



# Animal welfare during slaughter or killing of cattle at farm level

– who, where and how – responsibilities and practises

# Emergency slaughter / emergency killing

- ‘**killing**’ means any intentional process which causes **the death** of an animal
- ‘**emergency killing**’ means the killing of animals that are suffering from painful **injuries OR diseases**, where there is no other practical way to help them
- ‘**emergency slaughter**’ means the killing, and in due time, further processing of **injured** animals for human consumption

# Emergency killing – WHO?

- As a farmer, **you** are **responsible** for your animals;
- Owning a substantial number of animals, you must be prepared for accidents and illness
- You are to ensure that NO animal under your care is caused *unnecessary pain or suffering*
- => You must **be competent** to stun and kill, or **have someone** who can help you on **short notice**
- You are also responsible **safe disposal**;
- => animal disposal plant who will collect the dead body in short time, and you need a safe place to keep the dead animal until it is collected

# To avoid suffering, you must stun the animals prior to killing

- ‘**stunning**’ means any process causing **loss of consciousness and sensibility without pain** including methods resulting in **instantaneous death** (stun-kill method)
- The loss of consciousness shall be maintained **until the animal is dead**
- That is - usually you must do something to **kill** the stunned animal
- Never leave the animal alone until all signs of life have disappeared

- No movements
- No muscle tonus
- No breathing
- Eyes with large pupils
- No reflexes

# WHERE?

- Animals who are unfit for transport, must be killed or if possible slaughtered on farm
- Those who cannot walk without pain, are to be stunned and killed **where they are found**
- In some situations *it may* be necessary and possible to move the animal to a better or more convenient location (safety reasons)

# Fit for slaughter

An otherwise healthy animal that suffered an accident, and is **not fit** for transport



# Case for killing

Animals with symptoms of a systemic **disease** or being abnormally **thin** or **weak**, must be killed and declared **unfit for human consumption**



# Emergency slaughter

So, you have an otherwise healthy animal that just suffered an accident => not fit for transport

- You need an **agreement with a slaughter plant** who is accepting on farm emergency slaughter; the agreement should clarify by whom and how the slaughter is to be done
- The farmer is responsible to call **a veterinarian**, who must carry out an **ante mortem (AM) examination** of the **live animal**; you have to assess whether the waiting time is acceptable from an animal welfare point of view
- (Passing the AM control doesn't mean that the carcass will be approved for human consumption in the end)
- **Food chain info**; origin / id of the animal, medication? If yes -what/when?
- The animal must be **stunned** and **bled** on farm: either by you, the vet or a slaughterer
- Depending on expected transport time and transport conditions to the slaughter house, the stomachs and intestines may be taken out on the spot; **evisceration only in presence of the veterinarian**
- **The organs must accompany** the animal to the slaughterhouse

# Norwegian authorities have interpreted the term “accident”

may be accepted for ES, given quick recognition & otherwise healthy animals

- **Fractures or other injuries**
- **Complications at parturition**
- **Prolapse/eversion of vagina, uterus or rectum**

Body temperatures of 39 °C may be ok



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- Injuries of teats => risk of developing mastitis – maybe, if the slaughterhouse cannot transport the animals immediately, or if the animal cannot be transported (e.g. within 10% of the estimated time of the gestation before birth, or the first week after giving birth)
  - Non-responding cows with milk fever; if quick decision ok, **usually not!**
- 
- **Indigestions – animals are not healthy when diagnosed**
  - **Wild animals – healthy, but not regarded as accidental**

| HOW to stun                            | Effect due to                          | Category of animals                                  |
|--|--|--|
| <b>Penetrative captive bolt device</b> | Concussion & irreversible brain damage | Most animals, depending on weapon and cartridge used |
| <b>Shotgun</b> (5-25cm from skull)     | Instant damaged brain                  | All categories                                       |
| Rifle                                  | Damage heart or head                   | Wild animals   |
| Non-penetrative c. bolt                | Concussion / damage                    | For ruminants, only if LW $\leq$ 10 kg               |
| Blunt force                            | Concussion / damage                    | Piglets, lambs, .. $\leq$ 5 kg LW                    |

## Old equipment; a “bell gun” with a free projectile

- Dangerous for you and other persons nearby
- Ricochets may kill!
- What do you know about maintenance, storage & effect of cartridges?
- If used – only on the ground /soft surfaces



# Captive bolt devices; press against skull when fired



Always use original cartridges; different producers have different colour codes!!!

