



SEEMS LIKE ALL HANDGUN CALIBERS... ...SOMETIMES DON'T WORK ALL THAT WELL

LAPD Officer Stacy Lim was shot in the chest with a .357 Magnum.

The bullet ravaged her upper body when it nicked the lower portion of her heart, damaged her liver, destroyed her spleen, and exited through the center of her back, still with enough energy to penetrate her vehicle door, where it was later found....

And STILL!.....Stacy Lim ran down her attacker, returned fire, killed him, survived, and ultimately was able to return to duty.

Source:

(http://www.lapdonline.org/inside_the_lapd/content_basic_view/27327#Stacy%20Lim)



WHICH HANDGUN CALIBER ACCOMPLISHES MAX-DESTRUCTION?

BH Spring Solutions 11 Caliber SHOOTOUT

WILL ANSWER THE QUESTION!

BHSS Meat / Watermelon / Denim TEST

<u>CALIBER</u>	<u>FIREARM</u>	<u>BARREL LENGTH</u>	<u>AMMUNITION</u>	<u>FPS</u>	<u>Ft/Lbs Ener</u>
.30Luger	BHAdvanced Browning HP	4.66"	Fiocchi 93gr Semi-Jktd Sft-Pt	1160	278
.30SuperCarry	S&W Shield	3.68"	Federal 100gr JHP	1127	282
.32ACP	BHOptimized Beretta 81BB	3.81"	Fiocchi 60gr XTP HP	922	113
.357Sig	BHAdvanced Browning HP	4.66"	Federal HST 125gr JHP	1390	536
.380ACP	BHOptimized Browning BDA380	3.81"	Speer Gold Dot 90gr HP	1047	219
9X18Makarov	BHOptimized Makarov	3.68"	Hornaday 95gr JHP	947	189
9X19Luger	BHAdvanced Browning HP	4.66"	Browning 147gr X-Point JHP	960	301
.38Super	BHAdvanced Kimber 1911	4.00"	SigSauer VCrown 124gr+P JHP	1144	360
.40S&W	BHAdvanced Browning HP	4.66"	Remington 180gr Bonded JHP	1005	404
10mm	BHAdvanced Fusion 1911	4.25"	Federal HST 200gr JHP	998	442
.45ACP	BHAdvanced Ruger 1911	4.25"	Federal HST 230gr JHP	858	376

NOTES:

Test Media: Whole Watermelon, Pork Ribs secured front/back w duct tape, 2-layers denim ahead of front ribs. Rib-to-Rib dimension of media approximately 9". Failure to exit media considered possible insufficient penetration.

All ammunition Standard Typical Pressure for the Caliber.

.38Super is a higher pressured .38ACP and therefore typically expressed as "+P". The ballistics of the Browning 147gr X-Point JHP as represented by Browning are rated effectively equal to Federal HST 147gr JHP. We did not experience Mfg-Represented Velocity with most ammo used for testing.



**Caliber Rankings of Ammo Tested Re-Ordered Based on Muzzle Energy in Ft/Lbs
BHSS Meat / Watermelon / Denim TEST**

<u>CALIBER</u>	<u>FIREARM</u>	<u>BARREL LENGTH</u>	<u>AMMUNITION</u>	<u>FPS</u>	<u>Ft/Lbs Ener</u>
.357Sig	BHAdvanced Browning HP	4.66"	Federal HST 125gr JHP	1390	536
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.45ACP	BHAdvanced Ruger 1911	4.25"	Federal HST 230gr JHP	858	376*
.38Super	BHAdvanced Kimber 1911	4.00"	SigSauer VCrown 124gr+P JHP	1144	360
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.30SuperCarry	S&W Shield	3.68"	Federal 100gr JHP	1127	282
.30Luger	BHAdvanced Browning HP	4.66"	Fiocchi 93gr Semi-Jktd Sft-Pt	1160	278
.380ACP	BHOptimizedBrowningBDA380	3.81"	Speer Gold Dot 90gr HP	1047	219*
9X18Makarov	BHOptimized Makarov	3.68"	Hornaday 95gr JHP	947	189*
.32ACP	BHOptimized Beretta 81BB	3.81"	Fiocchi 60gr XTP HP	922	113*

