

BALLISTICS

- Internal Ballistics - projectile inside the weapon.
- External Ballistics - projectile in flight.
- Terminal Ballistics - projectile striking the target.

INTERNAL BALLISTICS

- **As the powder begins to ignite and chamber pressure builds, the bullet is thrust forward to engage the rifling.**



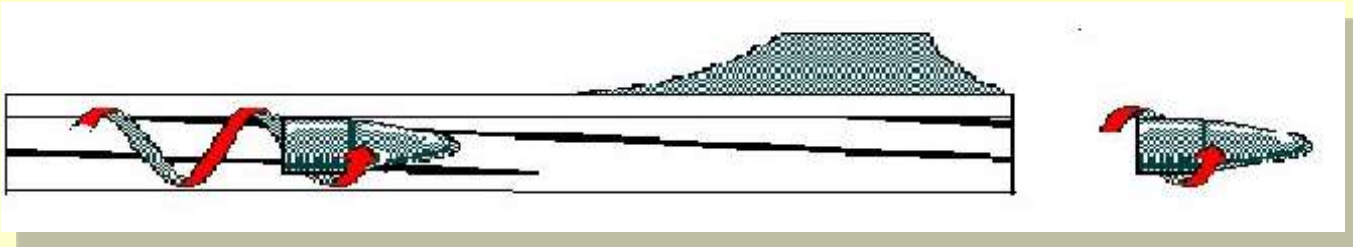
INTERNAL BALLISTICS (cont.)

- The pressure builds as more powder ignites, adding velocity to the projectile.



INTERNAL BALLISTICS (cont.)

- As the round travels down the barrel, it is rotated by the rifling cut into the barrel.



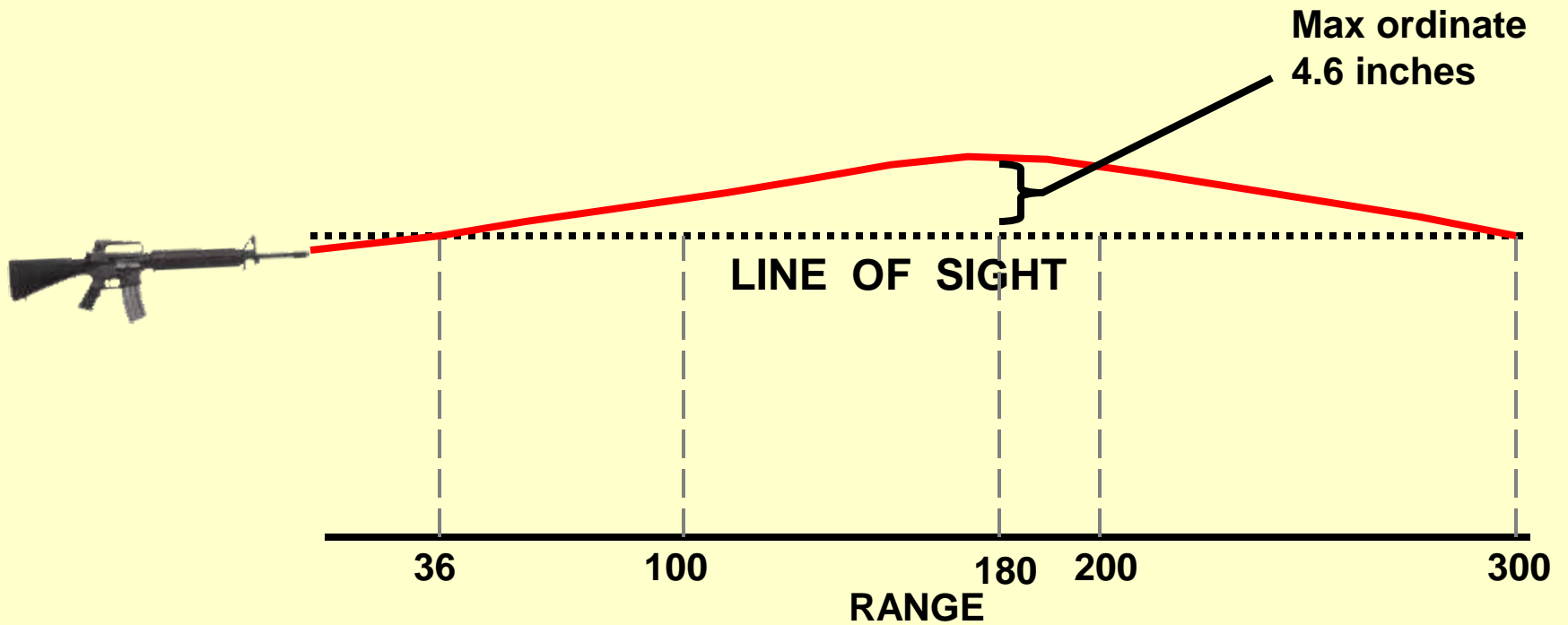
- The rotation will stabilize the round once it exits the barrel.

