THE TRUTH ABOUT DEATHS INVOLVING TASERS®
DO TASERS KILL?

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http://www.charlydmiller.com/LIB07/2006AugTruthAboutTasers.pdf

* For the purpose of this article, the term "Taser" refers to ANY form of electronic "stun-gun" device, or "conducted energy device" ("CED"), or "electromuscular-incapacitating device" ("EMD"), or "non-lethal incapacitating device" ("NID"), or the like.

THE TRUTH ABOUT DEATHS INVOLVING TASERS: DO TASERS KILL?

Taser manufacturing company representatives, individuals who use Tasers, diverse law enforcement and medical "experts," as well as various advocates **for *and* against** Taser use, have long-debated whether or not Tasers have actually caused an individual's death.

However, recently-published [February – August of 2006**([1,2,3])**] Medical and Forensic journal studies have provided information that makes it abundantly clear that

USE OF A TASER SIGNIFICANTLY CONTRIBUTES TO CAUSING DEATH IN CUSTODY.

Before discussing that statement, however, I will explain why

I continue to reserve my opinion about where to place the ultimate "blame" for deaths that occur in association with Taser use.

In my opinion, one of the biggest barriers to substantially being able to conclude whether or not Tasers have been solely responsible for killing people continues to be this:

Those who investigate and report Taser-related deaths frequently fail to consider **restraint asphyxia** as a differential (alternative) diagnosis for the cause of death. Thus, almost all Taser-related death investigations have failed to reasonably RULE-OUT restraint asphyxia as having caused the death prior to blaming the death on the Taser exposure.**([4,5])**

Why isn't restraint asphyxia routinely ruled-out before blaming a death on Taser use?

Likely because, to my knowledge, no specific "GUIDELINE" or "PROTOCOL" has ever been established for medical examiners (MEs) and forensic pathologists (FPs) to follow when investigating Taser-related deaths.

Still, I it is entirely reasonable to expect MEs and FPs to follow the same kinds of death investigation guidelines/protocols for Taser-related deaths that they are required to follow for any other type of "custody-related" death.**([6,7,8,9,10])** Thus, it is entirely reasonable to expect MEs and FPs to rule-out restraint asphyxia as the cause of death ***prior to*** considering the Taser as the cause of death.

Unfortunately, for some unknown reason, when the terms "Taser" or "Stun Gun" (or the like) are mentioned, many MEs and FPs seem to totally forget about the need to investigate the possibility of restraint asphyxia having caused the death subsequent to the Taser exposure.**([11])**

Granted, when a Taser was involved in the death, MEs or FPs may not be ***offered*** information about the manner and method of restraint that was used subsequent to the individual having been Tased. But, that is no excuse for MEs or FPs failing to request (***require***) that such information be supplied to them. Without that information, they cannot fulfill their responsibility to adequately "investigate" the death.

After all, these days everyone knows that an asphyxial manner of restraint can kill someone. Yet, "the jury is still out" as to whether or not a Taser can be considered responsible for causing death. Thus, when a Tased person dies during restraint, it is not at all surpriZing that restrainers much prefer the **Taser** being investigated, and the manner of restraint employed being ignored. Currently, restrainers are at risk for being considered responsible for the death only when the manner of restraint they employed subsequent to having Tased the victim is investigated.

Then there also is the stumbling block created by those who persist in electing to blame **"Excited Delirium"** for Taser-related deaths ***and*** for restraint asphyxia deaths.

BE IT KNOWN:

ANYONE who blames a death solely upon the deceased having been a victim of "Excited Delirium" does so without ***ANY*** form of scientific evidence (or even case-study-based) support for doing so! There has NEVER – ***ever*** – been a documented case of excited delirium having caused someone's death **ALL BY ITSELF**.

There have been a few cases reported of excited delirium victims dying due to massive trauma; such as that suffered after they leapt off of a 3-story building, or the like. But, "Excited Delirium" wasn't the cause of death in those cases. No. Those deaths were caused by the "massive trauma" the victim suffered.

ALL excited delirium deaths *unrelated* to massive trauma have occurred in association with the victim having been subjected to SOME form of restraint.

But, every so-called "excited delirium death" report ever published included ***inadequate*** (or entirely ***absent***) descriptions of the manner and method of restraint that was being employed at the time of the death. Consequently, it is impossible to rule-out restraint asphyxia based upon the published case study information. And, until restraint asphyxia can be ruled-out, it is far more likely than not, that the manner and method of

restraint being employed at the time of the so-called "excited delirium death" was what caused the death – not excited delirium.

