



Department
for Environment
Food & Rural Affairs

Red meat slaughter

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Forestry Commission
England



Environment
Agency

Aims

- Background and basic obligations
- Animal transport
- Lairage
- Restraint
- Stunning / Killing



What is welfare at slaughter

- ‘slaughtering’ means the killing of animals intended for human consumption (Art. 2(j))
 - Animals shall be spared any avoidable pain, distress or suffering during their killing and related operations. (Art. 3)
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Why do we care about welfare at slaughter

- is a matter of public concern
 - affects consumer attitudes towards agricultural products
 - contributes to higher meat quality
 - contributes to better meat safety
 - indirectly has a positive impact on occupational safety in slaughterhouses.
 - Caring for animal welfare is linked to care for others
 - Link between animal and human abuse
-

Basic obligations – the 5 freedoms

- 1. Freedom from Hunger and Thirst -**
by ready access to fresh water and a diet to maintain full health and vigour.

do not suffer from prolonged withdrawal of feed or water

Basic obligations – the 5 freedoms

2. Freedom from Discomfort - by providing an appropriate environment including shelter and a comfortable resting area.

are provided with physical comfort and protection, in particular by being kept clean in adequate thermal conditions and prevented from falling or slipping;

Basic obligations – the 5 freedoms

3. Freedom from Pain, Injury or Disease - by prevention or rapid diagnosis and treatment.

are protected from injury

do not show signs of avoidable pain or fear

Basic obligations – the 5 freedoms

4. Freedom to Express Normal Behaviour - by providing sufficient space, proper facilities and company of the animal's own kind.

are handled and housed taking into consideration their normal behaviour

Do not exhibit abnormal behaviour

Basic obligations – the 5 freedoms

5. Freedom from Fear and Distress - by ensuring conditions and treatment which avoid mental suffering.

are prevented from avoidable interaction with other animals that could harm their welfare

What operations are key for welfare at slaughter

Pre-slaughter handling

Stunning

Bleeding

Post-bleeding

Live

Consciousness

Death



Pre-slaughter handling

- Transport
- Unloading
- Moving animals
 - Lairaging
 - Restraint

Transport

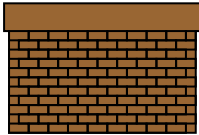
- **Vehicles:**
 - Condition
 - Stocking density
 - Climatic environment
 - Protection from weather
 - Social mixing

 - **Unloading facilities**
-

Transport

- Condition of the animals at unloading (stress, fear, DOAs)
 - Contingency procedures
 - Handling procedures
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Interactions



DO CHICKENS' FARTS SMELL LIKE EGGS?