EXTERNAL BALLISTICS

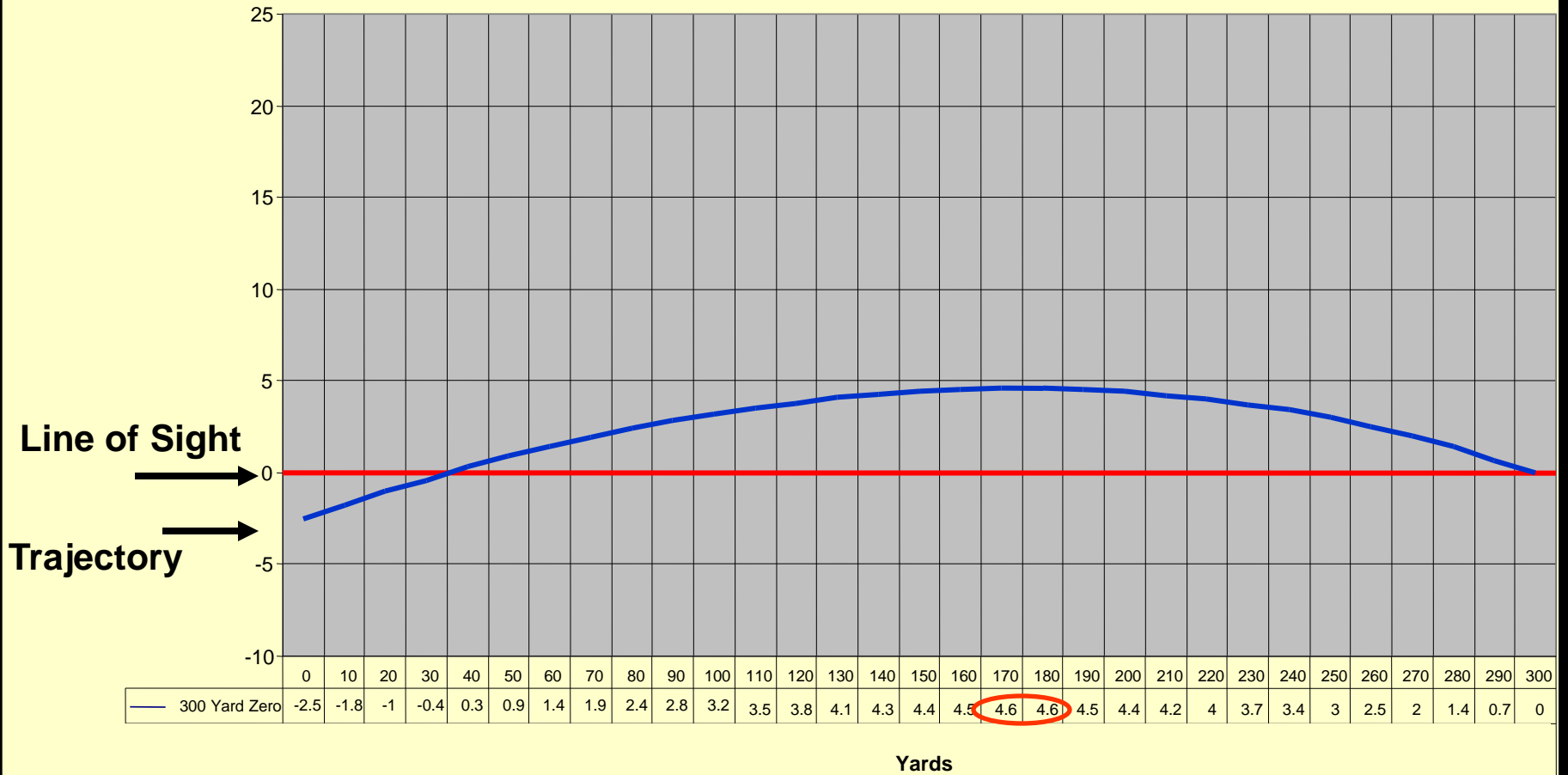
- **As soon as projectile exits the bore, velocity drops and air drag slows round down.**