Difficult to differentiate between red/pink and purple/black

If in doubt – choose a stronger cartridge, but never exceed max for your weapon!

| SUGGESTED TOOLS AND CARTRIDGES |   |   |   |   |  |   |   |
|--------------------------------|---|---|---|---|--|---|---|
|                                | .22" RANGE  |   |   | .25" RANGE  |  |   |   |
|                                | CASH SPECIAL  | CASH MAGNUM .22"  | CASH COWPUNCHER .22"  | CASH SPECIAL  | CASH MAGNUM  | CASH COWPUNCHER .25"  | MAGNUM XL   |
|                                |  |  |  |  |  |  |  |
| CALVES                         | PINK  | PINK  | N/A   | PINK  | PINK   | N/A   | N/A   |
| LIGHT ANIMALS                  | PURPLE  | PURPLE  | PURPLE  | YELLOW  | YELLOW   | YELLOW  | N/A   |
| MEDIUM ANIMALS                 | GREEN   | GREEN   | GREEN   | BLUE  | BLUE   | BLUE  | N/A   |
| HEAVY ANIMALS & BULLS          | RED*  | RED   | RED   | ORANGE*   | ORANGE   | ORANGE  | N/A   |
| VERY HEAVY ANIMALS             | N/A   | BLACK   | N/A   | N/A   | BLACK  | BLACK   | BLACK   |
| EXTREMELY HEAVY ANIMALS        | N/A   | N/A   | N/A   | N/A   | GREEN  | GREEN   | GREEN   |
| EXCEPTIONALLY HEAVY ANIMALS    | N/A   | N/A   | N/A   | N/A   | N/A  | N/A   | RED   |

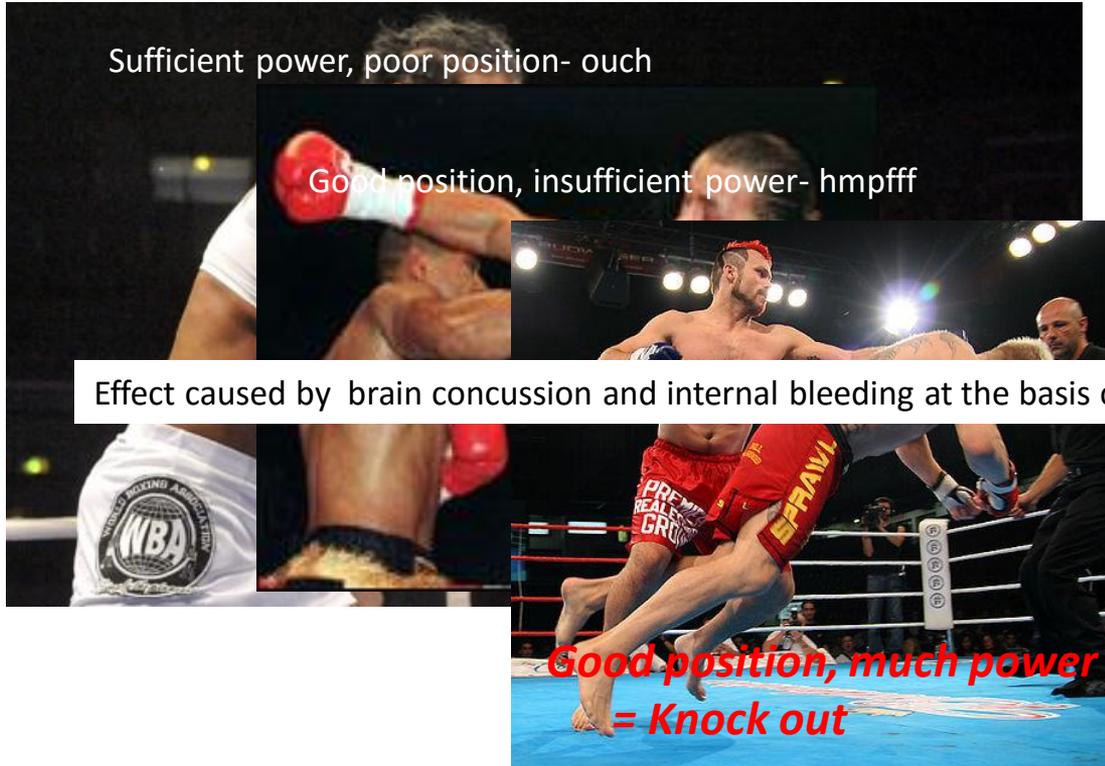
\* HEAVY DUTY CASH SPECIAL ONLY

### Accles & Shelvoke

Selco Way, Off First Avenue, Minworth Industrial Estate, Sutton Coldfield, West Midlands, B76 1BA, UK

