



Non-Stun Slaughter

Fact File

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About the Veterinary Policy Research Foundation (VPRF)

The VPRF is a not-for-profit organisation set up by Lord Trees with the purpose of employing a veterinary surgeon as an intern/researcher to facilitate Lord Trees' activities in the House of Lords.

Declarations by the authors

Professor the Lord Trees is a veterinary surgeon and a crossbench peer. The Parliamentary Veterinary Internship is funded by The Veterinary Policy Research Foundation that receives sponsorship from several veterinary organisations, professional bodies and universities. Further information on the VPRF can be found on our website: www.vprf.co.uk. This document has been prepared by the below authors, who declare they would wish to see all animals stunned before slaughter.

Authorship

Hannah Jordan BSc (Hons) BVetMed (Hons) MRCVS

Anthony Ridge MA (Zoology) VetMB MRCVS

Dr Gabrielle Laing BVSc PhD MRCVS

Fiona Shuttleworth MA (Zoology) VetMB MRCVS

Professor the Lord Trees FRCVS FMedSci HonFRSE

Martha Rushbrooke MA (Psychology) VetMB MRCVS

Statement of intention

This document is intended for the public, politicians and professionals and aims to present an unbiased, factual and up-to-date account of the current information available on non-stun slaughter.

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EXECUTIVE SUMMARY

OVERVIEW

- This document provides a comprehensive, evidence-based overview of non-stun slaughter in the UK, considering religious, legal, welfare and policy dimensions.
- Non-stun slaughter involves killing animals without first rendering them unconscious and thus insensible to pain. While stunning is mandatory under UK law to safeguard animal welfare during slaughter, non-stun exemptions exist for religious slaughter practices, namely Halal in Muslim communities, and Shechita in Jewish communities.
- This summary outlines the scientific evidence behind stunning and the ethical and regulatory implications of non-stun exemption and present policy recommendations to improve alignment between animal welfare and modern slaughter practices.

KEY ISSUES

SCIENTIFIC CONSENSUS

- **Pain and Consciousness:**
 - Evidence suggests animals experience significant pain and distress when slaughtered without stunning due to the delay to loss of consciousness.
 - Cattle, in particular, may remain conscious for up to four minutes post-cut due to continued brain perfusion via the vertebral arteries and the development of false aneurysms in the carotids.
- **Stunning Efficacy:**
 - Modern stunning methods, when performed correctly by a trained stockman using well-maintained equipment, are highly effective in ensuring immediate unconsciousness.
- **Risk of Mis-cutting:**
 - Non-stun slaughter methods have an increased risk of delayed or failed severance of key blood vessels in the neck leading to delayed exsanguination and prolonged suffering.
- **Blood Loss:**
 - Contrary to some religious beliefs, studies consistently demonstrate no difference in blood loss between stunned and non-stunned animals.

LEGAL LANDSCAPE

- **UK legislation** – the Welfare of Animals at the Time of Killing (WATOK) mandates stunning prior to slaughter but allows religious exemptions under regulated conditions in approved slaughterhouses.
- **International Precedent** – in 2024, the European Court of Human Rights upheld national bans on non-stun slaughter in Belgium, finding the ban did not violate religious freedoms. The ruling represents a significant milestone in the ongoing debate around non-stun slaughter and provides legal precedent for other countries, including the UK, to consider similar restrictions or bans on this practice.
- **Enforcement Challenges** – while legislation exists, regulatory gaps, for example the absence of method-of-slaughter-labelling and voluntary survey data, make monitoring and enforcement inconsistent.

SLAUGHTER TRENDS

- In 2024, over 44 million animals, of which 40 million were poultry, were slaughtered without prior stunning in England and Wales.
- There has been an increasing trend in the proportion of sheep killed without stunning in the UK since 2011 and a decrease in cattle killed without stunning over the same period (Figure 1).
- Sheep represent the largest proportion (29% of all sheep) of non-stun slaughtered animals, a 6% increase from 2022 and nearly tripling since 2011.
- All Shechita meat is non-stunned, whereas around 15% of Halal red meat was non-stunned.
- A significant proportion of Shechita meat – estimated at 60% - does not meet religious requirements and thus enters the general food chain unlabelled.
- These data are obtained from biennial Food Standards Agency one-week slaughter surveys in some slaughterhouses in England and Wales. Any national data are derived by extrapolation of these sample survey results to the national kill figures in the survey year.
- Obtaining accurate non-stun data is difficult as this one-week snapshot may not be representative of an entire year, survey participation is voluntary and the questions are not mandatory, resulting in incomplete data sets which reduces the reliability of year-on-year comparisons.

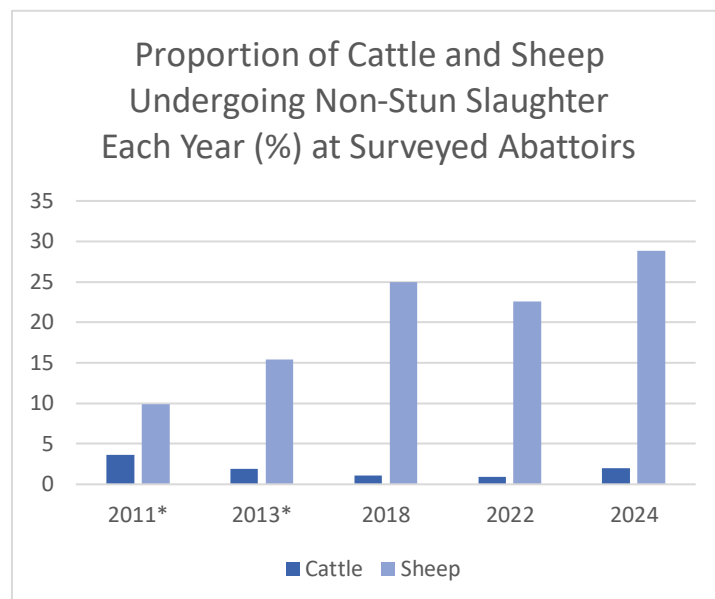


FIGURE 1: PROPORTION OF CATTLE AND SHEEP UNDERGOING NON-STUN SLAUGHTER (%). *IN THESE YEARS SHEEP AND GOATS WERE COMBINED.

POLICY ISSUES AND OPTIONS

MANDATORY METHOD-OF-SLAUGHTER LABELLING:

- Mandatory labelling would empower consumers to make informed choices on the welfare of the meat they buy. This will also increase transparency and accountability across the supply chain.

EXPORT RESTRICTIONS:

- Given there is evidence of non-stun sheep meat exports, a prohibition of non-stun exports would ensure that non-stun slaughter exemptions serve only domestic religious needs and are not exploited for commercial gain. This can be through a legislative ban or a market-incentive for stunned exports.

QUOTA SYSTEM:

- Similar to Germany, an introduction of capped exemptions for non-stun slaughter, aligned with domestic demand, could ensure no additional animal needs to undergo non-stun slaughter than is necessary.

DEMONSTRATION OF LIFE PROTOCOL PROMOTION

- This protocol is a UK, industry led, Government-backed initiative to demonstrate that electrical head-only stunning of sheep and goats does not cause death and thus is compatible with Halal slaughter requirements.
- The current uptake remains low, only five slaughterhouses as of 2025, but wider adoption could eliminate non-stun slaughter for nearly 3 million sheep each year.

- This protocol can be incentivised by permitting only stunned meat, under either the DoL or a similar scheme, for the UK export market.

PUBLIC EDUCATION AND CROSS-COMMUNITY DIALOGUE

- Fostering respectful discussion between welfare advocates, religious authorities and parliamentarians with a multi-stakeholder group could encourage evidence-based discussion and improve stakeholder education and engagement. Currently (as of summer 2025), various stakeholders are discussing how to increase uptake of the DoL.

CONCLUSIONS

Non-stun slaughter raises significant welfare concerns based on the available scientific evidence. While non-stun slaughter religious freedoms are protected in the UK, and some EU member states, there is growing precedent, ethically and legally, to support tighter controls or phase-outs of non-stun slaughter practises. With appropriate policy reform, including transparent labelling, the introduction of quotas, export restrictions and wider adoption of religiously compliant stunning, animal welfare can be significantly improved without compromising religious rights.

INTRODUCTION

A GLOBAL OVERVIEW

1. In both the European Union (EU) and the United Kingdom (UK), legislation mandates that all livestock in abattoirs must be stunned (rendered unconscious and insensible to pain) before slaughter, with limited exceptions permitted on religious grounds^{1,2}.
2. Non-stun slaughter has been banned in several European countries, including Denmark, Finland, Malta, Slovenia, Sweden, Cyprus, Luxemburg and Norway³. Some EU member states, such as Germany, require abattoirs to hold a specific licence which permits non-stun slaughter up to a quota to meet local demand only⁴.
3. In New Zealand, all animals are required to be stunned before slaughter, with a limited exemption for a small, fixed number of poultry and sheep intended for local Jewish consumption. These animals must be subject to a post-cut stun⁵. Notably, all sheep and beef exported from New Zealand are slaughtered by Halal stun methods, often incorporating the Demonstration of Recovery protocol to verify the animal was not killed by the stun itself (see later)⁶. Australia is similar in that it requires pre-cut stunning but allows an exemption for religious slaughter for the domestic market and utilises a post-cut stun in these cases.
4. In the UK, non-stun slaughter is legally permitted for the religious slaughter of Kosher and Halal meat². The Welfare of Animals at the Time of Killing (WATOK) regulations require that for animals undergoing non-stun slaughter must have their necks swiftly and continuously cut using a sharp hand-held knife to sever both carotid arteries and jugular veins. The animal must be suitably restrained and be left undisturbed for a minimum defined time during exsanguination².
5. In no regulations is cutting the throat listed as an appropriate stunning method^{1,2}. The purpose of stunning is to eliminate the animal's ability to feel pain and distress before death; cutting the throat without prior stunning does not meet this criteria.

UK SITUATION

6. In 2024, over 1 billion animals were slaughtered in England and Wales⁷, of these approximately 30.11 million were killed by a non-stun slaughter method⁸.
7. Currently, UK legislation requires all animals to be stunned prior to slaughter. However, an exemption exists allowing animals to be killed without prior stunning if done in accordance with religious rites, specifically for Halal and Kosher meat production².
8. There is growing concern about the increase in use of non-stun slaughter methods, particularly in sheep, and the transparency around the destination of this meat, principally if it ends up in the general food chain not labelled as non-stun.

9. In 2024, the Food Standards Agency (FSA) reported that sheep made up the largest proportion of animals slaughtered without prior stunning, accounting for 29% of all sheep killed – a 6% increase from 2022⁸.
10. Notably, there has also been an apparent increase in the export of non-stun sheep meat from the UK^{8,9}. This is controversial as the exemption inf WATOK, although unspecified, is surely only intended to serve domestic religious communities, and should not be used to meet commercial demand abroad.

DEFINITIONS AND TERMINOLOGY

It is recommended to use the term 'non-stun' slaughter rather than 'ritual' or 'religious' slaughter.

Terminology	Definition
Insensibility	Not perceptible to the senses.
False aneurysm	When a severed artery end retracts within its connective tissue sheath and at artery end becomes blocked or sealed.
Mis-stunning	When a stun is not carried out correctly and the animal is not rendered immediately unconscious and insensitive to pain.
Mis-cutting	When one or both of the major vessels in an animals neck remains intact or is incompletely cut and there follows delayed exsanguination.
Non-stun slaughter	The killing of animals for human consumption without rendering them unconscious or insensible to pain prior to death.
Pain	A conscious experience which requires nerve impulses form peripheral nociceptors to a functioning conscious cerebral cortex and associated subcortical structures.
Pre-cut stun	A stun prior to the throat cut.
Post-cut stun	A stun immediately after the throat cut.
Plexus	An intricate network of nerves of vessels in the body.
Pithing	Is the physical destruction of the brain by insertion of a cane or rod through the hole in the skull made by the penetrative captive bolt. During pithing the animal will initially exhibit violent involuntary muscle contraction. An animal that has been pithed must not be used for human or animal consumption
Porging	Applicable to Kosher meat production. It is the process of removing portions of the animal which are not classified as being Kosher; the blood vessels, certain fats (chailev) and the sciatic nerve (gid hanasheh).
Ramus	A branch-like structure which can either be a division of bone or a branch of nerves or blood vessels.
Recovery	Return of full physiological function as evidenced by normal respiratory and cardiac activity, and return to a brain state that can support maintenance of consciousness.
Sticking	To cut the throat and serve both carotid arteries and jugular veins of an animal to allow exsanguination.
Stunning	Any intentionally induced process which causes loss of consciousness and sensibility without pain, including any process resulting in instantaneous death.
Reversible/simple stun	Any intentionally induced process which causes loss of consciousness and sensibility without pain that <i>does not</i> cause instantaneous death. Head-only electronarcosis is an accepted form of reversible stunning.
Unconsciousness	An abnormal state of lack of response to sensory stimuli, including pain, resulting from injury, illness, shock or some other bodily disorder. This occurs when the brain's ability to integrate information is blocked or disrupted. In animals, loss of consciousness is functionally defined by Loss of Righting Reflex (LORR), also known as Loss of Posture (LOP).

