

*incomplete expansion of the lung as a result of partial or total collapse; often occurs in combination w/ penetrating wound to the chest atelectasis describe the radiographic appearance of atelectasis.*

Part 1 Working Party: This report is published in two parts. Section 3 of the report, together with the list of all references cited in both parts and details of training materials, will be published in the January issue of *Laboratory Animals*. We would like to thank the following people and organizations who provided valuable assistance and comments on the test: A brief description of each method is given with reasons for accepting or rejecting them. Details of how to carry out different methods are not provided; these may be found in references cited and in the recommended reading list. Other methods may be acceptable only if used on heavily sedated or unconscious animals. In principle, all methods can be used on unconscious animals unless they are unacceptably dangerous to personnel or there is a risk of the animal regaining consciousness before death occurs. There are three main sections to this report. Section 2 provides information on methods of euthanasia used for vertebrates and is divided broadly into acceptable physical and chemical methods, methods acceptable for insensible animals, and those methods not considered acceptable. At the end of each species section, there is a table summarizing the recommendations for that species. There are, in addition, comprehensive lists of cited references and literature recommended for further reading divided into general and species groups, together with information on audiovisual training materials that may be used in training programmes to encourage humane euthanasia practices. If information is required about a particular method, this may be obtained in Section 2, and if information is required about a particular species, this may be found in Section 3. This document is designed to assist all those concerned with experimental animals in deciding which method is the most humane and appropriate in the context of the experiment for killing the animal with which they are working. As this Directive protects vertebrates, this document will only cover euthanasia of vertebrates. Whilst this document provides recommendations for the euthanasia of experimental animals, it is strongly recommended that controls and guidelines issued in other EC directives and regulations for the euthanasia of animals be taken into consideration.

e. Consciousness is the state of awareness of a normal animal when it can perceive stimuli from its external environment and respond in the normal behaviour of an awake individual. Unconsciousness will be used to mean insensibility to external stimuli as would be expected in coma or during general anaesthesia. Two main ways of measuring insensibility are to look at the physical responses and responses in the central nervous system at the cortical level. The embryonic stage ends at the hatching or birth of the young animal.

Allaby A foetus is a mammalian embryo from the stage of its development where its main adult features can be recognized until its birth.

Allaby A larva is considered as the stage during which it is motile and capable of feeding itself, that occurs after hatching from the egg, and prior to the reorganizations involved in becoming adult.

Allaby All personnel must be trained to recognize these signs of suffering in the species with which they are working. Assessment of these factors must be based primarily on observations of abnormal behavioural and physiological responses that demonstrate anxiety and fear. Depending on the species these may include: Some of these responses can occur in unconscious as well as conscious animals. Fear may cause immobility or freezing in certain species, particularly rabbits and chickens. This immobility response should not be interpreted as unconsciousness when the animal is, in fact, conscious. When assessing the most humane method of euthanasia for any animal, sedation prior to euthanasia may be considered as a method of reducing possible anxiety and distress. However, a factor to consider is that this will involve more handling which in itself may add to the anxiety of the animal, thus negating the purpose of the sedative. The need to minimize fear and apprehension must be considered in determining the method of euthanasia. Distress vocalizations, fearful behaviour, and release of certain odours or pheromones by a frightened animal may cause anxiety and apprehension in others. It must be remembered that many vocalizations are at high frequencies and out of the human hearing range. Therefore, whenever possible,