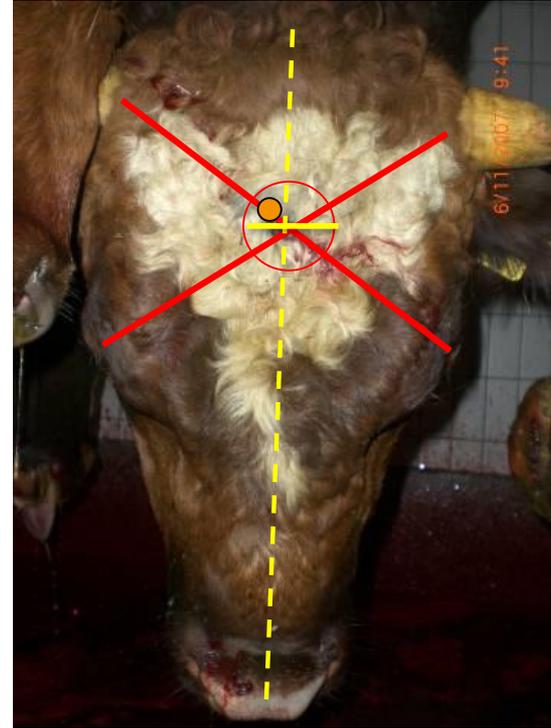
Tel: +44 (0) 121 313 4567 Fax: +44 (0) 121 313 4569 Email: info@acclesandshelvoke.co.uk

# An effective shot with a captive bolt device, works like a KO in a boxing game

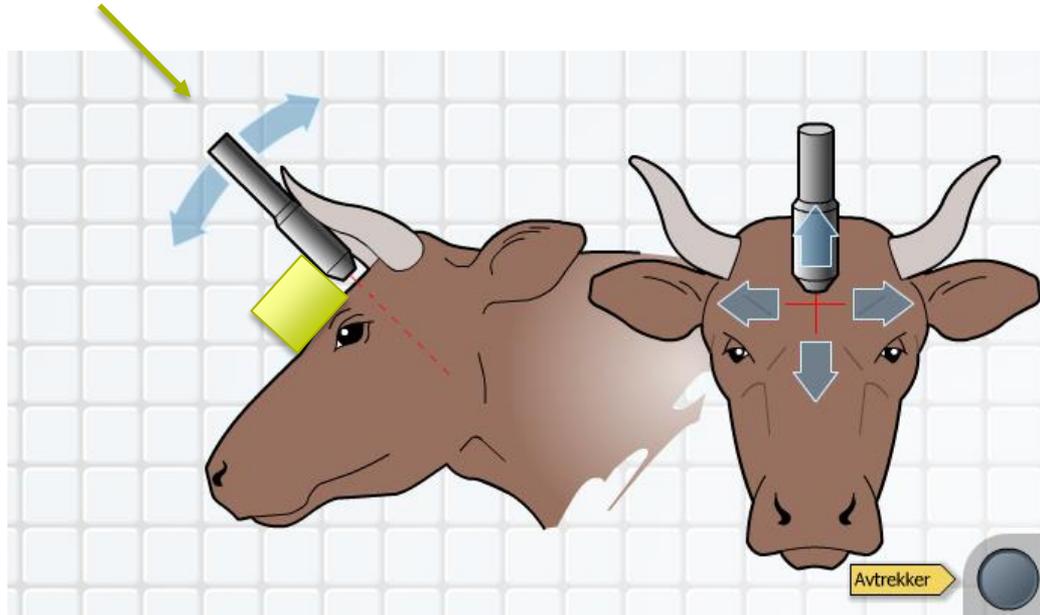


# Correct position in cattle:

- Find the crossing point of two imaginary lines drawn between the eyes and the center of the base of the opposite horns
- Aim within a radius of app. 2 cm
- Old animals; keep 1 cm to the left / right of the middle line
- The muzzle of the stunner should be held at a *right angle* to the skull, and *in contact* with the skull



