

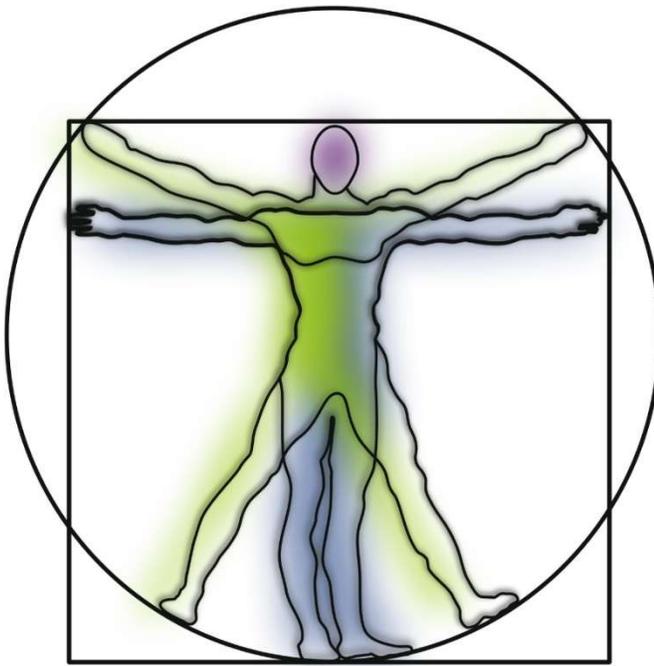
## The Science of Police Firearms Training

**Myth versus reality** - What every citizen should know about how police are trained to shoot

By Dave Brown

*"A lie will go round the world while truth is pulling its boots on."*

- Charles Haddon Spurgeon, 1855



Life is not a television show. Every crime doesn't get solved in 38 minutes to leave time for commercials. DNA results don't spit out the name, address and whereabouts of every criminal. Police officers don't get into gunfights every week. And on those rare occasions when they do, bullets sometimes miss their intended targets or might not miss the unintended ones.

Real life gunfights are neither exciting nor pretty. To paraphrase 17<sup>th</sup> century philosopher Thomas Hobbes, gunfights are nasty, brutish and short. They are potentially deadly to everyone around them.

There is no intermediate-force weapon, magic bullet or futuristic glue gun that can quickly stop a human-being determined to kill another human-being. If someone pulls a gun or an edged weapon on a police officer, they will likely get shot.

When officers are forced to resort to deadly force, they cannot shoot to wound; they must shoot to stop. The fight needs to be over as quickly and efficiently as possible. The longer a gunfight lasts, the more people get hurt or killed.

If citizens understood more about the science that goes into firearms training, they may be less inclined to prematurely condemn actions of officers forced to react in fractions of a second in order to save lives.

### The Science Behind Sudden Incident Stress

Firearms training is not some mystical black art. Police and armed law enforcement officers in Canada receive some of the most advanced, progressive and comprehensive firearms training available today. Yet, few members of the public get to see the level of training they receive or understand how much of that training is based on science.

A better understanding of the physiological and psychological effects of stress on the human body can help explain why police are trained to react in certain ways, and that much of what some people believe about police firearms training, may be just myth.

## **Physiology of stress**

The human body is an amazingly resilient package, complete with automated self-defense mechanisms. These mechanisms create almost instantaneous reactions in life-threatening situations. Because the body is preparing itself for either a battle or to flee for its life, these reactions are often simply termed the “fight-or-flight syndrome.”

When a body is threatened, one way it prepares itself to survive is by restricting blood flow only to the center-mass area. This is the part of the body that contains the major muscle groups, lungs and the main pathway to the brain. One of the first byproducts is an almost total loss of blood flow to extremities such as the arms and the legs, and the resultant loss of fine motor skills in the fingers.

This is why firearms training always emphasizes gross motor skills, and why certain techniques seen on television have no place on the street. It is also why a shot to an arm or a leg – even if possible in a fast-moving, dynamic situation - would have little effect in stopping a deadly threat. An assailant would not even feel anything until long after the fight was over.

As far as counting their rounds, officers rarely hear the sound of their own gunshots. In life-threatening situations, the brain can shut down much of the hearing in anticipation of loud noises, creating a loss of hearing called auditory exclusion. This is why no one can count their rounds in a real gunfight and why modern police training has moved from firing a fixed number of rounds at a target and knowing when to reload, and toward teaching officers to reload automatically as the slide locks back.

Tunnel vision is a term familiar in everything from firearms training to pursuit driving. Tunnel vision is the natural ability of the human brain to reshape the eyeball to optimize focus on a threat. The cost of this optimized focus is the loss of peripheral vision. Officers are taught from day one to always scan for further threats before holstering their sidearm.

Tunnel vision also causes distortions in remembering reality, particularly the size or distance of threats or objects. The brain does not generally experience tunnel vision often enough to perceive objects as being in sharper focus. It tends to misperceive objects as being larger or assailants being closer than they are in real life. (This is also what causes an armed robbery victim to identify almost any gun as “the size of a sewer pipe” when pointed directly at them.)

Adrenalin is a natural pain-killer that is instantly introduced into the bloodstream, serving to reduce the natural pain threshold of nerves and muscles. This can create nearly superhuman strength but it also means that assailants can still be a deadly threat even after multiple rounds strike the center-mass of the body. Only in the movies do bad guys go down instantly after one shot. In real life, some gunfights are over after one shot and some threats aren’t stopped after 10. Every situation is different.

