

Guide to removal of vertebral column Specified Risk Material (SRM) from primal cuts

This provides guidance on the removal of Vertebral Column (VC) Specified Risk Material (SRM) in compliance with the legislation.

The guide will outline:

- the relevant legislation.
- what must be removed.
- how to identify SRM for removal.
- examples of incorrect VC removal.
- storage, identification, collection and disposal of SRM.

Background

The correct removal and disposal of SRM in slaughterhouses and authorised cutting plants is essential to minimise risks to public health associated with **Transmissible Spongiform Encephalopathies (TSE)**.

The TSE Regulations specifically prohibits:

- the sale or supply of any SRM
- food containing SRM for human consumption
- SRM to be used in the preparation of any food for human consumption.

It is the duty of the FBO to comply with the legislation.

Annex V, Point 1(a) of Regulation (EC) No 999/2001 outlines the rules for the prevention, control and eradication of certain transmissible spongiform encephalopathies.

Also, it is paramount to remind that a **red stripe** must be clearly visible on the label of carcasses or wholesale cuts of carcasses of bovine animals containing vertebral column when the removal of the vertebral column is required.

Food Businesses Operators must be authorised by the FSA before they can receive carcasses or wholesale cuts of carcasses of bovine animals which require the removal of the vertebral column.

Guidance for bovine animals

The following tissues are designated as SRM if they come from animals whose origin is in a Member State, a third country or of one of their region with a controlled or undetermined **bovine spongiform encephalopathy (BSE)** risk.

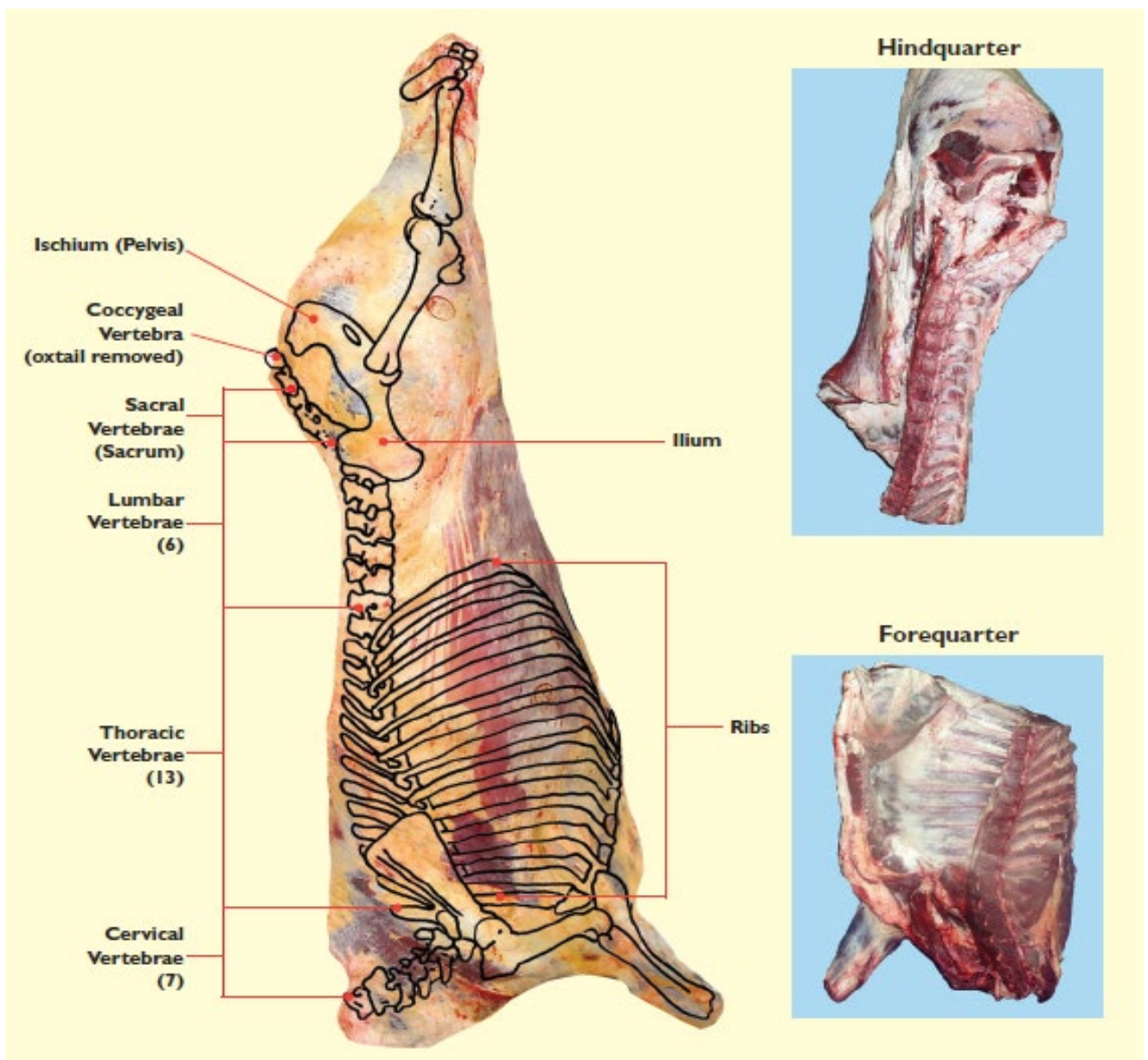
For bovine animals, the **vertebral column** should be removed, **excluding** the:

- vertebrae of the tail
- the spinous and transverse processes of the cervical
- thoracic and lumbar vertebrae
- the median sacral crest
- wings of the sacrum

For animals aged over 30 months, the dorsal root ganglia should also be removed.

Beef skeletal chart

Meat chart to understand the beef skeletal anatomy presented on the two wholesale cuts, hindquarter and forequarter, normally done at the abattoir.

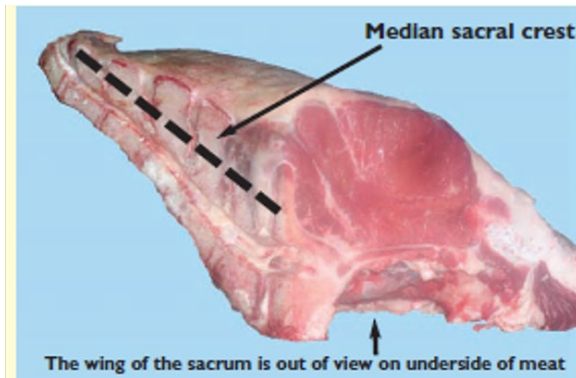


GLOSSARY

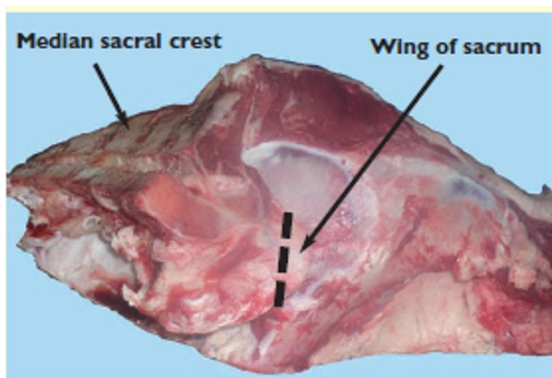
- **Central part of Vertebral Column:** Chine bone (regional variations may apply)
- **Ilium:** Hip bone / rump bone
- **Sacrum:** The bone formed by the fusion of the sacral vertebrae
- **Median sacral crest:** The fused sacral spinous processes
- **Spinous process:** Feather bone (regional variations may apply)
- **Transverse process:** Finger bone (regional variations may apply)
- **Wings of the sacrum:** Modified or reduced transverse processes of the sacrum

How to identify SRM for removal

Sacral vertebrae (including the median sacral crest and wings of the sacrum):
RUMP



Rump showing medial sacral crest. Dotted line indicates portion of the sacral crest that could be left attached to the primal rump.