LEGISLATION

EUROPEAN LEGISLATION

11. Retained European Council Regulation (EC) 1099/2009¹:
 - This regulation governs the protection of animals at the time of killing (PATOK) and applies to all EU member states. It came into effect on 1st January 2013.
 - It requires that animals are stunned before slaughter and that *‘animals shall be spared any avoidable pain, distress or suffering during their killing and related operations.’*
 - Some methods of stunning are not authorised due to insufficient scientific evidence demonstrating that they can provide reliable and efficient stunning under commercial conditions. Cutting of the throat is not listed as a recognised stunning method.

12. Recital 18 and Article 4 of the PATOK includes a derogation for Member States, should they choose, to provide an exemption from pre-slaughter stunning of animals for religious purposes, as long as the slaughter occurs within a slaughterhouse.

“In the case of animals subject to particular methods of slaughter prescribed by religious rites, the requirements of Paragraph 1 [above] shall not apply provided the slaughter takes place in a slaughterhouse.”

Paragraph 4, Article 4, Chapter II of the EC Council Reg. No. 1099/2009

“Animals shall only be killed after stunning in accordance with the methods and specific requirements related to the application of those methods [...]. The loss of consciousness and sensibility shall be maintained until the death of the animal.

The [stunning] methods referred to in Annex 1 which do not result in instantaneous death [...] shall be followed as quickly as possible by a procedure ensuring death such as bleeding, pithing, electrocution or prolonged exposure to anoxia.”

Paragraph 1, Article 4, Chapter II of the EC Council Reg. No. 1099/2009

13. Annex I of PATOK lists the accepted stunning methods and specific parameters for each method and species. An abridged version is shown in Table 1¹.

TABLE 1: AN ABRIDGED LIST OF STUNNING METHODS AS LISTED IN PATOK¹

Mechanical Methods	Species Applicable
Penetrative captive bolt	All species
Non-penetrative captive bolt	Ruminants
Firearm with free projectile	All species
Maceration	Chicks
Cervical Dislocation	Poultry
Percussive blow to the head	Piglets, lambs, kids, rabbits
Electrical Methods	
Head-only electrical stunning	All species
Head to body electrical stunning	All species

NON-STUN SLAUGHTER FACT FILE

Electrical waterbath	Poultry
Gas Methods	
High Concentration Carbon Dioxide	Pigs
Two-phased Carbon Dioxide	Poultry
Carbon Dioxide and Inert Gas	Pigs and poultry
Inert Gas	Pigs and poultry

UK LEGISLATION

14. Welfare of Animals at the Time of Killing Regulations (WATOK)²:

- The regulations came into effect in Scotland in 2012¹¹, in both Wales¹² and Northern Ireland¹³ in 2014 and in England in 2015.
- Like PATOK, the regulations ensure animals killed in the UK are done so humanely, quickly and are spared any avoidable pain or suffering¹.
- Schedule 3 of WATOK permits an exemption for non-stun slaughter for religious communities.
 - Animals must be killed without the infliction of unnecessary suffering by Shechita (Jewish) and Halal (Muslin) methods of slaughter.
 - Animals must be killed with a single rapid stroke across the throat with a sharp knife which serves both its carotid arteries and jugular veins.
 - The Schedule also provides rules for the humane restraint of animals intended for non-stun slaughter.
 - Animals must be restrained individually in an upright ben.
 - The schedule prohibits inversion of bovids before religious slaughter.
 - Additionally, the Schedule sets out the uninterrupted bleeds times where the animals cannot be shackled, hoisted, moved or dressed in any event before the expiry of:
 - 20 seconds – sheep and goats
 - 30 seconds – bovids
 - 120 seconds – turkeys and geese
 - 90 seconds – any other bird

“No person may kill an animal in accordance with religious rites without prior stunning unless it is a sheep, goat, bovine animal or bird killed in a slaughterhouse in accordance with this Schedule”

Schedule 3, Part I, Paragraph 2, WATOK (England) Regulations 2015²

“[For all non-stun slaughter an animal must be] killed by the severance of both its carotid arteries and jugular veins by rapid, uninterrupted movements of a hand-held knife ... [that is] undamaged and of sufficient size and sharpness”

Schedule 3, Part II, Paragraph 5 and Part III, Paragraph 7, WATOK (England) Regulations 2015²

“[Any bovine killed without stunning must be] *individually restrained in an upright position in a restraining pen which has been approved in writing by the competent authority ... [And to be approved it must be] of such a size and design, and is able to be operated, so as to protect an adult bovine animal from avoidable pain, suffering, agitation, injuries or contusions while confined in it*”

Schedule 3, Part II, Paragraph 3, WATOK (England) Regulations 2015²

EUROPEAN COURT OF HUMAN RIGHTS, FEBRUARY 2024

15. The European Convention on Human Rights (ECHR) guarantees certain rights fundamental to democracy and the rule of law¹⁰.
 - The ECHR is enforced by the Council of Europe and applies to the UK even after Brexit.
16. EU Member States have to comply with the EU Charter of Fundamental Rights, including protections on the freedom of religion. However, the Charter allows for restrictions on this freedom, provided they are proportionate, necessary and respect the essence of the right. According to the European Commission (EC) such an assessment can only be done on a case-by-case basis.
17. On the 13th February 2024, the European Court of Human Rights ruled that Belgium’s ban on non-stun slaughter does not violate Article 9 (freedom of religion) or Article 14 (prohibition of discrimination) of the ECHR. This ruling allowed for the ban on non-stun slaughter to continue in the Belgium stats of Flemish and Walloon regions¹⁴.
18. The ECHR allows for the curtailment of religious freedom as long as it is ‘*prescribed by law and is necessary in a democratic society.*’ Article 9 lists acceptable exemption categories for these restrictions, including public safety, public order, health or morals. The court recognised that ‘*the protection of animal welfare can be linked to...’public morality’, which constitutes a legitimate aim*’¹⁴.
19. The ruling represents a significant milestone in the ongoing debate around non-stun slaughter and provides legal precedent for other countries, including the UK, to consider similar restrictions or bans on this practice¹⁰.

SLAUGHTER PROCESSES

STUN SLAUGHTER

20. The slaughter process for farm animals in the UK has two main stages – stunning followed by sticking.
 - Stunning is any intentionally induced process that causes loss of consciousness and loss of sensibility without pain.
 - Sticking is the subsequent process whereby the animal’s neck is cut, severing the major blood vessels, resulting in rapid blood loss and therefore death whilst remaining ‘stunned’ and insensible to pain.

21. Effective stunning is essential to ensure the animal remains unconscious before death by blood loss occurs. This requires the correct positioning of tongs and correct currents (in instances of electrical stunning) and the correct cartridge (used in captive bolt stunning) must be used¹⁵.

22. An effective stun **must** cause loss of consciousness, loss of pain perception, and immobility.

23. The EC has released guidance that suggesting stunning to render the animal unconscious and sticking within 15 seconds to ensure a painless death, is vital to optimise welfare¹⁶.

24. Under the WATOK Regulations (Schedule I, Part 5) permitted stunning methods in the UK include the following with specific provisions to ensure each method is applied correctly and effectively²:
 - Captive bolt stunning (penetrative and non-penetrative)
 - Electrical stunning (including by waterbath for poultry)
 - Gas exposure (typically using controlled atmosphere systems)

25. In **no regulations** is cutting the throat listed as a method of stunning^{1,2}.

26. It is **not** permitted to stun animals by a non-mechanical percussive blow to the head, with the exception of rabbits under certain conditions².

27. Under UK law, all slaughterhouses are required to have an Official Veterinarian (OV) who is required to monitor the slaughter process.

28. Different stunning methods are used for different species to account for anatomical, physiological and behavioural differences, ensuring the most rapid and humane stun possible, outlined in Table 1. The prevalence of each method of stunning method used in the UK for each species is outlined in Table 2 below.

NON-STUN SLAUGHTER FACT FILE

TABLE 2: MOST COMMONLY USED STUNNING METHODS FOR STANDARD STUNNED SLAUGHTER ACCORDING TO SPECIES ACROSS ONE WEEK, FSA SLAUGHTER SURVEY 2024⁸

Species	Stunning methods available	Percentage stunned using this method
Cattle 95% (n = 34,120)	Free Bullet	<1% (n = 17)
	Captive Bolt	87.2% (n = 29,797)
	Jarvis Box	12.8% (n = 4,396)
Sheep 18% (n = 36,265)	Captive Bolt	1.34% (n = 491)
	Electronarcosis (head only)	98.6% (n = 35,754)
	Electronarcosis (head to body)	0.06% (n = 20)
Goats 53% (n = 175)	Captive Bolt	3.4% (n = 6)
	Electronarcosis (head only)	96.6% (n = 169)
Pigs 100% (n = 161,748)	High Concentration CO ₂	90% (n = 145,279)
	Electronarcosis (head only)	9% (n = 15,205)
	Electronarcosis (head to body)	<1% (n = 1,203)
	Captive Bolt	<0.5% (n = 57)
	Free Bullet	<0.1% (n = 4)
Poultry (including meat chickens, spent hens, turkeys and other) 79% (n = 15,196,759)	Phased CO ₂	74% (n = 11,220,040)
	Non-CO ₂ gas mixture	23.5% (n = 3,577,697)
	Electronarcosis (head only)	0.4% (n = 65,316)
	Electrical waterbath	2.1% (n = 333,786)

ELECTRICAL STUN PARAMETERS

29. The electrical parameters for different forms of electrical stunning are specified in Annex I of the PATOK regulations¹. Key parameters include minimum current (A or mA), minimum voltage (V), maximum frequency (Hz), and minimum time of exposure to electrical current. These vary depending on the species and the method.

- Parameters for other forms of electrical stunning as well as gas killing are also included which are based on a scientific review performed by the European Food Safety Authority¹⁷.

30. It is the current, not the voltage, which induces unconsciousness in electrical head-only stunning. The voltage is just the 'push' that makes the current flow in the first place.

31. Minimum currents for head-only electrical stunning, as defined in WATOK are as follows²:

- Cattle > 6 months – 1.28 A
- Cattle <6 months – 1.25 A
- Sheep and goat – 1.0 A
- Pigs – 1.3A
- Chickens – 240mA
- Turkeys – 400mA

32. For electrical waterbath stunning of poultry, minimum current and frequency values from WATOK are outlined in Table 3². Annex I of PATOK states that poultry should be stunned for a minimum of four seconds using these parameters.

TABLE 3: MINIMUM AVERAGE CURRENT AND FREQUENCY PER BIRD FOR ELECTRICAL WATERBATH STUNNING IN WATOK

Frequency (Hz)	Chickens (mA)	Turkeys (mA)	Ducks and Geese (mA)	Quail (mA)
<200	100	250	130	45
200-400	150	400	Not permitted	Not permitted
400-1,500	200	400	Not permitted	Not permitted

SIGNS OF AN EFFECTIVE STUN

33. For all methods of stunning, an effective stun is marked by:

- Immediate collapse
- Loss of rhythmic breathing
- Absence of corneal reflexes

ELECTRICAL STUNNING: PHYSIOLOGY AND PHASES

34. An effective head-only electrical stun induces a generalised epileptic seizure, rendering the animal unconscious and insensible to pain. This causes the brain to become overstimulated, and the body exhibits tonic and clonic activity¹⁸. Table 4 outlines the expected durations of the phases of electrical stunning in various species.