TRAJECTORY

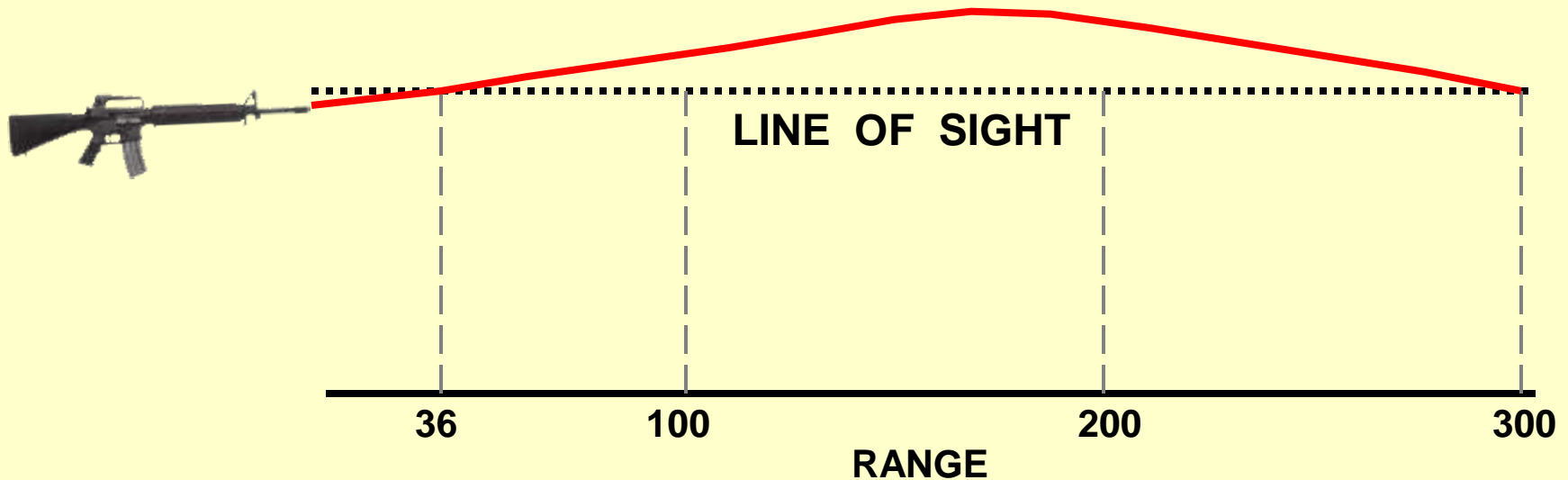


MAXIMUM ORDINATE



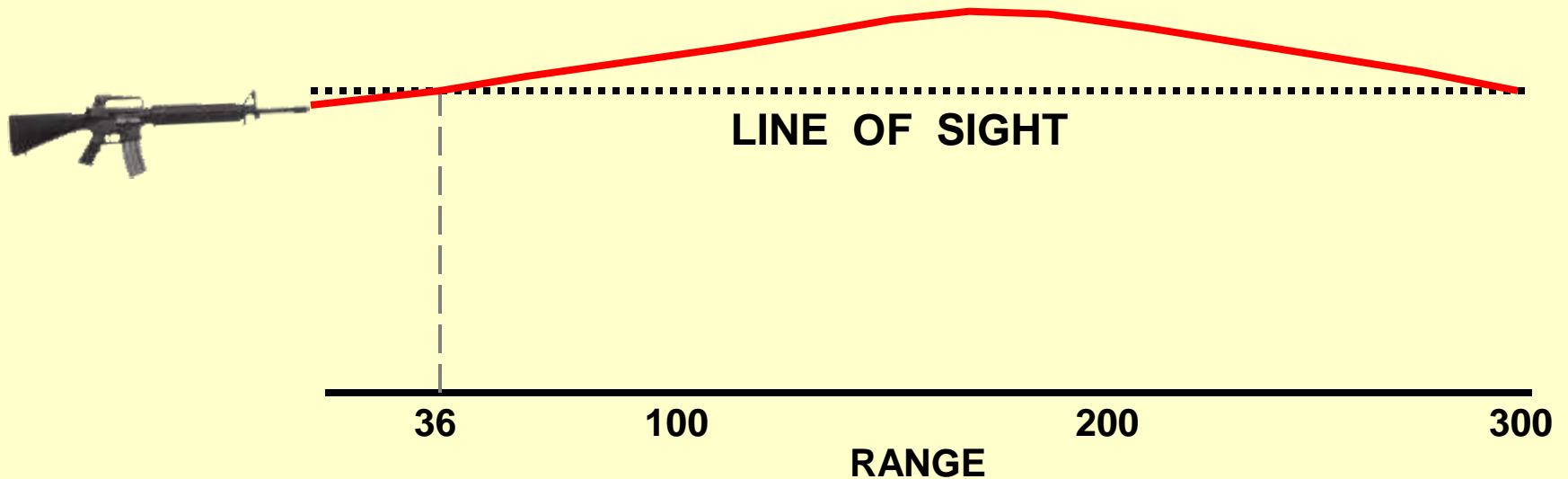
TRAJECTORY (cont.)

- **Bullet crosses line of sight on upward path at 36 yards; crosses again on downward path at 300 yards.**

