



A PRACTICAL GUIDE TO PISTOL CALIBERS FOR SELF-DEFENSE



**Written By Austin Killmer
Edited By Edward Cambro**

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(Woodsnorth, n.d.)

Choosing the right handgun caliber for self-defense may feel overwhelming to those who are new to gun ownership. It's easy to get caught up in the various discussions surrounding the topic. The caliber debate has been ongoing for decades and shows no signs of being settled anytime soon.

In this article, we'll help you figure out what handgun calibers are suitable for your defense. We'll provide you with the necessary data and why we recommend certain calibers over others. By the end, you should have all the necessary data to make an informed decision about your everyday carry firearm.

Choosing the right caliber for self-defense depends on a few important factors. The three main criteria we need to consider are capacity, controllability, and stopping power.

Capacity is determined by the number of rounds a magazine is designed to carry. We have yet to hear of either a documented or anecdotal case where someone who was in a gunfight wished for less ammunition.

Having more ammunition to protect yourself is obviously desirable. While some firearms can use larger magazines, they often make the gun harder to conceal. Larger firearms also tend to hold more rounds, but they can be more difficult to carry discreetly. This leads to an important question: what is a reasonable minimum number of rounds for an everyday carry firearm?

Numbers of rounds fired in defensive shootings will vary between law enforcement and non-law enforcement sources, and some are skewed by incidents in which no shots were fired. Considering all of the data available, we've estimated the average number of rounds necessary to end a violent encounter can be as high as **5 per attacker**.

We have included a link to table 106 of the FBI's Law Enforcement Officers Killed and Assaulted report (LEOKA) [here](#). This is part of the FBI's Uniformed Crime Report (UCR), which is a program that collects, analyzes and publishes data from over 18,000 law enforcement agencies. We understand that in general, law enforcement fires more rounds in violent encounters than private citizens do in self-defense. While the context of the shootings may be different,

the data still paints a picture for how many handgun rounds it takes to incapacitate an attacker. In order to determine the *minimum* number of rounds to carry, we need to consider the *maximum* number of rounds needed to end a violent encounter. While detailed data on civilian self-defense shootings is limited, this law enforcement data offers some of the most comprehensive information available to the general public.

Rangemaster, a well-renowned and long-standing training school, keeps records of their alumni outcomes in gunfights, including the round count. The most recent data we've found states 70 alumni have defended themselves and survived the encounter. The average round count for these gunfights is around 4. The range being between only 1 round, and one incident where 11 rounds were fired by the alumnus ([Concealed Carry Classes of Denver](#)).

Another factor to consider is the number of attackers that are likely to be present. According to a survey conducted by Georgetown University, **51.2%** of violent encounters involved two or more attackers. We have included a link to this survey [here](#).

The data suggests that it may take several rounds to stop an attacker. Of course, if more than one attacker is involved, the need for additional rounds is clear. For this reason, a firearm with at least 10 rounds is often considered a reasonable minimum. It's also important to remember that capacity alone doesn't determine effectiveness. Training, decision-making, and shot placement matter just as much as the number of rounds available.

Controllability is how much felt recoil a round has when fired, as well as how quickly you can get your sights or reticle back on target. This affects how quickly the shooter can make follow-up shots. As stated, it may take 5 rounds or more to stop an attacker. It's also important to point out that none of the studies cited accounted for handgun caliber used.

And finally, **stopping power**. This is a round's ability to incapacitate or stop an attacker. This is different than the Hollywood concept of "knockdown power." It's a common trope in movies to see people get

forcibly knocked down or even fly backwards when shot. This is done purely for dramatic effect and has no basis in reality.

FBI Special Agent Urey W. Patrick had this to say in his report on handgun wounding factors:

"A bullet simply cannot knock a man down. If it had the energy to do so, then equal energy would be applied against the shooter and he too would be knocked down. This is simple physics, and has been known for hundreds of years."

The full report can be found [here](#).

It's important to make the distinction between *stopping power* and *lethality*. The goal in a self-defense incident is to incapacitate or **stop** an attacker. When a firearm is used, this is accomplished in one of two ways.

The first way is by damaging blood vessels and vital organs, causing bleeding and eventually unconsciousness due to blood loss.

The second way is by disrupting the central nervous system (brain and/or spinal cord). Doing this will either result in unconsciousness or render the person unable to continue their violent actions due to nerve damage.