- A major determinant of the effectiveness of a stun is the operator skill, which is mandated under WATOK and monitored by OV's at slaughterhouses.

35. Tonic phase^{19,20}:

- This phase begins immediately after stunning with the animal exhibiting the following characteristics:
 - The forelimbs and hindlimbs are stretched forward.
 - No breathing occurs.
 - The eyeballs are in a fixed position or rotated into the socket.
 - Sticking is ideally performed in this phase.

36. Clonic phase²⁰:

- This follows the tonic phase.
- This phase is characterised by the involuntary and excessive kicking or paddling movements as muscles begin to relax.

- Breathing may resume and become more regular.

37. Recovery phase²⁰:

- The animal regains rhythmic breathing.
- The animal attempts to stand or lift its head.
- Ultimately the animals regains consciousness and is sensible to pain, marking the end to the stun period.

TABLE 4: EXPECTED LENGTHS OF TONIC, CLONIC AND RECOVERY PHASES OF ELECTRICAL STUNNING IN DIFFERENT SPECIES²¹

Species	Tonic Phase Length (seconds) (a)	Clonic Phase Length (seconds) (b)	Recovery Phase Length (seconds)	Total time likely unconscious (seconds) (a+b)
Pigs	10-20	15-45	30-60	25-65
Sheep	10-20	15-45	30-60	25-65
Goats	10-20	15-45	30-60	25-65
Cattle	5-20	10-60	45-90	15-80
Calves	8-14	8-28	40-70	16-42

STUN TO STICK TIME INTERVALS²²

38. The stun-to-stick time is the interval between the induction of an effective stun to the start of exsanguination.

- It is absolutely essential that both equipment for stunning and sticking are well maintained, and that stunning is carried out using the correct parameters and equipment to ensure animals are effectively stunned.

39. A maximum stun-to-stick interval of 15 seconds is recommended for all species.

- All pigs, sheep and goats should be bled within 15 seconds of stunning.
- However, for cattle, where it takes longer to hoist the animal for sticking, maximum stun-to-stick times are as follows:
 - For penetrative captive bolt – 60 seconds.
 - For non-penetrative captive bolt – 30 seconds.
- Failure to bleed the animal within the stipulated timeframe not only increases the risk of the animal suffering but also breaches WATOK and may result in non-compliance penalties.

AVERAGE TIME TO LOSS OF BRAIN FUNCTION

40. Table 5 presents the mean time to loss of brain function, i.e., considered brain dead, following different bleeding methods in different species²¹.

TABLE 5: MEAN TIME TO LOSS OF BRAIN FUNCTION FOLLOWING VARIOUS BLEEDING METHODS ACROSS VARIOUS SPECIES²¹

Species	Method	Time (seconds)
Pigs	Chest stick (brachiocephalic trunk)	18
Sheep	Full cut (both carotid arteries and jugular veins)	14
	Half cut (on carotid artery and one jugular vein)	70
Cattle	Full cut	55

Calves	Chest stick	5
	Full cut	17

41. To prevent unnecessary suffering in stunned slaughter, it is essential that animals are bled without delay to avoid the time to loss of brain function (Table 5)²¹ exceeding the time of returning to consciousness (Table 4).
42. For example, in sheep subject to a half cut, it can take up to 70 seconds for the animal to become brain dead – 50 seconds longer than if a full cut was performed and, more crucially, potentially longer than the 25-65 second interval where the animal is likely to be unconscious before the recovery phase occurs. This increases the risk that the animal will regain consciousness and experience pain, i.e., enter the recovery phase, before death ensues²¹.
43. In non-stun slaughter, the concern is precisely this; the delay between the neck cut and loss of consciousness, during which the animal may suffer.

NON-STUN SLAUGHTER

44. Non-stun slaughter involves killing an animal without the use of any stunning methods listed in Table 1 prior to the neck cut to allow exsanguination. This means that the animal is fully conscious at the point of cutting.
45. In the UK, non-stun slaughter must be carried out in accordance with WATOK Regulations and PATOK. Key requirements include:
- Animals must be slaughtered individually and in an approved restraint. For cattle, this typical involves an upright restraining pen capable of taking the weight of the animal and effectively restrain the head.
 - The slaughter knife must be examined for adequate size and sharpness before each cut to ensure rapid, uninterrupted severance of both carotid arteries and jugular veins.
 - When non-stun slaughter is carried out in cattle, sheep or goats *“appropriate back-up stunning equipment is kept close to the restraining equipment for use in case of emergency”*.
 - Animals must be checked for signs of consciousness or sensitivity before being released from the restraint. They must show any sign of life before being further processed, ensuring that exsanguination has been completed effectively and therefore death has occurred. The wait time between neck cut and further processing is known as the uninterrupted bleed time.
46. Animals must be checked for signs of consciousness or sensitivity before being released from restraint and must not present any sign of life before further processing²³.
- Signs of ruminant unconsciousness and insensible to pain:
 - Collapse of the hindquarters (if restrained in a standing position)
 - No attempt to right itself or its head (if the animal has been restraining in a standing position)
 - No rhythmic breathing
 - Eyes:

- Fixed, glazed expression.
- No tracking of movement.
- No blinking.
- No corneal reflex (touching the eye elicits no blink), typically disappears within 1-2 minutes post-cut in cattle.
- No menace response (e.g., flinching or blinking when a hand is rushed toward the eyes), however this is unreliable when the animal is a reversed position in a rotating pen.
 - No ear movement in response to noise (e.g., clapping 5cm from ear).
 - Tongue hanging out of the mouth.
 - Uncoordinated leg movements (pedalling).
- Signs of unconsciousness in poultry include:
 - No regular breathing.
 - No wing flapping.
 - No spontaneous blinking.
 - No righting attempt.
 - The neck is arched with the head pointing down (for electrical waterbath only)
 - No blink reflex.
 - No response to pinch or prick of its comb.

47. It is important to acknowledge that religious slaughter requirements were written prior to the invention of modern stunning techniques. At the time, these practices served a public health function, ensuring the animal appeared healthy and the meat was freshly slaughtered, given the absence of current scientific understanding of animal health and welfare, and ante-mortem inspection. This historical context is important when considering the ongoing ethical debate about whether religious slaughter exemptions should still permit non-stun methods in modern meat production systems with the current scientific evidence of welfare concerns.

HALAL (DHABIHAH) SLAUGHTER

48. The method of non-stun slaughter used by many in the Muslim community is called Dhabihah but is commonly referred to as Halal slaughter. Meat produced by this method is labelled as Halal.
49. The Muslim faith requires animals to be “alive and healthy” at the time of slaughter. This is interpreted by the various Muslim authorities in one of two ways:
- (a) meat that has been reversibly stunned by a demonstrably recoverable method, such as electric head-only stunning, is acceptable as Halal³⁴.
 - (b) meat that has been stunned in any form is not acceptable as Halal³⁵.
50. In 2024, the majority of sheep (65%), goats (78%) and cattle (85%) slaughtered by Halal were reversibly pre-stunned, but the remainder of Halal meat is non-stun⁸.
- The reversible pre-stun used in cattle is usually a non-penetrative captive bolt device that applies a concussive blow to the brain without penetrating the skull.
 - In sheep and goats, an electrical stun to the head is commonly used.

- In poultry, electrical stunning in a waterbath is often used, but this may occur at lower currents than PATOK regulations require to ensure the animal is not killed by the stun, thus maintaining compliance with Halal requirements. Crucially, these currents must still meet WATOK regulatory minimums (Table 3).

51. Halal slaughter process²⁹:

- At the time of slaughter, the slaughterer must recite 'Bismillah Wallahuakbar' over each carcass or group of animals being slaughtered continuously.
- A sharp blade (minimum 12cm in length) must sever the neck of the animal just below the glottis, incising the trachea, oesophagus, both carotid arteries and jugular veins.
- A 'sawing' action is permitted provided the blade is not lifted from the neck of the animal.
- The slaughterer must be a Muslim of sound mind and understand the rules and conditions related to the slaughter of animals. They must have a certificate of Halal slaughter issued by a competent authority.

SHECHITA SLAUGHTER

52. The method of non-stun slaughter used by the Jewish community is called Shechita. Only meat that fully passes the Shechita process is labelled Kosher.

53. All Shechita slaughter is non-stun²⁴.

- The Jewish faith requires animals to be alive, healthy, and unhurt (unblemished to the naked eye) prior to Shechita slaughter. Thus, stunning and unconsciousness, may not be regarded by some in the Jewish community as consistent with their requirements²⁴.

54. Shechita slaughter process:

- A surgically sharp, immaculate blade (the chalaf) is passed in one rapid and uninterrupted action across the trachea, oesophagus, carotid arteries, and jugular veins.
- There are five Halachic requirements which must be followed:
 - *Shehiya* - the incision must be uninterrupted.
 - *Derasa* - the chalaf must not be pressed against the neck.
 - *Chalada* - the chalaf must be of an adequate size that it is not covered by hide of cattle, wool of sheep or feathers of birds.
 - *Hagrama* - the incision must be at the appropriate site.
 - *Ikkur* - there must be no tearing of the vessels before or during Shechita.
- Shechita is performed only by trained Shochetim who must serve an apprenticeship with an experienced Shochet prior to becoming fully qualified²⁵.
 - A UK Shochet must hold two licences, one issued by Meat Hygiene Service and the other by the Rabbinical Commission for the Licensing of Shochetim.
 - Shochetim must apply for renewal of their license every 12 months and undergo annual examination by this Commission.
 - The Shochet is responsible for examining the chalaf for imperfections, visual and tactile examination of the organs and vessels of the animal immediately after severance to ascertain proper Shechita and examination of the internal organs and lungs to ascertain if abnormalities or defects are present.

55. Not all meat produced by Shechita slaughter is accepted into the Kosher food chain²⁶.
- A 2010 estimate found that approximately 60 out of every 100 animals slaughtered by Shechita are accepted as Kosher²⁷.
 - In the UK, only the forequarters of an Shechita-slaughtered animal (approx. ⅓ of the carcass weight) are eaten because it is uneconomical to purge the hindquarters (remove several veins, fats and the sciatic nerve)²⁸. As a result, it is estimated that 70% of meat produced by Shechita slaughter is sold on the general food market.
 - Using the results from the FSA slaughter survey 2024, the proportion of Shechita carcasses rejected as not meeting religious requirements but were deemed fit for general consumption were as follows⁸:
 - 25% of cattle (136 of 543)
 - 34% of sheep (330 of 967)
 - 1% of turkeys (17 of 1,716)
 - 1% meat chickens (526 of 57,333)

FOOD STANDARDS AGENCY SLAUGHTER SURVEYS

56. The Food Standards Agency performs a biennial slaughter survey across all major slaughterhouses registered in England and Wales. The survey covers a one-week period and excludes religious holidays to avoid skewed data and provide a representative sample of typical slaughterhouse operations. It reports the number of stunned and non-stunned animals in England and Wales in that week to track trends in slaughter practices.
57. The latest survey occurred in February 2024, where the FSA surveyed 148 red meat and 50 white meat slaughterhouses⁸.
58. The results, published in November 2024, showed that approximately 19.6 million animals were slaughtered during the survey week, 3% of which underwent non-stun slaughter.
59. In addition to the FSA survey, Defra collects monthly slaughter data from all major slaughterhouses registered in the UK³⁰. These figures provide a broader estimate of the total number of animals of each species slaughtered each year in the UK (Table 6).

TABLE 6: ESTIMATED NUMBER OF ANIMALS SLAUGHTERED IN THE UK EACH YEAR

Estimated annual number of animals slaughtered in UK abattoirs					
Animal Species	2011	2013	2018	2022	2024
Cattle	2.76 million	2.53 million	2.8 million	2.73 million	3 million
Sheep	14.5 million	14.5 million	13.8 million	13.8 million	13 million
Poultry	916 million	962 million	1 billion	1.1 billion	1.1 billion

NON-STUN SLAUGHTER FIGURES

60. Table 7 presents proportion of animals slaughtered without stunning in England and Wales, based on FSA survey data. Figure 1 illustrates the proportion of sheep and cattle undergoing non-stun slaughter in the UK for each survey year. While this data offers insight into the scale of non-stun slaughter, it is difficult to draw year-on-year comparisons using this data for several reasons:
- The survey provides a snapshot of one week only across the entire year. Despite efforts to avoid religious holidays, which could affect results, the short timeframe means it may not be fully representative of annual slaughter patterns.
 - Participation in the survey is voluntary and the questions are not mandatory, resulting in incomplete data sets. These data gaps reduce the reliability of year-on-year comparisons.
61. Despite these limitations, the proportions of animals slaughtered without stunning each year can still be used to highlight trends, even if absolute numbers should be treated with caution.