*Indicates Expanded Bullet was found in back rib / failed to exit media

At the completion of testing, and through comparing the destruction to the test media of the 11 caliber/ammo combinations tested, the test media exhibited no compelling reasons to re-order the above list. **The Final Finishing Order from Most Destructive to Least Destructive is the above list and in order from most to least Ft/Lbs Energy.**

Conclusions:

1. Among the various theories about the effectiveness of handgun ammunition, one "theory" seemed to be supported by the preliminary test of 11 calibers/ammo combinations: We call the "Theory": "**Big Holes Going Fast**". Big Holes Going Fast DO seem to have advantage.
2. The same source that offered the theory "Big Holes Going Fast" also stressed that Ft/Lbs Energy is **not always** a reliable indicator of the most destructive caliber/ammunition combination because Ft/Lbs Energy does not consider the composition of the target or the impact of the diameter of the projectile.

So, actually 2 theories that are part of the same concept.

The decision was made to test 3 Additional Caliber / Ammo Combinations but for the purpose of proving or disproving this two part concept. The 3 Additional Caliber / Ammo choices were based on following the advice: "It's about Big Holes Going Fast".



11 Caliber Test - Continued

EXTENDED CALIBER / AMMUNITION TESTING

RED is ammunition chosen for Extended Testing based on desire for "Big Holes Going Fast"
Compared to Same Caliber/Ammo Combination already Tested (BLACK)

				FPS	ft/lb Energy
.45ACP					
.45ACP	BHAdvanced Ruger 1911 (Failed to Exit the Media)	4.25"	Federal HST 230gr JHP	858	376
.45ACP	BHAdvanced Ruger 1911	4.25"	Hornaday 220gr +P JHP	931	423*
	*The Only Caliber/Ammo Combo Tested that EXPLODED the Test Media				
.40S&W					
.40S&W	BHAdvanced Browning HP	4.66"	Remington 180gr Bonded JHP	1005	404
.40S&W	BHAdvanced Browning HP	4.66"	Hornady 165gr FTX	1147	482**
	**Moderate Improvement in Destruction to Test Media				
9X19mm					
9X19Luger	BHAdvanced Browning HP	4.66"	Browning 147gr X-Point JHP	960	301
9X19Luger	BHAdvanced Browning HP	4.66"	Speer 124gr +P JHP	1216	408**
	**Moderate Improvement in Destruction to Test Media				



FINAL FINISHING PLACEMENTS OF ALL CALIBER / AMMUNITION COMBINATIONS TESTED

<u>CALIBER</u>	<u>FIREARM</u>	<u>BARREL LENGTH</u>	<u>AMMUNITION</u>	<u>FPS</u>	<u>Ft/Lbs Ener</u>
.45ACP	BHAdvanced Ruger 1911	4.25"	Hornaday 220gr +P JHP	931	423
.40S&W	BHAdvanced Browning HP	4.66"	Hornady 165gr FTX	1147	482
.357Sig	BHAdvanced Browning HP	4.66"	Federal HST 125gr JHP	1390	536
10mm	BHAdvanced Fusion 1911	4.25"	Federal HST 200gr JHP	998	442
.40S&W	BHAdvanced Browning HP	4.66"	Remington 180gr Bonded JHP	1005	404
9X19Luger	BHAdvanced Browning HP	4.66"	Speer 124gr +P JHP	1216	408
.45ACP	BHAdvanced Ruger 1911	4.25"	Federal HST 230gr JHP	858	376*
.38Super	BHAdvanced Kimber 1911	4.00"	SigSauer VCrown 124gr+P JHP	1144	360
9X19Luger	BHAdvanced Browning HP	4.66"	Browning 147gr X-Point JHP	960	301
.30SuperCarry	S&W Shield	3.68"	Federal 100gr JHP	1127	282
.30Luger	BHAdvanced Browning HP	4.66"	Fiocchi 93gr Semi-Jktd Sft-Pt	1160	278
.380ACP	BHOptimizedBrowningBDA380	3.81"	Speer Gold Dot 90gr HP	1047	219*
9X18Makarov	BHOptimized Makarov	3.68"	Hornaday 95gr JHP	947	189*
.32ACP	BHOptimized Beretta 81BB	3.81"	Fiocchi 60gr XTP HP	922	113*

*Failed to Exit Media

The Extended Testing Results seemed to confirm both "Big Holes Going Fast" and "Ft/Lbs Energy" is a "marker" but not sufficient in an of itself as a predictor of a caliber / ammo destructive performance in the test media used. By following "Big Holes Going Fast" as guidance, two of the three additional caliber / ammo combinations tested performed better than any of the first 11 caliber/ammo combinations tested, regardless of caliber. We also saw 9x19mm performance improve so as to be judged superior to the original .38Super and .45ACP ammos tested.

