

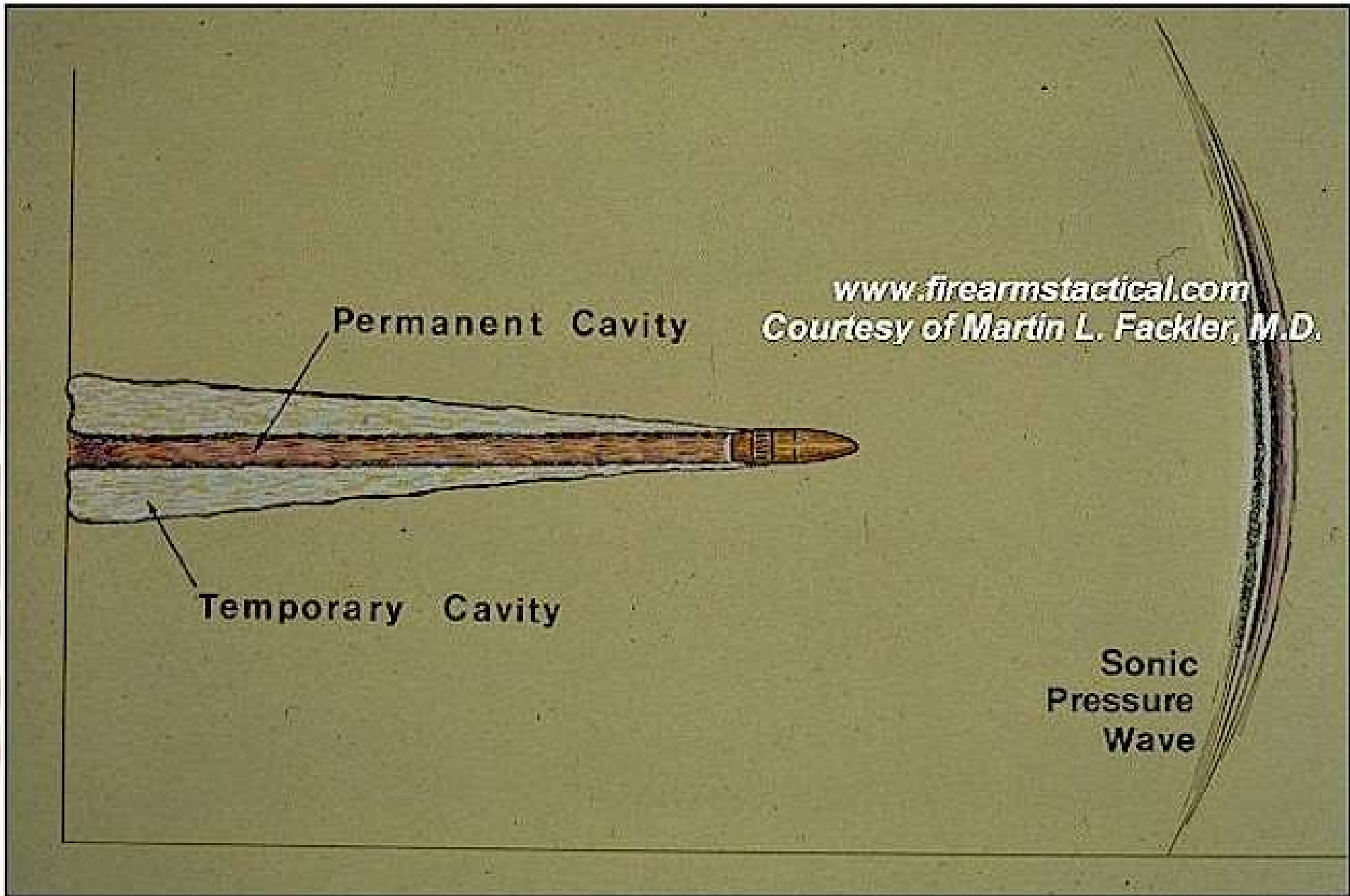
WHAT IS TODAY'S OBJECTIVE?

**WHAT DOES
A BULLET
DO TO THE
BODY?**



RIFLE WOUNDS

- The bullet often fragments in the body and x-ray may show a lead snowstorm of fragments as it passes thru the body
- **Contact wounds:** extensive damage
- **Distant-range:** small entrance + large internal damage