NON-STUN SLAUGHTER FACT FILE

TABLE 7: PROPORTION OF ANIMALS IN ENGLAND AND WALES UNDERGOING NON-STUN SLAUGHTER

Proportion of animals undergoing non-stun slaughter using FSA slaughter survey data.					
Animal Species	2011* ³³	2013* ³²	2018 ³¹	2022 ⁹	2024 ⁸
Cattle	3.6% (n =1,574 of 43,772)	1.9% (n=841 of 44,216)	1.1% (n=419 of 36,588)	0.9% (n=327 of 35,602)	2% (n=779 of 37,721)
Sheep	9.9% (n=30,554 of 307,512)	15.4% (n = 45,551 of 295,500)	25% (n=61,120 of 244,305)	22.6% (n=49,450 of 219,016)	28.8% (n = 59,254 of 205,994)
Goats			7.5% (n=30 of 402)	24.7% (n =92 of 372)	10.6% (n=35 of 331)
Poultry	4% (n = 643,185 of 16,101,844)	3.5% (n = 594,145 of 17,067,641)	9.1% (n= 1,757,085 of 19,260,431)	2.3% (n=440,231 of 19,121,585)	3.7% (n=702,507 of 19,193,543)

*2011 and 2013 surveys were for Great Britain, whereas 2018 and beyond were for England and Wales only. However, Scotland had only one abattoir performing non-stun slaughter in 2011 and there were none in 2013 onwards.

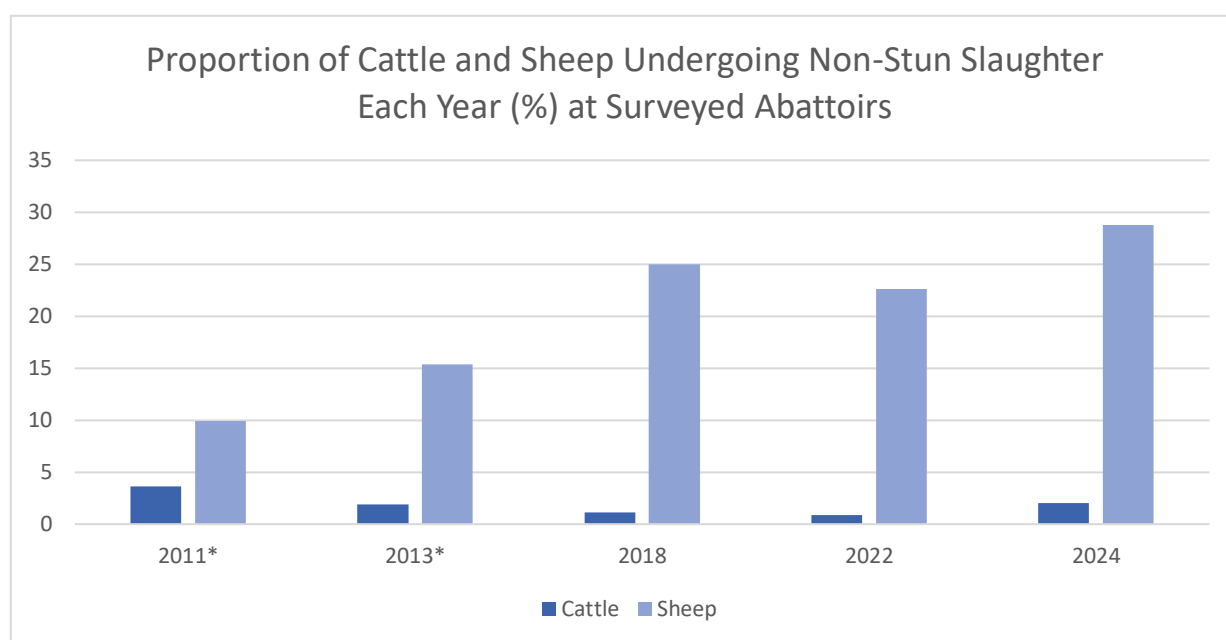


FIGURE 2: PROPORTION OF CATTLE AND SHEEP UNDERGOING NON-STUN SLAUGHTER (%). *IN THESE YEARS SHEEP AND GOATS WERE COMBINED.

62. Table 8 combines data from both the FSA slaughter survey and Defra’s monthly records to extrapolate the estimated annual non-stun slaughter numbers for each species in the UK.

TABLE 8: ESTIMATED TOTAL NUMBER OF EACH ANIMAL SPECIES UNDERGOING NON-STUN SLAUGHTER IN THE UK EACH YEAR

Estimated total number of each species undergoing non-stun slaughter in the UK annually					
Animal Species	2011	2013	2018	2022	2024
Cattle	99,360	48,070	30,800	24,570	60,000
Sheep	n/a	n/a	3,450,000	3,118,800	3,744,000
Poultry	36,640,000	33,670,000	91,000,000	23,000,000	40,700,000

NON-STUN SLAUGHTER FACT FILE

*Note – goats are not included as they are not accounted for in the Defra slaughter statistics, and therefore the number of sheep undergoing on-stun slaughter cannot be reliably extrapolated from the FSA survey data to the total populations of slaughtered sheep in 2011 and 2013.

63. The results of the FSA surveys can be used to estimate the proportion of animals that are slaughtered by Halal (including both reversible pre-stun and non-stun) and Shechita methods, these are presented in Table 9 and 10, respectively⁸.

- All animals slaughtered by Shechita methods are not stunned prior to slaughter.
- Between 2022 and 2024, the proportion of poultry stunned before slaughter increased from 95% to 97%.
- However, in the same period, only 85% of red meat animals were stunned prior to slaughter, a decrease from 89% in 2022. This decline is mostly likely driven by a reduction in the number of sheep stunned prior to slaughter, which dropped from 77% in 2022 to 71% in 2024.

TABLE 9: PROPORTION OF ANIMALS UNDERGOING SCHECHITA SLAUGHTER IN ENGLAND AND WALES EACH YEAR

Animal Species	Shechita slaughter (all non-stun)				
	2011 ³³	2013 ³²	2018 ³¹	2022 ⁹	2024 ⁸
Cattle	3% (n = 1,314 of 43,772)	1% (n = 475 of 44,216)	0.5% (n = 166 of 35,588)	0.8% (n = 276 of 35,602)	1.8% (n = 693 of 37,721)
Sheep	0.6% (n = 1,917 of 307,512)	0.2% (n = 601 of 295,500)	0.1% (n = 222 of 244,305)	0.2% (n = 520 of 219,016)	0.5% (n = 967 of 205,994)
Goats			n/a	n/a	n/a
Poultry	0.4% (n = 71,236 of 16,101,844)	0.1% (n = 21,716 of 17,067,641)	0.3% (n = 51,839 of 19,260,431)	0.3% (n = 59,443 of 19,121,585)	0.3% (n = 59,532 of 19,193,543)

TABLE 10: PROPORTION OF ANIMALS UNDERGOING HALAL AND SPECIFICALLY NON-STUN HALAL SLAUGHTER IN ENGLAND AND WALES EACH YEAR

Animal Species	All Halal Slaughter Methods					Non-stun Halal Slaughter				
	2011 ³³	2013 ³²	2018 ³¹	2022 ⁹	2024 ⁸	2011 ³³	2013 ³²	2018 ³¹	2022 ⁹	2024 ⁸
Cattle	3.9% (n = 1,728 of 43,772)	3.2% (n = 1,437 of 44,216)	3.4% (n = 1,226 of 35,588)	3.9% (n = 1,374 of 35,602)	4.1% (n = 1,565 of 37,721)	0.6% (n = 271 of 43,772)	0.8% (n = 366 of 44,216)	0.7% (n = 253 of 35,588)	0.1% (n = 51 of 35,602)	0.6% (n = 236 of 37,721)
Sheep	50.3% (n = 154,795 of 307,512)	41.1% (n = 121,472 of 295,500)	71.1% (n = 173,871 of 244,305)	72.2% (n = 158,175 of 219,016)	81.9% (n = 168,762 of 205,994)	9.3% (n = 28,734 of 307,512)	15.2% (n = 44,950 of 295,500)	24.9% (n = 60,898 of 244,305)	22.3% (n = 48,930 of 219,016)	28.3% (n = 58,287 of 205,994)
Goats			37% (n = 149 of 402)	55.6% (n = 207 of 372)	47.1% (n = 156 of 331)					
Poultry	29.6% (n = 4,766,237 of 16,101,844)	21.5% (n = 3,667,593 of 17,067,641)	20.9% (n = 4,022,458 of 19,260,431)	15.8% (n = 3,029,365 of 19,121,585)	20.5% (n = 3,937,272 of 19,193,543)	3.6% (n = 582,776 of 16,101,844)	3.4% (n = 572,422 of 17,067,641)	8.9% (n = 1,705,246 of 19,260,431)	5% (n = 949,721 of 19,121,585)	2.4% (n = 456,063 of 19,193,543)

EXPORTS

64. The 2024 FSA slaughter survey reported that seven Halal non-stun slaughterhouses exported of some non-stun meat products - two cattle and five lamb facilities⁸.

- No Shechita meat products were destined for export.
- No non-stun poultry meat was reported for export over the survey period.
- 3% of domestic non-stun Halal sheep meat was intended for export via wholesaler – equating to over 1,500 non-stun sheep carcasses.
 - However, this figure might be an underestimate given the survey is voluntary and the questions are not mandatory thus some respondents did not answer the question regarding the destination of the non-stun Halal meat. In 2024, 36% of non-stun sheep meat destination was not specified and therefore is unknown.
 - Table 11 compares the number of stun and non-stun Halal sheep meat intended for export in 2022 and 2024. While the 2022 data shows a higher proportion of non-stun sheep exports (32% compared to 3% in 2024), this comparison is complicated by the high proportion of unknown destination in 2024 (36%), compared to 0% in 2022.

TABLE 11: HALAL NON-STUN EXPORTS FROM ENGLAND AND WALES IN 2022 AND 2024.

Species	Halal Slaughter method	2022			2024		
		Total	% intended for export	% going to unknown destination	Total	% intended for export	% going to unknown destination
Sheep	Stun	109,245	9% (n=9,832)	9	99,828	8% (n=7,987)	64
	Non stun	48,930	32% (n=15,658)	0	55,615	3% (n=1,669)	36

MISCONCEPTIONS AROUND STUN AND NON-STUN SLAUGHTER

65. The welfare of animals at the time of slaughter, particularly regarding stunned and non-stunned slaughter methods, has been the subject of ongoing debate in Parliament and among key stakeholders including the British Veterinary association, Farm Animal Welfare Council, and various Halal and Shechita certifying bodies, to name a few.
66. This section aims to address common misconceptions about the welfare implications of non-stun slaughter by presenting an evidence-based overview informed by peer-reviewed scientific literature. It is intended to support reliable, objective understanding of the subject in a sensitive and understanding way.
67. It is important to note that there are limited scientific studies focussing specifically on the welfare of animals undergoing non-stun slaughter in the UK. This is partially because such research requires Home Office licencing under the Animals in Scientific Procedures Act 1986 which can be difficult to obtain for studies involving potential animal suffering.
68. Experimental data is required to understand the welfare implications both stunned and non-stunned animals at the time of slaughter. However, evidence for pain and suffering at the time of slaughter is contentious. Measuring pain and distress during slaughter is inherently challenging due to the:
- Lack of objective, quantifiable indicators during the rapid events of slaughter.
 - Subjective indicators of distress may be limited by the influence of animal restraints required for non-stun slaughter and the severance of the trachea (vocalisation responses).
 - It can be challenging to distinguish between reflexive responses from signs of conscious perception of pain.