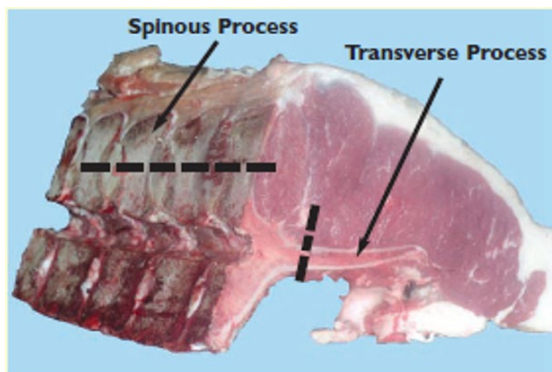


Rump with wing of sacrum partially separated by knife, leaving the ilium attached to the rump. Dotted line indicates portion of the wing that could be left attached to the primal cut.



Sacrum removed as one piece including the median sacral crest and the wing of the sacrum.

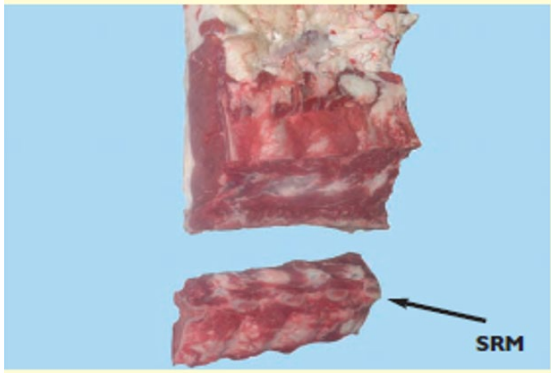
Lumbar vertebrae: SIRLOIN



Bone-in sirloin.

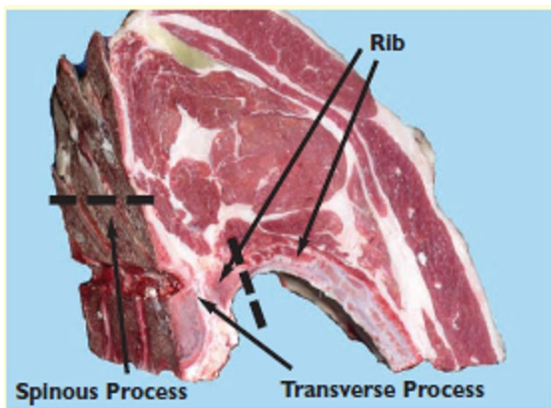


Partial separation of the vertebrae from the sirloin with the transverse and spinous processes remaining attached.

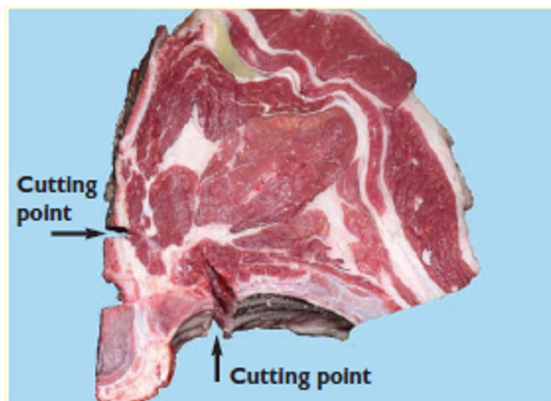


Vertebrae removed and left untrimmed.

Thoracic vertebrae: FORERIB (also applies to the chuck)



Bone-in forerib.

