

Induction of Anaesthesia

ASA classification	Description
ASA I	Normal, healthy animal
ASA II	Mild systemic disease or impairment
ASA III	More severe systemic disease which is well compensated/controlled by treatment
ASA IV	Severe systemic disease which is not compensated
ASA V	Moribund, unlikely to survive 24 hours
E	Added to any anaesthetic classification if anaesthetic is an emergency

Disclaimer

A series of booklets has been developed by the Clinical Skills Lab team (staff, recent graduates and students) from the School of Veterinary Sciences, University of Bristol, UK. Please note:

- Each booklet illustrates one way to perform a skill and it is acknowledged that there are often other approaches. Before using the booklets students should check with their university or college whether the approach illustrated is acceptable in their context or whether an alternative method should be used.
- The booklets are made available in good faith and may be subject to changes.
- In using these booklets you must adopt safe working procedures and take your own risk assessments, checked by your university, college etc. The University of Bristol will not be liable for any loss or damage resulting from failure to adhere to such practices.

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Equipment list:

Induction of Anaesthesia

Equipment for this station:

- There is no specific equipment for the station other than this booklet and the other relevant CSL booklets and the associated models and equipment:
 - ‘CSL_A06 IV Catheter’
 - ‘CSL_A05 Endotracheal Intubation’
 - ‘CSL_A07 Calculating and Drawing Up Anaesthetic Drugs’

Considerations for this station:

- This booklet provides a guide to the stages of induction. Refer to your anaesthesia lectures and notes for more detail.

Anyone working in the Clinical Skills Lab must read the ‘CSL_I01 Induction’ and agree to abide by the ‘CSL_I00 House Rules’ & ‘CSL_I02 Lab Area Rules’

Please inform a member of staff if equipment is damaged or about to run out.

Clinical Skills:

Induction of Anaesthesia

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The first step in undertaking anaesthesia is to assess the individual patient and decide on a drug protocol. A number of factors need to be considered (see details later in this booklet). Refer to lectures etc. for more information.



Once the protocol has been decided, the drug doses should be carefully calculated, and the drugs accurately drawn up. See 'CSL_A07 Calculating and Drawing Up Anaesthetic Drugs'.



An i.v. catheter may be placed before or after premedication (depending on the animal's health status and temperament) to ensure there is intravenous access throughout anaesthesia. The aims of premedication are to provide sedation, analgesia and reduce the amount of induction agent required.



The premedication is normally delivered IM or IV. Occasionally premedication is not required, e.g. in collapsed patients.

The animal must then be kept in a quiet, stress-free environment while the drugs take effect.



Before induction of anaesthesia, it is important to have all the equipment ready i.e. for induction, intubation and maintenance.



For induction to be carried out safely, the animal should be calm and amenable to handling.

The time required for the premedication to take effect will depend on the drugs used and the route of administration.

Clinical Skills:

Induction of anaesthesia



The patient should be appropriately restrained by an assistant whilst the induction drug is administered. Intravenous is usually the route of choice, preferably by i.v. catheter (see 'CSL_A06 IV Catheter'), as this allows drugs and fluids to be quickly administered during anaesthesia, if required.



It is important to give the induction agent correctly – for example, some need to be given slowly to effect, others must be administered quickly to avoid excitation.

If using a catheter, make sure it is flushed (with saline) after administering the induction agent to avoid administering additional induction drug at a later stage.



Intramuscular injection is sometimes used to induce small animals, however a fixed dose is administered and there is individual variability in the effect. This method is usually reserved for feral animals which otherwise cannot be injected safely intravenously.



Gaseous anaesthesia is sometimes used to induce patients – however this is mostly reserved for small animals and species where intravenous access is difficult. Small rodents and wildlife (such as hedgehogs and birds) may be anaesthetised in this way.



Once anaesthetised, the trachea is intubated (see 'CSL_A05 Endotracheal Intubation'), and the ET tube is tied in place. The animal can then be connected to the anaesthetic machine for provision of oxygen and gaseous (inhalational) anaesthetic. It is also important to connect any monitoring equipment.

Alternatively, maintenance of anaesthesia may be achieved using injectable anaesthetic rather than gaseous.

In some cases the entire anaesthetic can be maintained by IV drug infusion or bolus, however the animal still requires intubating to provide oxygen and maintain patency of the airway.

Selecting the drug protocol

Induction of Anaesthesia

The selection of drugs for use in a specific anaesthetic protocol is based upon several factors:

1. Species
2. Breed
3. Age
4. Reason for anaesthesia
5. Animal's health status – including laboratory tests and American Society of Anesthesiologists (ASA) Classification:

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Based on the above factors and your knowledge of anaesthetic agents, select an appropriate drug regime from the groups of anaesthetic agents available.

N.B. There are 'pros' and 'cons' of the different approaches that should be considered and there is usually more than one 'acceptable' approach.

Resetting the station:


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1. Put all handbooks and associated models and equipment back in the correct place, ready for the next student to use.

Station ready for the next person:

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I wish I'd known:

Induction of Anaesthesia

- There is a lot to think about with regards to anaesthesia induction. Prepare well in advance - have all the equipment ready and know the order of events. This will be particularly important if things do not go exactly to plan and will help you to remain calm.
- Animals can react differently to anaesthetic drugs, depending on health, age, premedication etc. Monitor the depth of anaesthesia carefully e.g. you may not need all of the drug you have drawn up as drugs are 'given to effect'.
- During intubation, keep any remaining induction agent close by in case you need to administer more, as the stimulus of intubation may cause the patient's plane of anaesthesia to lighten.
- Know your drugs! They act differently and so need to be administered appropriately.