

Firearm stunning for small plants

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Jennifer Woods, M.Sc. VPM - Animal Welfare

Most Common Causes of Failed Stuns

Not the appropriate firearm for the species

Inaccurate placement of shot

Wet or damp ammunition

Failure to maintain gun

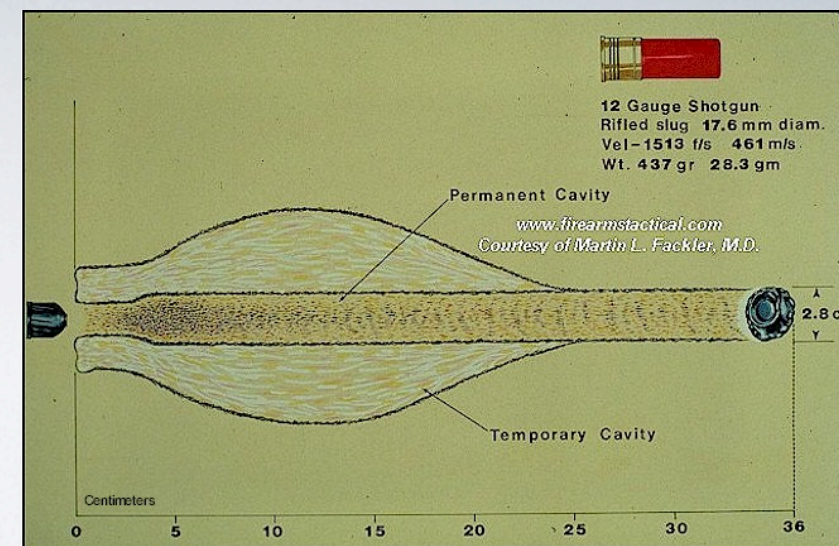
Appropriate Training is Critical to Successful Firearm Stunning

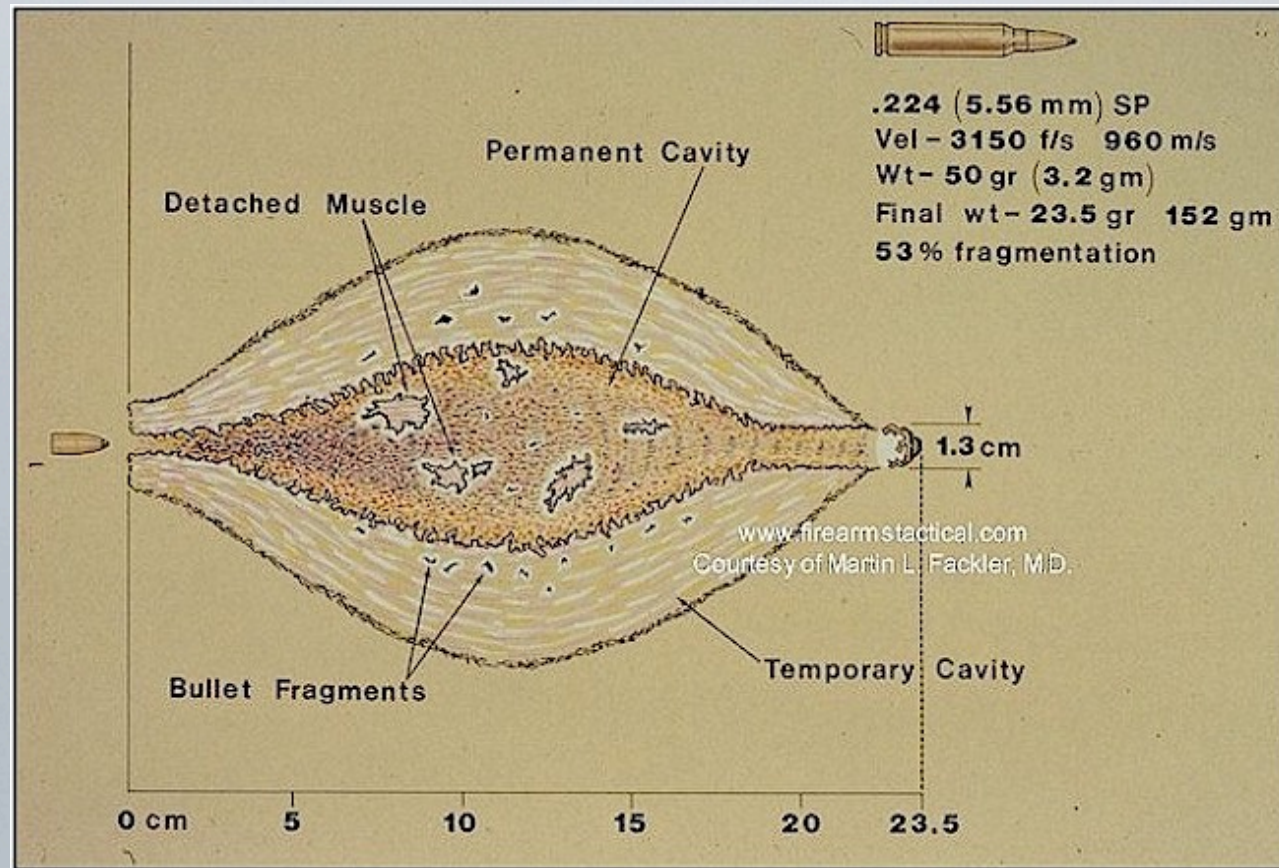
Gunshot kills by mass destruction of the brain