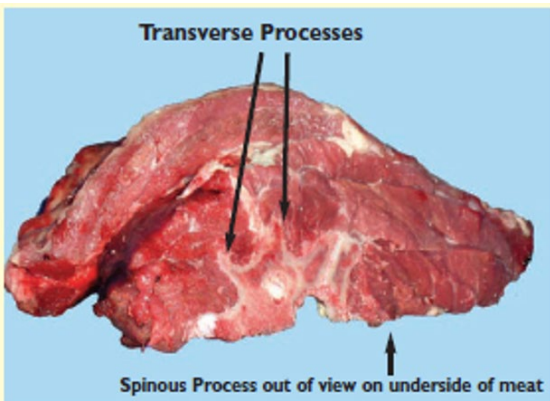


Partial separation of the vertebrae with the ribs and spinous processes remaining attached to the meat.

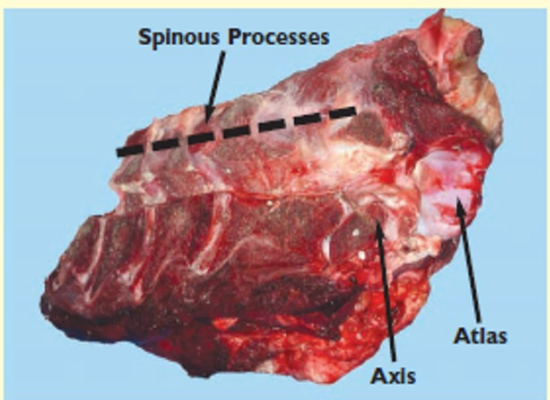


Vertebrae removed and left untrimmed.

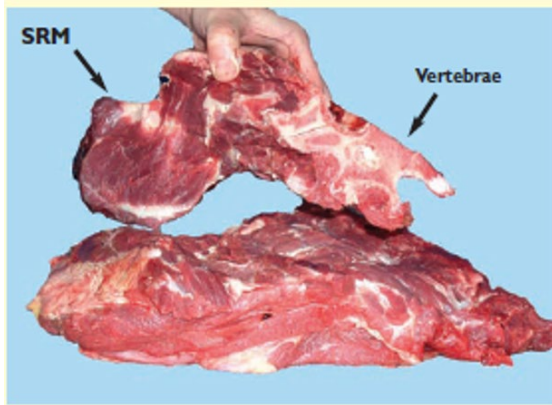
Cervical vertebrae: NECK



Posterior end of neck showing the vertebral structure (cut through at the 6th cervical vertebra).

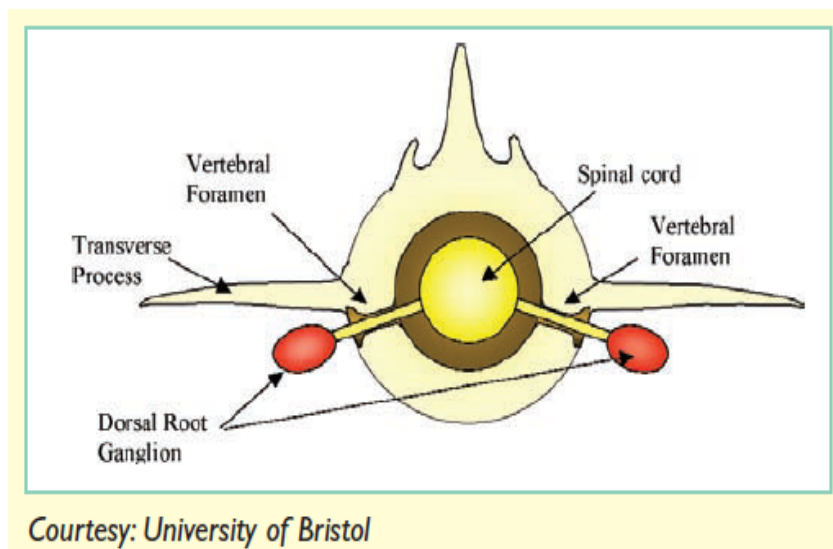


Anterior end of neck showing the first two vertebra (the atlas and axis).