THE EFFECT OF STUNNING ON BLEEDING OUT

69. For both Kosher and Halal, meat with lower blood content is desirable as the consumption of blood is prohibited under Jewish and Islamic dietary law, particularly in the Jewish community³⁶.
70. One argument sometimes raised in support of non-stun slaughter is the belief that non-stunned animals bleed out more effectively than stunned animals. This claim is based on the idea that the neurological, muscular, and cardiovascular changes that occur during stunning may impede blood flow during exsanguination.
71. However, this belief is not supported by the available scientific evidence. A series of peer-reviewed studies by Anil et al. (2004 and 2006) directly investigated this issue:
- In the 2004 study, blood loss in sheep was compared across three groups: animals electrically stunned, captive bolt stunned, and non-stun Halal slaughtered animals. They found no significant difference between blood loss in the three groups³⁷.
 - The 2006 study compared cattle that had been captive bolt stunned before the throat cut with cattle that were not stunned and slaughtered by Halal. Again, they found no significant difference between blood loss between the two groups³⁴.

72. Earlier research also supports this conclusion. A 1984 review paper by Warris concluded that residual blood content in lean meat is not affected by the method of slaughter. The volume of blood lost during exsanguination was an approximately constant fraction of the total blood volume³⁸.
73. This is further supported by work done by Griffiths et al. in 1985, which found no difference when comparing the blood loss from poultry carcasses following different methods of slaughter, including stunned and non-stunned approaches³⁹.
74. A more-recent study performed in South Africa in 2012 measured the potential differences in percentage blood loss, presence of blood in the trachea and blood splash in the lungs between Shechita slaughtered cattle (n=170) and cattle stunned prior to slaughter (n=141). They found no significant difference between the two group regarding the percentage of blood loss, but did find significantly increased incidents of the meat quality defects, including blood splash in lungs and blood in the trachea, in the Shechita slaughtered group³⁶.

WELFARE EFFICACY OF STUNNING METHODS

75. An EU-funded DIALREL report (Dialogue on issues of Religious Slaughter) acknowledged that all slaughter methods, whether involving stunning or not, are vulnerable to non-compliances related to inadequate equipment and insufficient operator knowledge or skills⁴⁰.
76. While no system is without its challenges, welfare failure rates associated with stunning and sticking can be effectively mitigated through mandatory backup systems, stringent welfare protocols, and certified training—as currently required by UK law.

MIS-STUNNING

77. The risk of mis-stunning, where the stun fails to render the animal unconscious and insensible to pain, has been raised as a point of criticism for the use of stunning.
- Any stun attempt on an animal carries a risk of a mis-stunning incident occurring, which is why immediate and appropriate action is required to be taken to rectify such an incident.
 - The FSA Manual for Official Controls makes the following statement clarifying the Food Business Operator responsibility for a Standard Operating Procedure for mis-stun incidents⁴¹:

“As regards stunning, the Standard Operating Procedure shall: [...] (c) specify the measures to be taken when checks indicate that an animal is not properly stunned or in the case of animals slaughtered or in the case of animals slaughtered in accordance with Article 4(4) (religious slaughter), that the animal still presents signs of life.”

Page 2-2, Chapter 2.3, Manual for Official Controls

78. Although mis-stunning incidents do occur, there is some controversy about the frequency of their occurrence. For example, in 2004 the European Food Safety Authority (EFSA) reported that when using captive bolt stun in cattle, between 4-6.6% cattle needed a second stun⁴².

79. However, more recent UK data suggests the rate of welfare breaches, including mis-stunning, is significantly lower:

- The FSA Animal Welfare Surveys record incidents of minor welfare breaches, including where back-up stunning equipment is used, or a second stun is carried out without the intervention of the Official Veterinarian.
- In 2023/24 over 1 billion animals were processed in approved slaughterhouses in England and Wales⁷.
- Of these, 99.9956% showed no breaches of animal welfare standards.
- Just 44,015 animals (0.0044%) experienced an impact on their welfare⁷.
 - Notably, two isolated incidents account for the majority of this figure; a batch of 30,000 birds and a batch of 10,650 birds both experienced a delay to slaughter due to plant breakdowns without provision of appropriate feed and water⁷.
- In 2023/24 the number of slaughterhouse non-compliance cases increased by 2% from 354 cases in 2022/23 to 362 cases in 2023/24 and appropriate enforcement action was taken in all cases⁷.

80. Similarly, Table 12 shows the reports of mis-stunning incidents reported during routine inspections from 2008-2014 in response to a Parliamentary Written Question in 2014⁴³, which again show divergence from the EFSA 2004 data.

TABLE 11: NUMBER OF REPORTS OF MIS-STUNNING IDENTIFIED DURING ROUTINE INSPECTION OF SLAUGHTERING IN APPROVED MEAT ESTABLISHMENTS FOR DIFFERENT SPECIES⁴³

Species	2008	2009	2010	2011	2012	2013	2014*
Cattle	8	6	14	6	10	9	4
Sheep	1	7	5	2	8	3	-
Goats	1	-	-	-	-	-	-
Poultry	9	47	23	7	7	13	-
Pigs	5	5	5	2	2	3	-

*Data for 2014 covers 1 January 2014 to 28 February 2014 only.

81. A 2016 study of 346 cattle compared mis-stunning between animals stunned by penetrative captive bolt (n=279) and non-penetrative captive bolt (used as a reversible stunning method) (n=67). The proportion of cattle mis-stunned was higher when using the non-penetrative bolt stunning (prior to Halal slaughter) with 46% mis-stunning compared to just 2% for penetrative captive bolt stunning (used in secular slaughter)⁴⁴. These findings suggest that non-penetrative stunning, while potentially compliant with religious requirements, carries a significantly higher risk of failure and may compromise welfare if not properly monitored and applied.

MIS-CUTTING

82. The act of cutting the throat of non-stunned animals, as in Shechita or Halal, carries an inherent risk of a mis-cutting incident.

83. A mis-cut typically involved the incomplete severance of one or both carotid arteries⁴⁵, which delays exsanguination, and can result in the animal remaining conscious and sensitive to pain for an extended time.
84. UK legislation (WATOK) requires that for non-stun slaughter, each animal is slaughtered by rapid, uninterrupted movements of a hand-held knife, to sever both its carotid arteries and both its jugular veins².

“Any person who kills a sheep, goat or bovine animal in accordance with religious rites without prior stunning must-

- a) ensure it is killed by the severance of both its carotid arteries and jugular veins by rapid, uninterrupted movements of a hand-held knife; and*
- b) immediately before killing, inspect the knife to be used to ensure it is-*
 - i) undamaged; and*
 - ii) of sufficient size and sharpness to kill the sheep, goat or bovine animal in the manner described in subparagraph (a).”*

Schedule 3, Welfare of Animals at Time of Killing Regulations England 2015²

- Gregory et al. remark this provision within WATOK could be interpreted to allow for changes of direction in the cut, provided they were uninterrupted⁴⁶. However, it is well recognised that the number of blade movements, the higher risk of pain, due to increased stimulation of cutaneous nerve endings⁴⁶.
85. In a 2008 study by Gregory et al. it was observed that in Shechita and Halal slaughter in cattle, it took on average 3.2 ± 0.1 (n=231) and 5.2 ± 0.2 (n=116) throat cuts to sever both carotids and jugular veins to fulfil this provision in WATOK, respectively. In context, one cut represents a movement of the blade in one direction without withdrawal of the knife⁴⁵.
- Furthermore, in the same study, it was determined that the prevalence of failure to cut a carotid artery was 6% during Shechita slaughter and 1% during Halal slaughter. This suggests that several cuts are required for non-stun slaughter methods to ensure severance of both carotid arteries and jugular veins, increasing the risk of stimulation of free nerve endings in the skin and pain perception by the animal⁴⁶.
86. The Food Standards Agency Manual for Official Controls outline the responsibilities of slaughterhouse operators and POV's in the event of mis-cutting in the following statement with regard to intervention to address mis-cutting and avoid any further unnecessary suffering prior to dressing of the carcass⁴¹.

“In establishments where killing by a religious method takes place, there should be checks by the business operator that animals are unconscious before being released from restraint and checks that the animal does not present any sign of life before undergoing dressing or scalding.”

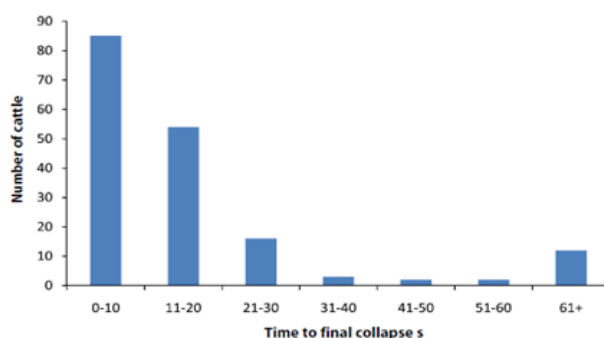
Page 4-2, Chapter 2.3, Manual for Official Controls

PAIN PERCEPTION FROM STUNNING

87. Some critics of stunning argue that the stunning process itself is inherently cruel, suggesting that animals may experience pain or distress during the application of the stunning equipment or from the stun itself.
88. However, when used correct and with appropriately maintained equipment, captive bolt stunning is widely considered humane and effective. Research by Gregory and Shaw (2000) demonstrated that with properly trained operators and well-maintained equipment, captive bolt stunning can achieve 100% success rate in render cattle unconscious⁴⁷.
89. Similarly, head-only electrical stunning (electronarcosis) is designed to induce a rapid loss of consciousness without causing pain, through the generation of a generalised epileptic seizure⁴⁸.
 - It is important that electrical head stunning, is reversible, meaning that if the animal is not subsequently bled, it can regain consciousness, and should not be compared to electrocution which involves lethal levels of current and causes cardiac arrest.

TIME TO UNCONSCIOUSNESS OR COLLAPSE

90. Loss of posture (LOP) and loss of righting reflex (LORR) are recognised as an easily observable proxy for loss of consciousness by the American Veterinary Medicine Association (AVMA)⁴⁹. These markers are commonly used in research and welfare assessments where direct measurement of brain activity is not feasible. However, LOP and LORR are a useful, but imperfect proxy for unconsciousness in animals, as brain activity may continue after physical collapse, meaning these markers may underestimate the duration of consciousness. This is highlighted by the 25 cattle which collapsed and then stood again after undergoing non-stun Halal slaughter in the study mentioned in paragraph 91.
91. These indicators are particularly important in non-stun slaughter, where there is no prior guarantee of unconsciousness from stunning to indicate the animals is either dead or unconscious and thus insensible to pain. Until the animal exhibits LOP or LORR, it is assumed to be conscious and therefore capable of feeling pain and distress.
92. A study by Gregory et al. (2008) studied the time to collapse in 174 cattle undergoing non-stun Halal slaughter, the results of which are summarized in Table 13 and Figure 1⁵⁰. The results are suggestive that slaughtering animals without stunning increases the risk for a prolonged period consciousness and thus feelings of pain and distress.



Reproduced from: Gregory, N. et al (2010) Time to collapse following slaughter without stunning in cattle. *Meat Science*. 85; 66-69.

FIGURE 3: TIME TO COLLAPSE (SECONDS) OF 174 CATTLE UNDERGOING NON-STUN HALAL SLAUGHTER

NON-STUN SLAUGHTER FACT FILE

TABLE 13: TIME TO COLLAPSE IN 174 CATTLE SUBJECT TO NON-STUN HALAL SLAUGHTER

Average time to collapse (seconds)	20 (SD +/- 33)
Median time to collapse (seconds)	11
Maximum time to collapse (seconds)	265
Number of cattle >60seconds to collapse	14 (8%)
Number of cattle that collapsed and stood again before final collapse	25 (14%)

93. Across multiple studies, the estimated time to loss of consciousness following non-stun slaughter for different species is as follows⁴⁹:

- Poultry: 12-15 seconds following throat cut⁵¹.
- Sheep: 12-14 seconds but downward eye rotation only occurred at 15 seconds⁵².
- Cattle: show considerable variation in loss of posture and in some cases, it is prolonged, taking 11-265 seconds.
 - This prolonged time to loss of consciousness in cattle is largely due to their unique alternative blood supply to the brain.
 - In observational studies it has been noted that there is little behavioural reaction in restrained cattle to the throat cut when performed by a skilled slaughter man, but loss of posture occurred between 17-85 seconds⁵³.
 - However, this apparent lack of behavioural reaction could be a result of the tight restraint requirements required for animals undergoing non-stun slaughter which may suppress any visible behavioural responses of pain difficult to detect.

