

Will a gun that uses facial recognition reduce firearm deaths? A Colorado entrepreneur thinks so

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The country's first biometric smart gun started as a Boulder teenager's high school science fair project.

Ten years later, Kai Kloepfer is bringing his smart gun to market in what could be the first weapon to break a decades-old political and manufacturing "log jam" that has kept smart guns from [mass production](#).

Kloepfer's Broomfield-based company, Biofire, on Thursday announced the sale of guns that use both fingerprint and [facial recognition](#) to make sure only authorized users can fire the weapon.

His goal is to reduce accidental deaths and suicides and to keep children from accessing their parents' weapons. The gun will allow people to have a weapon at hand but want to make sure children, visitors or criminals can't use it.

The gun is primarily marketed for use as a weapon for home defense, Kloepfer said. Gun owners must balance keeping a weapon easily accessible in case of emergency but also secure enough that others can't access it.

"Home defense is an area that even for firearm experts remains a frictional area," he said.

The 2012 Aurora theater shooting sparked Kloepfer's interest in guns. The mass shooting an hour from his Boulder County home was the first time the then-sophomore seriously thought about [gun violence](#).

As he researched, he learned that the toll of accidental shootings and gun suicides far outpaced deaths in mass shootings.

Over the next 10 years, Kloepfer developed more than 150 versions of the prototype, raised funds, recruited staff and learned how to run a business. He enrolled at the Massachusetts Institute of Technology but stepped away to pursue Biofire full-time.

"It's been a wild journey," said Kloepfer, now 26.

How the gun works

The challenge with smart guns, Kloepfer said, is creating a locking system that unlocks for an authorized user instantly, every time, and in any environment.

Fingerprint readers are relatively established technology, he said. Most smartphones have the ability to read a fingerprint, but fingerprint technology can be unreliable if a person's hands are wet or dirty.

That's why Kloepfer used both a [fingerprint scanner](#) on the grip and a facial recognition system built into the back of the handgun—either can unlock the weapon. Dirty fingers don't impact the effectiveness of facial recognition and conditions that might affect facial recognition, like lighting, don't affect fingerprints.

The gun comes with a small tablet computer that is used to register new users and a charging dock for the its battery. The system is not connected to the internet and the data is encrypted.

Biofire on Thursday started accepting orders for the gun, which starts at \$1,499. Guns will start to ship out to purchasers at the end of 2023, Kloepfer said.

While the aim is to minimize deaths, adding more guns to the hundreds of millions already in circulation carries its own risk—especially if people who wouldn't purchase a standard gun decide to buy a smart gun. The presence of a gun increases the risk of deaths by suicide and accidental shootings, said Adam Skaggs, vice president of Giffords Law Center, citing numerous research studies.

While the technology might keep that person's child from shooting themselves, it wouldn't stop the authorized user.

"It's kind of a brave new world," Skaggs said. "In [theory](#), there will be benefits and, in theory, there will be risks by putting these guns on the market. It's hard to say."

Pushback on smart guns

Researchers, entrepreneurs and the gun industry have pondered the creation of a smart gun for decades.

Other companies have produced guns that can be activated by a device worn by an authorized user, like a ring. But those technologies have not proved perfect.

A German company, Armatix, created a gun that unlocked when in proximity to a linked watch. But the gun lost viability after it was discovered it could also be unlocked with \$15 worth of magnets.

Some gun stores that opted to sell the Armatix product faced [death threats](#) and boycotts from people who oppose smart guns.

The National Shooting Sports Foundation—the firearm industry's trade association—does not oppose smart guns. However, the foundation opposes any laws or regulations that mandate the sale or use of smart guns and remains concerned about technology that could prove faulty in a moment of crisis.

"A 'smart gun' must work as safely and as reliably as current technology," the foundation's position statement reads.

Some of the backlash against smart guns can be traced to a since-

changed 2002 New Jersey law that required all gun shops in the state to only sell smart guns once such guns became available. The mandate violated the Second Amendment, opponents said. In 2019, New Jersey lawmakers amended the law to require that licensed firearm retail dealers make smart guns available once they are included on a state roster of approved personalized handguns.

But the opposition to smart guns goes back even further.

Gun manufacturer Smith & Wesson in 1999 promised to invest in developing a smart gun as part of an agreement with the U.S. government following the shooting at Columbine High School in Jefferson County. But the company backed away from that work after the National Rifle Association organized a boycott that nearly destroyed the company, forced the ouster of its CEO, and prompted the sale of the company.

"There have been very strong headwinds against bringing smart gun technology to market in a robust way," Skaggs said. "It could be that this is the first one to break the log jam and get out there."

So far, Kloepfer hasn't received any harassment or pushback for Biofire. Early reviews of the gun have been positive, he said.

Kloepfer doesn't believe smart guns will or should replace all firearms in the U.S. But they will provide a solution to the "uniquely American challenge of gun deaths," he said.

"We can have a very real impact," he said.

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