1st - shockwaves compress the tissues ahead of the bullet

2nd - laceration and crushing along the path or track of the bullet as it travels through the brain

3rd - formation of permanent and temporary cavities in the brain caused by the track of the bullet.





The degree of brain damage inflicted by the bullet is dependent upon the firearm, nature of the ammunition and accuracy of the shot.

Firearm Basics

The basic ballistics of a bullet are:

Weight or Mass - this is the weight of the grains in the bullet.

Muzzle velocity is the speed of the bullet the moment it leaves the muzzle.

Muzzle energy is the kinetic energy of a bullet as it is expelled from the muzzle. The energy of the bullet is determined by the formula of half of the mass multiplied by the square of the velocity. $KE = \frac{1}{2}mv^2$

Firearm Basics

You want the bullet to maintain enough energy to effectively penetrate the skull of the animal, but not so much it passes right through.

As the bullet passes through the air, it loses energy. The further it travels, the less energy it has as it hits the target. This why close range shots will not require the same amount of kinetic energy as a longer distanced shot.

Shape of ammunition can also influence energy loss. Pointed bullets have less resistance then rounded bullets, losing less energy as they travel.

Firearm Basics

The **calibre** of the gun is based on the interior bore or diameter of the barrel.

The larger the calibre (higher mass) = the more suitable it is for:

1. Larger animal
2. Animals with thick skulls or horn mass
3. Longer distance shots

Firearm Basics

The barrel of a gun will be either:

Smooth

Rifled (spiral grooves).

When a barrel is **rifled** it causes the bullet to spin. The more spin a bullet gets from rifling, the more stable it is in flight making for a more accurate shot, especially at a distance.

Selection of Firearm

The firearm needs to be powerful enough (kinetic energy) to produce irreversible insensibility, yet not so powerful that the bullet passes through the skull and into the neck of the animal.

$$\mathbf{E_k = \frac{1}{2}mv^2}$$

Selection of Firearm

The three main considerations when choosing a firearm and ammunition are:

The size of the animal

The thickness of the skull

The distance between the shooter and the animal

When choosing between a shotgun and rifle considerations include:

Shotguns are best for close range shots (less than 20 feet)

Only slugs should be used in shotguns

Shotguns significantly reduce the chance of ricochet

Rifles are best for longer range shots (greater than 20 feet)

There is a greater chance of ricochet with a rifle

Ammunition from rifles have a greater chance of passing through the brain and into the neck of the animal. A shotgun slug with the equivalent energy will not.

**Handling and restraint must be
adequate to ensure the safety
of the operator and
the welfare of the animal.**

Preparing to shoot:

Always be aware of your surroundings - location of people/other animals.

Always shoot with a clear background.

Load your weapon

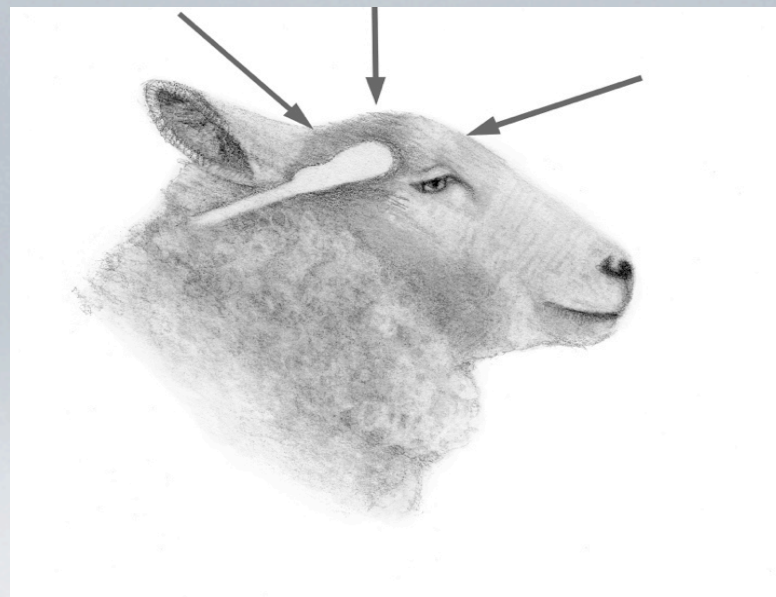
Wait for the animal to calm down/settle if necessary. Be Patient!
Ideally, you will wait for the animal to be looking straight on at you.