A round's effect on the human body is called terminal ballistics—essentially, it's what happens when a bullet hits its target. For our purposes, we will be using the terms *terminal ballistics* and *stopping power* interchangeably.

While any gunshot wound has the potential to be fatal, a round that lacks stopping power may not have the desired effect on an attacker quickly enough. That person may be able to continue the attack, only to succumb to the injury later once the harm has already been done to you.

Secondary considerations are the price and availability of ammunition. This directly affects how often you are able to attend training classes, as well as how often you're able to practice at the range. Ultimately, a round's effectiveness is irrelevant if the shooter can't consistently deliver rounds on target.

FBI Standards for Stopping Power

As we consider these factors, it's important to understand how stopping power is measured. The FBI developed these testing protocols following the infamous 1986 Miami FBI shootout. This single incident changed how law enforcement nationwide looks at terminal ballistics, tactics and training. There are multiple in-depth reports on this shooting. For our purposes, we will focus on a few key facts.

Early in the gunfight, one of the suspects was shot through the arm. The 9mm Winchester Silvertip continued into his chest and came to rest about an inch away from his heart. This round would eventually lead to the suspect's death, as it had severed his brachial artery and caused his lung to begin filling with blood. As this was happening, the suspect and his accomplice were able to continue shooting, ultimately **killing two FBI agents** and **wounding five more** before both suspects finally succumbed to their injuries. A report from Firearms News can be found [here](#) and the full 354-page report from the FBI can be found [here](#).

Following this, the FBI developed a new testing protocol and standards for terminal ballistics. They adopted the use of ballistics gel. This gel is designed partially to simulate human muscle tissue, and partially to be a consistent test media for any person or organization wishing to conduct their own independent testing. While not perfectly representative of the human body, ballistics gel testing can give useful data as to what a round will do once it enters a human body.

The parameters for **depth of penetration** were set between 12 inches and 18 inches. The 12-inch minimum was determined by the average distance between a person's shoulder and the vital organs inside the chest. Think of it this way: 12 inches ensures the bullet can reach vital organs even when shooting at an angle or through an arm. 18 inches is the upper limit because we want the bullet to stay inside the attacker, not pass through and potentially hit an innocent bystander. Notably, this new 12 inch minimum came as a result of the round fired by the FBI agent in 1986 that failed to incapacitate the suspect quickly enough.

It's also important to mention why *expansion* is important in terminal ballistics. Expanding bullets create a larger wound cavity, which increases the rate of bleeding, ultimately incapacitating an attacker faster. It also helps prevent overpenetration. When a round expands, the larger surface area creates drag, slowing the bullet down and, ideally, preventing the round from exiting the attacker's body and striking someone else.

.22 LR and .380 ACP

The first two calibers we'll be discussing are often recommended for beginners and those with limited hand strength. This is because the guns that fire these rounds are often small and are thought of as having soft recoil.

The first caliber is **.22 Long Rifle (LR)**. This is the smallest caliber we've included in this article. Because .22 LR is such a small diameter round, this means it has excellent capacity. Depending on the gun, this is usually between 10-20 rounds with some handguns holding even more!

The small caliber also makes .22 very soft recoiling. Many people recommend brand new shooters start with a .22 for this reason. The soft recoil may help those who are new to shooting.

When it comes to stopping power, this is where the .22 falls short. This is also where the lethality distinction comes into play. A gunshot wound from a .22 may eventually cause unconsciousness, or even death, but the time it takes for this to happen may allow for a violent attack to continue.

The ballistics gel testing we will be referencing comes from Lucky Gunner Ammo. They tested over 100 different rounds in various calibers, following the FBI's testing protocols. Their complete library of data can be found [here](#).

Many of the .22 rounds they tested struggled or failed to reach the minimum 12" of penetration. The complete data set for .22 LR can be found [here](#).



Here we have photos of the only .22 round tested to have any kind of expansion, the CCI Stinger. As you can see, the average depth of penetration was only 9.6", well below the FBI standard.

The next small caliber round we'll be discussing is **.380 ACP (Auto Colt Pistol)**. Guns chambered in .380 are typically small. As a result, there aren't many models that offer a capacity of 10 or more rounds.