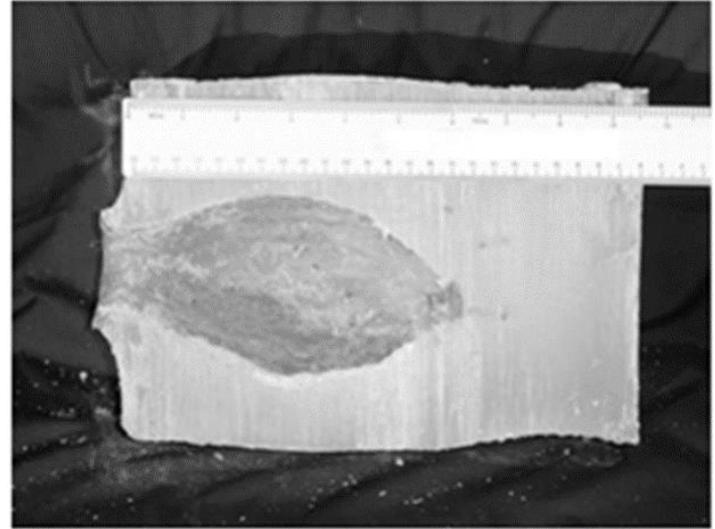
# Position and direction / angle 90 degrees



## Shotgun for close range; 5 – 25 cm (Humane Slaughter Association)

- Shotguns are the most common weapons found on farms;
- For all conventionally farmed livestock species, a 12, 16 or 20 bore shotgun may be used with No. 4, 5 or 6 bird-shot
- To be used only by qualified/certified personnel!
- Never in contact with the skull
- Store in approved and locked cabinet

Effect of 16 bore shotgun blast from a distance of 5 cm; see more at the website HSA; <https://www.hsa.org.uk/humane-killing-of-livestock-using-firearms-introduction/introduction-2>



# Rifle



- If, for some reason, you need to kill an animal from a distance, you should use a **larger calibre, centre-fire rifle** and aim at **the heart**
- The common general purpose .22 inch rim-fire rifles used for rats and rabbits, *are not to be used!*
- Follow general rules for such weapons

# Signs of a good stun

- Immediate collapse, tonic cramp, hind legs flexed
- Eyes fixed, staring gaze
- No eye reflex
- No breathing
- Relaxed jaw
- Tongue relaxed
- Kicking /movements may start 10-20 seconds after the shot, pregnant cows may kick vigorously

Restraint facilitates correct position and direction; a halter may work if the animal has experienced it earlier



# Extra risk for poor results in emergency situations

- Poor restraint
- Access to the animals that cannot be moved
- Personnel with limited experience
- Maintenance and cartridges!
- An old study from abattoirs in UK found that 6,6 % of the steers and heifers, and 53 % of young bulls were stunned poorly

## Poor hit, insufficient power or wrong angle

- Narrow or closed eyes
- Eye rotation
- Nystagmus



## Other signs of poor/failed stunning

- Respiration / breathing
- Eye reflex; reacts when eye is touched
- Spontaneous blinking
- No tonic phase, kicks immediately post stun or limp
- Righting reflex
- Vocalisation

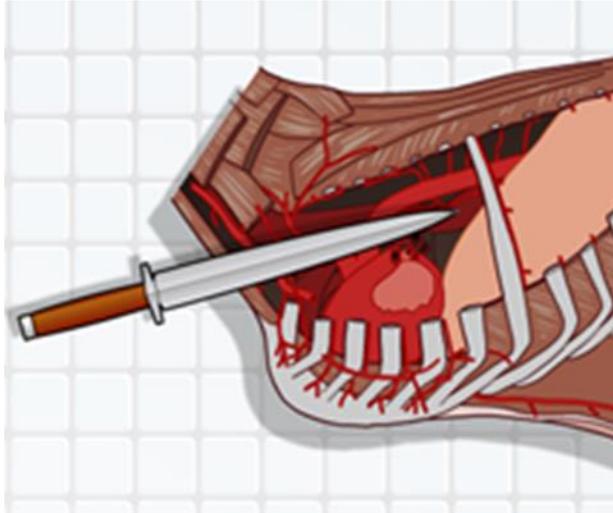
# The shot was effective, I could see brain tissue hanging out ...



