\*871](#) strong evidence to justify the district court's revocation of his probation, he would still not prevail in this appeal. That is because the district court offered an alternate ground for revoking Meyer's probation. Specifically, the district court observed that Meyer violated his probation when he — without first obtaining permission from the court or from a probation officer — traveled outside of Iowa's Northern District to have his hair tested for drugs. Although Meyer asserts that he believed he had "blanket permission" to leave the jurisdiction, Appellant's Br. at 6 n. 2, that belief turns out to have been mistaken. That Meyer "only traveled outside the Northern District of Iowa one time" does nothing to alter the fact that he violated a condition of his probation. *Id.* One time, at least in the context of probation, is one time too many. Thus, Meyer's misguided efforts to exonerate himself from violating one probationary condition succeeded only in violating another probationary condition.

The district court's revocation of Meyer's probation is affirmed.

[\[\\*\]](#) The Honorable Sandra Day O'Connor, Associate Justice of the United States Supreme Court, (Ret.), sitting by designation, pursuant to 28 U.S.C. § 294(a).