Military Rifle Wound Profiles

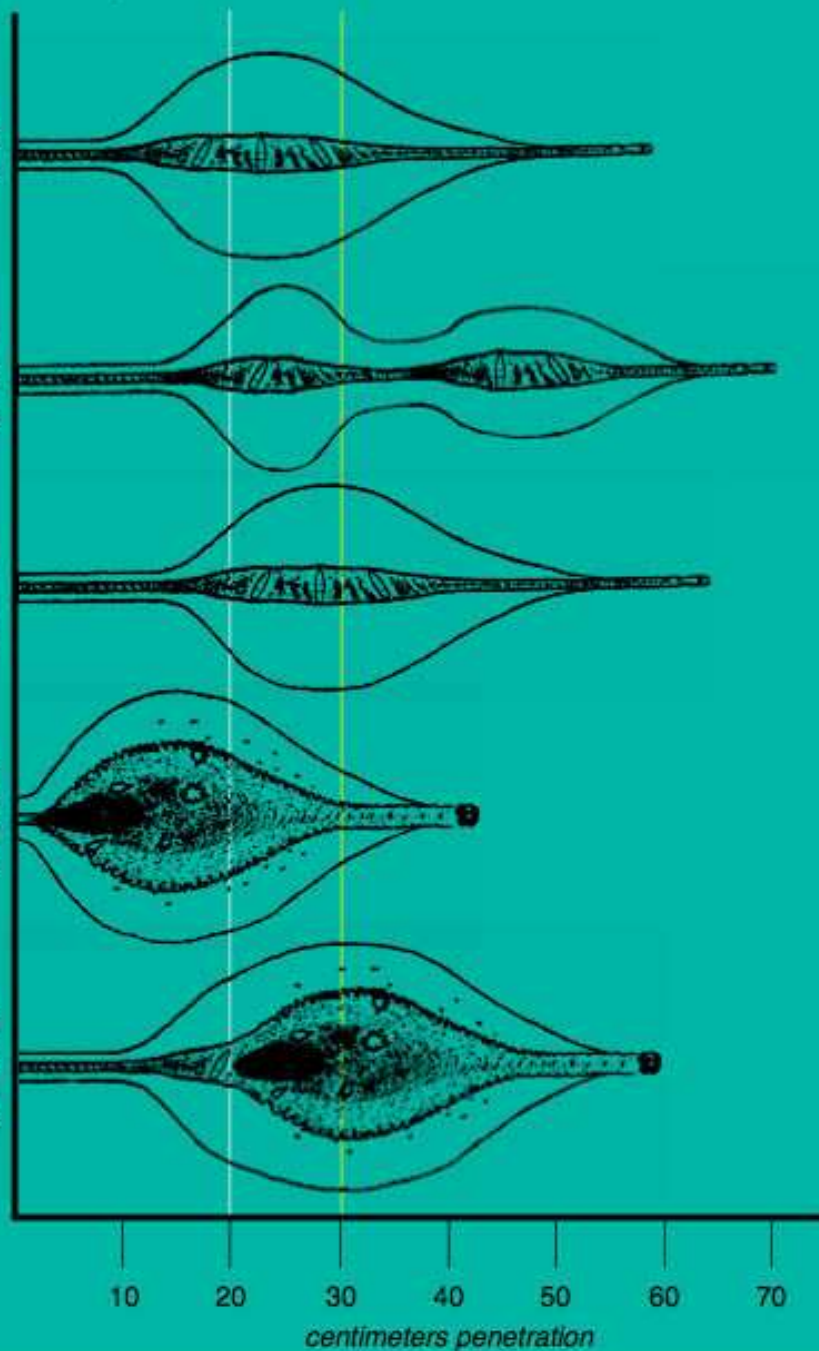
.303 British MkVII
174 gr FMJ at 2450 f/s

7.92 x 57 mm
Mauser M98
177 gr FMJ at 2500 f/s

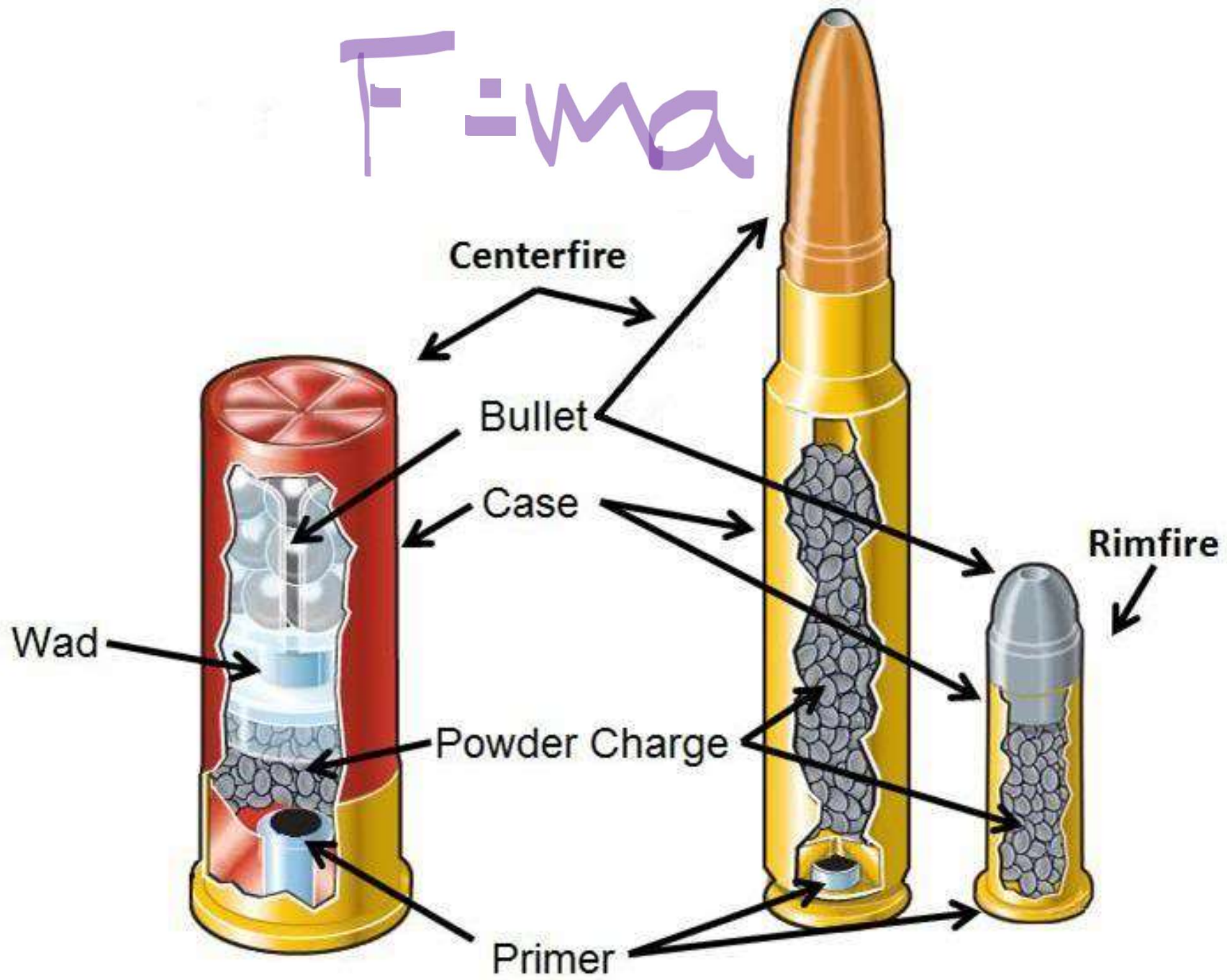
7.62 x 51 mm
(copper jacket)
150 gr U.S. M80 FMJ
at 2850 f/s