Blaming a death solely upon excited delirium is a "smokescreen."**([5,12])** Blaming a death solely upon excited delirium often is also an attempt to blame the VICTIM for her/his own death – an attempt to shift the blame away from the people who were restraining the victim at the time she or he died.**([12])**

The fact remains that, had any excited delirium victim NOT been restrained in a manner that interfered with her/him being able to HYPERVENTILATE (to breathe deeper and faster than normal), she/he more-likely-than-not would have SURVIVED the excited delirium incident. Because, the "cure" for the chemical imbalances caused by excited delirium is HYPERVENTILATION.**([13,14,15])**

Bottom Line: Until a case of death associated with excited delirium is reported, wherein massive trauma, overdose or poisoning, ***and*** restraint asphyxia have been conclusively RULED-OUT, there still will not exist a case demonstrating excited delirium having caused death, all by itself.

Before September of 2005, it was my stalwart opinion that ALL Taser-related deaths were probably caused by restraint asphyxia. After all, one would expect a Taser-related death to occur immediately after the "last" employment of the Taser. And, NONE of the Taser-related death case studies published had clearly ruled-out death occurring ***before*** application of a possibly asphyxial form of restraint.**([4])**

The only reason my opinion began to "waver" is this:

In a September 2005 Letter to the Editor of the New England Journal of Medicine, two study authors reported the case of an "adolescent" who was "subdued with a Taser stun gun and subsequently collapsed."**([16])** Oh, surpriZe; the report doesn't describe whether or not the "collapse" occurred immediately after the Taser stun … OR, whether it occurred during the application of some form of RESTRAINT subsequent to the Taser stun!

HOWEVER. The authors reported that, "Paramedics found the adolescent to be in ventricular fibrillation."

Ventricular fibrillation is a lethal electrical pattern occurring in the heart (a lethal "cardiac dysrhythmia"). A heart that is in ventricular fibrillation ("V-Fib") cannot circulate blood; it cannot produce a pulse; it does not "beat." Although V-Fib IS the most commonly first-encountered cardiac dysrhythmia when someone dies due only to a "heart attack," V-Fib is NOT commonly the first-encountered cardiac dysrhythmia when asphyxia or suffocation is the cause of death. In fact, one of the hallmark "clinical" points of evidence that restraint asphyxia caused a death is the fact that the first-encountered cardiac dysrhythmia was ASYSTOLE – "flat line." That is because asystole is the cardiac electrical dysrhythmia most commonly associated with death due to asphyxiation (or suffocation).

But, if a Taser stun was the cause of death, ventricular fibrillation WOULD, most-likely, be the first-encountered cardiac dysrhythmia.

Unfortunately, I have been unable to learn whether or not the entirety of this case report's information (including restraint-related information) will ever be published. When I Emailed him (in September, 2005), the "contact author" for this letter stated that he is "no

longer involved" with the other report "authors." He stated he has forwarded my request to be contacted to the others, but – almost a year later – I still haven't heard from them.

As it happens, several study articles regarding Tasers and V-Fib have been published since that bare-bones case study of a teen who entered V-Fib after being Tased.**([2,3,17,18,19,20,21])**

It is not surprising that, only researchers who have an "interest" in the continued profits of TASER International (or an interest in the continued misrepresentation of restraint asphyxia information), have elected to publish a study "conclusion" suggesting that Tasers could not possibly cause ventricular fibrillation.**([19,20])** Additionally, each one of those studies were performed using healthy, rested, human beings. Consequently, even if they'd found NO alteration in a study subjects electrocardiogram following Taser exposure, their findings still wouldn't have ***any*** relationship to REAL LIFE situations, anyway. The people who get Tased are not healthy, rested, human beings.

