

# Wound Cavity and Caliber

## Caliber Greatly Affects the Amount of Crushed Tissue (Volume of Permanent Wound Cavity)

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### How to Read this Table

- (a) When hunting the goal of a projectile (pellet or slug) is to destroy vital organs and/or induce bleeding of the quarry by slicing and crushing the tissue. This results in a hole – the permanent wound cavity.  
The larger the permanent wound cavity left by the projectile the more tissue is destroyed and the more bleeding occurs. The table shows how much the wound cavity would increase by using a larger or smaller caliber (assuming no expansion of the projectile, and equal penetration).  
Of course, shot placement is always the most important factor!
- (b) Select a caliber from the first two table rows: The **diameters** are given in metric and imperial units, in **bold**.
- (c) The next two rows show you the **impact area** at each of the diameters in the first two rows.
- (d) And the next two rows in **blue** show you the **wound cavity**

**volume** at each of the diameters. Note that **domed and pointed projectiles do make a narrower wound cavity** than wadcutters and (nonexpanded) hollow points with a wide HP cup.

- (e) The next rows with **the red arrows and numbers** show **by how many percent** the wound cavity volume increases for a certain increase of HP projectile diameter.

**Examples:** Increasing the caliber from .177 to .20 (4.5mm to 5.0mm) results in an increase of 23% of wound cavity volume (cf. the first row with red arrows). Increasing from .20cal to .22cal results in a 21% wound cavity increase; etc.  
Second row in red: From .177 to .22 (4.5 to 5.5) results in 50% cavity increase. The following rows in red all compare a .22cal cavity to larger calibers. E.g., from .22cal to .25cal (5.5 to 6.35) it's a 33% cavity increase. From .22 to .30 (5.5 to 7.62) it's 92%. To .35cal (9mm) it's 167%. etc.

Caliber in mm	4.5 mm	5.0 mm	5.5 mm	6.35 mm	7.62 mm	9 mm	10 mm
Caliber in inches	.177 cal	.20 cal	.22 cal	.25 cal	.30 cal	.35 cal	.40 cal
Impact Area* in mm <sup>2</sup>	15.9	19.6	23.8	31.7	45.6	63.6	78.5
Impact Area* in in <sup>2</sup>	0.025	0.030	0.037	0.049	0.071	0.099	0.122
Wound Cavity Volume* in mm <sup>3</sup>	636	785	950	1267	1824	2545	3142
Wound Cavity Volume* in in <sup>3</sup>	0.039	0.049	0.060	0.077	0.111	0.152	0.198
Increased Size in Caliber → Resulting in → <b>Wound Cavity Volume Increase in %</b> (red numbers) (for a 1½" short wound channel = 4cm [1.575"])  *Formulas: IA = A <sub>circle</sub> = π · r <sup>2</sup> WCV = V <sub>Cylinder</sub> = π · r <sup>2</sup> · h rounded numbers	↳ +23%	↳ +21%	=↑ ↳ +33%	=↑ ↳ +44%	=↑ ↳ +40%	=↑ ↳ +23%	=↑
	↳ +50%	→	=↑				
			↳ +33%	= ↑			
			↳ +92%	→	= ↑		
			↳ +167%	→	→	= ↑	
			↳ +230%	→	→	→	= ↑