Lairage

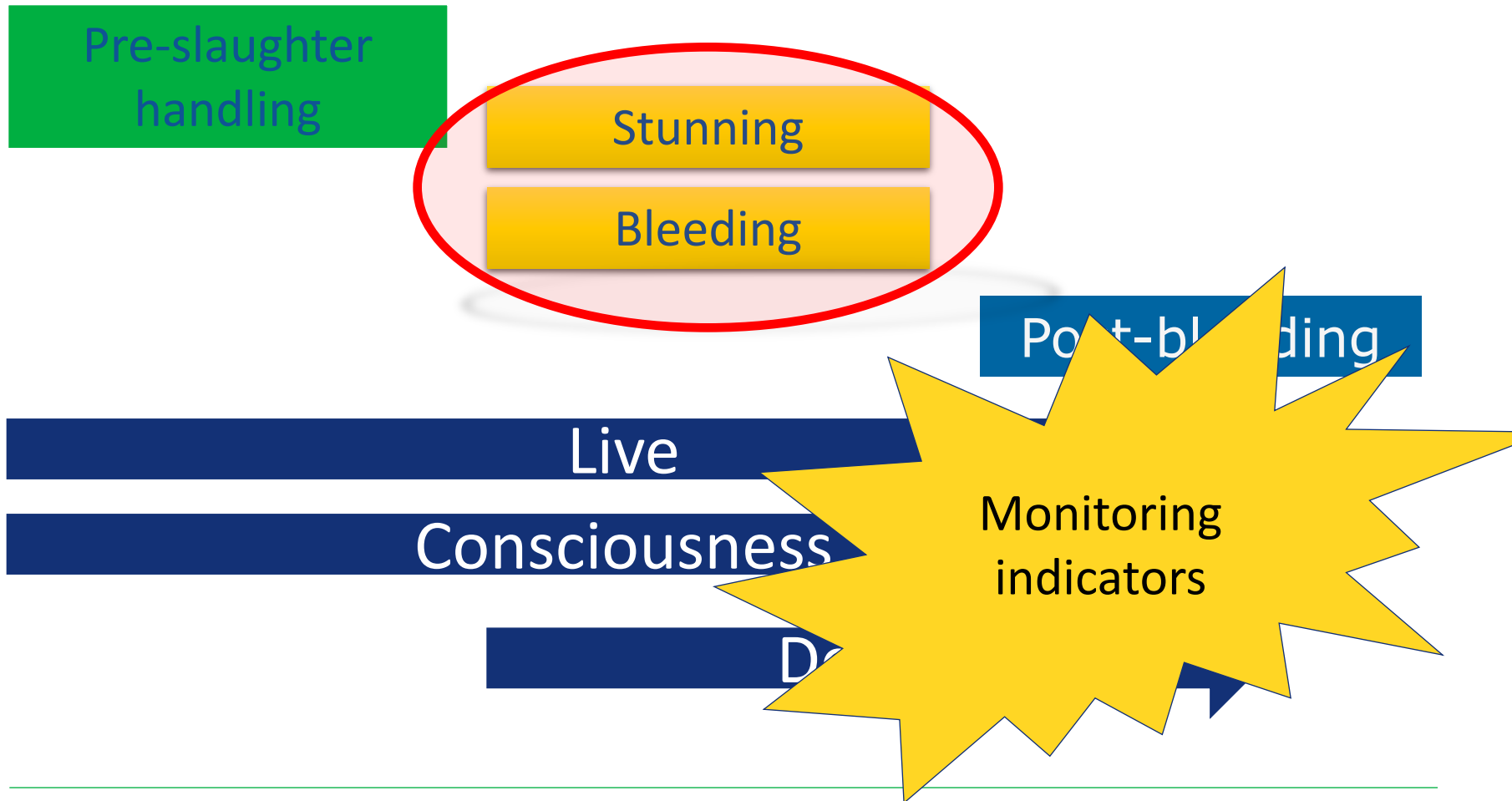
- Overall design, maximum capacity
- Protection from adverse weather
- Ventilation
- Maintenance
- Lighting and reflections
- Isolation pen
- Trained personnel
- Management and procedures
- Water and food as required



Handling & restraint

- Within the lairage
 - In race to stun pen
 - Use of electric goads
 - Restraint (individual for non-stun)
 - Method, duration
-