7.62 x 51 mm
TSWG
155 gr Hornady OTM
at 2850 f/s

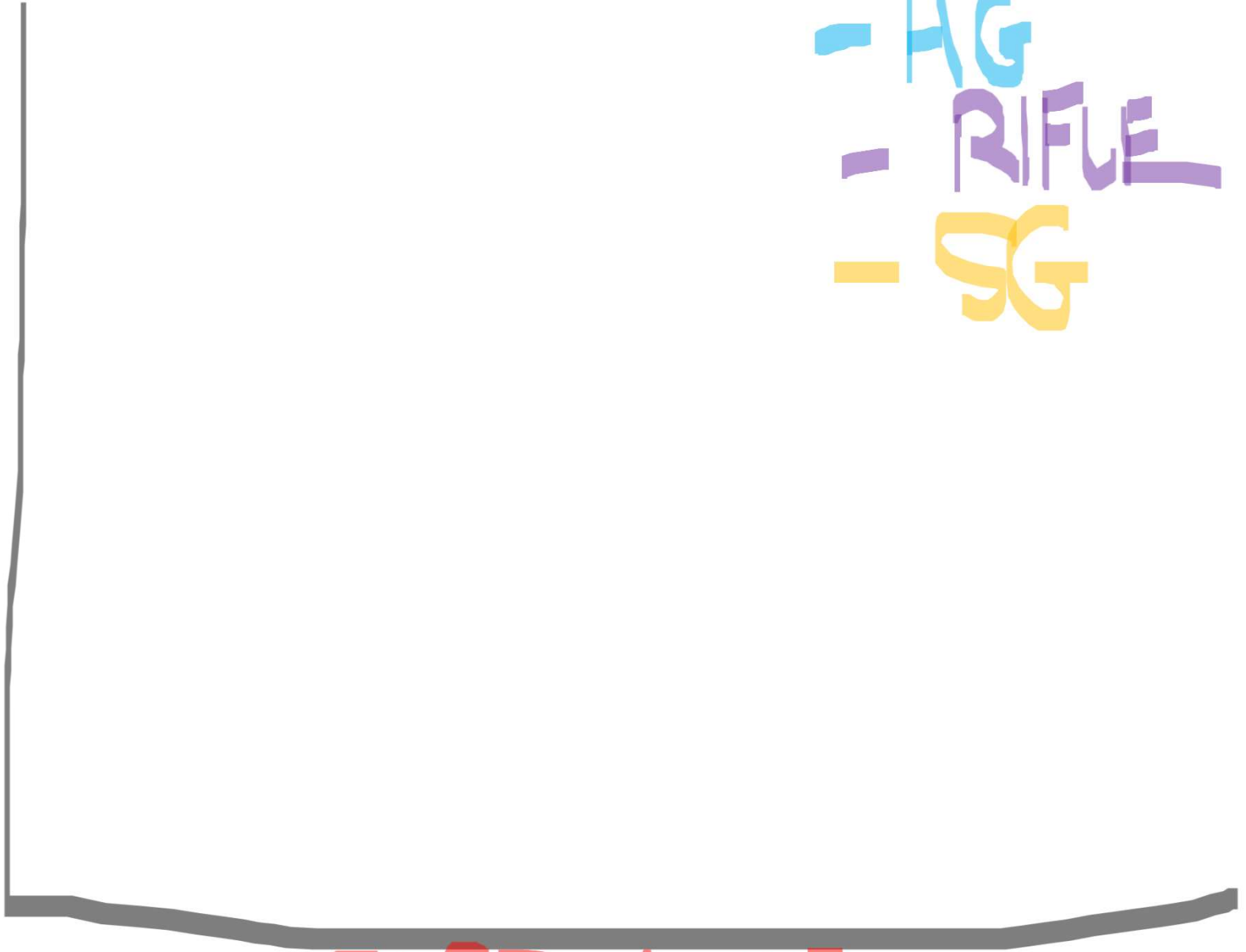
7.62 x 51 mm
175 gr M118 LR
SMK OTM
at 2650 f/s