Noteworthy: Of 14 Caliber / Ammunition Combinations Tested, placement in the Top 6 involved Ft/Lbs Energy above 400.

It appears this testing does prove that questions like "9mm or .45ACP?" or ".40S&W or .357Sig?" do not contain sufficient information from which to have a relevant conversation.



EXTENDED NOTES

FROM THE 11-Caliber +3 Max Destruction Testing

- **All ammunition exhibited excellent expansion characteristics.**
- **During the testing, our “thinking” about this subject moved away from caliber and moved toward more specific subjects of:**
 - Energy**
 - Velocity**
 - Bullet Weight**
 - And of course, projectile diameter**
- **Much was determined by the size of the hole and how fast it was going.**



SHORT NOTES ABOUT EACH CALIBER / AMMO COMBINATION TESTED:

<u>CALIBER</u>	<u>FIREARM</u>	<u>BARREL LENGTH</u>	<u>AMMUNITION</u>	<u>FPS</u>	<u>Ft/Lbs Ener</u>
.45ACP	BHAdvanced Ruger 1911	4.25"	Hornaday 220gr +P JHP	931	423
This was the only caliber / ammo combination that exploded the test media					

4 Very Comparable Choices:

.40S&W	BHAdvanced Browning HP	4.66"	Hornady 165gr FTX	1147	482
High Level of Destruction to the Test Media					
.357Sig	BHAdvanced Browning HP	4.66"	Federal HST 125gr JHP	1390	536
High Level of Destruction to the Test Media					
10mm	BHAdvanced Fusion 1911	4.25"	Federal HST 200gr JHP	998	442
.40S&W	BHAdvanced Browning HP	4.66"	Remington 180gr Bonded JHP	1005	404

The above 4 caliber / ammo combinations exhibited destruction of the test media that was very similar in appearance upon examination. All delivered significant Shock and Energy and Disturbance to the Test Media that exceeded the performance of all caliber / ammo combinations listed below this point in this summary.

9X19Luger	BHAdvanced Browning HP	4.66"	Speer 124gr +P JHP	1216	408
This tested 9X19mm ammo is an excellent example how the technological focus and attention on 9X19mm ammo has this caliber "living large" – and situationally can result in a 9X19mm cartridge that can out-perform it's big brother .38Super and it's bigger brother the .45ACP.					
.45ACP	BHAdvanced Ruger 1911	4.25"	Federal HST 230gr JHP	858	376*
Significant media destruction and energy transfer to the test media <i>where the bullet penetrated</i> . Text-Book Bullet Expansion, but failed to Exit Media. Expanded Bullet only penetrated the plastic wrap of the back rib and did NOT penetrate or imbed in the back rib of the media, failed to exhibit any destruction to the back rib.					
.38Super	BHAdvanced Kimber 1911	4.00"	SigSauer VCrown 124gr+P JHP	1144	360
Satisfactory 9mm diameter performer as tested.					
9X19Luger	BHAdvanced Browning HP	4.66"	Browning 147gr X-Point JHP	960	301
Satisfactory 9mm diameter performer that can be much better from the caliber.					