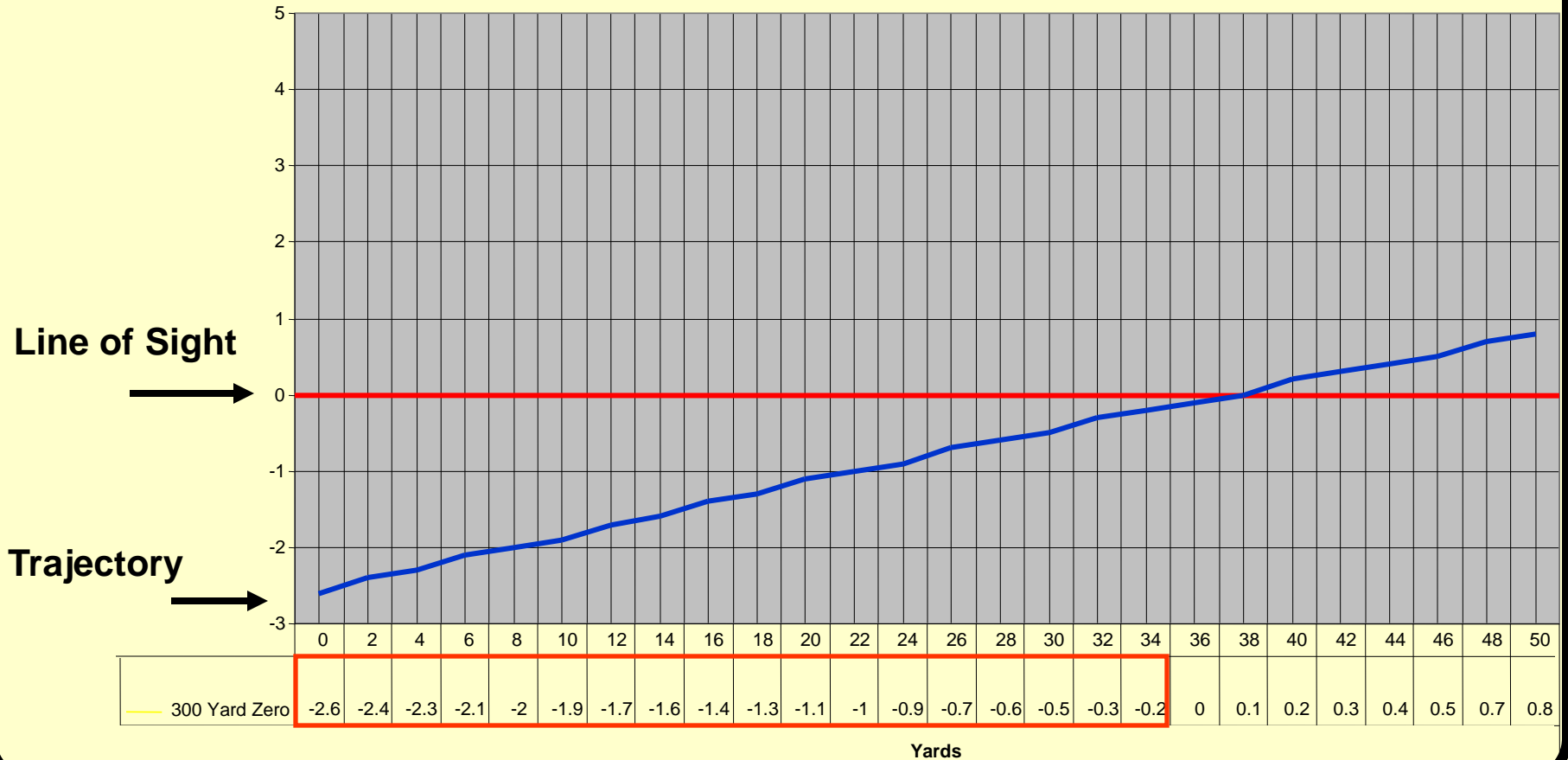


Engagement at Less Than 36 Yards

- Shots will be below sight picture
- Must aim higher to be accurate

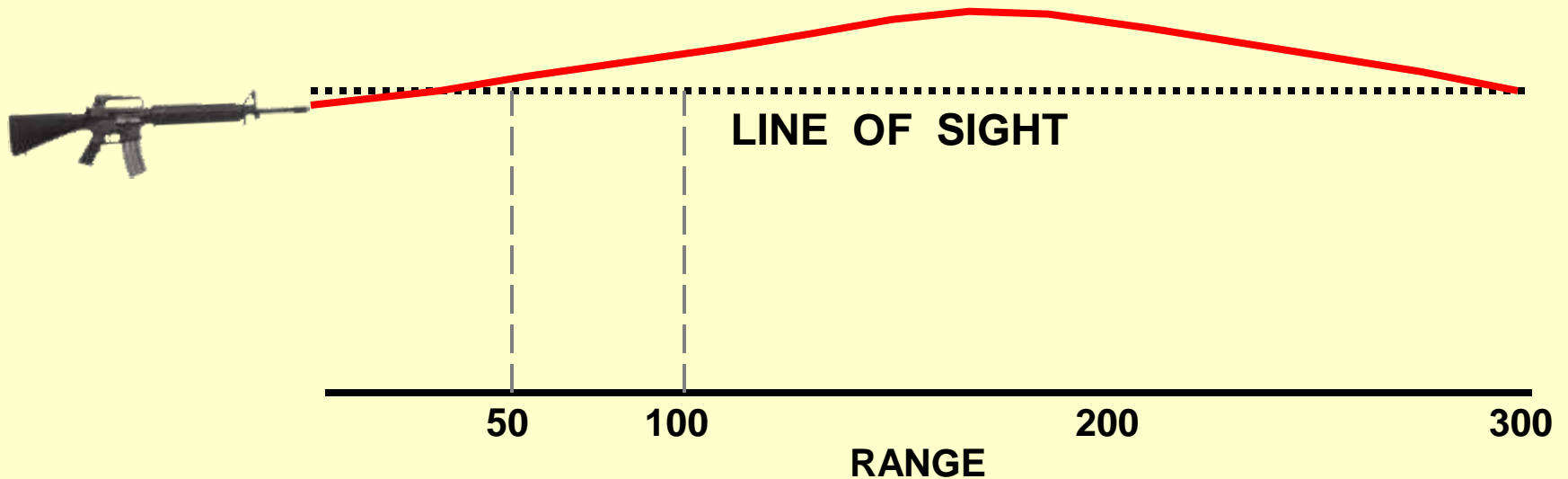