What operations are key for welfare at slaughter

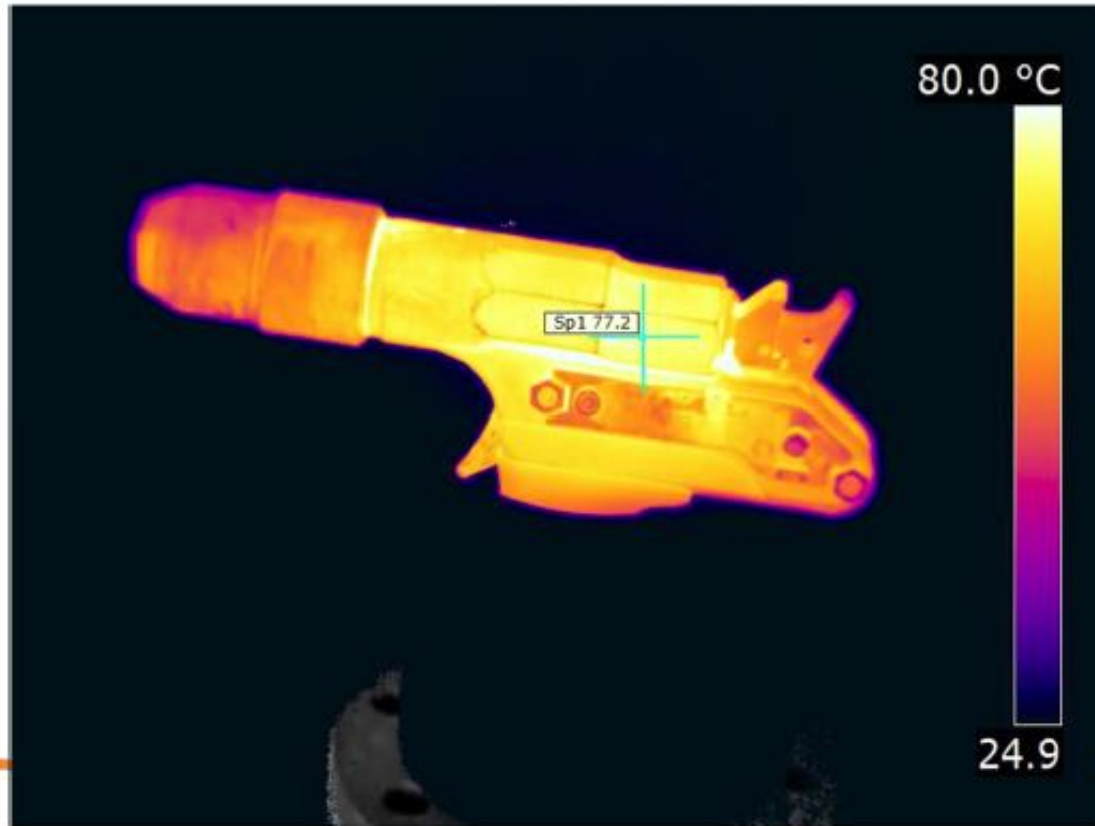


Stunning

- Slaughtermen training and licensing
 - Back up stunner
 - Equipment parameters
 - Gun, bolt (diameter, penetration depth, velocity) cartridge (type, storage)
 - Electrical (position, current, waveform, conductivity/resistance)
-

Stunning

Methods – new developments



Gibson, T.J., Ridler, A.L., Lamb, C.R., Williams, A., and Gregory, N.G. (2012). MH0140 Studies to examine the use of captive bolt guns as a killing method for horned and un-horned sheep over six months of age. Final report. DEFRA

Stunning / Killing – Checks on stunning

- Entry and passage
 - Gas concentration
 - Carbon dioxide at high concentration
 - Carbon dioxide in two phases
 - Carbon dioxide associated with inert gases
 - Oxygen concentration
 - Inert gases
 - Carbon dioxide associated with inert gases
 - Duration of exposure
 - Quality of the gas
 - Temperature of the gas
 - Alarm systems
 - Emergency procedures
-

Stunning / Killing – Checks on stunning

- Accuracy
 - Effectiveness
 - Maintenance records
 - Manufacturers instructions
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Stunning monitoring

Animals should be monitored continuously after *stunning* until *death* to ensure the absence of brain stem reflexes.