Studies performed and reported by ***unbiased*** researchers, however, have universally concluded that Tasers MAY INDEED be able to cause ventricular fibrillation, even in healthy, rested, pigs or human beings.**([2,3,17,18,21])** Consider the following quotes, below:

> **Previous pig studies placed the dart on the intact chest wall and the heart was then separated from the [dart] by a fat and muscle layer which is not as thick in the human. Our model will more closely provide a basis to correlate studies in the 2 species. … It is possible to cause ventricular fibrillation in pigs using a Taser EMD device.([2])**
>
> **At a meeting of the Academy of Forensic Sciences in February, electrical engineer James Ruggieri made a presentation in which he said that the electrical output of Taser's M26 model succeeds the fibrillation threshold for half the U.S. population.([3,18])***
>
> **In a separate finding, the Army also concluded last year that Tasers could cause ventricular fibrillation, the irregular heart rhythm characteristic of a heart attack. A memorandum from the Aberdeen Proving Grounds in Maryland, where the Army develops, tests and evaluates weapons, said, "Seizures and ventricular fibrillation can be induced by the electric current." At issue was whether soldiers should be shocked with the stun guns during training exercises, as Taser recommends. The Army's occupational health sciences director determined that Taser is an effective weapon but added in the February 2005 memo that "the practice of using these weapons on U.S. Army military and civilian forces in training is not recommended, given the potential risks."([3])**
>
> **Electrical tissue properties vary with locations in the body. The Taser waveforms could vary with different Tasers, and different individual Taser impulses. We just used one waveform as an example. These limitations may lead to misleading model results, which have to be considered if models are to be used to predict the safe dart-to-heart distance.([17])**

Thus, the ONLY reasonable and unbiased conclusion that can possibly be drawn from ALL the currently-available research data related to Tasers and V-Fib is this:

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* I have purchased the National Academy of Forensic Engineers (***NAFE***) December 2005 issue containing the Ruggieri article referred to by Anglen.**([3])** At this writing, it has not arrived. Once it is posted, it will be at: **http://www.charlydmiller.com/LIB08/2005DecRuggieriTaserShockPower.pdf**

A Taser strike MAY be able to cause death
due to triggering ventricular fibrillation!

USE OF A TASER SIGNIFICANTLY CONTRIBUTES TO CAUSING DEATH IN CUSTODY

The most important recently-published study report related to the effects of Taser exposure is that of Jauchem, Sherry, Fines, and Cook; "Acidosis, lactate, electrolytes, muscle enzymes, and other factors in the blood of *Sus scrofa* following repeated TASER® exposures."**([1])**

Jauchem, et al.'s clinical study discovered that rested and anesthetized pigs suffered:

- "**severe acidemia**" for at least an hour after Taser exposure
- "**increases in hematocrit, potassium, and sodium**" for at least 30 minutes post Taser exposure
- "**significantly decreased**" **oxygen saturation** "immediately after" being Tased, that didn't return to "pre-exposure levels" until almost 30 minutes after exposure.

Considering the fact that those very unhealthy findings were produced in rested and anesthetized pigs, imagine how much ***more*** acidemia, electrolyte imbalance, and decreased oxygen saturation would probably be suffered by a TASED HUMAN BEING who had been ***extremely exerting her/himself*** prior to Taser exposure – ***extremely exerting her/himself*** during the struggle and forceful restraint that occurred after the Taser's FAILURE to incapacitate her/him!

Imagine my "disappointment" when I read the authors' "conclusion," and noticed that it was worded in a way that encouraged misinterpretation and misrepresentation of their very important findings!

Jauchem, et al.'s conclusion failed to offer any kind of statement identifying how seriously (lethally) Tased human beings would be effected, were they to suffer what rested and anesthetized pigs suffered after being Tased. In fact, the only specifically "conclusive" statement penned by the study authors suggested that, "It is doubtful" that a human being subjected to Taser exposure would be caused to suffer "any serious health consequences."

Apparently, Jauchem, et. al, failed to CONSIDER THE FOLLOWING FACTS:

(1) Law enforcement personnel are not legitimately allowed to fire a Taser at a human being unless the target individual is acting in a manner strongly indicating that she/he presents a serious danger or threat to her-/himself or others, ***and*** the target individual fails to respond to repeated verbal cues to stop her/his dangerous or threatening activity.**([22])**

(2) All human beings who legitimately qualify for being Tased have engaged in extremely exertive physical activity for an unknown period of time – minutes-to-hours – prior to Taser exposure.**([4,22,23])** Certainly, rested and anesthetized human beings have never been (and never will be) legitimately subjected to Taser exposure in "real life" situations.