.30SuperCarry	S&W Shield	3.68"	Federal 100gr JHP	1127	282
Exhibited impressive energy transfer to the test media considering the .30 diameter. Understandable the advocates of .30SuperCarry point out ballistics in the range of 9x19mm. .30SuperCarry caliber is less comparable to the Speer 124gr +P in 9x19mm. Expansion and expanded wound channel all satisfactory considering the size of the hole.					
.30Luger	BHAdvanced Browning HP	4.66"	Fiocchi 93gr Semi-Jktd Sft-Pt	1160	278
This was an energetic performer. Soft-point exhibited expansion and destruction characteristics comparable to an expanding hollow point. The Semi-Jacketed nature of the Semi-Jacketed Soft Point also produced a shrapnel effect found within the media.					
.380ACP	BHOptimized Browning BDA380	3.81"	Speer Gold Dot 90gr HP	1047	219*
Delivered 9mm hole and energy to the target and exhibited excellent expansion benefits. The expanded bullet failed to exit the media.					
9X18Makarov	BHOptimized Makarov	3.68"	Hornaday 95gr JHP	947	189*
At 100 FPS slower than the 9x17 .380ACP, performance didn't compared to other 9mm calibers tested. Failed to exit test media.					
.32ACP	BHOptimized Beretta 81BB	3.81"	Fiocchi 60gr XTP HP	922	113*
Bullet expansion was typical. Bullet did not exit test media. Least destruction to the test media of the Caliber / Ammo Combinations Tested.					

FINAL THOUGHTS:

Other considerations for users of any of these calibers and any of these ammunitions include:

What handgun caliber / ammo / firearm combination is best for accuracy, for me?

Is that firearm Reliable with said caliber/ammo combination?

Can I fully-control said caliber / ammo / firearm combination and continue to make accurate follow-up shots as long as necessary?

Can I deploy said firearm fast?.....and have it with me almost all the time unless the 12 Gauge with Slug is more accessible.

All of the above must be individually tested.

As you've seen, the "Caliber Wars" mostly don't tell even half the story.

"What you are shooting (the target) is as important as what you are shooting (the caliber & bullet) are as important as what you are shooting (specific firearm).



**ADDITIONAL REFERENCE GUIDE AND THOUGHTS ABOUT STOPPING POWER
THAT WERE CONSIDERATIONS WHEN PLANNING
THE BHSpringSolutions 11-Caliber Max Destruction Testing**

**It does not matter what I intend to do today.
It does not matter what I have planned, or where I intend to go.
What matters is where I end up today.**

**If I knew in advance that I would be in a fight for my life today...
...how would I prepare for that?**

Prepare - Like THAT – Today

**Once upon a time, I considered my personal defense handguns to be 7 Yard Tools,
maybe 10 or 15 Yards in a worst-day-scenario.**

**Am I to believe that it is impossible that I could be driving today and
see some asshole popping some off in a school yard from 50 Yards out?**

Or, sitting in a Mall Food Court and a lunatic starts popping some off from 40 Yards out?

Far from impossible – Others have already experienced these.

Do today's realities warrant handgun proficiency at longer distances by armed citizens?

Higher Velocity (Flatter Shooting) Handgun Bullets equal better accuracy at distance.

The 11-Caliber-Test should not be construed to be about effectiveness at short range only.



ADDITIONAL REFERENCE GUIDE OF HIGHER VELOCITY CURRENTLY AVAILABLE AMMUNITIONS
 ADDITIONALLY CHRONOGRAPHED AND TESTED PREMIUM CHOICES IN 9X19, .40S&W, .45ACP, added in Red
 UNTESTED CHOICES BASED ON MFG. REPRESENTATIONS added in Blue

As Chronographed and Tested by BHSpringSolutions in Black

Rankings Based on Ft/Lbs per Sq./In.