Find the target on their head

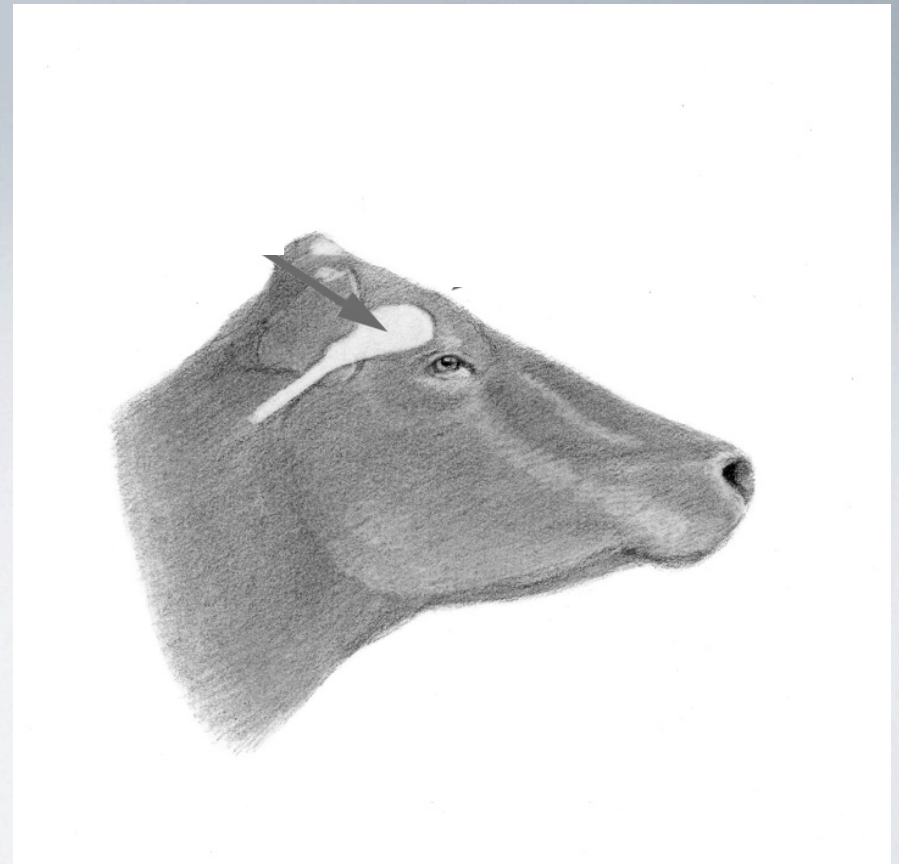
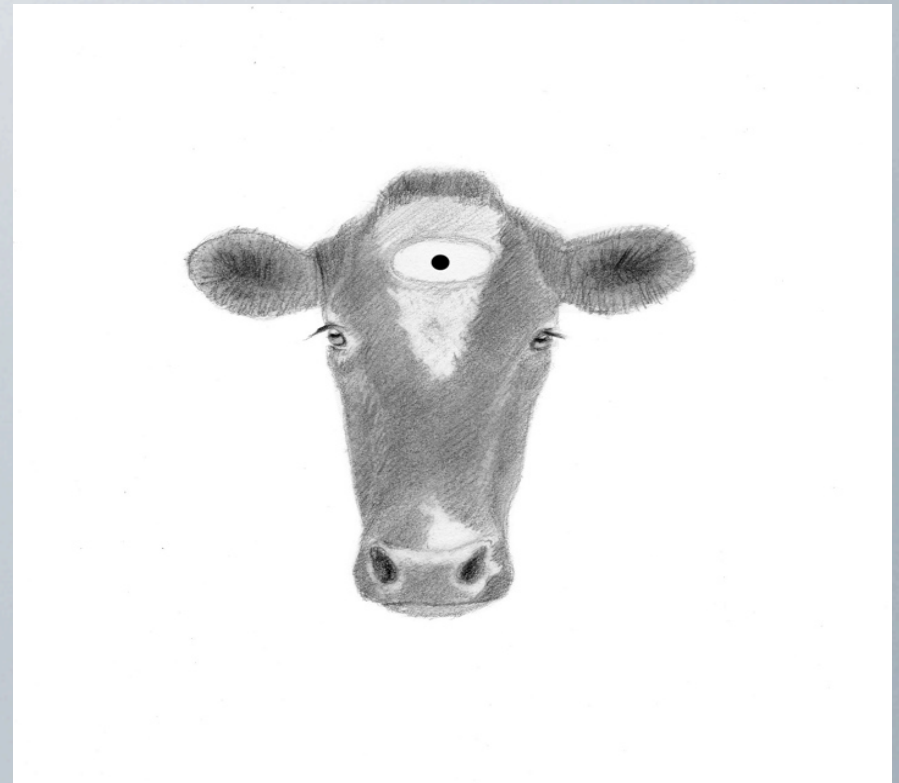
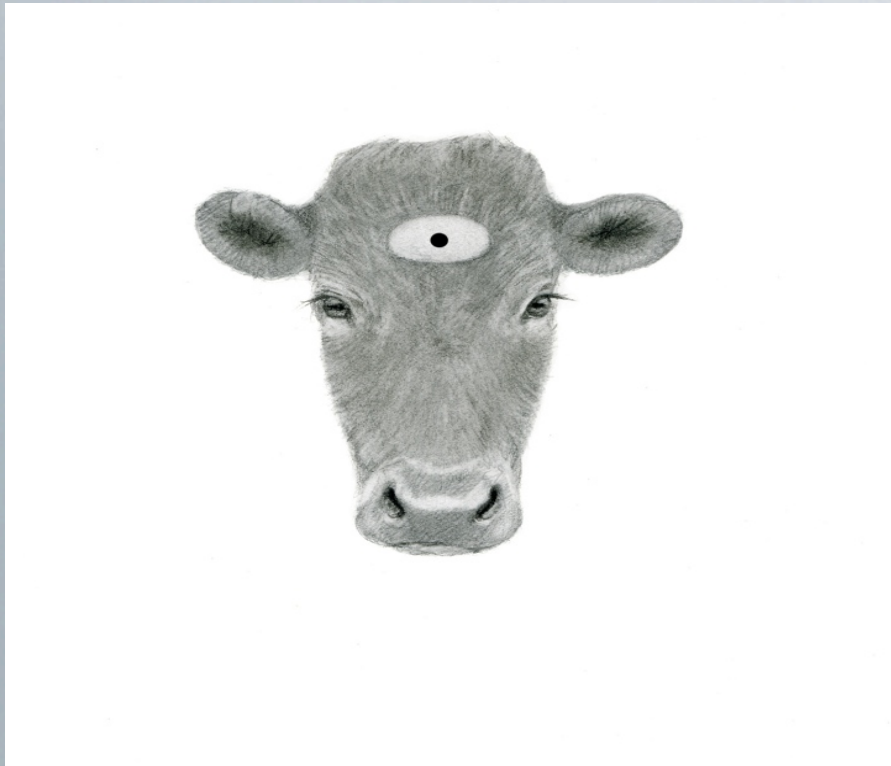
Shoot