BALLISTICS AT CLOSE RANGES

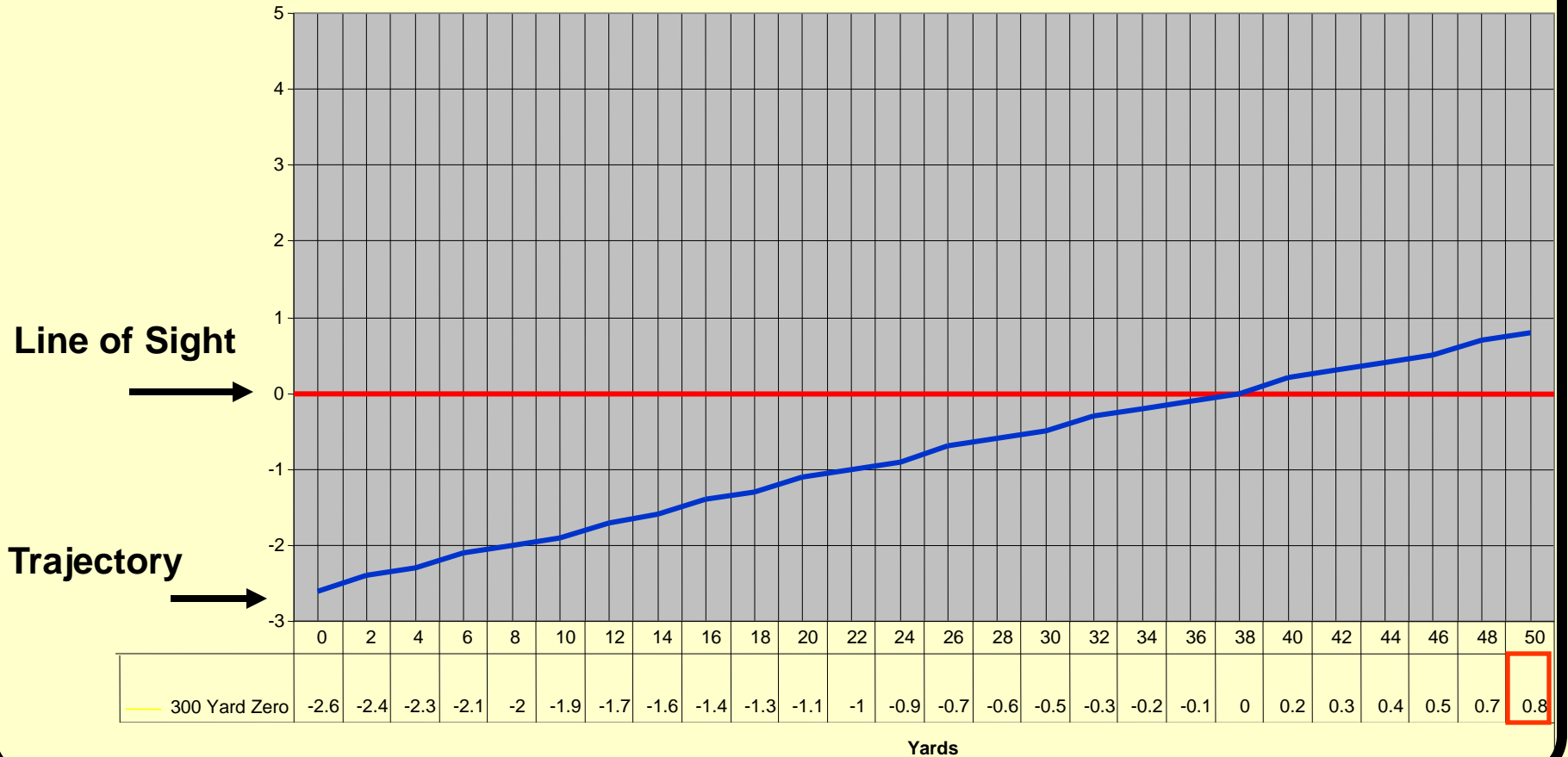


Engagement at 50 and 100 Yards

- Shots will be above sight picture
- Must aim lower to be accurate

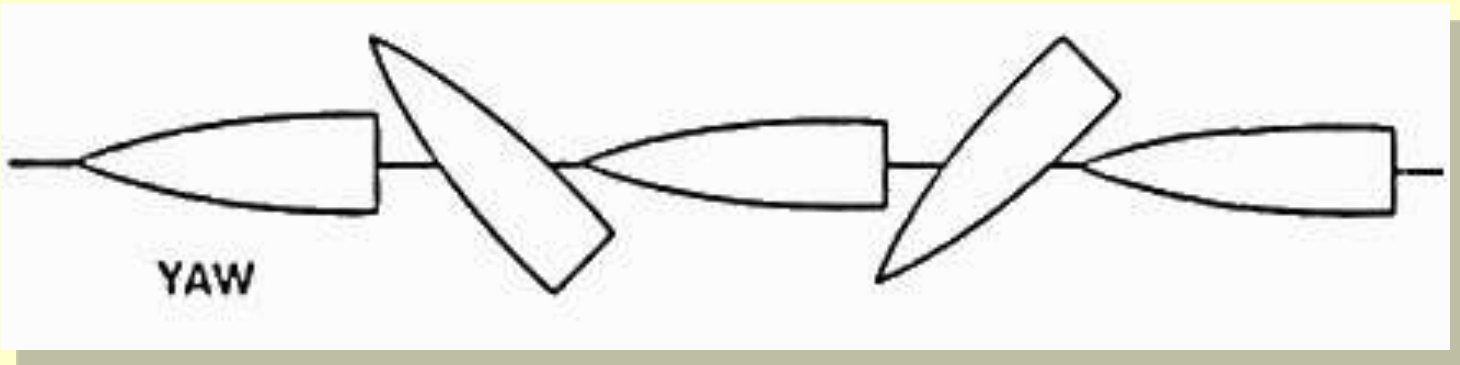