<u>CALIBER</u>	<u>FIREARM</u>	<u>BARREL LENGTH</u>	<u>AMMUNITION</u>	<u>FPS</u>	<u>Ft/Lbs Ener</u>
10mm	-	-	Underwood 155gr JHP	1500	775
10mm	-	-	BuffaloBore 180gr JHP	1350	728
.357Sig	-	-	Underwood 125gr JHP	1475	604
.45ACP	-	-	Underwood 185gr +P JHP	1200	592
.40S&W	-	-	BuffaloBore 135gr JHP	1400	588
10mm	-	-	Corbon 150gr JHP	1325	585
.40S&W	-	-	BuffaloBore 155gr +P JHP	1300	582
.45ACP	-	-	Corbon 165gr +P JHP	1250	572
.357Sig	-	-	BuffaloBore 125gr JHP	1425	564
.38Super	-	-	BuffaloBore 115gr+P JHP	1450	537
10mm	-	-	Federal 200gr JHP	1100	537
.357Sig	BHAdvanced Browning HP	4.66"	Federal HST 125gr JHP	1390	536
.40S&W	-	-	Corbon 135gr JHP	1325	526
.45ACP	-	-	Speer 200gr +P JHP	1080	518
.38Super	-	-	Corbon 115gr+P JHP	1425	518
.40S&W	BHAdvanced Browning HP	4.66"	Hornady 165gr FTX	1147	482
9X19Luger	-	-	Corbon 115gr +P JHP	1350	465
10mm	BHAdvanced Fusion 1911	4.25"	Federal HST 200gr JHP	998	442
.40S&W	BHAdvanced Browning HP	4.66"	Federal HST 165gr JHP	1088	434
9X19Luger	-	-	Underwood 115gr +P JHP	1300	432
.45ACP	BHAdvanced Ruger 1911	4.25"	Hornaday 220gr +P JHP	931	423
9X19Luger	BHAdvanced Browning HP	4.66"	Speer 124gr +P JHP	1216	408
.40S&W	BHAdvanced Browning HP	4.66"	Remington 180gr Bonded JHP	1005	404
9X19Luger	BHAdvanced Browning HP	4.66"	Hornady 124gr +P JHP	1197	394
.45ACP	BHAdvanced Ruger 1911	4.25"	Federal HST 230gr JHP	858	376
.38Super	BHAdvanced Kimber 1911	4.00"	SigSauer VCrown 124gr+P JHP	1144	360
.30SuperCarry	-	-	Hornady 100gr JHP	1250	347
.30SuperCarry	-	-	Speer 115gr JHP	1150	338
9X19Luger	BHAdvanced Browning HP	4.66"	Browning 147gr X-Point JHP	960	301
.380ACP	-	-	BuffaloBore 90gr +P JHP	1200	288
.30SuperCarry	S&W Shield	3.68"	Federal 100gr JHP	1127	282
.30Luger	BHAdvanced Browning HP	4.66"	Fiocchi 93gr Semi-Jktd Sft-Pt	1160	278
9X18Makarov	-	-	BuffaloBore 95gr +P JHP	1125	267
.32ACP	-	-	BuffaloBore 75gr +P F.N.	1150	220
.380ACP	BHOptimizedBrowningBDA380	3.81"	Speer Gold Dot 90gr HP	1047	219
9X18Makarov	BHOptimized Makarov	3.68"	Hornaday 95gr JHP	947	189
.32ACP	-	-	Corbon 60gr HP	1050	147
.32ACP	BHOptimized Beretta 81BB	3.81"	Fiocchi 60gr XTP HP	922	113



ADDITIONAL REFERENCE GUIDE REDUCED TO HIGHEST VELOCITY CURRENTLY AVAILABLE AMMUNITIONS BY CALIBER + TESTED AMMUNITION
ADDITIONALLY TESTED & Chronographed by BHSS PREMIUM CHOICES IN 9X19, .40S&W, .45ACP, added in Red
UNTESTED PREMIUM CHOICES W/ HIGHEST FT-LBS ENERGY RATINGS BY CALIBER BASED ON MFG'S REPRESENTATIONS in Blue
 As Chronographed and Tested by BHSpringSolutions in Black

<u>CALIBER</u>	<u>FIREARM</u>	<u>BARREL LENGTH</u>	<u>AMMUNITION</u>	<u>FPS</u>	<u>Ft/Lbs Ener</u>
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.38Super	-	-	BuffaloBore 115gr+P JHP	1450	537
.357Sig	BHAdvanced Browning HP	4.66"	Federal HST 125gr JHP	1390	536
.40S&W	BHAdvanced Browning HP	4.66"	Hornady 165gr FTX	1147	482
9X19Luger	-	-	Corbon 115gr +P JHP	1350	465
10mm	BHAdvanced Fusion 1911	4.25"	Federal HST 200gr JHP	998	442
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.32ACP	-	-	BuffaloBore 75gr +P F.N.	1150	220
.380ACP	BHOptimizedBrowningBDA380	3.81"	Speer Gold Dot 90gr HP	1047	219
9X18Makarov	BHOptimized Makarov	3.68"	Hornaday 95gr JHP	947	189
.32ACP	BHOptimized Beretta 81BB	3.81"	Fiocchi 60gr XTP HP	922	113

Other Home Defense Options for Comparison:

.50AE	-	5.00	Underwood 300gr	1580	1663
7.62x39	-		123gr	2450	1640
.223	-		55gr	3250	1290
3" 12 GA Slug	-		452gr	1760	3108



The ability to deploy the defensive firearm, FAST

The ability to Deploy & Utilize 1-Handed

The ability to Deliver Accuracy

The ability to deliver Fast & Accurate Follow-Up Shots, in whatever quantity is required, until the threat changes positions in the sights. (A threat going from Vertical to Horizontal would be an example of a desirable change.)