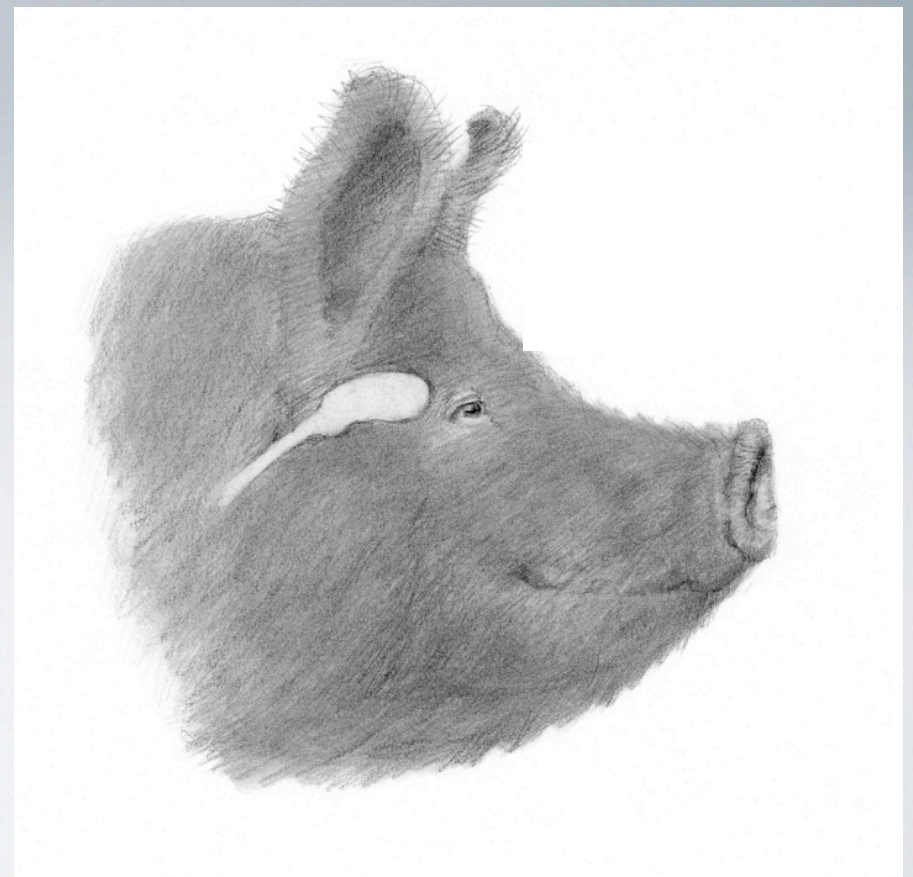
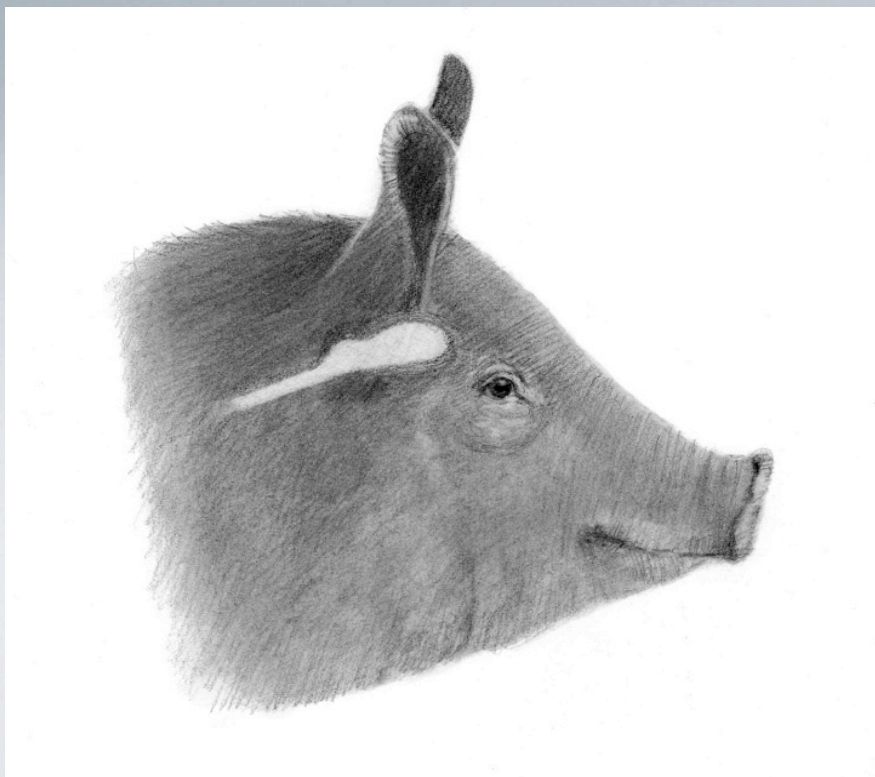