Fima



1000000

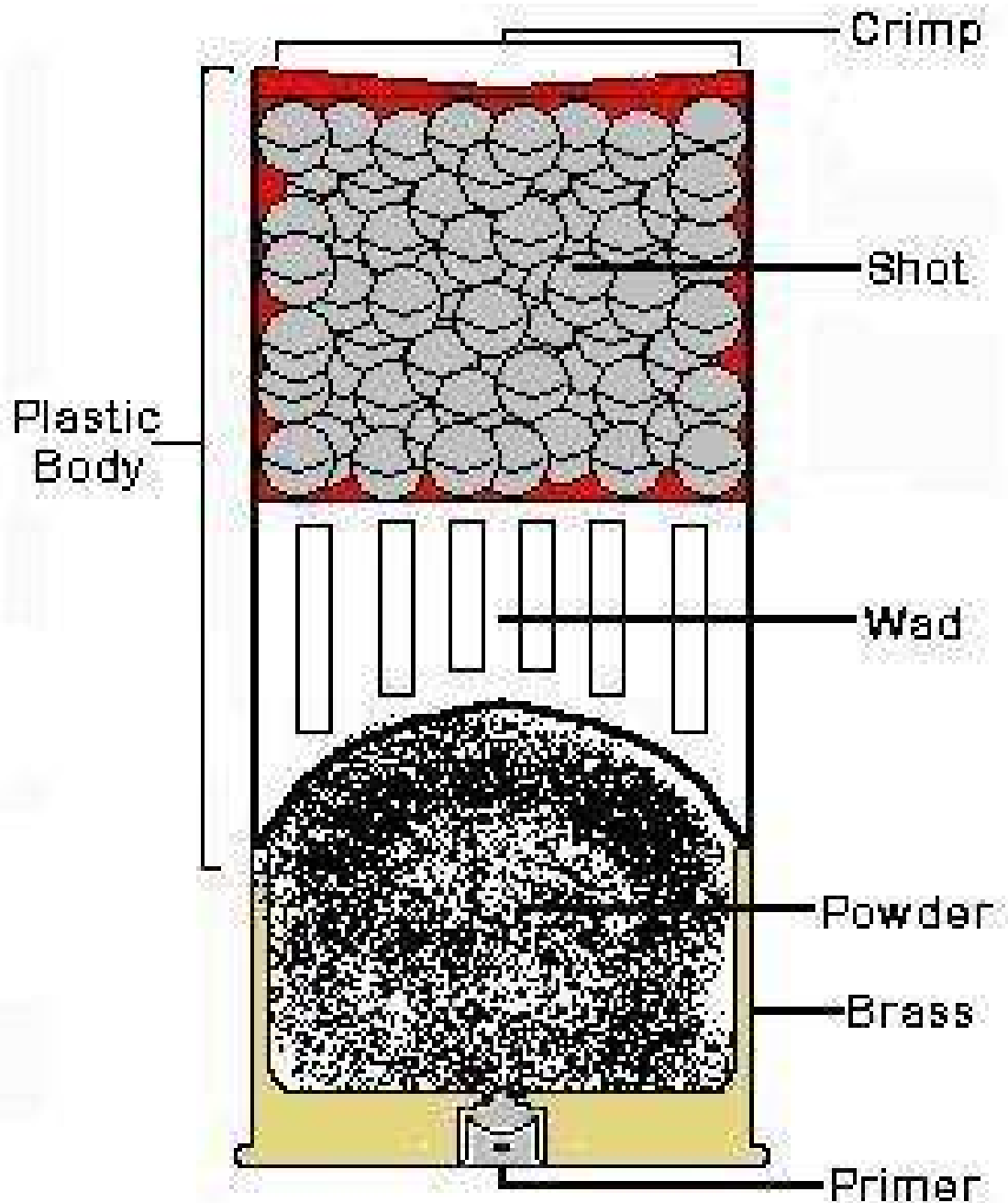


- HG
- RIFLE
- SG

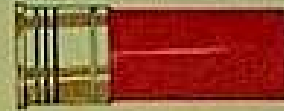
DISTANCE



Video: Oath Ammo



Shot Gun Shell



12 Gauge Shotgun
Rifled slug 17.6 mm diam.
Vel - 1513 f/s 461 m/s
Wt. 437 gr 28.3 gm

Permanent Cavity

www.firearmstactical.com

Courtesy of Martin L. Fackler, M.D.