Removal of the vertebrae left untrimmed. Although the spinous and transverse processes are not SRM they are removed with the vertebrae to avoid leaving dorsal root ganglia (DRG) attached in the meat.

Dorsal Root Ganglia

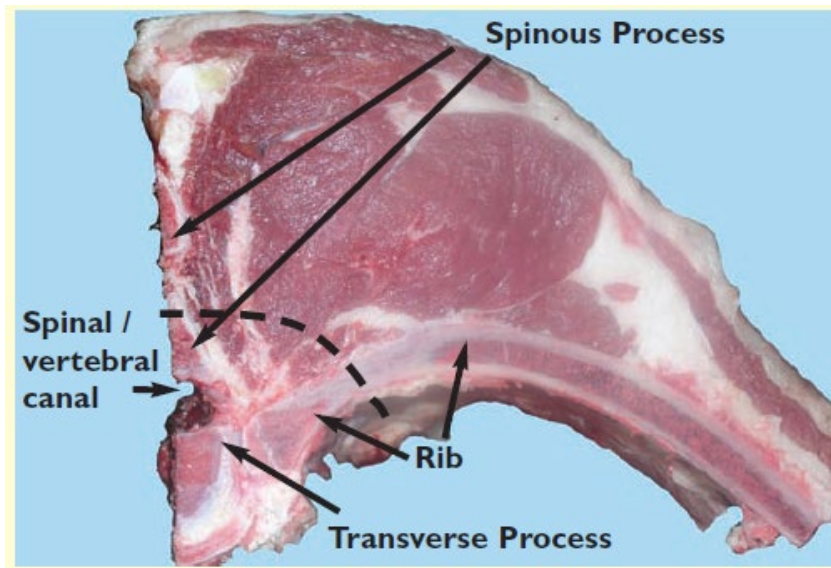


Courtesy: University of Bristol

The spinal cord lies in the spinal or vertebral canal within the vertebral column. A number of nerves arise from the spinal cord and each nerve exits the canal via a foramen (the space between adjacent vertebrae). As the nerves exit the canal they form the Dorsal Root Ganglia (DRG). The exact location of the DRG can vary along the length of the vertebral column and they can be found inside or outside a foramen (the latter is shown in the illustration above).

The DRG are defined as SRM and the butchery procedures illustrated in this guide have been designed to avoid DRG remaining in the meat after boning.

Thoracic vertebra with rib



The ribs are not defined as SRM but the cutting lines indicated have been selected to avoid leaving DRG in the meat.

Boning methods and practices which remove SRM from meat

Traditional boning practice, which aims to maximise yield by removal of bones cleanly and individually, increases the likelihood that Dorsal Root Ganglia (DRG) will remain with the meat. Sheet boning, where bones are removed in one piece without further trimming, reduces this likelihood.

Also, removing the fillet by pulling it out as opposed to cutting it out will reduce the potential for the DRG to remain within the meat.