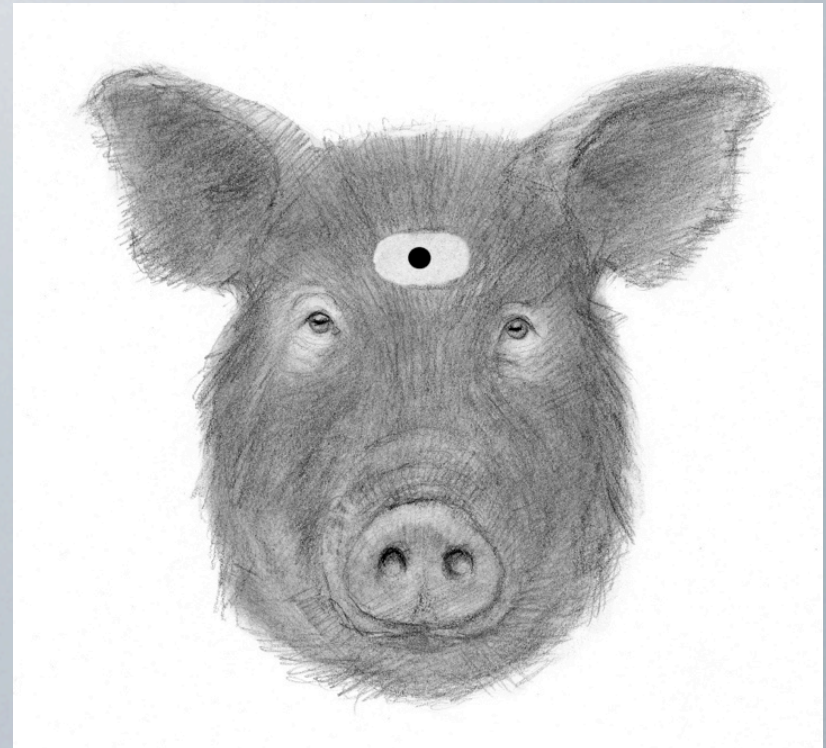
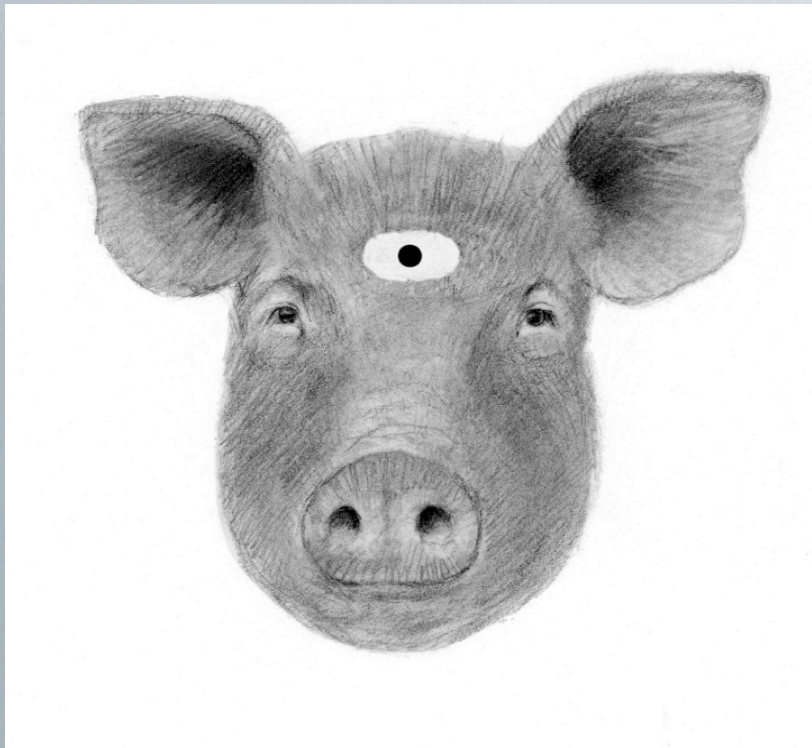
LOCATION OF SHOT