BALLISTICS AT CLOSE RANGES



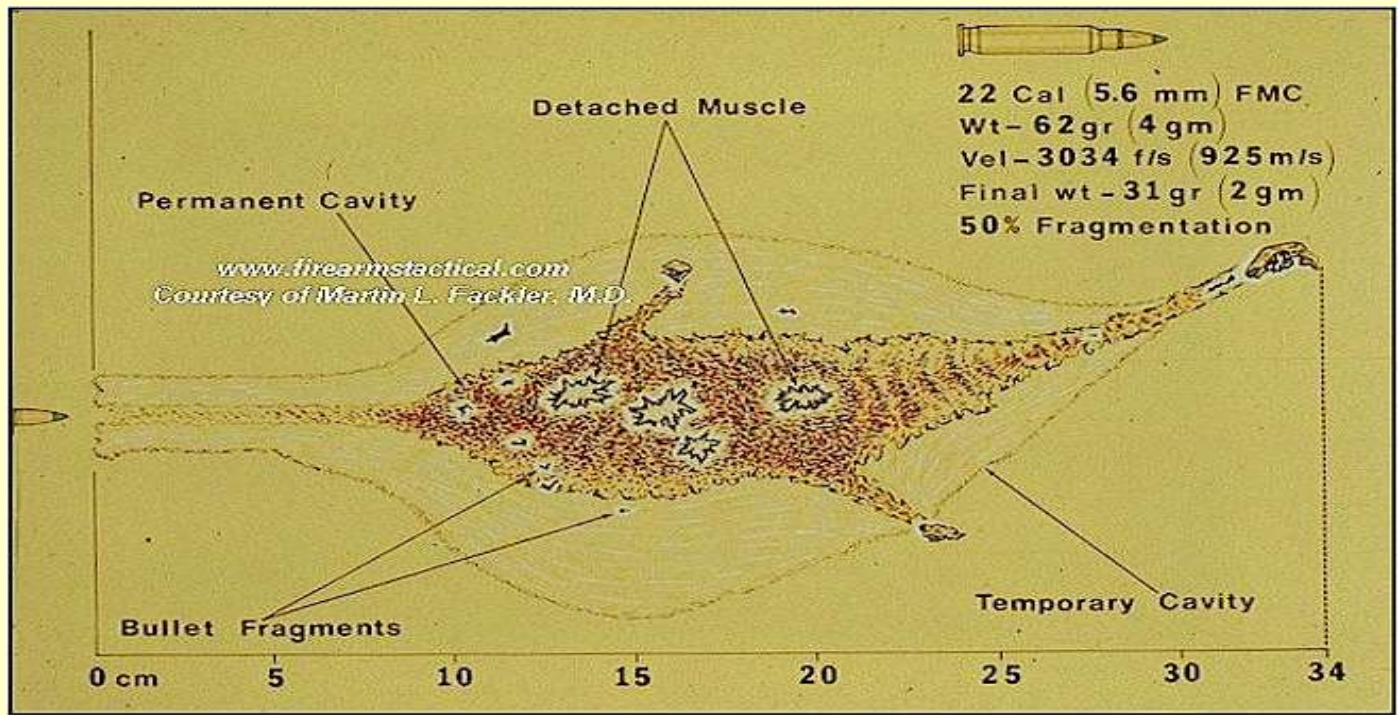
TEMPORARY CAVITY

- Friction causes round to tumble, creating temporary cavity.
- Shock is transmitted through body fluids.