94. The FAWC produced a 2003 report to assess the welfare of animals at slaughter without stunning⁵⁴ and reviewed the evidence of the species differences in time to loss of consciousness, presented in Table 14⁵⁴.

- Carotid occlusion, also referred to as false aneurysm, is observed in cattle and particularly calves, where the severance of the carotid arteries causes retraction into the connective tissue of the neck which can cause the formation of clots and therefore occludes blood flow⁵⁴. This maintains blood pressure in the aorta which in turn maintains blood supply to the brain through the vertebral arteries (see next section).

TABLE 14: SPECIES DIFFERENCES IN TIME TO LOSS OF BRAIN RESPONSIVENESS⁵⁴

Animal Species	Time to Loss of Brain Responsiveness (seconds)
Adult Cattle	22-40 (or longer with carotid occlusion)
Calves	10-120
Sheep	5-7
Goats	3-7

THE VERTEBRAL-BASILAR PLEXUS

95. In mammals, the brain receives oxygenated arterial blood from a ring-like network of arteries which encircle the base of the brain called the Circle of Willis (CoW).

96. The structure of the CoW is fairly consistent in appearance amongst mammals, but the origin of its arterial blood supply varies by species⁵⁵.

- Given the circular arrangement of the CoW (Figure 2), if one major artery, for example the internal carotids, becomes blocked or stenosed, collateral blood flow from other arteries can maintain cerebral perfusion and brain function.
- In general:
 - The main blood supply to the brain is from the internal carotid arteries and basilar artery.
 - The internal carotids receive blood from external carotids, the common carotid artery and, in some species, from the vertebral artery via the occipital artery.
 - The basilar artery receives blood from the ventral spinal artery and vertebral arteries.
 - Additional blood supplies can include:
 - An anastomosing ramus from the maxillary artery to the internal carotid artery.
 - Direct connections between the vertebral and internal carotid arteries.
- In sheep, the main blood supply to the brain is from three sources; the paired internal carotids and the basilar artery.⁵⁵
 - Sheep do not possess the vertebral-inguinal arterial connection and only have the anastomosing maxillary ramus on the left side.
 - In sheep, different arteries supply different sections of the brain:
 - The carotids supply most of the brain, including the cerebrum, cerebellum and medulla oblongata.
 - The vertebral blood (from the basilar artery) supplies the caudal parts of the brain, including the brain stem.
- In cattle, the vascular anatomy is more complex and has profound implications for animal welfare during non-stun slaughter.
 - Cattle possess an additional vertebral ramus, the vertebral-basilar plexus, which receives blood from the vertebral artery which lies close to the spinal cord in the cervical vertebrae.

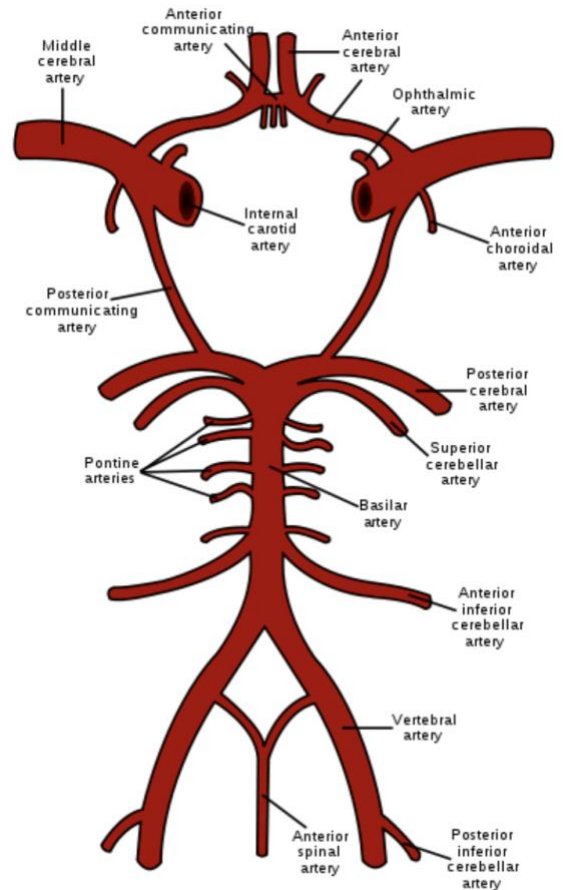


FIGURE 4: SCHEMATIC REPRESENTATION OR THE CIRCLE OF WILLIS⁵⁵

- In cattle, both carotid and vertebral blood supply the entire brain with no distinction between brain regions as with other species⁵⁵. A simplification of the blood supply to the brain in cattle is shown in Figure 3⁵⁶.

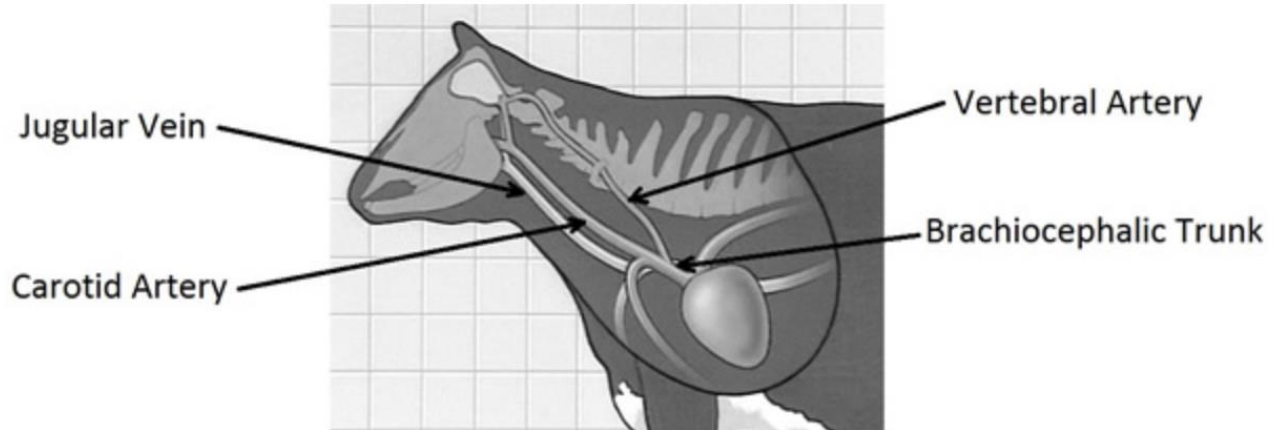


FIGURE 5: BLOOD SUPPLY TO THE BRAIN IN CATTLE⁵⁶

97. Cattle undergoing non-stun slaughter are more likely to experience delayed loss of consciousness and therefore remain sensible to pain and distress for prolonged periods. This is due to two anatomical and physiological features which together delay the onset of cerebral hypoxia and unconsciousness:
- The vertebral arteries, which supply the vertebral-brachial plexus, are not severed with the standard neck cut used in non-stun slaughter. As a result, they continue to supply the brain with blood, prolonging consciousness⁵⁷.
 - After the carotid arteries are cut, they can retract into surrounding tissue and form a false aneurysm, which impedes exsanguination and enables the vertebral system to maintain cerebral perfusion (as described in paragraph 95)⁵⁸.
98. Evidence suggests that a high neck cut at the level of the C1 vertebra, as opposed to the conventional C2 + cut, could reduce the incidence of false aneurysm and therefore improve welfare outcomes by:
- Decreasing time to collapse/loss of posture⁵⁹.
 - Also reduce potentially unpleasant sensory signals associated with blood contaminating the upper and lower respiratory tract due to severing of the sensory nerve to the respiratory tract⁶⁰.

EVIDENCE OF PAIN AND SUFFERING FROM NON-STUN SLAUGHTER

99. As previously mentioned, the assessment of pain and suffering during slaughter, particularly in the context of non-stun slaughter, remains a topic of scientific and ethical debate. Obtaining objective measurements of pain and distress is inherently challenging (paragraph 67).
100. Previous parliamentary debates⁶¹ have argued that there are few nerve endings in the throat, disputing the expert opinion given in the FAWC report. However, anatomical textbooks clearly confirm the presence of nerve fibers below the skin in the throats of both humans and bovids, directly contradicting that claim⁶².
101. Shechita UK and other proponents argue that the throat cut itself acts as a stun method⁶⁷.
- This claim is not recognised in either WATOK or PATOK regulations as valid and humane method of stunning^{1,2}.
 - A 2016 study of 88 cattle slaughtered by the Shechita method found:
 - Response to nostril stimulation in 7% of cattle 20 seconds after throat cut.
 - Response to tongue pinch in 4% of cattle 20 seconds after throat cut.
 - Spontaneous blinking in 10% of cattle 20 seconds after throat cut.
 - Rhythmic breathing in 100% of cattle 20 seconds after throat cut.
 - None of these responses were found in animals which had been stunned.
 - The study concluded that slaughter without previous stunning may result in greater risk of cattle experiencing suffering, pain and distress at slaughter⁶⁸.
102. Rosen, a notable proponent of non-stun Shechita slaughter, claims when talking about cerebral perfusion, loss of consciousness and consequent inessentiality that; *“the collapse in arterial blood pressure that follows on from severance of the carotid arteries at Shechita causes a dramatic fall in cerebral perfusion [...] Consciousness is lost rapidly (within approximately two seconds) and irreversibly”* and *“...Shechita is a painless and effective method by which to stun and dispatch an animal in one rapid act.”*⁹⁷
- However, this view is not supported by multiple independent studies, which have:
 - Detected pain-like brain responses post-cut^{61,62,68,69}
 - Measured delayed loss of consciousness, particularly in cattle due to alternative cerebral blood supply^{54,57,58}.
103. A 2017 EC report on best practices for the protection of animals at the time of killing recognises that the *‘duration of the pain provoked by the neck cut can be reduced if stunning is performed immediately after the cut (post-cut stunning)’*²³. The European Food Safety Authority also supported the opinion that animals endured more pain and suffering where there was no stun⁷².
104. The EC-funded DIALREL Project (2006 to 2010), which examined religious slaughter and animal welfare, concluded that slaughter without stunning poses a greater risk of animals suffering. The report recommended further harmonisation of welfare practices across EU member states⁴⁰:

“[There is a] high probability that animals feel pain during and after the throat cut without prior stunning. This applies even to a good cut performed by a skilled operator, because substantial tissue damage is inflicted to areas well supplied with nociceptors and subsequent perception of pain is not exclusively related to the quality of the cut.”

Deliverable 1.3, Report on Good and Adverse Practices – Animal welfare concerns in relation to slaughter practices from the viewpoint of veterinary sciences, 2010

105. Similarly, the FAWC’s 2003 report concluded and recommended⁵⁴:

“When a very large transverse incision is made across the neck a number of vital tissues are transected including: skin, muscle, trachea, oesophagus, carotid arteries, jugular veins, major nerve trunks (e.g. vagus and phrenic nerves) plus numerous minor nerves. Such a drastic cut will inevitably trigger a barrage of sensory information to the brain in a sensible (conscious) animal. We are persuaded that such a massive injury would result in very significant pain and distress in the period before insensibility supervenes.”

“Given that the exemption from pre-stunning is subject to the requirement that unnecessary suffering is not inflicted, we consider that the Government should take steps to repeal this exemption.”

Farm Animal Welfare Committee Report on Non-Stun Slaughter, 2003⁵⁴

106. A series of peer-reviewed studies by Gibson et al. (2009) investigated the electroencephalographic (EEG) responses of halothane-anaesthetised calves to the process of non-stun slaughter. Overall they found that following a neck cut, pain-like responses were recorded in the brain which was abolished with the induction of a post-cut stun. A true replication of Shechita slaughter was not possible due to laws protecting animal welfare in experimentation requiring some anaesthesia.

- In the first study, a ventral neck incision produced EEG responses consistent with nociceptive stimuli, suggesting such cut would be painful in a conscious animal⁶³.
- In a further study, non-penetrative captive bolt stunning after the neck cut stopped these brain responses in the majority of calves, demonstrating that stunning effectively prevents pain-related brain activity⁶⁴.
- However, current EEG-based brain function monitors cannot provide definitive answers as to the exact onset of unconsciousness⁶⁵.