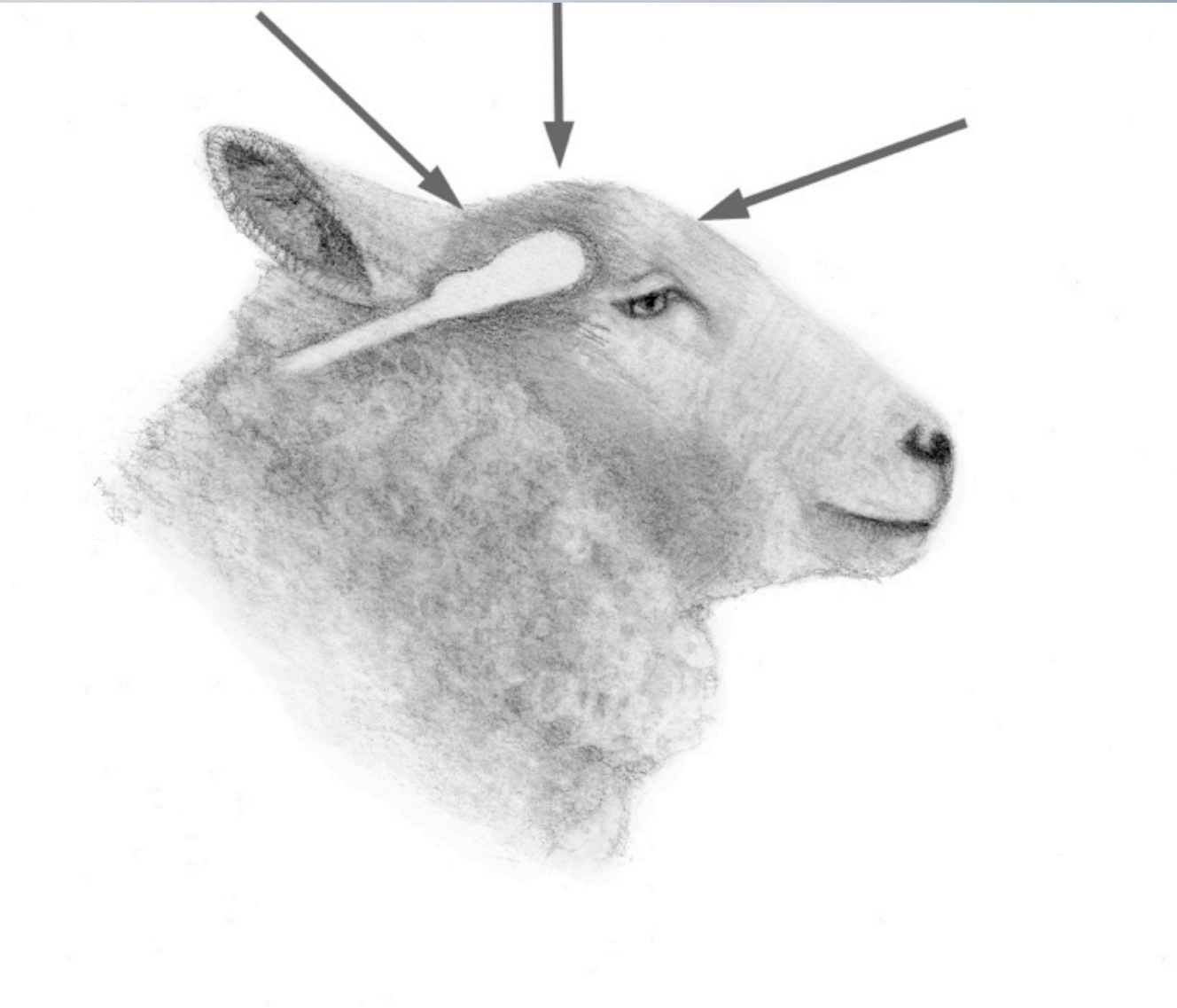
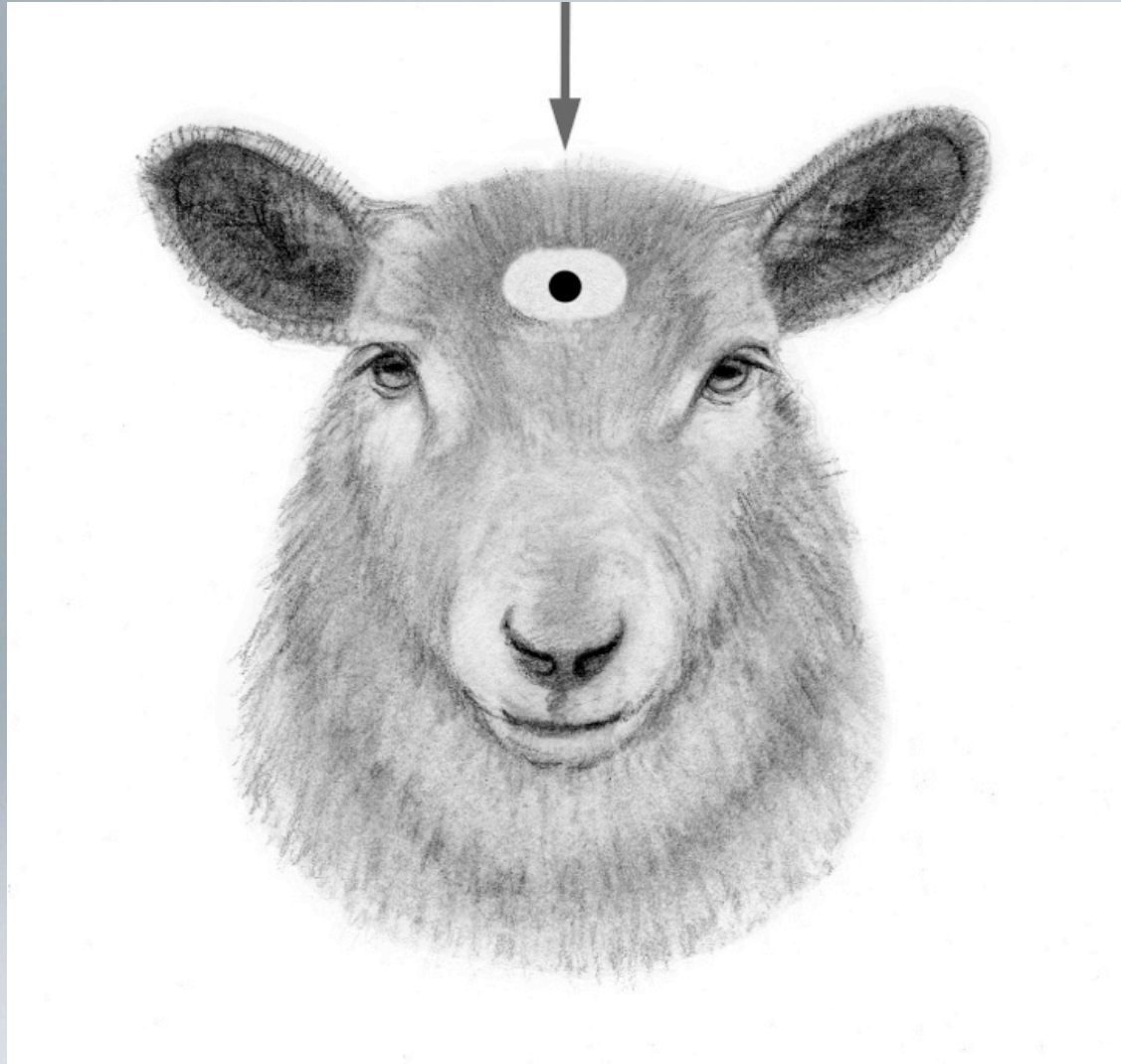
The best place to penetrate the head is where the bullet/slug will meet minimal resistance with the most direct path to the desired areas of the brain, insuring maximum damage and destruction to the brain.