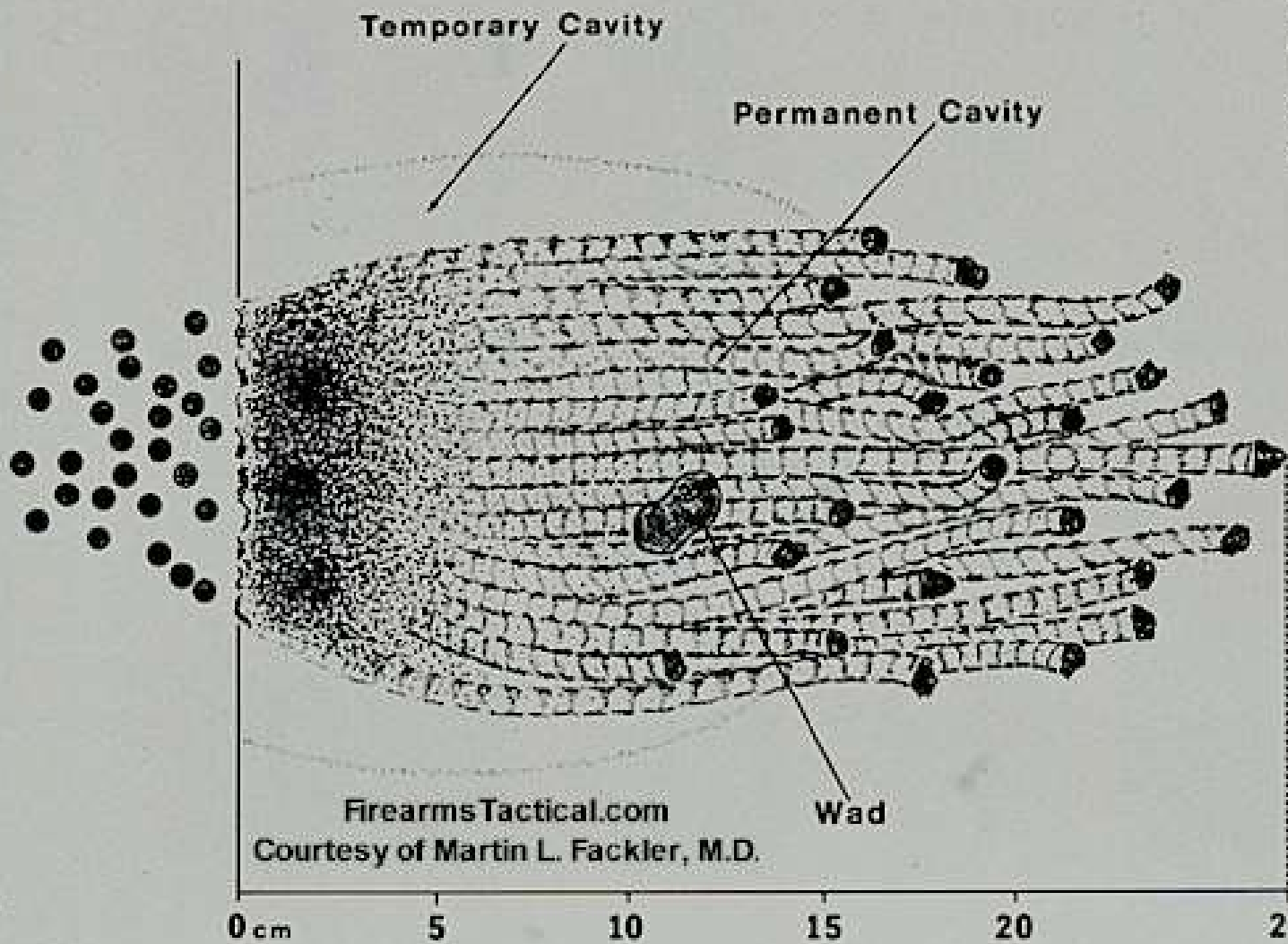
Temporary Cavity

A
2.8 c
Y

Centimeters

0 5 10 15 20 25 30 36

12 Gauge Shotgun
no choke
#4 Buckshot
Vel.- 1351 f/s (412 m/s)
Wt.- 540 gr (35gm)
27 pellets of 24 Cal.



FirearmsTactical.com
Courtesy of Martin L. Fackler, M.D.

SHOTGUN WOUNDS

CONTACT

- Large E = large damage
- In close range – wound is usually circular

Shotgun Patterns

The spread pattern of the **shot** determines distance.

The **shot spread** ~1in for every 3ft it travels

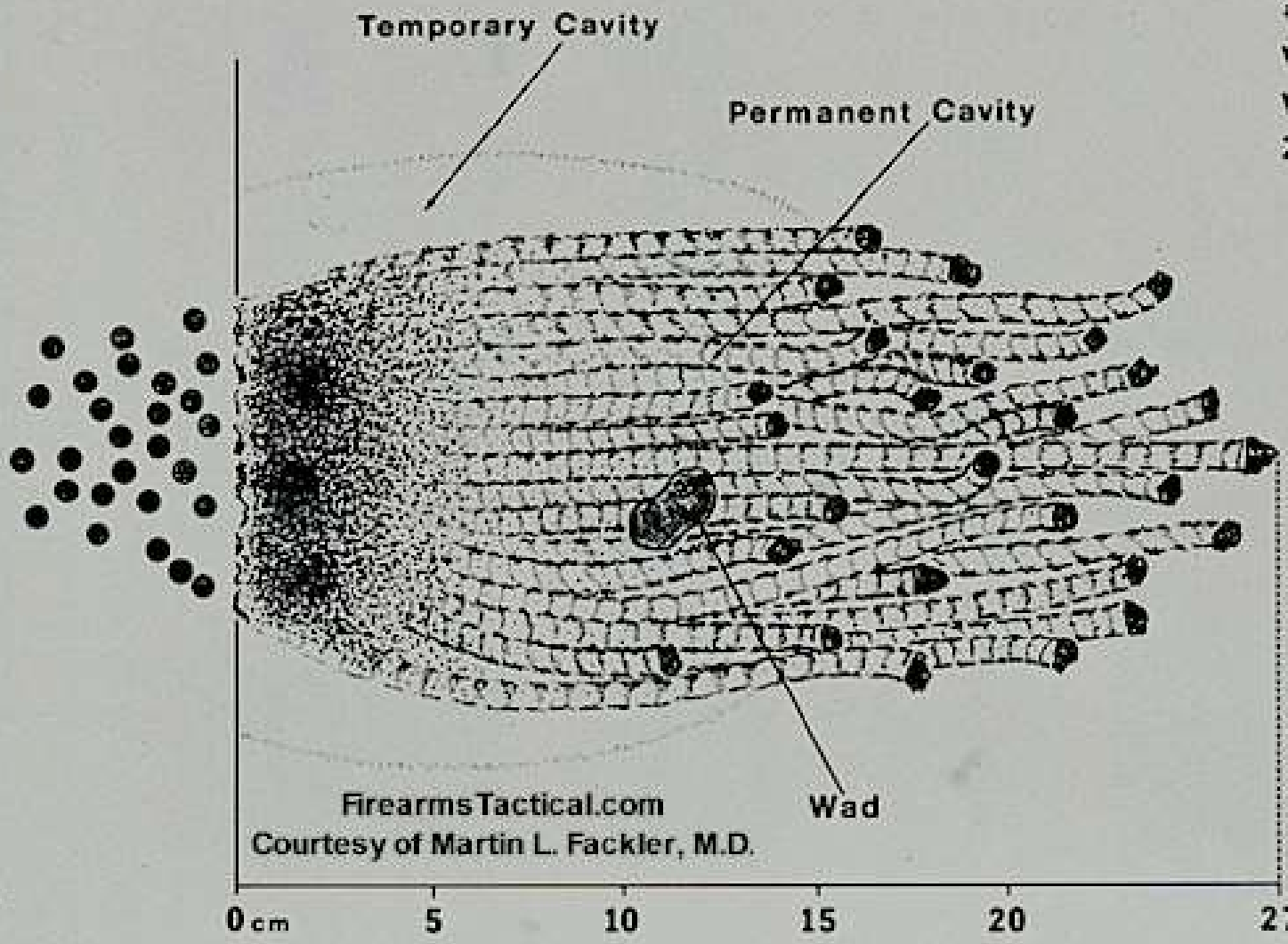
If the shot was spread out about 4 inches, how far away was the shooter?