- **Phineas P. Gage** (1823–1860) was an American railroad construction foreman remembered for his improbable survival of an accident in which a large iron rod was driven completely through his head, destroying much of his brain
- Lived for another 12 years, but was not quite the same man he used to be

# After the stun, the animal must be *killed*;

- by bleeding if you will slaughter the animal
- if the animal is condemned, pithing is an alternative; i.e. the physical destruction of the brain by a rod inserted through the hole in the skull made by the bolt



What is a pithing rod?

# Chest sticking

- Most effective, and according to hygiene rules
- Stick the animal within the first 10 seconds!
- Use a sharp knife, rel. long blade
- Challenging when the animal is lying flat on the side; esp. in fat cows – hard to reach the heart or large vessels

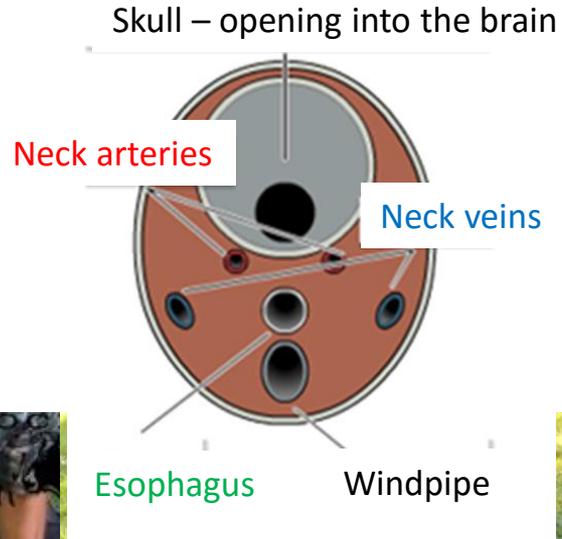


# Chest sticking at slaughter



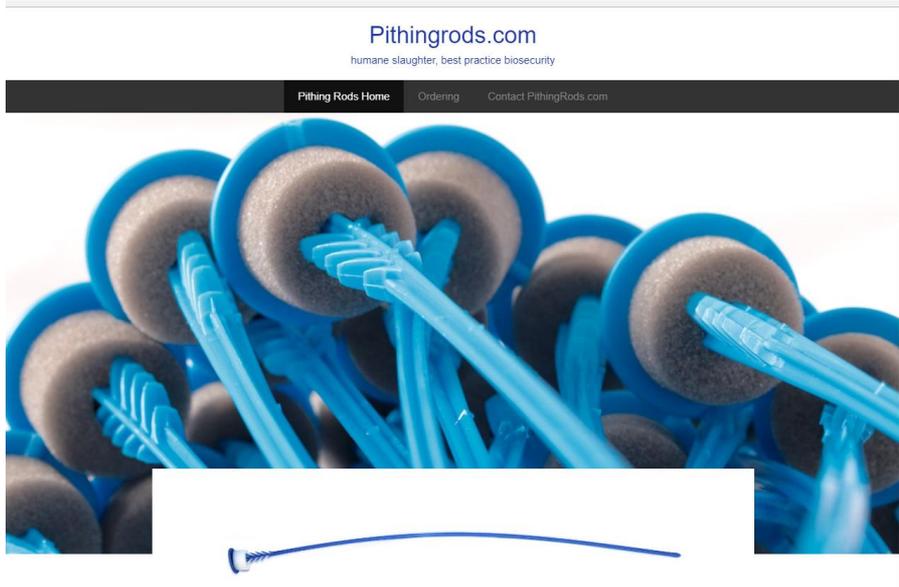
# Gash sticking – not for slaughter

<https://youtube/emLpsVhX4nc>

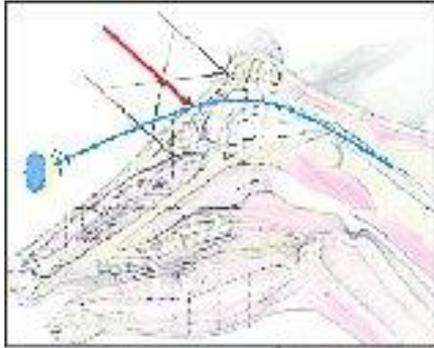


# Pithing rod;

- risk of spreading prions; not allowed by slaughter

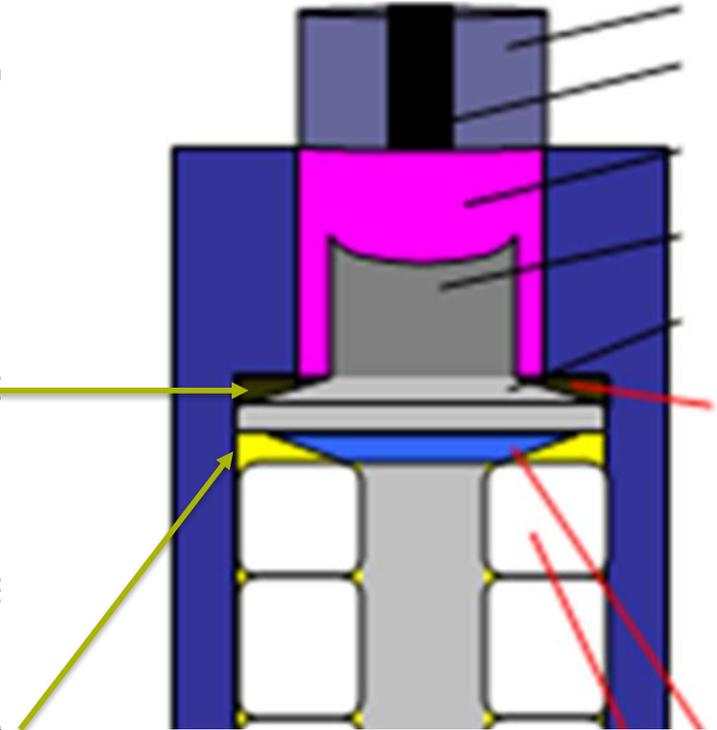


During pithing the animal will initially exhibit violent involuntary muscle contraction.

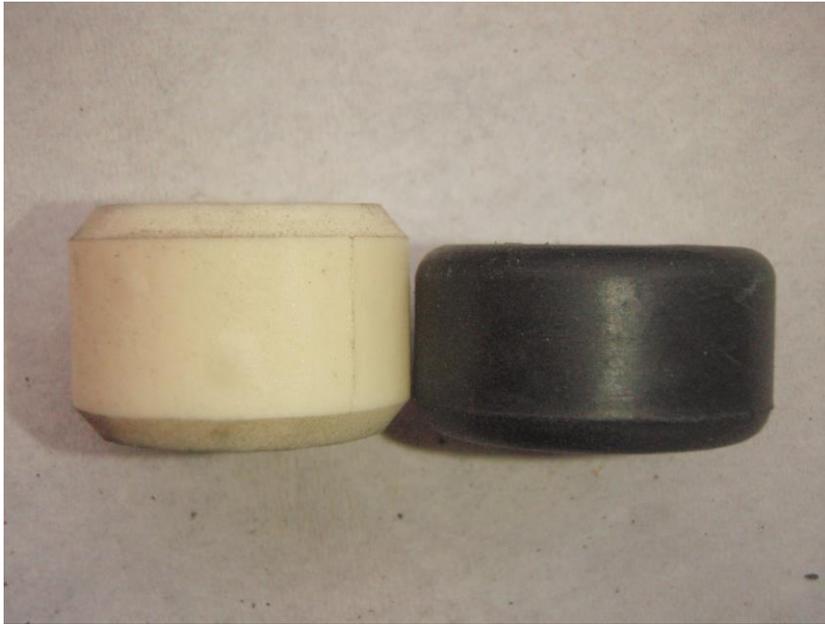


# Maintenance

- Weapon and cartridges should be stored in a dry and locked cabinet
- Always clean after use, preferably when still warm
- Follow instructions from producer
- Build up of gunpowder results in less power, as the bolt cannot retract completely => chamber volume increase reduced speed
- Moist cartridges should never be replaced in the original box
- Change buffers and washers if worn out, => gas leakage