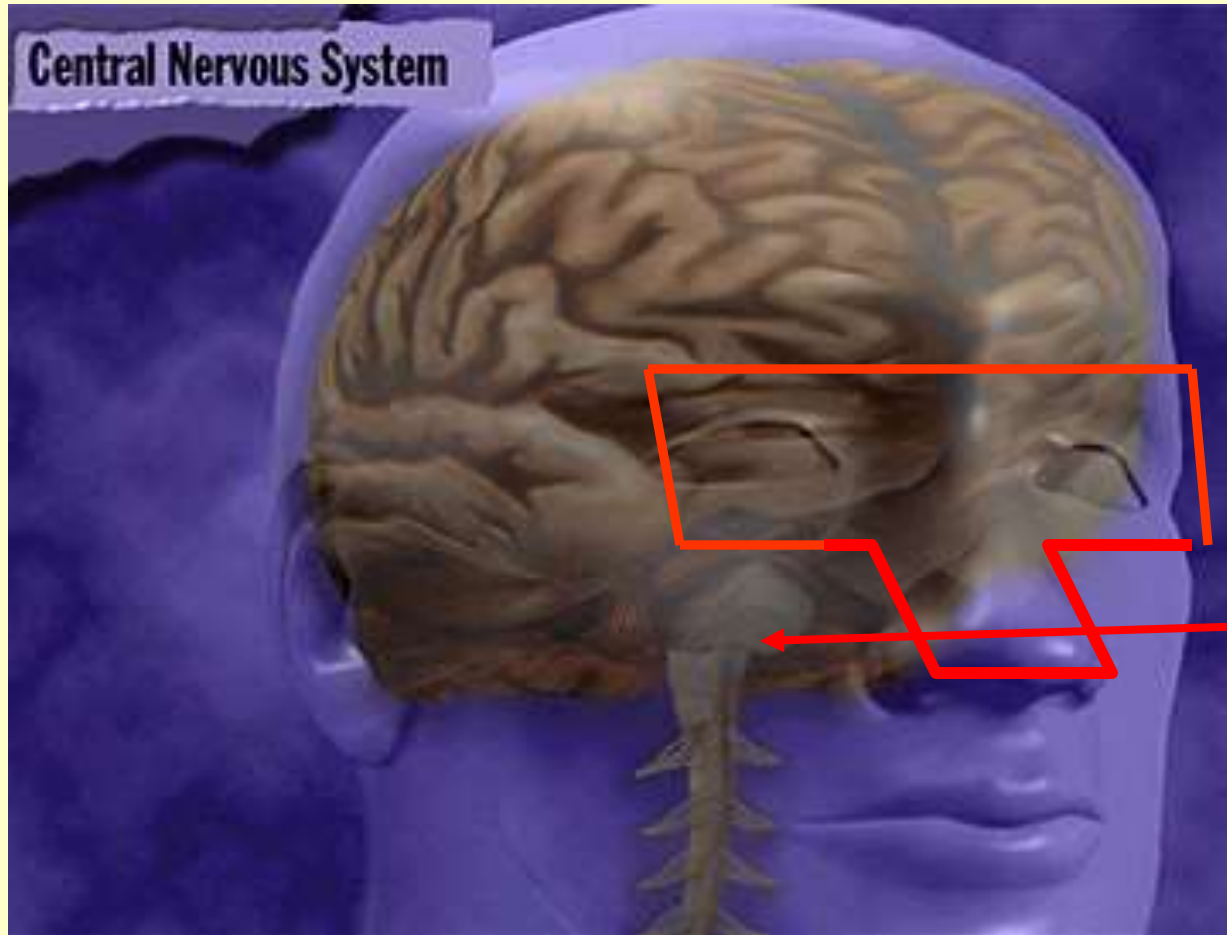


PERMANENT CAVITY

- Tissue crushed and torn by the projectile will remain open as the permanent cavity.



CENTRAL NERVOUS SYSTEM

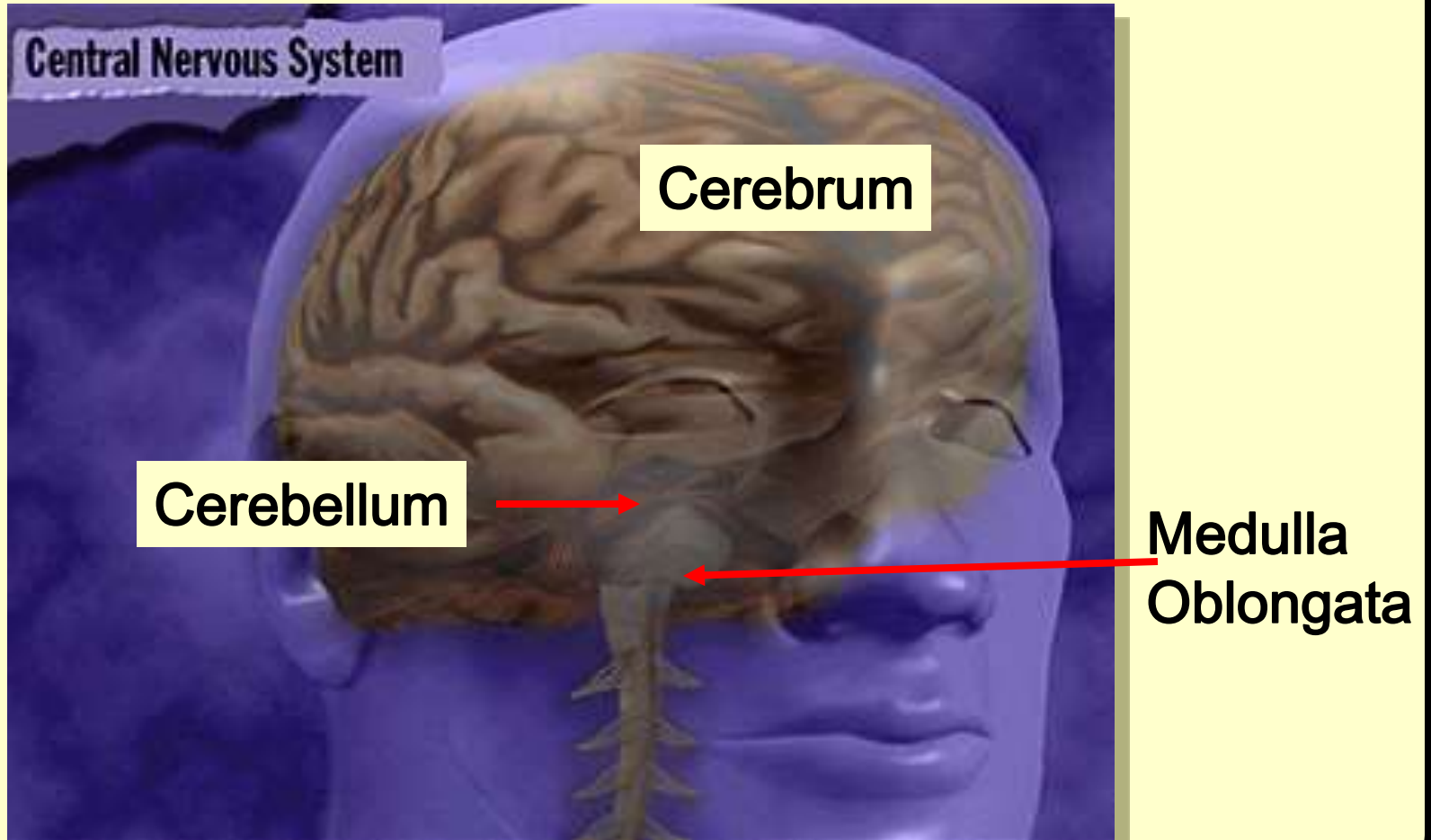


Medulla
Oblongata

Hydraulic Decompression (Bleed Out)