Another downside of these small guns is their stiff recoil springs. These are necessary for the gun to function correctly. This means that the slides on these small .380s can be difficult to rack, especially for people with limited hand strength.

It also means that many .380s will have what's described as a "snappy" recoil. Snappy, meaning that there isn't necessarily a lot of recoil, but the recoil is delivered so quickly that it can be uncomfortable or even painful to some. This also affects the speed of follow-up shots, or the controllability.

As for stopping power, the weather can actually affect the .380's stopping power. .380 tends to struggle to get through multiple layers of clothing and get the desired depth of penetration. In cold weather, people will be wearing multiple layers of clothing, which can hinder the performance of .380 rounds.



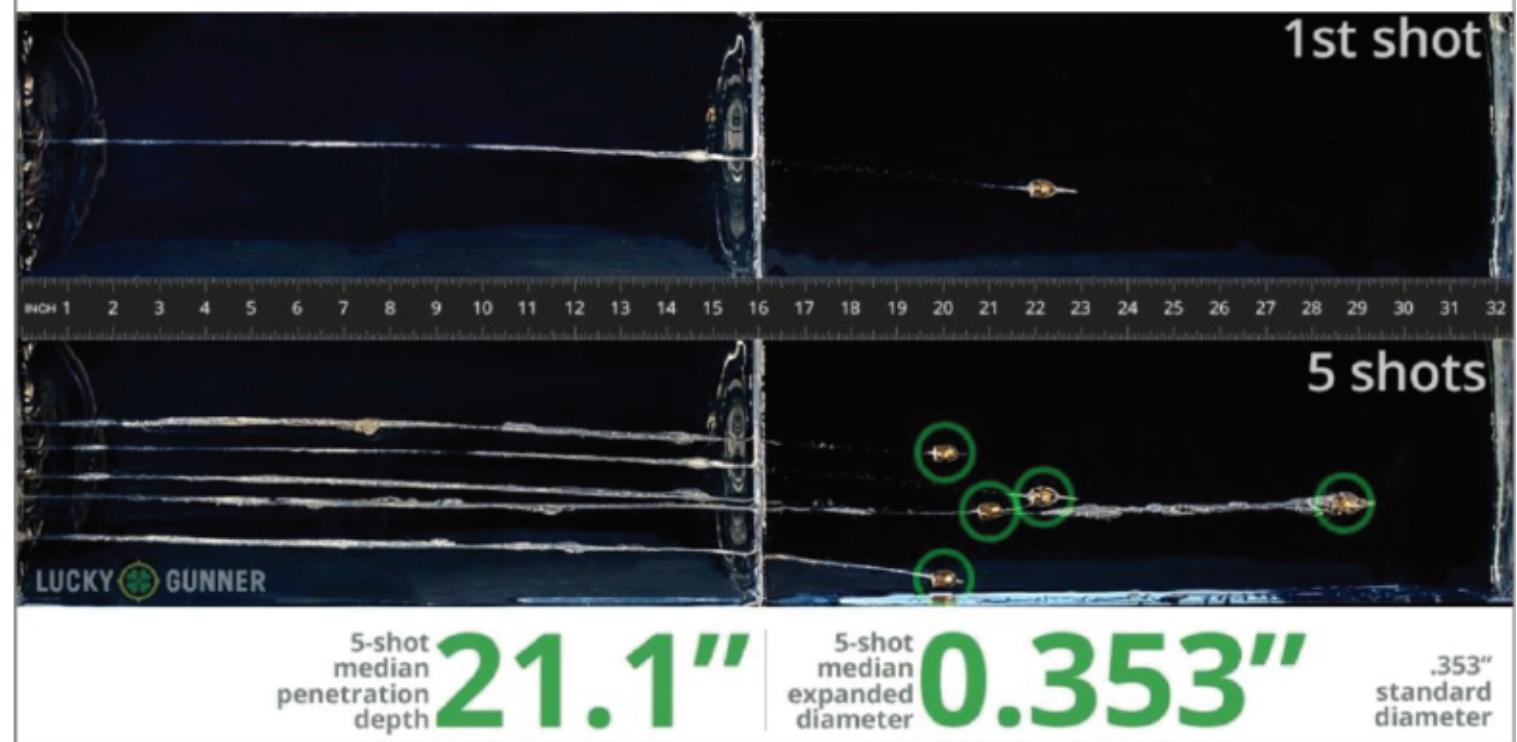
(LuckyGunner, Ballistic Gel Test)

This is because hollow point expansion relies on liquid pressure. For instance, when a bullet enters tissue (which is mostly water), that liquid is forced into the hollow cavity at the front of the bullet, causing it to expand. It's like forcing water into a balloon. It's similar to how a parachute opens up, but with liquid instead of air.

