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[CBC News](#)

Taser stun guns may not be as safe as their manufacturer claims, according to a study carried out by Chicago researchers, CBC News has learned.

The team of doctors and scientists at the trauma centre in Chicago's Cook County hospital stunned 11 pigs with Taser guns in 2006, hitting their chests with 40-second jolts of electricity, pausing for 10 to 15 seconds, then hitting them for 40 more seconds.

When the jolts ended, every animal was left with heart rhythm problems, the researchers said. Two of the animals died from cardiac arrest, one three minutes after receiving a shock.

The findings call into question safety claims made by Taser International, the Arizona company that makes the stun guns, which are used by dozens of police departments across Canada.

According to Taser International's website, "independent medical and scientific experts have determined Taser devices to be among the safest use-of-force options available."

Taser director Mark Kroll has also published a paper called Safety of Taser Electronic Devices, in which he says when electricity kills, it is an immediate death that occurs within four seconds because electricity can't linger in a living being's body "like a poison."

But Bob Walker, one of the lead researchers on the Chicago study, said the fact that one of the pigs died three minutes after being stunned is significant.

"It says that the effect of the Taser shot can last beyond the time when it's being delivered," he said. "So, after the Taser shock ends, there can still be effects that can be evoked and you can still see cardiac effects."

Thomas Smith, the co-founder of Taser International, is set to testify before the parliamentary committee on public safety and national security in Ottawa on Wednesday, where he'll face questions on the safety and use of the weapons.

Officers need to ask questions: researcher

Dr. Andrew Dennis, a Chicago-based trauma surgeon and police officer who worked on the study, said if Tasers can affect pigs, more research needs to be done to study how safe the stun guns are. In the meantime, police should question when, and on whom, they use the devices, he said.

"The officers need to question themselves and ask themselves, 'Is this the appropriate situation for this device?'" Dennis said. "They need to have the understanding that this is not a truly benign device."

"What I would not want to see is an individual police officer thinking that this device can [be] used with impunity, because I think there are certain risks to this device."

Stun gun safety was called into question after Robert Dziekanski, a 40-year-old Polish man, died at Vancouver International Airport after being shocked with a Taser by police on Oct. 14, 2007. Dziekanski's death renewed calls for a moratorium on Taser use.

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Other Taser studies have been done on pigs and humans in the past — some finding medical problems with the stun guns, and others not — but the Chicago researchers said they wanted to do a study where subjects were exposed to longer bouts of the guns' electrical currents.

Because the researchers opted for 40-second jolts, their ethics board wouldn't allow them to use human subjects.

Rick Smith, the CEO of Taser International and company co-founder, doesn't think much can be concluded from the Chicago study because it focused on pigs that weigh less than 100 pounds and have a very different physiology from humans.

Smith said studies done on humans have shown Tasers don't pose a serious health threat.

"The human studies are clearly much more relevant to policy-makers, and to people that are interested in the science of how Tasers affect people," he said.

Dr. Jeffrey Ho, a researcher who has studied stun guns in the past, but was not involved in the Chicago study, stressed that the guns may not have the same effect on people as they did on the pigs in Chicago.

"I think animals are good surrogates for research models in some situations," said Ho, an associate professor of emergency medicine at the University of Minnesota. "In my modelling, I prefer to use humans."

However, pig studies have been used as evidence in arguments for and against stun guns in the past. Even the Taser International website points to studies on pigs in which the outcomes suggest the stun guns aren't a serious safety risk.