## **Psychology of stress**

In a life-threatening situation, people often report a feeling that time slows down. This is known as the tachypsychia effect, and has been described as everything happening in slow motion. These distortions of time, speed, distance and even the order in which events happen, are a function of memory and perception but creates the temporary inability to remember the physical reality of distances, time frames, size of objects or even how many rounds are fired. One can easily see why several officers in the exact same situation may report seeing and hearing things completely different. In legal situations, if every eyewitness tells the exact same story, something is probably wrong.

In one example, a combination of tunnel vision and tachypsychia effect caused a soldier to describe empty shell casings flying past their face in the middle of combat as appearing “the size of beer cans, and moving so slowly I could read the writing on the headstamp.”

## What every citizen should know

### **Police don't fire warning shots.**

When deadly force is threatened against them or others, officers have no choice. Except in specific circumstances, officers shoot only for center-mass of the human body. This is the only place that can stop a deadly threat as quickly and efficiently as possible.

When firearms are the only solution, the goal will always be to stop a threat as instantly as possible. This means a bullet deep enough into the vital area of the assailant in order to cause massive trauma and a quick shutdown of the central nervous system. In a dynamic situation where people are screaming, bullets are flying and targets are moving, every projectile that leaves an officer's firearm must be accounted for. Any bullet that misses, has to hit something. Only on television do they disappear into thin air. In real life, projectiles can travel thousands of meters. Warning shots are dangerous to the public, plus have little to no effect anyway. Police don't fire warning shots.

### **Police don't shoot to kill.**

Neither can they shoot to wound. They only shoot to stop. Based on the science behind firearms training, shooting an assailant in the arm or the leg would have little effect. They will still be a deadly threat. This is why officers are taught to shoot for the center-mass of the body.

### **Police cannot shoot someone in the leg or shoot the knife out of someone's hand.**

Life is not a "John Wick" movie. When firearms are the last resort, police must shoot for the largest target they can see, and this is usually center-mass. In a dynamic situation, any other target would have no effect on stopping the threat and may result in a potentially dangerous miss. Only in movies do good guys always hit their target and bad guys always fall down. In real life, bullets rarely stop anyone with one or two shots, and even when hit, the body might not even know it has been shot. In the seconds or minutes before the body shuts down enough to stop the fight, an assailant can cover a lot of ground, stabbing or shooting more victims.

### **There are no magic bullets.**

There is no magic weapon police can employ to stop a deadly threat instantly. Tasers, batons and OC spray are all intermediate-force weapons. If deadly force is threatened on another human being, there is no longer any choice except the firearm.

### **Police cannot just "leave them alone."**

There is little honor among criminals. They prey on the weakest victims they can find, and most would give up their grandmother for a pack of cigarettes. If a violent criminal pulls an edged weapon or a gun on an armed police officer, they would certainly be prepared to also use it on the very next defenseless, innocent citizen who happens to fall within their sights. Criminals do not carry box-cutter knives to make greeting cards for their friends, or sharpened screwdrivers to tune tiny little carburetors. They carry these weapons to incite fear, maim and possibly kill. Police have no choice but to deal with them now. If they have time, they can tactically reposition for best advantage and hopefully avoid the use of deadly force, but police cannot just up and go away.

### **Police are not being equipped with "assault rifles" or military weapons.**

The patrol carbine gives police officers a defensive response to a much greater distance than they ever had before. The Armalite AR-style patrol carbine is not a "military weapon" or an "assault rifle." It has no full-automatic capability. But it is made by the same top tier manufacturers who produce military grade weapons because they have to work the first round, every time, no matter how long they have sat in the gun rack of a boiling hot or freezing cold police vehicle. Equipped with advanced combat-tested sight

systems, officers can engage deadly threats as far out as 300-meters. In addition to being more accurate at longer distances, they are also safer for the public. Equipped with police-issue hollow point ammunition, the bullet from the patrol carbine is far less likely to over-penetrate a target or go through the walls of an apartment.

### **Police don't go around shooting people.**

One of the biggest misperceptions about armed officers is why they carry that firearm on their hip. For most, it is one more tool to help protect citizens and make it home alive to their own families. In reality, no police officer wants to get into a gunfight. They know full well that nobody "wins;" they only survive. Real life gunfights are not a competition or a video game; there are no participation awards or prizes for coming in second. This is why police need to respond with overwhelming force in potentially deadly situations, specifically to avoid the need for deadly force unless it becomes absolutely necessary.

After all, the best gunfight in the world is the one that never happens in the first place.

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Even today, most officers will go through their entire career rarely needing to use their firearms. Yet the first question many citizens ask when they find out someone is a police officer is, "Ever shot anybody?"

### **Life is not television**

Some days you just can't win, no matter how hard you can argue science.

In March 2009, Vancouver Police are forced to shoot a man armed with a knife. Letters to the editor of the local paper for the next two weeks were full of, "Why did the police have to shoot him?" and "Why didn't they just shoot the knife out of his hand?"

Conversely, one year earlier RCMP officers responding to a murder on a Greyhound bus had to exercise considerable restraint during a lengthy standoff but were criticized by the public afterwards for NOT shooting the killer, although there was no longer anyone else alive on that bus and no one's life was in immediate danger.

Law enforcement is one of the few professions where one can behave professionally and responsibly and still get criticized.

Will science ever win out over these common myths? Probably not. For as long as some people still believe the earth is flat, all the science in the world won't change minds. In today's society, a lie can travel twenty times around the world before the truth even gets out of bed in the morning.

*As a firearms writer and instructor, Dave Brown has testified in court as an expert witness, written guest articles for the Vancouver Sun and Winnipeg Free Press and lectured on the science behind police weapons training at the University of Manitoba Law School and Canadian Association of Journalists.*