On the next page, you can see the fabric stuck inside the hollow point of these .380 Federal HST rounds, which prevented them from expanding in this photo, courtesy of Lucky Gunner.



380 ACP - 99 gr JHP - Federal HST



(LuckyGunner, Ballistic Gel Test)

As a result, these rounds penetrated an average of 21.1", exceeding the desired maximum designated by the FBI.

Full testing data of these rounds is available [here](#).

Conversely, these Speer Gold Dots expanded, but failed to meet the minimum 12" of penetration.



Full testing data can be found [here](#).

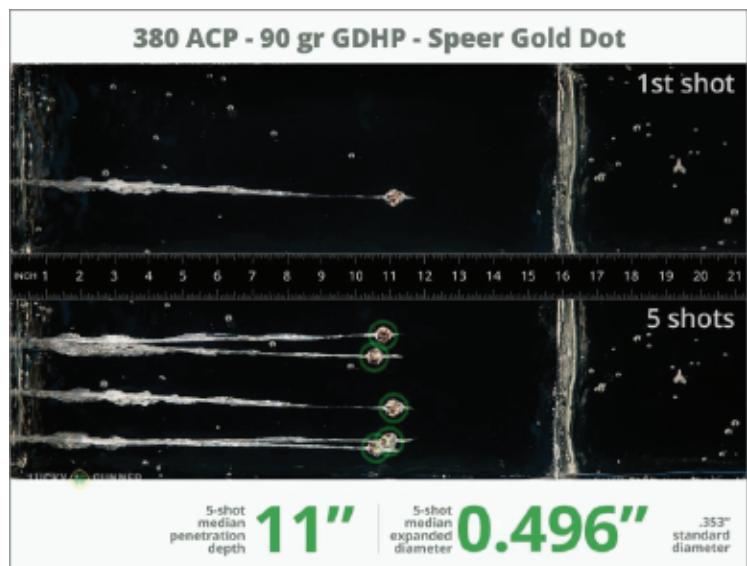
Due to the general lack of stopping power in these calibers, the use case for .22 and .380 is limited. .22's serious lack of stopping power could negatively affect the outcome of a violent attack. .380's effectiveness relies heavily on factors outside of gun and ammunition choice, as its stopping power can be inconsistent. While guns chambered in these small calibers are usually small and easily concealed, their ability to stop a violent attack is paramount when choosing a caliber for self-defense.

9mm

The next round for consideration is 9 millimeter (mm). Being such a popular round used by many countries around the world, it has come to be known by several names. These include 9mm Luger, 9mm Parabellum and 9x19mm. The specifications for these are nearly identical, and all are cross-compatible.

Most 9mm handguns hold between **10 and 17** rounds, offering good capacity. Guns chambered in 9mm usually have mild recoil, meaning most people can shoot them without much issue in terms of controllability.

As for stopping power, 9mm has proven to be adequate. This has become more apparent with recent advancements in bullet design. Modern hollow points have more consistent expansion when compared to their contemporaries of the past, especially after penetrating through clothing or



barriers. The standards set by the FBI post 1986 also pushed manufacturers to balance expansion with proper depth of penetration.

Since the 1986 Miami FBI shootout, several rounds have come and gone attempting to replace 9mm. After all, it was a 9mm Winchester Silvertip that failed to deliver an incapacitating wound that allowed FBI agents to be killed and wounded that day. More recently, both law enforcement and private citizens have gravitated back to 9mm as their choice of caliber. Many came to the conclusion that the trade-offs in **capacity, controllability, stopping power and cost** of these other rounds weren't significant enough to abandon 9mm. The 1986 incident demonstrates why stopping power isn't just about making a fatal wound; it's about stopping the threat immediately—before they can harm you.

.40 S&W

One of the calibers created to be comparable to the 9mm was the .40 Smith & Wesson (S&W). The .40 was thought of as a middle ground between the existing 9mm and .45 ACP cartridges. Offering greater stopping power than 9mm and increased capacity compared to .45.

