

# THE TRUTH ABOUT TRANSDERMAL FENTANYL EXPOSURE

## CAN YOU ABSORB FENTANYL THROUGH YOUR SKIN?

Fentanyl is a powerful opioid drug that is being widely abused across the US. I've written in the past how **Mexican Drug Cartels** are ramping up the production of *fentanyl* as well as how **Chinese manufacturers** are importing the drug into the US. As more of the drug enters the US, officers are put at risk to exposure of a drug that is 50 to 100 times as powerful as heroin. We know that it can be absorbed into the human body transdermally (through the skin), but a number of reputable doctors and medical organizations are stating the transdermal threat is overrated.

## IS THE THREAT OVERRATED OR IS IT JUSTIFIED?

The medical community's scrutiny of fentanyl absorption began when the American College of Medical Toxicology (ACMT) and American Academy of Clinical Toxicology (AACT) **published a position paper on occupational fentanyl exposure in emergency responders**. It's important to point out that these associations represent the medical field and not the toxicologists that work with us on the criminal side. I have talked to toxicologists that we work with and they all said unequivocally that these associations do not represent their views. With that said, the position paper addressed the inhalation risk first:

*Industrial producers of fentanyl use time-weighted average occupational exposure limits (OEL-TWA) for alfentanil (1 mcg/m), fentanyl (0.1 mcg/m), and sufentanil (0.032 mcg/m) to limit exposure. At the highest airborne concentration encountered by workers, an unprotected individual would require nearly 200 min of exposure to reach a dose of 100 mcg of fentanyl.*

The position paper essentially minimizes the risk of inhalation hazards. This is contrary to a growing number of actual incidents involving officers that have reported adverse effects after inhaling the drug that was released into the atmosphere. These same officers later tested positive for fentanyl and their symptoms reversed after naloxone administration (which can only occur if they were poisoned by an opiate). An example of this is outlined in a training film by the RCMP where exposed officers were interviewed.

<https://youtu.be/w48y6tzkpkg>      RCMP Releases video on dangers of fentanyl

There have been a number of documented incidents where officers had been exposed as outlined above. But, the paper goes on to talk about the transdermal risk to officers. Specifically, the paper states

*However, incidental dermal absorption is unlikely to cause opioid toxicity. If bilateral palmar surfaces were covered with fentanyl patches, it would take 14 min to receive 100 mcg of fentanyl (using a body surface area of 17,000 cm, palm surface area of 0.5%, and fentanyl*

*absorption of 2.5 mcg/cm/h). This extreme example illustrates that even a high dose of fentanyl prepared for transdermal administration cannot rapidly deliver a high dose.*

*The above calculation is based on fentanyl patch data, which overestimates the potential exposure from drug in tablet or powder form in several ways. Drug must have sufficient surface area and moisture to be efficiently absorbed. Medicinal transdermal fentanyl utilizes a matrix designed to optimize delivery, whereas tablets and powder require dissolution for absorption. Relatedly, powdered drug sits on the skin, whereas patches have adhesive to hold drug in close proximity to the skin allowing both to remain moist.*

There are some important factors to remember in the research they did. They are comparing results from *pharmaceutical fentanyl* and not the type and quantities of the drug officers are encountering on the street. Many officers are encountering analogs that are more potent than pharmaceutical fentanyl. Pharmaceutical fentanyl is also measured in micrograms and officers are encountering analogs that are measured in kilograms. Let's look at this picture as an example.



*Drug task force officers recovered 16 kilos of a powder that was later identified as fentanyl. There is 1,000,000 micrograms in a kilogram. Again, pharmaceutical fentanyl is measured in micrograms. These are hardly weights that should be compared to a patch in a hospital setting. The position paper also states that the drug must sit on the skin for some time and that a patch is different because it maintains moisture for easy absorption.*

*Obviously, they have never searched a car in the summer. You know what I'm talking about. The day where it is so hot that your body armor becomes a second skin and you are soaking wet from sweat. Let's say that same officer searches a car, but doesn't know that the suspect decided to dump his drugs on the floorboard of the car. Because this is a typical drug user's car, it is disgusting and the powder mixes with the rest of the trash on the floorboard. Our officer decides to look under the seat and his arm brushes against the floorboard picking up some of the drug on his arm. Because he is busy and continues searching, the fentanyl stays on his arm while he processes the scene. This can take some time. Sometimes it can take hours.*

**What's the first thing you get done search a criminal's car? You take a Purell bath! The hand sanitizer every cop keeps a gallon of in his car comes out and then the officers wipes his hands and arms because he has no soap and water to clean himself in the field.**

**Unfortunately, hand sanitizer will accelerate the absorption of the fentanyl.** With the scenario we just outlined, take a look at this video. It is a drug task force team in California that just stopped a car with 2 kilos of fentanyl in it. What if it wasn't experienced narcs stopping that car? What if it was a Highway Patrolman cruising for an interdiction stop and thought he had another load of meth? What if it was hot and the officer was pouring sweat from the heat? What if he had gotten some fentanyl on himself and used hand sanitizer to disinfect himself?

The authors continue in their position paper with some recommendations for safety personnel that may encounter fentanyl. However, it should be noted that there is no statement that any first responders were actually participating in this project.

*Workers who may encounter fentanyl or fentanyl analogs should be trained to recognize the symptoms and objective signs of opioid intoxication, have naloxone readily available, and be trained to administer naloxone. For opioid toxicity to occur, the drug must enter the blood and brain from the environment. Toxicity cannot occur from simply being in proximity to the drug. Toxicity may occur in canines utilized to detect drug. The risks are not equivalent to those in humans given the distinct contact that dogs, and not humans, have with the local environment.*

Basically, you will only be exposed if you get the drug in your system and you should have training in how to recognize if you become symptomatic. Essentially, what we already know. They continue on with ways to protect your skin.

- *Incidental dermal absorption is very unlikely to cause opioid toxicity. For routine handling of drug, nitrile gloves provide sufficient dermal protection.*
- *In situations where an enclosed space is potentially heavily contaminated with a highly potent opioid, water-resistant coveralls should be worn.*
- *Incidental dermal exposures should immediately be washed with water. Alcohol-based hand sanitizers should not be used for decontamination as they do not wash opioids off the skin and may increase dermal drug absorption.*

With the first point, it is obvious they have never been knee deep in a drug investigation or a medical call with an overdose. Sure, you should always wear nitrile gloves. But what about your arms? Remember our scenario above? They do point out how problematic hand sanitizer is for cops.

For respiratory protection, they outline what has already been taught to cops through DEA guidelines. Wear an N95 mask or an air purifying respirator with a P100 filter.

Unfortunately, this position paper did more harm than good. It created a number of spin off articles where the press wrote about how law enforcement is over stating the problem. I was a cop for 29 years. I've spent an entire career working drug enforcement and have paid the price. I've been exposed to meth lab chemicals, I got MRSA from a drug abuser and I am the recipient of a lifelong medical illness courtesy of a drug addict. I've seen more than one friend get cancer that we suspect came from drug lab chemicals. What could have prevented all of this was the use of proper PPE. You shouldn't stop doing your job. You should just take the proper precautions when dealing with drugs. I, for one, would advise officers to take a little more caution than the minimization occurring in this position paper. Just looking at their research, there is a huge difference between the fentanyl they use in their research and the quantities we encounter and in the scenarios that we encounter fentanyl on the street.

Stay safe!



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<https://gravesassociates.com/is-there-a-transdermal-threat-with-fentanyl/>