Pelvic Bone



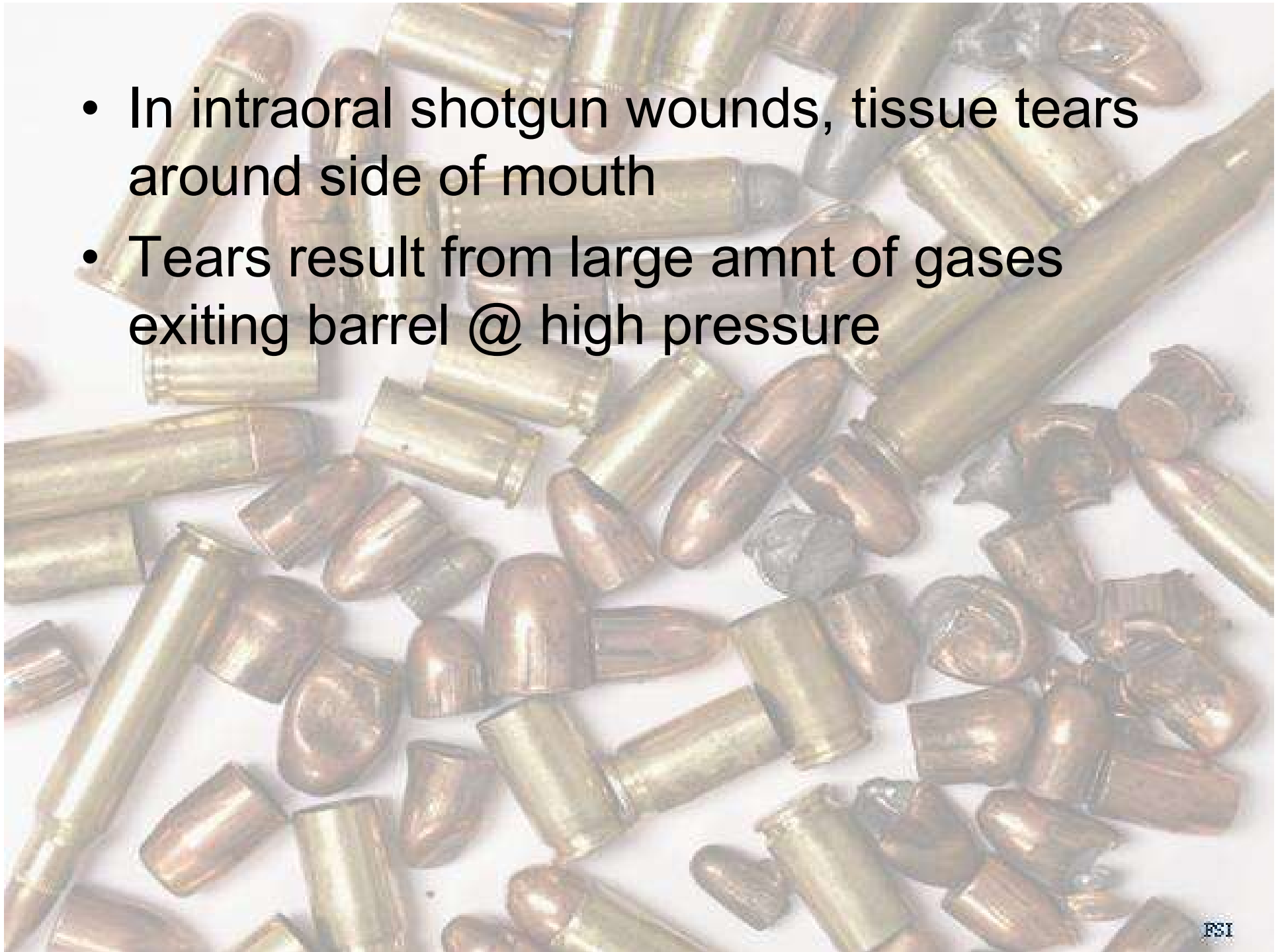
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- In intraoral shotgun wounds, tissue tears around side of mouth
- Tears result from large amnt of gases exiting barrel @ high pressure