Capacity of .40 S&W guns is usually between 9 and 15 rounds, depending on the gun. Generally, going from a gun chambered in 9mm to one chambered in .40, you lose 1-2 rounds. .40 caliber handguns are usually sized similarly, if not identically to their 9mm counterparts. For example: the Glock 19 (9mm, 15 rounds) and Glock 23 (.40 S&W, 13 rounds) share compatibility with holsters, and some parts are even

interchangeable. Since .40 S&W is a high-pressure round, this means **controllability** suffers. .40s are generally snappy and follow-up shots will be more difficult compared to the other calibers mentioned already. It's again important to remember that it may take 5 or more rounds to stop an attacker, regardless of caliber.

This brings us back to stopping power. While the .40 certainly has more stopping power when compared to 9mm, this improvement is only marginal.

Let's take Lucky Gunner's results between the 9mm and .40 S&W rounds of Federal HST, a popular choice for law enforcement and armed citizens as an example:

9mm - 124 Grain HST JHP - Federal Premium - 20 Rounds

			Median		
Bullet Depth (in.)	17.3	17.8	18.4	18.8	19.1
Expanded Diameter (in.)	0.6	0.6	0.6	0.61	0.62
Bullet Weight after shot (gr.)	121.4	121.4	123	123.5	123.5
Bullet Velocity (fps)	1115	1134	1135	1145	1146

40 S&W - 180 gr HST JHP - Federal Premium Law Enforcement - 50 Rounds

			Median		
Bullet Depth (in.)	17.3	17.7	18.4	19.4	19.7
Expanded Diameter (in.)	0.71	0.72	0.72	0.73	0.74
Bullet Weight after shot (gr.)	179.3	179.7	179.7	180.4	180.4
Bullet Velocity (fps)	949	952	960	976	982

(LuckyGunner, Ballistic Gel Test)

Their testing showed an identical average depth of penetration and just over one tenth of an inch larger hollow point expansion than the 9mm. The complete testing results for 9mm HST can be found [here](#) and for .40, [here](#).

The less than stellar improvement in terminal ballistics, combined with the loss in capacity, decreased controllability and higher cost of the ammunition caused .40 to fall out of favor by the 2020s. In 2015, the FBI themselves switched from .40 S&W back to

9mm for their standard issue handguns and continue to use it as of the writing of this article.

.45 ACP

The last caliber we'll be talking about is the **.45 ACP (Auto Colt Pistol)**. .45 is a large caliber round. This means that it has **low capacity** in relation to gun size. Guns chambered in .45 carry around 6-13 rounds. While, yes, there are some .45 caliber guns that meet or exceed our 10-round minimum, these guns are going to be large and difficult for most people to

conceal.

The controllability of .45 also depends on gun size. When fired from a large, metal framed gun like a 1911, felt recoil isn't too bad. Fired from a small, polymer framed gun, that same .45 round will have a lot more recoil and **controllability will suffer**.

.45 ACP has gained a **reputation for its stopping power**. Many anecdotes and euphemisms about its performance can often be heard in gun shops and on shooting ranges. Upon examination, however, ballistic testing shows once again only marginal improvement when compared to its contemporaries.

9mm - 124 Grain HST JHP - Federal Premium - 20 Rounds

			Median		
Bullet Depth (in.)	17.3	17.8	18.4	18.8	19.1
Expanded Diameter (in.)	0.6	0.6	0.6	0.61	0.62
Bullet Weight after shot (gr.)	121.4	121.4	123	123.5	123.5
Bullet Velocity (fps)	1115	1134	1135	1145	1146

40 S&W - 180 gr HST JHP - Federal Premium Law Enforcement - 50 Rounds

			Median		
Bullet Depth (in.)	17.3	17.7	18.4	19.4	19.7
Expanded Diameter (in.)	0.71	0.72	0.72	0.73	0.74
Bullet Weight after shot (gr.)	179.3	179.7	179.7	180.4	180.4
Bullet Velocity (fps)	949	952	960	976	982

45 ACP - 230 gr HST JHP - Federal Premium Personal Defense - 20 Rounds

			Median		
Bullet Depth (in.)	13.1	13.3	13.4	13.6	16.7
Expanded Diameter (in.)	0.83	0.84	0.84	0.86	0.87
Bullet Weight after shot (gr.)	229.1	229.6	229.6	229.7	229.9
Bullet Velocity (fps)	810	811	822	834	835