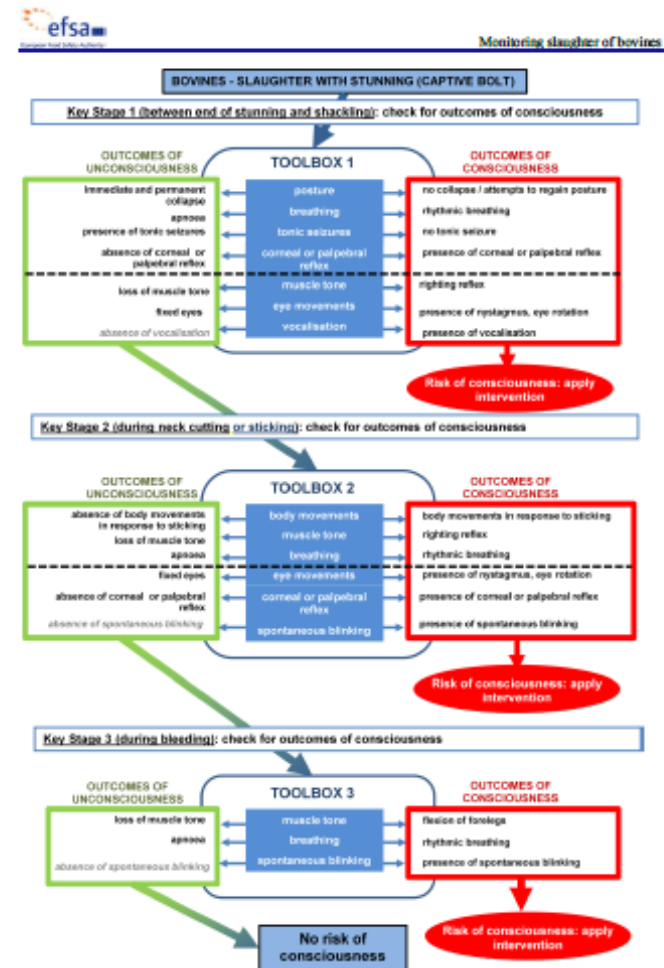
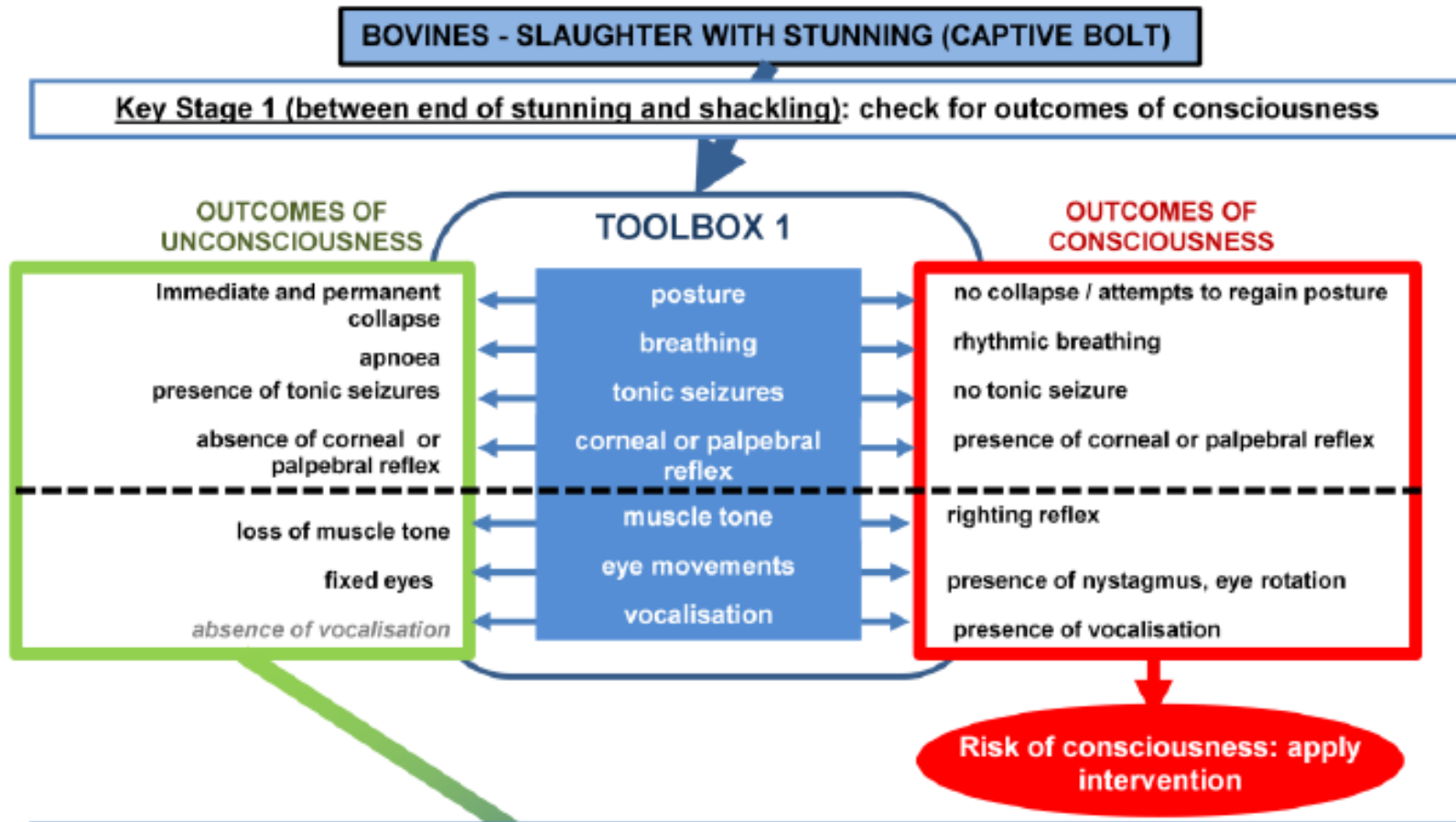