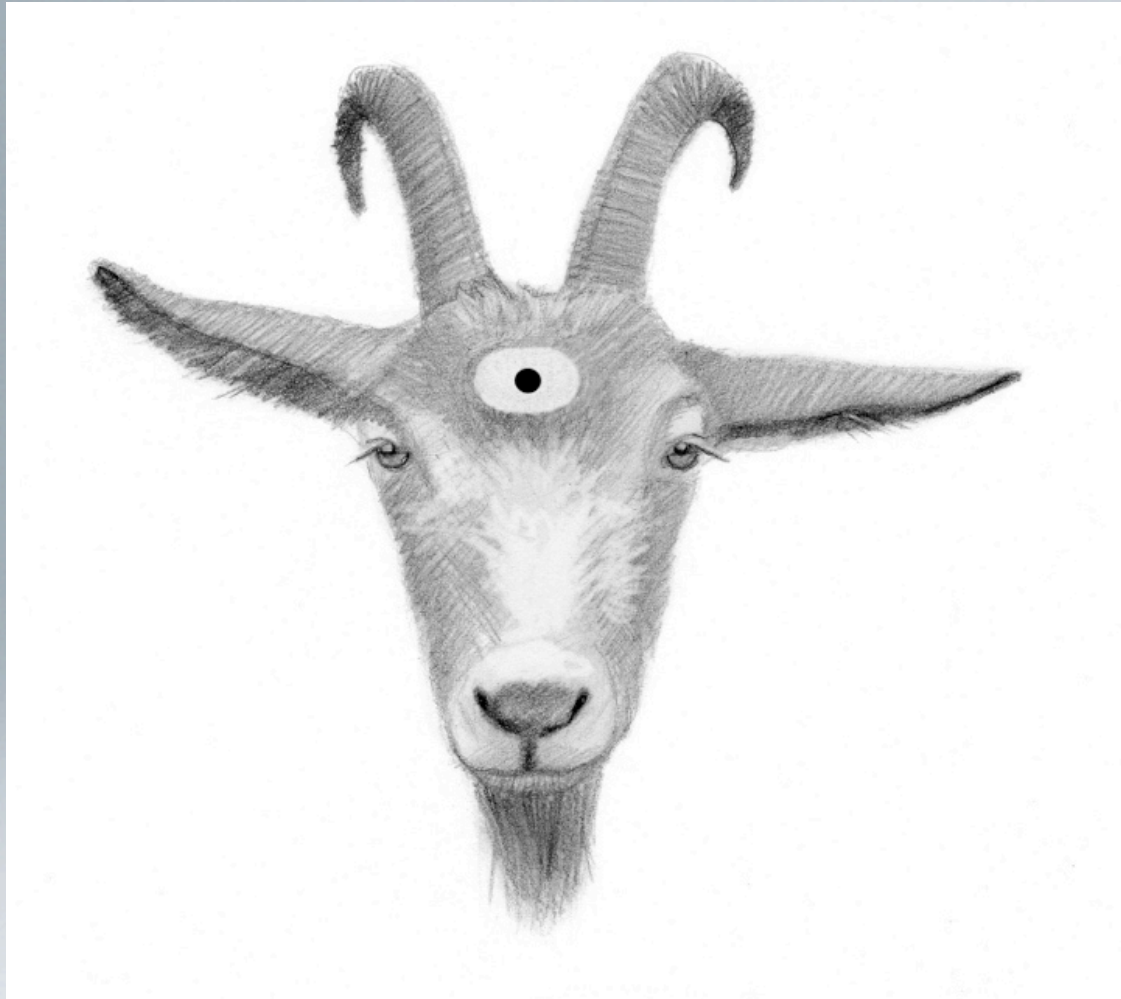


Plan the trajectory so that the bolt or projectile travels through the brain.





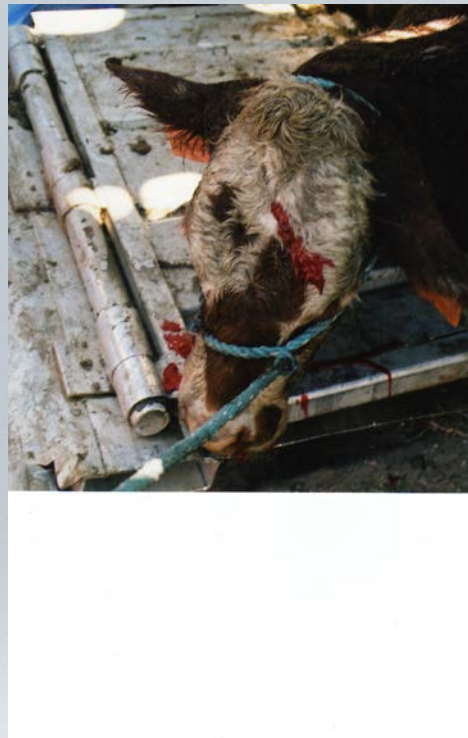




Best Training Tool



If an animal shows any signs of sensibility, you will need to immediately shoot the animal again.



If the first shot was not accurately placed, target to the correct spot. If the first shot was accurately placed, target approximately one inch above and slightly to the side of the first shot.

Routine Maintenance & Storage

Only have enough ammunition out for the current shift (2 for each animal)

Always have a back up gun - rotate usage

Store ammunition in an airtight container
Regularly clean the gun

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