107. A similar 2013 South African study compared penetrative stunning, non-penetrative stunning (low and high powers) and post-slaughter stunning on the stress-associated EEG and biochemical responses in heifers and steers⁶⁶. Key findings included:

- Penetrative stunning was the most reliable method for maximising the chance of post-stunning insensibility and minimising pain based on EEG patterns.
- Non-stunned animals demonstrated an increase in EEG activity consistent with post-cut noxious stimuli from tissue cut and injury.

- Interestingly, penetrative stunning also triggered a rise in circulating ACTH (a stress hormone), suggestive of a physiological stress response.
- However, the study sample size was small (n=10 per group) and limited analytical specificity led to the authors to caution overinterpreting the results.

POLICY ISSUES AND OPTIONS

108. Our long-term objective is to have no animals slaughtered without prior stunning in the UK. In the interim, there are several measures, some requiring legislation, others requiring industry-backing, to reduce the number of animals slaughtered without stunning and improve animal welfare at the point of slaughter for potentially millions of animals.

BAN ON NON-STUN SLAUGHTER

109. This is a politically and religiously sensitive issue. A complete ban on non-stun slaughter risks alienating communities, particularly within the Halal meat sector, which have already engaged with initiative to improve welfare standards, such as the Demonstration of Life (DoL) protocol (see later).
110. Historically, there have been concerns that removing the derogation permitting non-stun slaughter for religious purposes could lead to legal challenges on the grounds of the right to express religious freedom. However, the recent ruling from the ECHR in the decision to uphold Belgium's ban on non-stun slaughter may set a precedent for future legislative change in the UK and other countries which permit non-stun slaughter.
111. However, non-stun meat product imports could increase as an unintended consequence as a result of the ban. This raising ongoing concerns about the UK's ability to maintain domestic animal welfare standards while importing products which would not meet these standards.

DEMONSTRATION OF LIFE PROTOCOL

112. Established in 2021, the 'Demonstration of Life' (DoL) protocol is an industry-led, Government supported voluntary initiative which aims to provide assurance to Muslim consumers that electrical head-only stunning of sheep and goats is compatible with Halal slaughter requirements.
113. The protocol involves a demonstration of head-only electrical stunning, performed at slaughterhouses, which allows partial recovery of the animals after the stun by the return of two rhythmic breaths to prove that the stunning method is non-lethal. This demonstrates the recoverability of the stunning process but does not allow full recovery of the animal.
114. Using this protocol, a significant proportion of Halal meat comes from animals which are stunned before slaughter.
115. The process is overseen by a FSA vet and an approved religious body, at no additional cost, to certify the stun method is Halal compliant.
116. The protocol requires a maximum of two demonstrations a year with a maximum of two animals per demonstration. Certification is valid for one year and can be renewed annually.
117. As of 2024, 88% of Halal meat was stunned prior to slaughter. However, uptake of the scheme by industry has been limited; with three slaughterhouses (approximately 23% of those performing non-stun slaughter)⁹ having adopted the scheme in 2022. However, as of 2024, the wavering of the

FSA fee to perform the DoL and improving scheme awareness saw two new slaughterhouses sign up for the scheme, which now totals five in England and Wales.

118. The universal adoption of the DoL by Halal certifying bodies could mean that some 3 million sheep currently slaughtered without pre-stunning could be stunned.
119. In comparison, New Zealand uses the ‘Demonstration of Recovery’ protocol, which allows full recovery of the animal which has undergone head-only electrical stunning to prove that the stun is non-lethal and therefore acceptable for Halal⁷². This has facilitated the classification of all exported sheep meat from New Zealand as Halal and stunned, a model which the UK could look to emulate, and exploit the Halal-meat sector in the Middle East, through the DoL.

NOVEL STUNNING METHODS

120. Countries such as Malaysia and member of the Gulf Corporation Council, including Saudi Arabia, the UAE and Qatar, also accept non-penetrative captive bolt stunning as a form of recoverable stunning acceptable for Halal slaughter⁷³. However, in the UK this slaughter method is only permissible for ruminants under 10kg.
121. The development of new recoverable stunning methods for all species should be prioritised, to reduce the need for non-stun slaughter methods while ensuring Halal requirements are met.
- This needs to be done in conjunction with active communication with the relevant Halal authorities, certification bodies and Islamic scholars, to ensure they meet Halal criteria⁷³.
122. The development of a novel head-only electrical stunning system, Single Pulse Ultra-High Current, for the humane slaughter of cattle is a promising innovation of this field⁷⁵ but warrants field trials.
123. In New Zealand they have developed the Jarvis Beef Stunner (JBS), a head-only electrical stunning system with post-stun electro immobilisation (non-lethal)⁷⁶.
- This involves a head-only stun with neck and nose electrodes in a box, followed by low voltage electro-immobilisation on the bleed table
 - Electro-immobilisation is applied to the spinal cord or the anus + head to ensure convulsions are under control and prioritise slaughter-person safety
 - However, the UK currently does not accept electro-immobilisation – there are around 5 JBS units in use in the UK, but these are used to induce cardiac arrest and therefore death, rather than reversible stun, making them incompatible with Halal currently.
124. In Australia there is also a new system, the diathermic syncope (DTS) method, which has been developed as a potential Shechita-compliant reversible stunning system⁷⁷.
- This system is used to selectively heat the brain using microwaves and induce what the developers describe as ‘hyperthermic syncope’, whereby heat stress to the brain leads to reversible syncope.

- However, further investigation suggests that rather than is seen in a traditional fainting episode, the DTS induces epileptiform seizure activity, similar to electrical stunning.
- There is concern over the welfare implications of gradual heating of the brain (inducing heat-stroke like effects in the cows), as well as potential for mis-stunning, with 9-35% of uses in the Final Report showing ineffectiveness due to overpower of the equipment.
- Furthermore, due to sensitivity of the brain to increases in temperature of greater than a few degrees, the DTS may be associated with both cellular damage and macroscopic changes such as brain swelling and liquefactive necrosis, making this incompatible with Shechita.

MANDATORY METHOD OF SLAUGHTER LABELLING

125. Mandatory labelling of meat and meat products could be introduced to indicate whether an animal was stunned prior to slaughter. This would:
- Promote transparency and consumer choice.
 - Inform ethically conscious consumers who may wish to avoid meat from non-stunned animals.
 - Address the concern that a significant proportion of meat from Shechita slaughter (see paragraph 54), including hindquarters of all animals which are not consumed by the Jewish community, enters the general food chain unlabelled.
126. On the Labour Government's Animal Welfare Strategy (published December 2025)⁷⁸ they commit to 'exploring how improved food labelling, including method-of-production labelling, could improve animal welfare' - so there is potential for reform in this area.

NON-STUN QUOTAS AND BANNING THE EXPORT OF NON-STUN MEAT

127. Similar to other European countries, including Germany and Austria, a quota on non-stun slaughter would ensure the quantity of non-stunned animals should only meet the needs of the UK's domestic religious communities. To achieve this would involve:
- Requiring slaughterhouses to obtain a permit detailing the number of animals to be slaughtered without stunning with evidence of the domestic demand each permit would be used to supply.
 - Mandate a ban on all non-stun slaughter exports to ensure non-stun slaughter is only used of the UK's indigenous population who require it and the WATOK derogation is not being exploited by other countries or as a method of profiteering of poor welfare.
 - Another complimentary approach could be to mandate post-cut stunning⁷⁵, which some UK Halal slaughterhouses already practice.
128. The DoL might be important here as a positive market incentive for export of Halal meat which is under the DoL only. Only UK meat exports with certification of stunning under the DoL, or a similar protocol, is able to access the export market.
129. Overall, this recommendation would aim to:
- Minimise the number of animals slaughtered without stunning.
 - Prevent an export-driven low-welfare market from the UK.

- Preserve the UK's high animal welfare standards.

130. However, in Shechita slaughter, a high proportion of animals fail to meet religious criteria post-slaughter and thus enter the general food chain (see paragraph 54). Any quota system would need to accommodate for this issue or risk under-provisioning domestic communities and possibly increase the reliance on import of non-stunned meat.

131. Improving data collection on non-stun exports, through the FSA slaughter surveys would strengthen any policy recommendation in this area. For example, through making the survey and all questions mandatory, as currently the survey lacks sufficient granularity to assess year-on-year trends in non-stun exports to reliably inform policy decisions.

MANDATING POST-CUT STUNNING

132. Post-cut stunning involves administering a stun immediately after the neck cut on a conscious animal. This serve religious requirements in that the animal is alive at the time of slaughter and reduces animal suffering from non-stun slaughter as the time the animal remains conscious during exsanguination is minimised.

133. While this still presents a welfare concern – the animal is still conscious at the time of the neck cut – it still represents a slight compromise that reduced suffering considerably compared to traditional methods of non-stun slaughter.

MORE RESEARCH ON WELFARE AT TIME OF SLAUGHTER

134. There remains a need for:
- More independent, peer-reviewed research on the welfare implications of non-stun and post-cut stun slaughter.
 - Studies which evaluate pain perception, consciousness duration and behaviour in different species undergoing different methods of slaughter.
 - Improved data sets for FSA slaughter surveys and Defra slaughter figures to improve clarity on the actual number of animals undergoing non-stun slaughter in the UK each year.

STAKEHOLDER POSITION STATEMENTS

RELIGIOUS GROUPS

SHECHITA UK

135. Shechita UK is a community-wide campaign that unites representatives from the Board of Deputies of British Jews, the National Council of Shechita Boards, the Union of Orthodox Hebrew Congregations and the Campaign for the Protection of Shechita. It incorporates representatives from all the Kashrus Authorities in the UK. They state:

“The legal definition of “stunning” in the UK is to “render an animal unconscious until death”. The process of Shechita conforms to this legal definition”.

“With Shechita there is no delay because the slaughter method incorporates an immediate stun. Shechita both stuns and slaughters in one action, thereby making it the most humane and efficient method.”⁸⁰

HALAL FOOD AUTHORITY

136. The Halal Food Authority (HFA) group, is a widely recognised Halal certifier that estimates that it certifies 70% of UK Halal meat, states:

“...animal welfare as well as human safety at slaughterhouse would be jeopardised if slaughter without stunning was performed for large-scale production. HFA argues that kosher meat can be produced ... without stunning because, contrary to Halal meat, it is produced in low quantities, manually even in the case of chickens, at low speed and high costs, supplying a small percentage of the population.”⁸¹

A survey of 66 Islamic scholars, funded by the Halal Food Foundation (parent company of the HFA), found that 95% of scholars agreed it was permissible for Halal slaughter to include pre-stunning provided that the stun did not cause death, physical injury or obstruct bleed-out and that slaughter was carried out by a Muslim. However, many scholars would still not recommend the use of stunning as they regarded it as a cruel and inhumane practice that adversely affects the volume of blood loss during exsanguination and produces meat of inferior quality⁸².

HALAL AUTHORITY BOARD

137. The Halal Authority Board (HAB) is one of the newest certification bodies and is part of a bigger global group and brand, Al Hijaz. Their standard does not include specifics on animal welfare, but their spokesperson gave this statement:

“The government regulations on animal welfare in this country are very good and where we feel there are gaps it is our duty to inform the government and improve those standards for animal welfare purposes. But because those regulations exist, we do not have to repeat those regulations in our standard – there is no point ... If the government was not doing it then we would put it into our own standard.”⁸³

ANIMAL WELFARE GROUPS AND ASSURANCE BODIES

THE BRITISH VETERINARY ASSOCIATION

138. *“The BVA view is that all animals should be stunned before slaughter, and if slaughter without stunning is still to be permitted then any meat or fish from this source must be clearly labelled.”⁸⁴*

THE FARM ANIMAL WELFARE COUNCIL

139. *“Council considers that slaughter without pre-stunning is unacceptable and that the Government should repeal the current exemption.”⁸⁵*

THE FEDERATION OF VETERINARIANS IN EUROPE (FVE)

140. *“FVE is of the opinion that the practice of slaughtering animals without prior stunning is unacceptable under any circumstances and that animals should be effectively stunned before slaughter. FVE calls on policy makers to stop the excessive use of slaughter without stunning as a priority.”⁸⁶*

THE HUMANE SLAUGHTER ASSOCIATION (HSA)

141. *“Whilst respecting differing religious beliefs, the HSA’s position on the pre-slaughter stunning of animals has always been unequivocal, all animals should be effectively stunned prior to being bled. Recent advances in the electrical stunning of cattle now make reversible stunning a practical option for all. This overcomes one of the main obstacles preventing a full uptake of pre-slaughter stunning. As long as meat from animals slaughtered without pre-stunning is available in the UK (whether slaughtered in the UK or imported), we believe it should be clearly and accurately labelled as such. The aim of the HSA remains that all animals should be effectively stunned prior to being bled, because this precludes the possibility of suffering.”⁸⁷*

THE RSPCA

142. *“We are opposed to the slaughter of any animal without first ensuring it is rendered insensible to pain and distress. We recognise that religious beliefs and practices should be respected. However, we also believe animals should be slaughtered under the most humane conditions possible. Evidence clearly indicates that slaughter without pre-stunning can cause unnecessary suffering.”⁸⁸*

FARMWEL

143. *Animals reared in Britain should be slaughtered in Britain, and abattoirs should develop a more open, market-facing approach to slaughter. This could include CCTV at the slaughter line, as well as non-discriminatory method of slaughter labelling.⁸⁹*

144. Several Food Assurance bodies including Assured Food Standards (Red Tractor)⁹⁰, Soil Association Organic⁹¹ and RSPCA Assured (previously Freedom Food)⁸⁹ do not allow non-stun slaughter meat to be accredited.