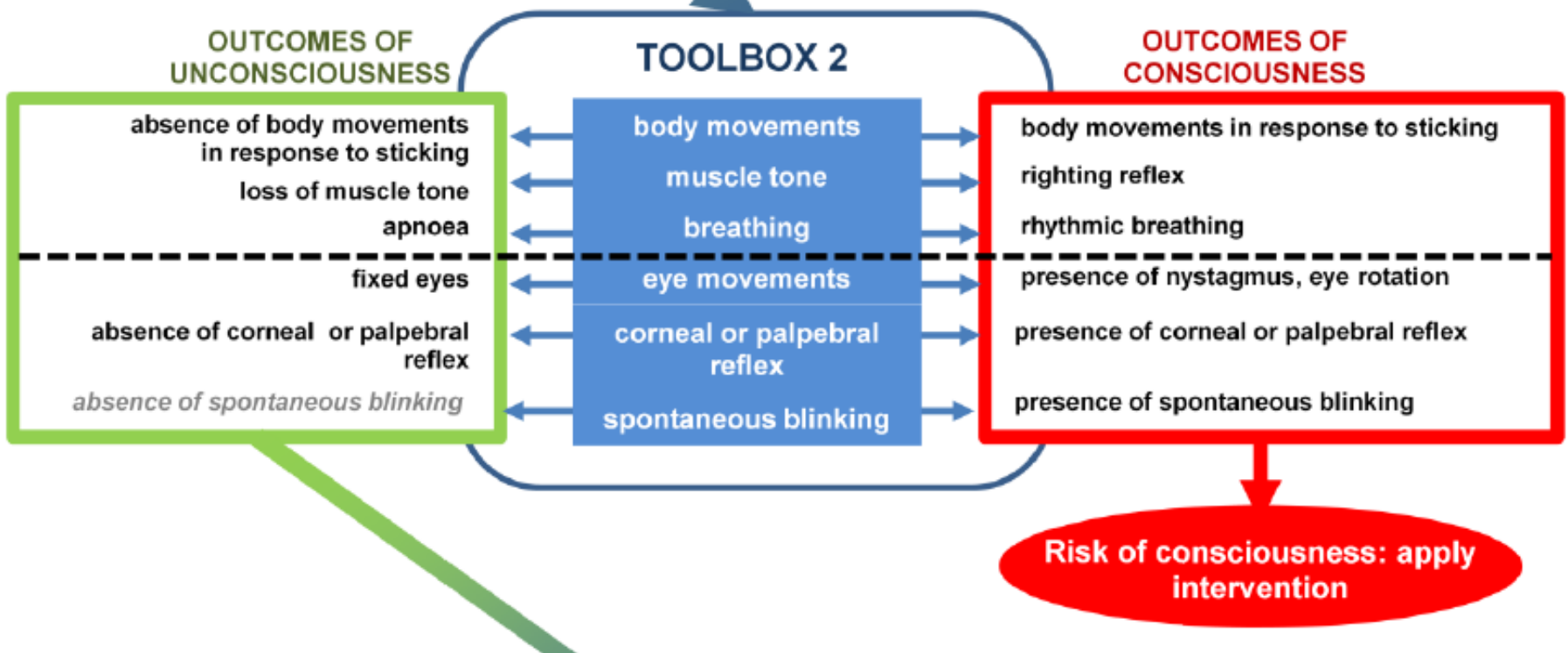
Figure 5: Toolbox of indicators that are considered suitable to be used for detection of conscious animals at each key stage of the procedure of captive bolt stunning in bovines