As you can see, .45 achieved less penetration than .40 or 9mm. This matters, as the FBI cites depth of penetration as a major factor in terminal ballistics. While the .45 had greater expansion than both .40 and 9mm, a 2014 FBI White Paper from their academy in Quantico had this to say about bullet diameter's effect on the human body:

“...it has long been established by medical professionals, experienced in evaluating gunshot wounds, that the damage along a wound path visible at autopsy or during surgery cannot be

(LuckyGunner, Ballistic Gel Test)
distinguished between the common handgun calibers used in law enforcement. That is to say an operating room surgeon or Medical Examiner cannot distinguish the difference between wounds caused by .35 to .45 caliber projectiles.”

Essentially, once a bullet is inside the body, the difference between a 9mm hole and a .45 caliber hole is medically insignificant. What matters most is where you hit and how deep the bullet penetrates.

The full white paper can be found [here](#).

Other Calibers

The calibers mentioned in this article were chosen specifically because they are the most popular pistol calibers on the market today. They are far from the only calibers available.

As for other calibers not mentioned in this article, we won't be going in-depth on them. The main reason being that they fail to meet our secondary criteria of cost and availability. While they may have slight variations in performance when compared to 9mm, .40 S&W and .45 ACP, rounds like .30 Super Carry, .357 Sig, .45 GAP, 5.7mm, .38 Super, etc. are typically expensive and hard to find.

Not to mention that many gun manufacturers have discontinued guns chambered in these unusual calibers, or never made them to begin with. As we mentioned before, the issue becomes the frequency at which you are able to train and practice with your handgun. Ideally, you want to be doing this with the gun and ammunition you plan on carrying, or at least getting as close to that as possible. This is important, as you want to be intimately familiar with your gun's recoil impulse, sight picture, controls, etc. before you need to protect your life with it. This ensures you have the greatest chance of surviving a violent encounter.

Conclusion

While a pistol chambered in .22 LR can be useful for first-time shooters, its severe lack of stopping power could be detrimental if used for protection. We also challenged the notion that .380s, with their snappy recoil and stiff recoil springs, are a good choice for those with limited hand strength. That being said, these smaller calibers may find a place in your everyday carry setup as a **backup** gun. Having a good, high-capacity primary carry gun allows for more flexibility when choosing a backup gun. .22s and .380s are generally small guns, which easily allows them to be carried in a pocket or ankle holster. In the future, we'll be covering backup guns in-depth.

We looked at the hard data between the 3 most popular calibers for self-defense and showed how minute the differences really are. The terminal ballistics of 9mm and .40 S&W are nearly identical. While the .45 ACP certainly makes a large wound track, this comes at the cost of heavy recoil and

reduced capacity.

With all these factors taken into consideration, it is easy to see why **9mm is the most popular pistol caliber** on the market today. It offers an excellent balance of stopping power, controllability, capacity and cost that has drawn law enforcement, armed citizens and competition shooters to it. This is coupled with the fact that the widest selection of pistols are available in this caliber. This means you have more options when selecting a specific handgun model to fit your needs.

Selecting a handgun caliber for self-defense can be overwhelming, but it doesn't have to be. The caliber debate will likely go on forever, but the data tells a clear story: modern 9mm ammunition offers the best overall balance for most people.

That said, the most important factor isn't which caliber you choose—it's your ability to use it effectively. A smaller caliber that you can shoot accurately and comfortably is far more valuable than a larger caliber you struggle to control. The best defensive handgun is the one you'll actually carry, practice with regularly, and can operate confidently under stress.

Before making your final decision, we strongly recommend renting or borrowing handguns in different calibers to see how they feel in your hands. What works for someone else may not work for you, and hands-on experience is invaluable.

Once you've chosen your caliber and firearm, commit to regular training and practice. Familiarize yourself with your gun's controls, recoil characteristics, and sight picture. In fact, many ranges and instructors offer handgun rentals, which is a great way to test your firearm choice or try different models during training. It's important to take courses from qualified instructors who can help you develop the skills necessary to protect yourself and your loved ones.

Finally, always remember that your safety is worth the investment in quality ammunition, proper training, and ongoing practice.