UK RETAILERS

In response to letters of enquiry from the VPRF in 2018, the following supermarkets have responded as follows:

MORRISONS

145. *“All Morrisons own brand meat comes from animals which have been stunned before slaughter. All of our fresh meat (including all the meat sold from our in-store butchers counter) is British. We operate three abattoirs (in Spalding, Colne and Turiff) which slaughter sheep, pigs and cattle. The meat is sent to either our manufacturing sites for further processing (we are the second largest fresh food manufacturer in the UK) or to our in-store butchers counters. We sell a range of branded halal and kosher products where there is strong demand. In addition, we have a small number of independent halal concessions operating in certain stores where there is a particularly large Muslim catchment. The meat from these concessions is from non-stunned sources.”⁹²*

MARKS AND SPENCER

146. *“Animal welfare is at the heart of our livestock procurement policies and therefore all M&S foods have a requirement for pre-stunning prior to slaughter. We take a pro-active stance on labelling, trying to always ensure that where we have a policy or procedure that our customers would expect to know about, we ensure our labelling reflects this. [...] as we don’t source non-stunned livestock, we have no experience of labelling in this area.”⁹³*

WAITROSE

147. *“We place the highest importance on animal welfare in our business and require that all livestock supplying our own label meat is stunned before slaughter. We would support labelling by exception; that is the labelling of all meat from animals not stunned before kill.”⁹⁴*

TESCO

148. *“We require all slaughter processes for Tesco branded products to meet our stringent animal welfare requirements, without exception. In every case, the animal is stunned before slaughter. We do however, in some stores, sell branded meat or host concessions that sell un-stunned halal and kosher meat. This is to serve customers who specifically wish to purchase un-stunned meat. This meat is clearly labelled Halal or Kosher, so that our customers are able to make informed choices. Regarding labelling should the Government choose to look at this area it will be important that any guidance offered delivers a consistent approach across the food industry and enables us to provide even greater transparency for our customer.”*

THE CO-OPERATIVE GROUP

149. *“All Co-op own-brand fresh and frozen meat and poultry sold has been humanely stunned prior to slaughter, and all abattoirs and processing plants supplying our own-brand products are required*

to work to the standards laid down by our strict animal welfare requirements as well as the Humane Slaughter Association in their Codes of Practice. We do sell some branded Halal certified meat in a small number of stores where there is sufficient demand, but again this is all pre-stunned prior to slaughter.”⁹⁵

MCDONALDS

150. *“We listen to our customers in every country where we operate and, as a result, develop food offers that are most relevant to them. While there are diverse customer needs, we base our food development on dominant preferences and customer demands. We do not, therefore, currently offer specialist food options like kosher or halal in the UK. All the meat sold in our UK and Irish restaurants is reared in accordance to nationally recognised farm assurance scheme including RSPCA Assured, Red Tractor and Bord Bia schemes or their national equivalent for animals reared outside the UK and Ireland. All animals are required to be stunned prior to slaughter.”*

SAINSBURY’S

151. *“All the livestock and farmed salmon, trout and pangasius which go towards Sainsbury’s brand products are stunned before slaughter and according to both regulatory requirements and current best practice industry guidance. We do not accept meat for our own brand products from abattoirs that slaughter without stunning. Pigs, chickens and turkeys are stunned-to-kill in controlled atmosphere (gas) systems. For these species the associated methods provide significant benefits in terms of minimising potential stress during live animal handling. In particular, they eradicate the need for live shackling of poultry. Sheep, cattle and waterfowl are stunned by species-appropriate methods and in accordance with the requirements of Regulation 1099/2009 EC. All animals, irrespective of method used, are treated humanely and with respect. To meet customer demand, we do sell a range of branded halal and kosher meat in some stores. These are very clearly labelled as kosher and halal.”⁹⁶*

PARLIAMENTARY DEBATES – FACT CHECK

WESTMINSTER HALL DEBATE – NON-STUN SLAUGHTER, MONDAY 9TH JUNE 2025⁷⁴

152. **Yasmin Qureshi (Labour)** – *‘Although this has not been mentioned, scientific studies have shown that the Jewish and the Islamic method of slaughter is actually less painful to the animal because it involves a minimum amount of time, whereas gassing animals or putting a bullet through their heads—a lot of times, that actually fails, so it has to be done twice over—is much more painful’.*
- From this quote, it is assumed that Jewish and Islamic slaughter is non-stun slaughter only. This is always the case for Shechita, but not always for Halal.
 - **‘Jewish and Islamic method of slaughter is ... less painful to the animal...’.**
 - See paragraphs 98, 99, 100, 101 and 103.
 - These show noxious stimuli responses in animals undergoing non-stun slaughter, and which were not present in animals which underwent a stun. Similarly, animals undergoing post-cut stunning had the responses, but they were abolished with the induction of an effective stun. This indicates that the act of stunning itself is not painful as it renders the animals unconscious and insensible to pain.
 - **‘...gassing animals or putting a bullet through their heads – a lot of times, that actually fails, so it has to be done twice over...’**
 - See paragraphs 78 and 77.
 - The failure rate of stunning, whether through gas induction, captive bolt (which in this case it is incorrectly referred to as a bullet) and electrical stunning (not mentioned) has a failure rate below 0.01%. However, this data is contentious with EU data, but importantly it is still a vast majority of all welfare breaches at slaughter and of all animals undergoing stunning.
153. **Yasmin Qureshi (Labour)** – ‘If it [the debate against non-stun slaughter] is truly about animal welfare, will we be talking about the 44,000-plus welfare breaches occurring in the stun industry; the millions of animals affected by failed stunning,
- **‘44,000 plus welfare breaches occurring in the stun industry...’**
 - See paragraph 78.
 - The welfare breaches mentioned occurred across both the stun and non-stun slaughter industry. From the FSA data quoted, there is no distinction between method of slaughter as implied from the quotation.
 - There were over 44,000 welfare breaches recorded in 2024, however these breaches occurred across all stages for slaughter (loading animals for transport, unloading, lairage, moving to the stunning pens, stunning and sticking), not just the stunning phase. Furthermore, the welfare breaches referred to were dominated by two separate events related to the delayed provision of food and water for 30,000 and 10,500 poultry prior to slaughter closures – totalling 40,500 of these 44,015 breaches.
 - **‘...the millions of animals affected by failed stunning.’**
 - See paragraph 77 and 78.
 - Again, mis-stunning figures vary, but are typically very low.

154. **Rupert Lowe (Independent)** – ‘The halal stun is a lower voltage than the non-halal stun.’
- See paragraph 30, 31, 32 and 50.
 - It is the current and not the voltage of an electrical stun which induces unconsciousness during electrical head stunning. All electrical stun parameters must meet the minimum current requirements, be placed on the animal for a stipulated amount of time, and current and voltage parameters must be recorded.
 - This MP may have mistakenly interpreted that in poultry electrical waterbath stunning may occur at lower currents than PATOK regulations require to ensure the animal is not killed by the stun, thus maintaining compliance with Halal requirements. Crucially, these currents must still meet WATOK regulatory minimums.
155. **David Pinto-Duschinsky (Labour)** – ‘For instance, evidence suggests that animals undergoing Kosher or Halal slaughter often rapidly lose consciousness. A recent peer-reviewed report in the *‘Journal of the American Veterinary Medical Association’* suggests that, in the case of kosher slaughter, consciousness is lost within 10 seconds.’
- See paragraphs 90-97.
 - The paper referred to is a literature review by Rabkin 2025, which does not use any new experimental data⁷⁵.
 - The review only looked at studies which measured cerebral blood flow and blood pressure responses and did not look for studies which assess time to loss of consciousness through loss of posture or loss of righting reflex (paragraph 90).
 - The vast majority of the sources used by the literature review were from calves or significantly older animal studies and therefore the applicability of the results to adult cattle is contentious.
 - The conclusion *‘Shechita produces a rapid fall in BP [blood pressure] that reduces cerebral blood flow to < 5% [of normal] within a few seconds, demonstrating the inadequacy of vertebral circulation to maintain cerebral blood flow. The label of false aneurysm is a misnomer, and the data do not convincingly link it to blood loss.’* is in direct opposition to numerous studies which show prolonged loss of consciousness, particularly in cattle, following non-stun neck cuts in slaughter (paragraphs 90-97).
 - The conclusion that 5% reduction in cerebral blood flow after 10 seconds of throat cut is able to cause loss of consciousness is highly contentious. A 5% reduction in normal blood flow, means 95% of the normal cardiac output of oxygenated blood still remains able to perfuse the brain. Other studies suggest that only when cerebral blood flow drops to 50% of normal does the animal lose consciousness⁷⁶.
 - Similarly, a large-scale review of over 1,500 cattle slaughtered without stunning reported⁴⁶:
 - False aneurysms developed in approximately 10% of animals which was linked to delayed collapse or even the cessation of bleeding in some cases.
 - 14% of cattle stood after initial collapse after their throat was cut.
 - 1.5% of cattle took over 4 minutes before their final collapse.
 - 80% took 60 seconds or longer to collapse.
 - These results do not cooperate the conclusions drawn by this comparatively small-scale literature review.

156. **Iqbal Mohammed (Independent)** - A gun fires a metal bolt through the skull into the brain, causing unconsciousness after excruciating pain.
- See paragraph 127 referring to a captive bolt as a 'gun'.
 - '[penetrative captive bolt stunning causes] unconsciousness after excruciating pain.'
 - See paragraphs 98-105.
 - There is limited evidence to suggest that penetrative captive bolt stunning causes pain before unconsciousness is observed, given unconsciousness is essentially instantaneous from the point of stunning.

ORAL QUESTION ON MEAT LABELLING, TUESDAY 13TH JANUARY 2026⁹⁹

157. **Baroness Ludford (Liberal Democrats)** - 'Does the Minister agree that, before any labelling scheme could be considered, there would have to be an assurance that it would be comprehensive and not discriminatory against religious slaughter of shechita and halal? While a recent study in the *American Journal of Veterinary Research* confirmed that "religious slaughter induces swift LOC"—or loss of consciousness— "reinforcing its potential to minimize animal suffering", we know that animal welfare standards in industrialised slaughterhouses, using gassing and electrocution, are often very poor and far from humane. Any labelling scheme must fully reflect all those aspects.'
- The paper referred to is a systematic review by Hascalovici et al. 2025¹⁰⁰, which does not provide any new evidence, but classifies studies in this area into high, medium and low quality:
 - The classification is based on the use of certain electrophysiological parameters (onset of high amplitude low frequency delta waves) and specific means of recording these – electrocorticography rating higher quality.
 - Four studies were classified as 'high-quality', these showed onset of HALF waves at 10 seconds or less.
 - However, three out of four of these studies were done on calves, and the number of calves in the non-stun group ranged from 4-8. The 'high-quality' studies were also all from more than 30 years ago.
 - The conclusion of the systematic review relies on HALF waves reliably indicating loss of sensibility.
 - Notably, the isoelectric point (widely regarded as the point of brain death) typically took much longer to occur, with one calf taking 120 seconds to reach this point in one of the studies¹⁰¹.

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