Stunning monitoring – penetrative captive bolt



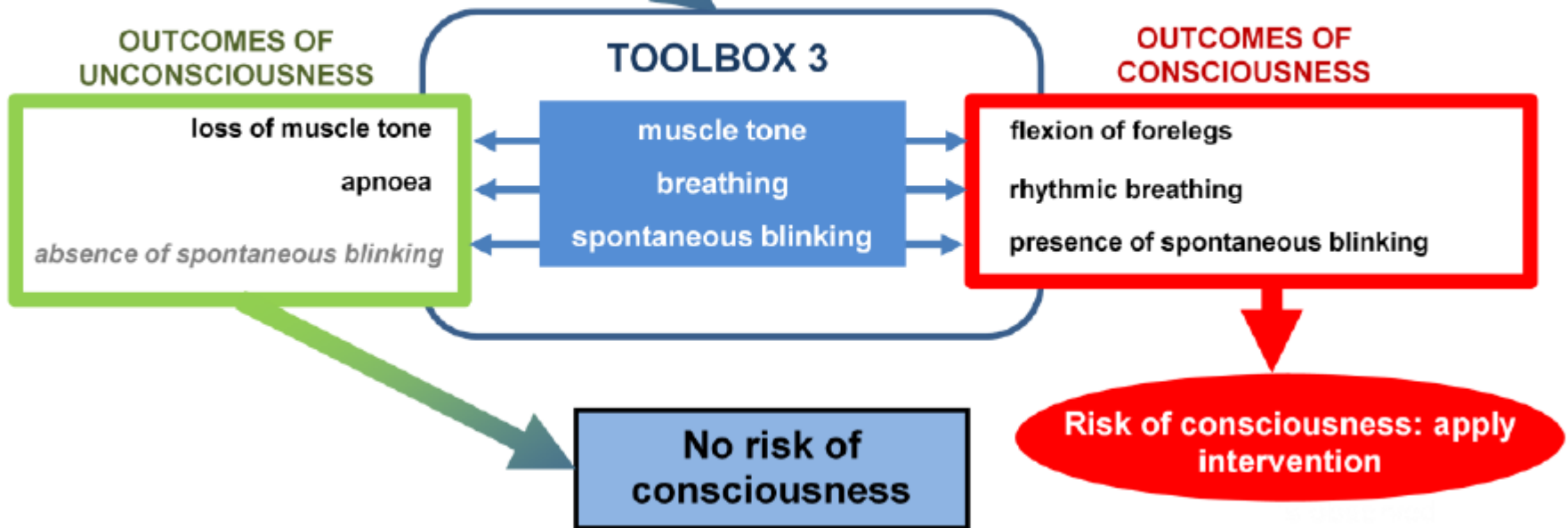
Stunning monitoring – penetrative captive bolt

Key Stage 2 (during neck cutting or sticking): check for outcomes of consciousness