NO CALIBER can help if these abilities are absent, or deficient.

Question in Online Forum:

Help me understand. I see several types of hollow points from different calibers penetrate just as far as others. Some also penetrate less, but with much more energy. Take cor bons 135gr 10mm round. It only penetrated 10.5 inches, but with over 700 ft lbs. 165 gr .40 golden Sabres penetrate around 14-16 inches but with around 480 ftlbs. Which is more important?

How is Bullet Energy in Ft/lbs calculated?

(FPS x FPS x Bullet Weight in Grain) / 450,240 = ft lbs As is the rule when it comes to physics, we don't consider extraneous factors like aerodynamics, gravity, and what you had for lunch for the sake of keeping the equation manageable.

Frank Ettin: October 2013, Online Forum

And further in In Defense of Self and Others... (pp. 95-96, emphasis in original): Kinetic energy does not wound. Temporary cavity does not wound. The much-discussed "shock" of bullet impact is a fable.... The critical element in wounding effectiveness is penetration. The bullet must pass through the large blood-bearing organs and be of sufficient diameter to promote rapid bleeding.... Given durable and reliable penetration, the only

way to increase bullet effectiveness is to increase the severity of the wound by increasing the size of the hole made by the bullet....

I see several types of hollow points from different calibers penetrate just as far as others. Some also penetrate less, but with much more energy. ...Which is more important? Penetration.

This is kind of a long read, but pretty much covers the ground.

Let's consider how shooting someone will actually cause him to stop what he's doing.

The goal is to stop the assailant.

There are four ways in which shooting someone stops him:

psychological -- "I'm shot, it hurts, I don't want to get shot any more."

massive blood loss depriving the muscles and brain of oxygen and thus significantly impairing their ability to function

breaking major skeletal support structures

damaging the central nervous system.

Depending on someone just giving up because he's been shot is iffy. Probably most fights are stopped that way, but some aren't; and there are no guarantees.

Breaking major skeletal structures can quickly impair mobility. But if the assailant has a gun, he can still shoot. And it will take a reasonably powerful round to reliably penetrate and break a large bone, like the pelvis.

Hits to the central nervous system are sure and quick, but the CNS presents a small and uncertain target. And sometimes significant penetration will be needed to reach it.

The most common and sure physiological way in which shooting someone stops him is blood loss -- depriving the brain and muscles of oxygen and nutrients, thus impairing the ability of the brain and muscles to function. Blood loss is facilitated by (1) large holes causing tissue damage; (2) getting the holes in the right places to damage major blood vessels or blood bearing organs; and (3) adequate penetration to get those holes into the blood vessels and organs which are fairly deep in the body. The problem is that blood loss takes time. People have continued to fight effectively when gravely, even mortally, wounded. So things that can speed up blood loss, more holes, bigger holes, better placed holes, etc., help.

So as a rule of thumb --

More holes are better than fewer holes.

Larger holes are better than smaller holes.

Holes in the right places are better than holes in the wrong places.

Holes that are deep enough are better than holes that aren't.

There are no magic bullets.

There are no guarantees.

With regard to the issue of psychological stops see

this study (<http://www.buckeyefirearms.org/node/7866>) by Greg Ellifritz.

As Ellifritz note in his discussion of his "failure to incapacitate" data (emphasis added):

...Take a look at two numbers: the percentage of people who did not stop

(no matter how many rounds were fired into them) and the one-shot-stop percentage. The lower caliber rounds (.22, .25, .32) had a failure rate that was roughly double that of the higher caliber rounds. The one-shot-stop percentage (where I considered all hits, anywhere on the body) trended generally higher as the round gets more powerful. This tells us a couple of things...