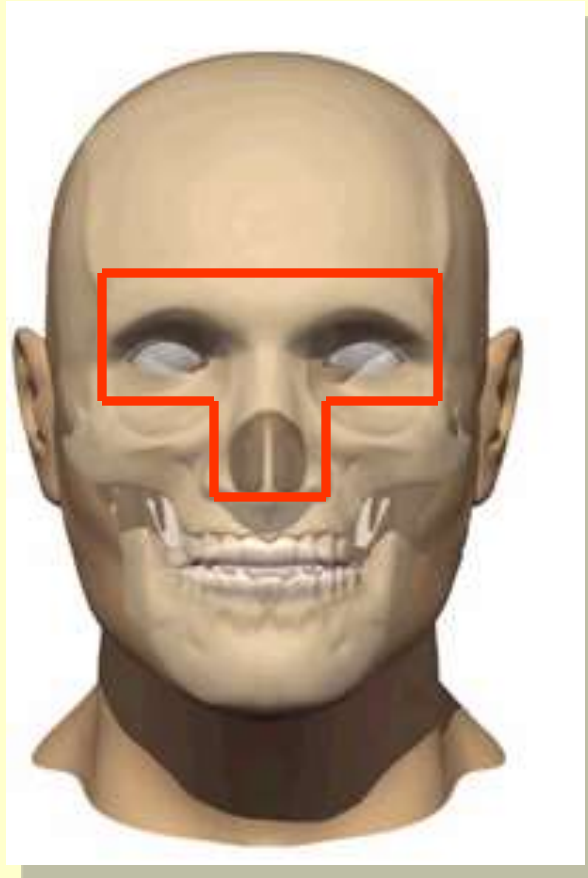
- **Heart or vascular structure.**
- **Target can still effectively fight for 10-15 seconds.**
- **Not effective for close range fight, though will usually lead to death.**

BRAIN

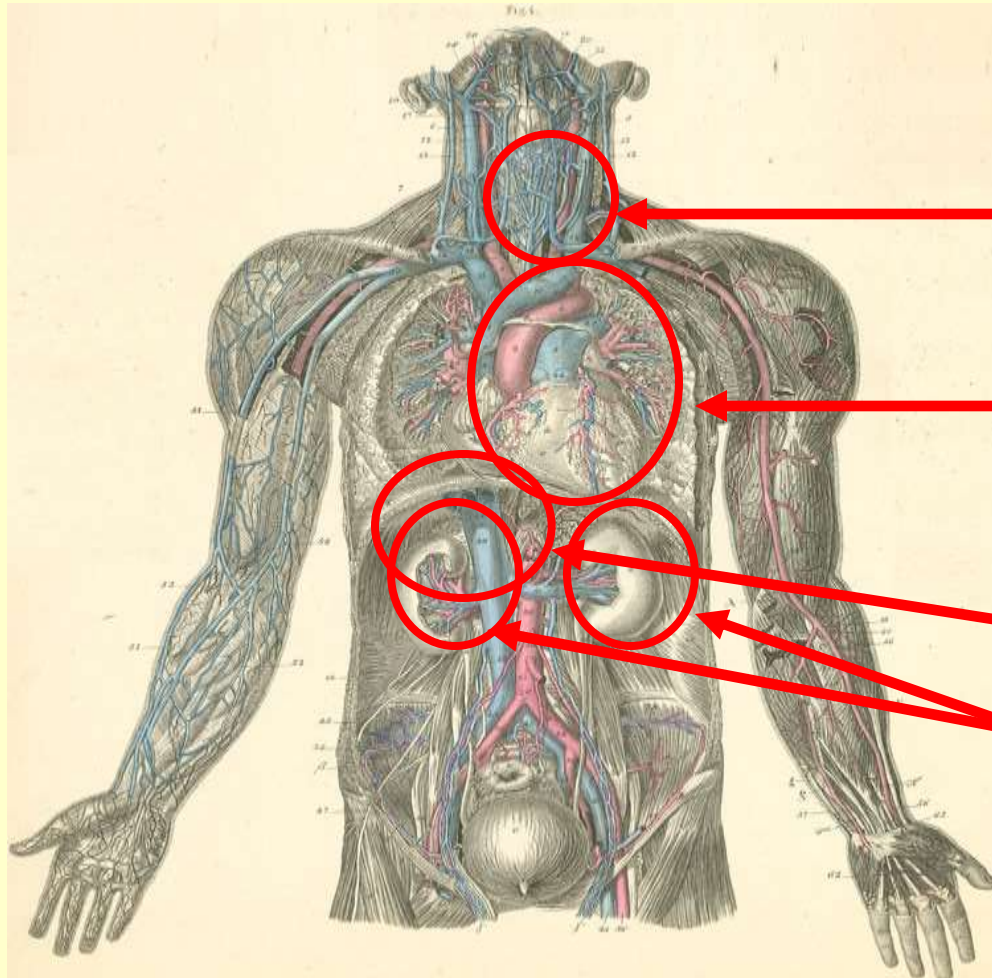


IMMEDIATE INCAPACITATION AIMING POINTS FOR THE HEAD

Frontal Shot:
"T-Box"



VITAL AREAS OF THE BODY



Base of Throat

Heart and Major
Vascular
Structures

Liver

Kidneys