Stunning monitoring – penetrative captive bolt

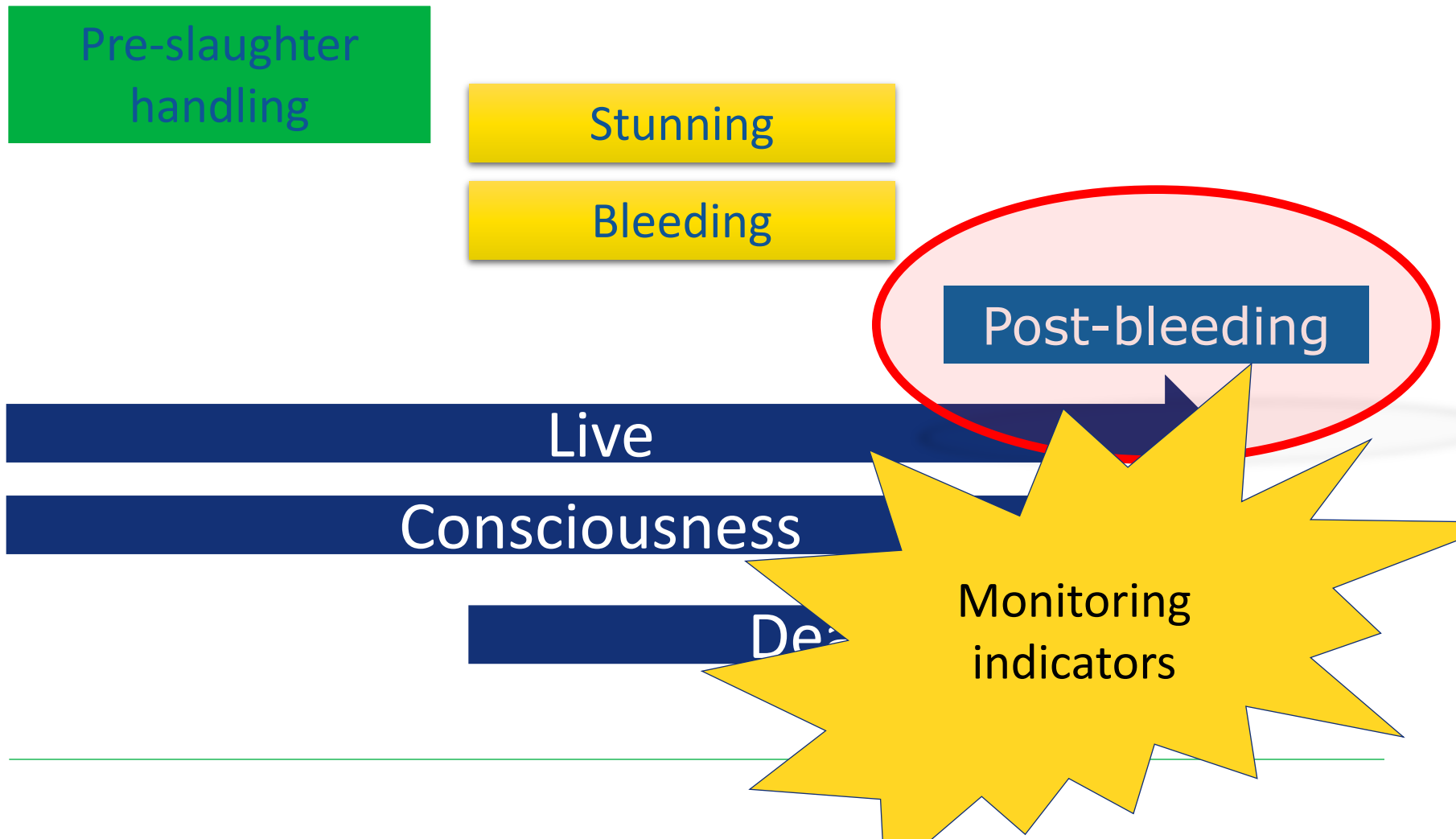
Key Stage 3 (during bleeding): check for outcomes of consciousness



Bleeding

- Equipment – knife size / sharpness
 - Efficiency of neck cut (2 carotid arteries)
 - Throughput rate (staff numbers)
 - Stun to bleed times (simple stunning only)
 - Training and skill
 - Slaughter without stunning
 - Additional provisions
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What operations are key for welfare at slaughter



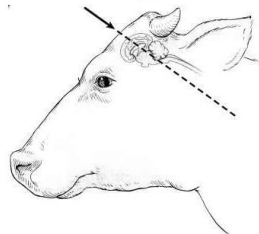
Post-bleeding and post-mortem checks

Post-bleeding

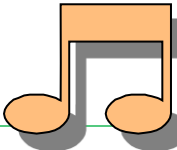
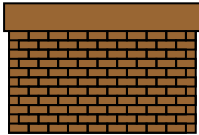
- Bleed to dressing/scald times
- Slaughter without stunning
 - Additional provisions

Post-mortem

- Injury, broken bones
- Bruising
- Shot position



Interactions



DO CHICKENS' FARTS SMELL LIKE EGGS?

Who is responsible?