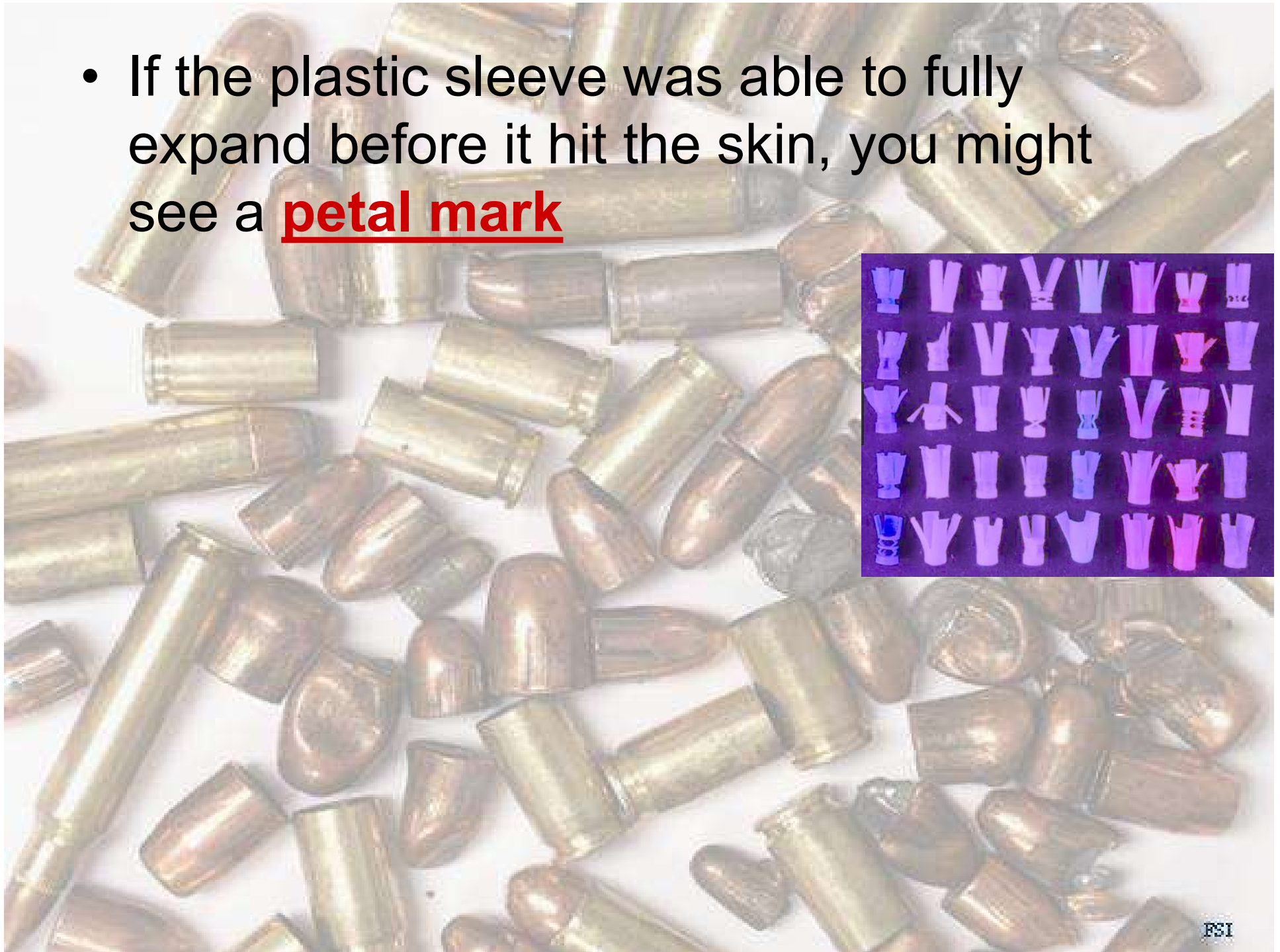
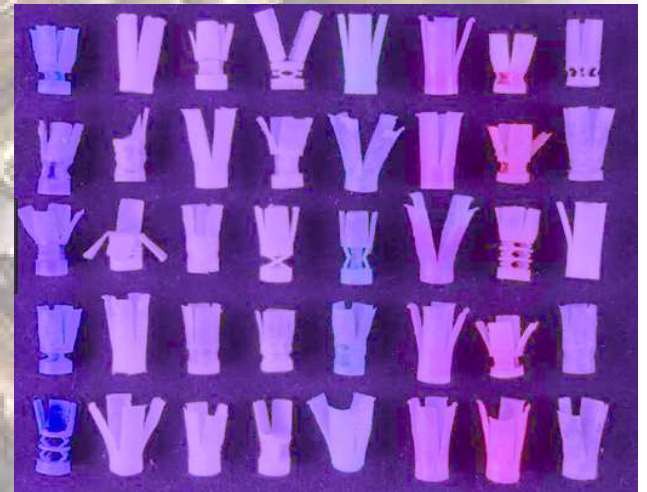
MEDIUM RANGE to DISTANT RANGE