(3) Many human beings who were shot with a Taser prior to their death were Tased more than once during the incident that caused the officer to fire.**([4])** Human beings suffering from excited delirium are commonly at least Tased 2 to 3 times … sometimes 6 to 10 times … and – at least once – a person was Tased "19" times!**([4])**

(4) A person suffering from excited delirium who is Tased – even only once – frequently can continue to struggle and engage in extremely exertive physical activity after the Taser exposure.**([4,23])** In fact, continued struggle following Taser exposure occurred in the vast majority of Taser-related in-custody death reports that ever have been documented; hence, the reason that officers continued to Tase the victim.

(5) Lastly; it is a fact that many "excited delirium" victims who have died due to restraint asphyxia demonstrated a lethal level of acidosis even when a Taser was ***not*** employed during efforts to take them into "custody" – or to transport them to a care-provision facility – or to "control" their dangerous behavior within a care-provision facility.**([24,25,26,27,28,29,30])**

After reading the Jauchem, et al., study's "conclusion" and considering those 5 points, I submitted a Letter To The Editor of the journal that published their article. At this writing, my letter is being reviewed for publication. In the mean time, my letter is posted on my website at:
http://www.charlydmiller.com/LIB08/2006Aug04PigStudyEditorLetter.pdf

Within my letter, I asked the study authors to answer four questions that, were they to answer them honestly, would prevent misinterpretation and misrepresentation of their very important findings. When the authors reply, their reply will be posted at:
http://www.charlydmiller.com/LIB08/2006Aug04PigStudyAuthorReply.pdf

IN SUMMARY

THE TRUTH ABOUT TASERS: DO THEY KILL?

- No one can state, for a fact, whether or not Tasers have killed someone, because no one has ever adequately investigated Taser-related deaths by first ruling-out restraint asphyxia as having caused the death.

- Since Tasers CAN cause ventricular fibrillation, it is possible that they MIGHT cause it.

- Since Tasers HAVE been PROVEN to cause severe acidemia and altered electrolyte levels in rested and anesthetized pigs, Tasing a human being WILL worsen whatever acidemia and altered electrolyte levels that individual was suffering before the Taser strike.

- Since Tasers HAVE been PROVEN to cause significantly decreased oxygen concentrations in rested and anesthetized pigs, Tasing a human being WILL worsen any decreased oxygen concentration the individual suffers if she/he is subjected to an asphyxial form of restraint before, during, or after being shot with a Taser, one or more times.

There are many, many questions that have YET to be studied about the effect of Tasers®, "stun-guns," conducted energy devices, or any other forms of "electromuscular-incapacitating devices."

For instance: What effect might a Taser have on an individual's diaphragm (the largest muscle of respiration), were the Taser electrodes to land on either side of the person's lower chest or upper abdomen? If the diaphragm was incapacitated by the Taser, how long would it take for the diaphragm to recover and resume function? How long could the individual survive without diaphragm function, even were the individual NOT being restrained in a manner that prevented smaller muscles to help her/him breathe? If the individual was being restrained in a manner that prevented smaller respiratory muscles from helping her/him breathe, would the diaphragm be able to recover? If the individual was being restrained in a manner that increased the diaphragm's workload (such as forceful-prone-restraint), would the diaphragm be able to recover and resume functioning?

Still. Based on what ***has*** been studied and reported, we can come to two entirely reasonable "conclusions" about TASERS.

CONCLUSION #1:

Since it is known that a Taser exposure WILL worsen conditions that can cause restraint asphyxia (such as acidosis and oxygen desaturation), it is reasonable to presume that Taser exposure probably will cause restraint asphyxia to occur MUCH FASTER than it would have had the person not been Tased. Thus, it is negligently irresponsible to continue allowing human beings to be subjected to Taser strikes, until AFTER those allowed to use Tasers are adequately educated how NOT to cause restraint asphyxia.

CONCLUSION #2:

Since it remains unknown whether or not a Taser exposure can cause death all by itself, it is negligently irresponsible to continue allowing human beings to be subjected to Taser strikes, until AFTER the Taser has been conclusively proven to be safe.

Clearly, these conclusions demand an immediate world-wide BAN on the use of the Taser and other Taser-like devices. So, why is it that a device NOT proven to be SAFE is allowed to CONTINUE TO BE USED?

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REFERENCES:

[Each of the references for this article can be found in Charly D. Miller's Restraint Asphyxia Library: **http://www.charlydmiller.com/RA/RAlibrary.html** Links to specifically Taser-related articles can be found on the RA Library's "**Taser or Stun Gun Deaths Collection of Articles**" directory page: **http://www.charlydmiller.com/LIB07/2006TaserCollection.html**]

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