Worn out buffer and washer; height and width reduced



## Signs of a good stun

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## Poor stun

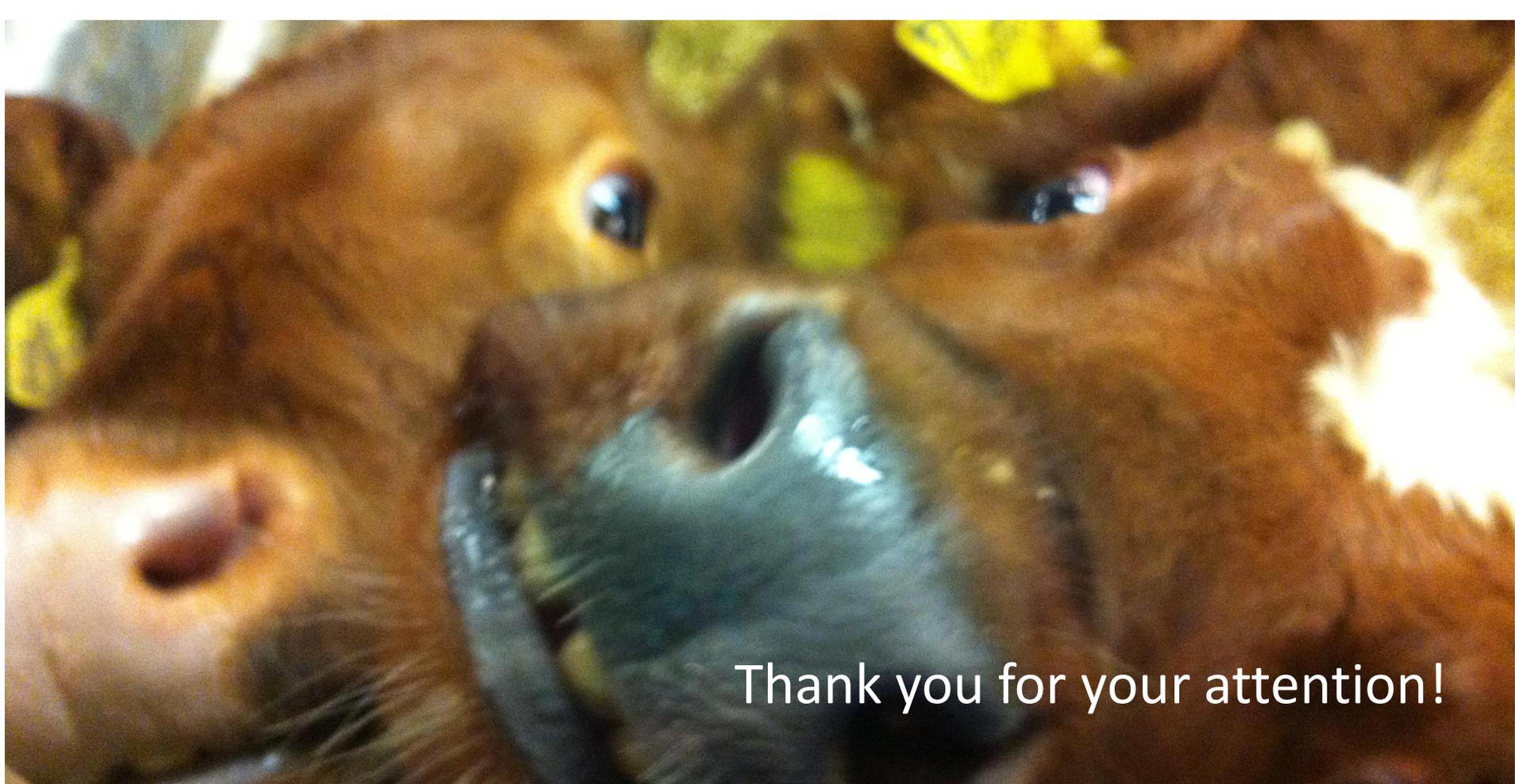
- No tonic phase; flaccid muscles or immediate kicking
- Eyes closed /rotating / quivering
- Positive eye reflex
- Rhythmic breathing
- Tense jaw

# Key parameters captive bolt guns

- Shot position
- Angle / direction
- Bolt velocity / speed
- Exit length
- Bolt diameter
- Max stun to stick interval



Choose weapon and cartridge according to animal size



Thank you for your attention!