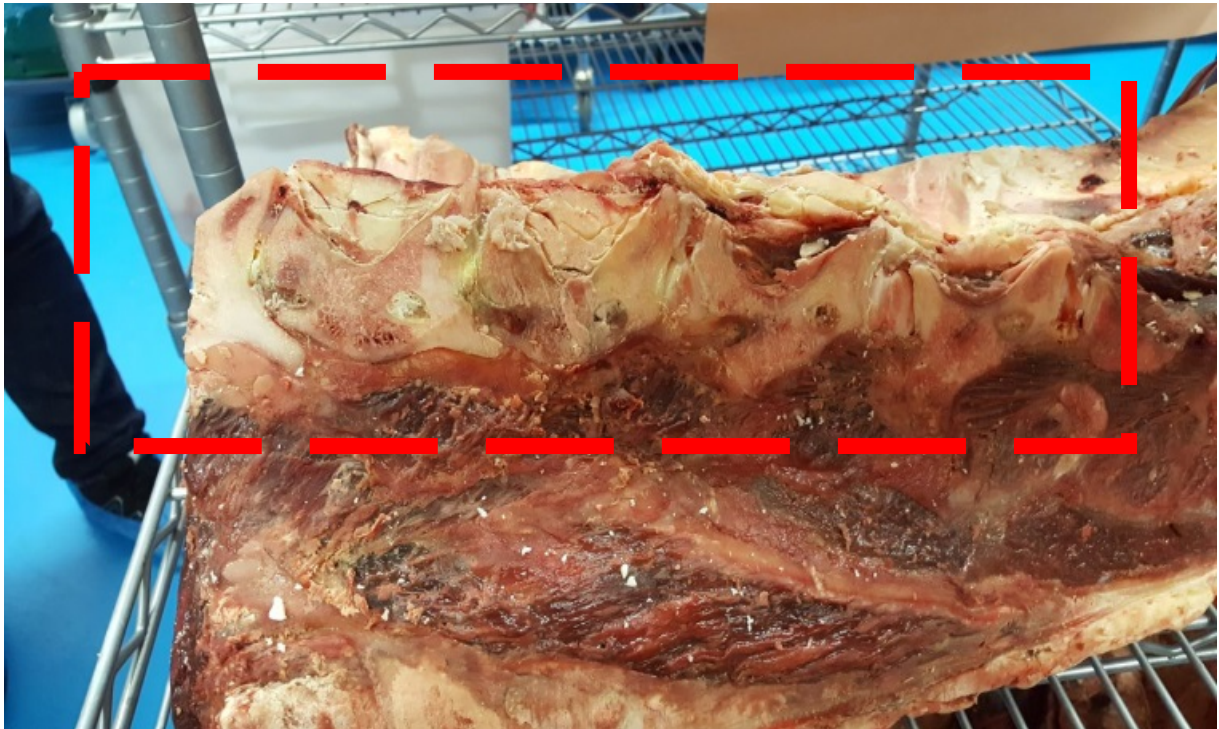
Examples of incorrect VC removal

In some instances, misuse of equipment and lack of training can lead to attempting poorly the removal of vertebral column. See examples below of cases in which parts of VC still SRM were left attached in the meat (Sirloin roasting) and dispatched to standalone cutting plants not authorised for removal of VC on OTM cattle.



V shaped cut done around the vertebral canal with a circular saw but not removing the whole vertebra (SRM) with high risk of leaving DRG.

Below another case in which the cut through transverse process was done very close to the vertebra remaining part of it (SRM) with high risk of leaving DRG.



How to Handle Specified Risk Material



The following guide outlines how to correctly store, stain and document **specified risk material** (SRM). The equipment required can be purchased from a DIY or hardware store.

Storage

Bins must be:

- labelled as either containing 'SRM' or 'Cat 1 ABP for disposal only' (**The TSE (England) Regulations 2018, Schedule 7, paragraph 12**).
- impervious (leak proof) and covered.
- kept adequately separate from any food (including CAT 3 intended to be use for pet food).
- thoroughly washed as soon as reasonably practical after use.
- be thoroughly washed and disinfected before any other use other than for SRM

Staining

Indelible staining means treating the material (whether by immersion, spraying or other application) with a blue colouring agent using a solution of such a strength that the staining is clearly visible and remains visible after the specified risk material has been chilled or frozen. The stain must be applied in such a way that the colouring is and remains clearly visible over the whole of the cut surface and the majority of the head in the case of the head of an ovine or caprine animal; and in the case of all other specified risk material, over the whole surface of the material. (**The TSE (England) Regulations 2018, Schedule 7, paragraph 11**).

Documentation

A **Commercial Document** (CD) must be completed and accompany the SRM despatched for disposal and a copy of the this must be retained for two years.