In a certain (fairly high) percentage of shootings, people stop their aggressive actions after being hit with one round regardless of caliber or shot placement. These people are likely NOT physically incapacitated by the bullet. They just don't want to be shot anymore and give up! Call it a psychological stop if you will. Any bullet or caliber combination will likely yield similar results in those cases. And fortunately for us, there are a lot of these "psychological stops" occurring. The problem we have is when we don't get a psychological stop. If our attacker fights through the pain and continues to victimize us, we might want a round that causes the most damage possible. In essence, we are relying on a "physical stop" rather than a "psychological" one. In order to physically force someone to stop their violent actions we need to either hit him in the Central Nervous System (brain or upper spine) or cause enough bleeding that he becomes unconscious. The more powerful rounds look to be better at doing this....

There are two sets of data in the Ellifritz study: incapacitation and failure to incapacitate. They present some contradictions.

Considering the physiology of wounding, the data showing high incapacitation rates for light cartridges seems anomalous.

Furthermore, those same light cartridges which show high rates of incapacitation also show high rates of failures to incapacitate. In addition, heavier cartridges which show incapacitation rates comparable to the lighter cartridges nonetheless show lower failure to incapacitate rates.

And note that the failure to incapacitate rates of the 9mm Luger, .40 S&W, .45 ACP, and .44 Magnum were comparable to each other.

If the point of the exercise is to help choose cartridges best suited to self

defense application, it would be helpful to resolve those contradictions.

A way to try to resolve those contradictions is to better understand the mechanism(s) by which someone who has been shot is caused to stop what he is doing.

The two data sets and the apparent contradiction between them (and as Ellifritz wrote) thus strongly suggest that there are two mechanisms by which someone who has been shot will be caused to stop what he is doing.

One mechanism is psychological. This was alluded to by both Ellifritz and FBI agent and firearms instructor Urey Patrick. Sometimes the mere fact of being shot will cause someone to stop. When this is the stopping mechanism, the cartridge used really doesn't matter. One stops because his mind tells him to because he's been shot, not because of the amount of damage the wound has done to his body.

The other mechanism is physiological. If the body suffers sufficient damage, the person will be forced to stop what he is doing because he will be physiologically incapable of continuing. Heavier cartridges with large bullets making bigger holes are more likely to cause more damage to the body than lighter cartridges. Therefore, if the stopping mechanism is physiological, lighter cartridges are more likely to fail to incapacitate.

And in looking at any population of persons who were shot and therefore stopped what they were doing, we could expect that some stopped for psychological reasons. We could also expect others would not be stopped psychologically and would not stop until they were forced to because their bodies became physiologically incapable of continuing.

From that perspective, the failure to incapacitate data is probably more important. That essentially tells us that when Plan A (a psychological stop) fails, we must rely on Plan B (a physiological stop) to save our bacon; and a heavier cartridge would have a lower [Plan B] failure rate.

Also see the FBI paper entitled "Handgun Wounding Factors and Effectiveness", by Urey W. Patrick (<http://thefiringline.com/forums/attachment.php?attachmentid=83888&d=1348552423>). Agent Patrick, for example, notes on page 8:...Psychological factors are probably the most important relative to achieving rapid incapacitation from a gunshot wound to the torso. Awareness of the injury..., fear of injury, fear of death, blood or pain; intimidation by the weapon or the act of being shot; or the simple desire to quit can all lead to rapid incapacitation even from minor wounds. However, psychological factors are also the primary cause of incapacitation failures.

The individual may be unaware of the wound and thus have no stimuli to force a reaction. Strong will, survival instinct, or sheer emotion such as rage or hate can keep a grievously wounded individual fighting....

And for some more insight into wound physiology and "stopping power":

Dr. V. J. M. DiMaio (DiMaio, V. J. M., M. D., Gunshot Wounds, Elsevier Science Publishing Company, 1987, pg. 42, as quoted in In Defense of Self and Others..., Patrick, Urey W. and Hall, John C., Carolina Academic Press, 2010, pg. 83):In the case of low velocity missiles, e. g., pistol bullets, the bullet produces a direct path of destruction with very little lateral extension within the surrounding tissue. Only a small temporary cavity is produced. To cause significant injuries to a structure, a pistol bullet must strike that structure directly. The amount of kinetic energy lost in the tissue by a pistol bullet is insufficient to cause the remote injuries produced by a high-velocity rifle bullet.

Lost Sheep

October 12, 2013, 04:18 PM

Rule 1 - Terminal Ballistics is an inexact science.