- As the range increases, the pellets spread out
 - Scalloping happens around 2-4'
 - Satellite defects around 3-5'
 - General spread of pellets around 8-10'

- As range increases & pellets spread out, they create a **wider** spread of entrance wound... also the **spiral-shaped** abrasion from the shell (plastic sleeve or wadding)



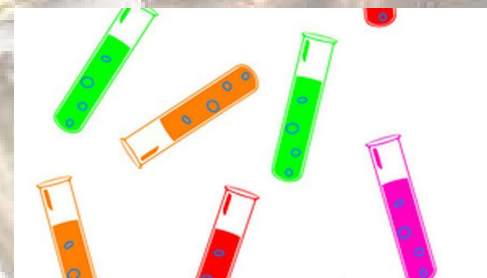
- If the plastic sleeve was able to fully expand before it hit the skin, you might see a **petal mark**



GUNSHOT RESIDUES

When a bullet is fired, gases and particles escape from the gun. These particles, called **gunshot residue (GSR)** cling to the shooter's hand, arm, clothing, face, and hair. *(In close-range shots, GSR clings to the victim.)*

IR photographs can reveal GSR. The **Griess** **Test** may also reveal GSR.



GSR on hand



TESTING FOR GSR

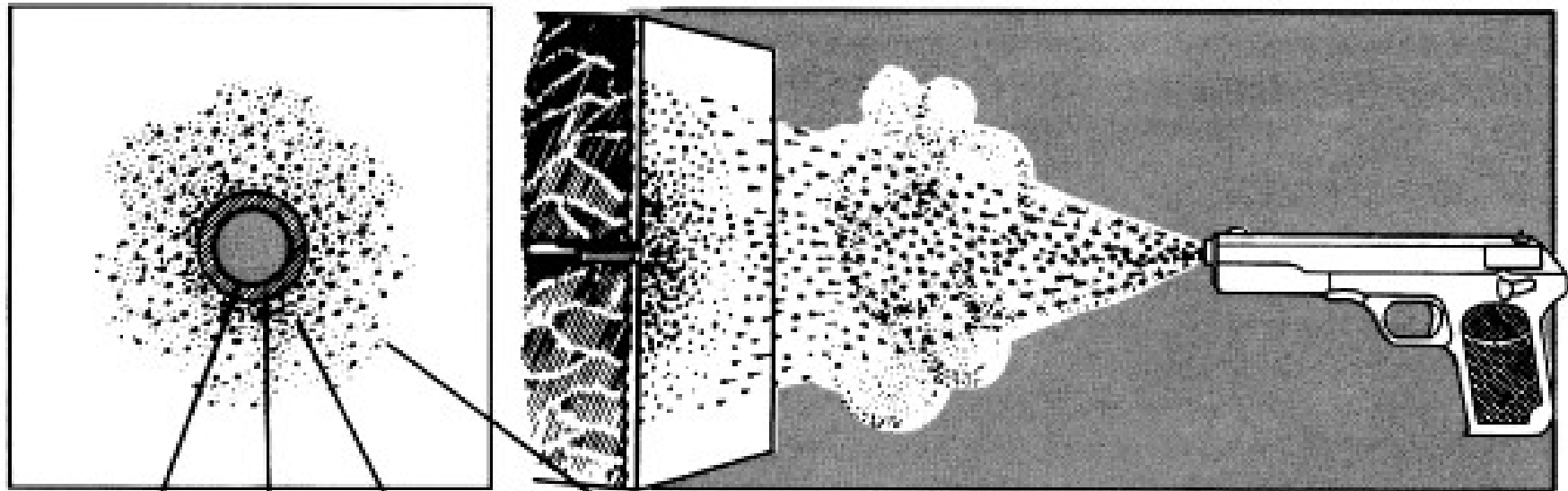
NOT foolproof

- Being near gun can leave GSR
- It fades away rapidly
- Can easily be washed off

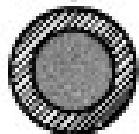
Nitrates can give a false +

(fertilizer, tobacco, cosmetics, urine)

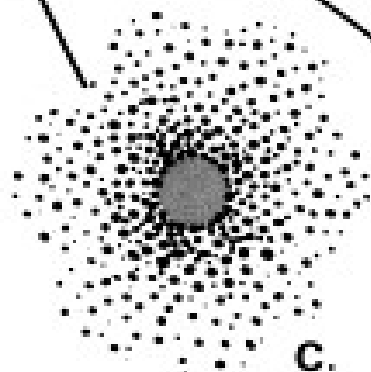
GUNSHOT RESIDUE PATTERN ANALYSIS



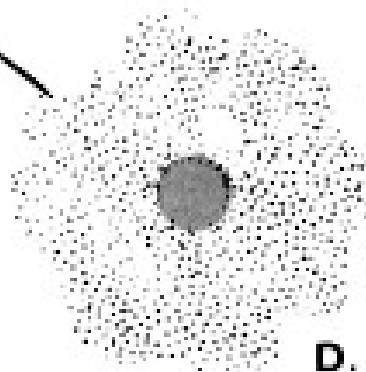
A.



B.



C.



D.

Marks that may be found around the entry of a bullet in a close shot.

A. abrasion collar

B. ring of dirt

C. grains of powder

D. deposit of powder smoke.