- Animal owner
 - Transporters
 - Food Business Operator
 - Slaughterhouse personnel
 - Officials
 - Veterinarians
 - The public
-

Who is responsible?

Everyone involved in the process

Working together

Officials and Business Operators should work together. This will help:

- Drive up standards in the industry
 - Ensure that no one operator obtains a commercial advantage over another
 - Maintain consumer confidence
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Precision slaughtering

The 4Rs in agriculture

Right thing

Right place

Right way

Right time

The 4Rs in welfare at slaughter

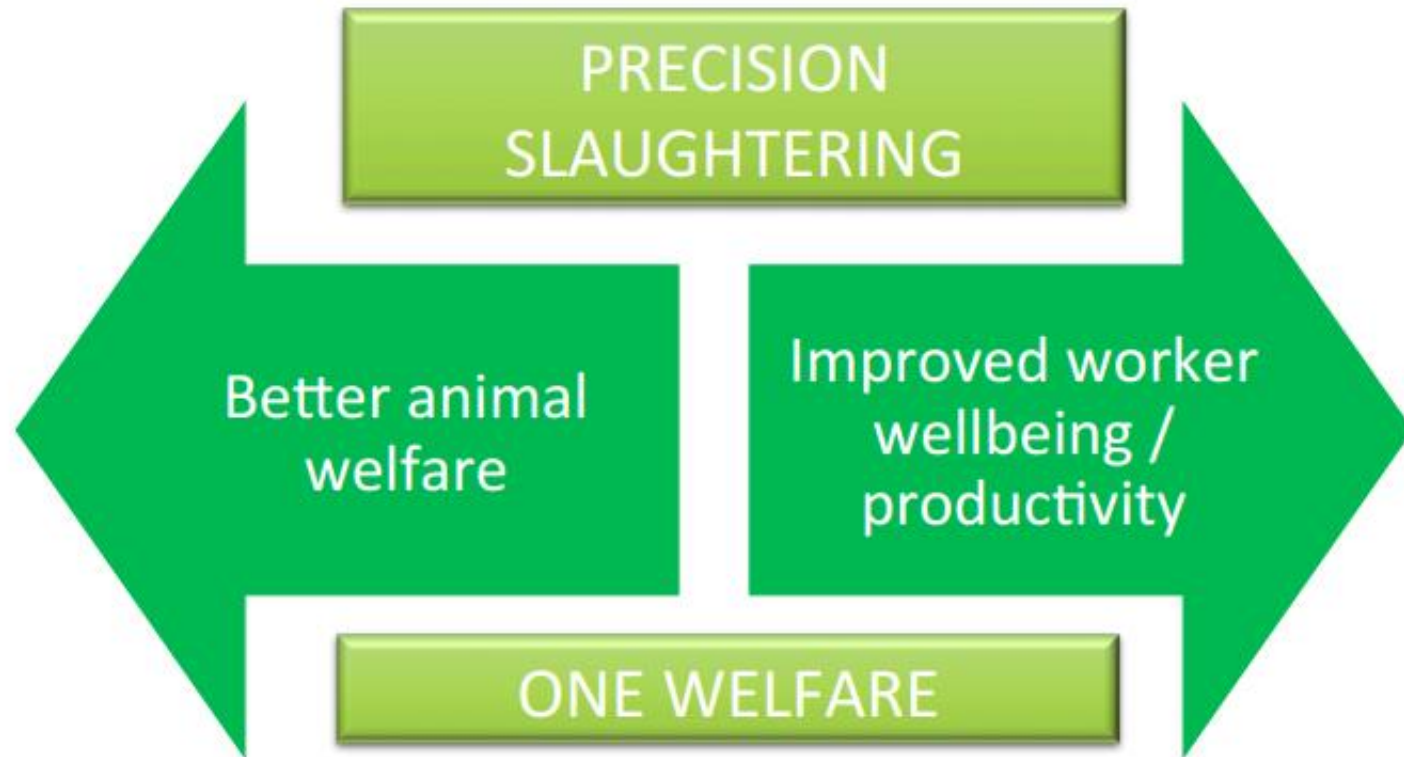
Right equipment

Right place

Right way

Right time

Precision slaughtering





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