animals should not be present during euthanasia of others, especially of their own species. This is particularly important when vocalizations or release of pheromones may occur during induction of unconsciousness. It is also known that the last animal in a group to be removed may become disturbed and so the last two animals may have to be removed together. The method chosen will depend on the species being handled. Professional advice should be sought. Training programmes should include courses on the biology of the species to be used, suitable methods of euthanasia for each species and national and European animal welfare regulations. Training must include aspects such as recognition of pain, fear, distress, anxiety, insensibility and death for all species to be used. Detailed courses on methods of euthanasia for each species must be provided, including assessment of the most humane and suitable methods depending on the species and experimental requirements. Training courses should also cover the functioning and maintenance of the equipment to be used. Competence assessment is necessary at the end of each course. Experienced personnel who have developed a trusting relationship with the particular animals should be used for euthanasia of these animals as this will minimize stress and anxiety in the animals. All people performing euthanasia should demonstrate professionalism and sensitivity for the value of animal life. The degree of distress experienced by those people observing or performing euthanasia in any form is dependent on their backgrounds and on their personal philosophies and ethical concerns about using animals in research. The stress experienced by people who regularly perform euthanasia may cause a strong sense of work dissatisfaction or alienation, which might be expressed by absenteeism, belligerence, or careless or callous handling of animals, along with a high turnover rate of personnel. Coping skills for employees should be developed through training programmes. The effects of various agents and methods may be subjective and based on professional judgement, experience and intuition. Some physical methods may be aesthetically unpleasant but quite humane. The choice of method of euthanasia must be based primarily on humane concerns for the animal rather than on the sensitivities of the technician who performs the task or the people who observe the euthanasia. The degree of control and kind of restraint needed will be determined by the animal species, breed, size, state of domestication, presence of painful injury or disease, degree of excitement, and method of euthanasia. Suitable control is vital to minimize pain and distress in animals, to assure safety of the person performing euthanasia, and frequently to protect other animals and people. Where capture or restraint may cause pain, injury or anxiety to the animal or danger to the operator, the prior use of tranquillizing and immobilizing drugs may be necessary. They should be regularly inspected and cleaned to ensure that they are in a good state of repair and will function correctly at all times. Blood, urine and faeces which could cause anxiety to subsequent animals must be removed. Care should be taken when disposing of carcasses and other waste for example water in which agents have been dissolved that it does not provide any danger to others or the environment. Chemical methods except carbon dioxide must not be used on animals destined for consumption or where the carcass may enter the food chain. Operators must ensure that they comply with national and international legislation. Section 1 must be consulted in conjunction with this section. Agents may cause death by three basic mechanisms: Further details for each species group may be obtained in Section 3. They are most useful when pharmacological methods would interfere with the purpose of the experiment. While physical methods may be aesthetically less pleasant for observers and those killing animals, in skilled hands they are quick and certain and possibly the least distressing for the animal. Specialist training is essential for all of these methods. These methods require restraint which may cause extra stress for some animals. If possible the animal should not be killed in the sight or smell of other animals. This may be divided into two types: The type of weapon used must be selected according to the species to be killed and the environment. All personnel must be trained in these techniques to ensure the correct positioning of the weapon to ensure a direct hit into the brain Longair et al. When the animal can be appropriately restrained, the captive bolt method is preferable as there is less danger to personnel. A free bullet humane killer is preferred for example, on horses Blackmore , Dodd , Oliver Large rabbits and dogs may also be killed in this way Dennis et al. However, it is not always effective in large pigs and mature bulls because of the thickness and density of the skull. The purpose of stunning is to render

the animal instantaneously insensible to pain by causing concussion Ministry of Agriculture, Food and Fisheries The animal should remain insensible until exsanguination is performed Blackmore Effective stunning depends on accurate positioning of the pistol, use of the correct strength of cartridge in relation to the species and size of the animal, the size and speed of the bolt and proper maintenance of the pistol. The site of penetration differs with each species and therefore this method should only be carried out by suitably trained personnel. Appropriate restraint must be used to prevent incorrect positioning of the pistol. The operator should ensure that the bolt retracts to its full extent after each shot and if not, it should not be used again until it has been repaired. The bolt should always be properly cleaned after each use. Experience and training are essential for the correct choice of method to be used. In larger animals specialized equipment such as the non-penetrating captive bolt must be used. The use of the hammer or poleaxe is condemned as a method of stunning. These methods must always be followed immediately by exsanguination, removal of the heart or destruction of the brain to ensure death. Training is essential for all operators. If not performed correctly, various degrees of consciousness with concomitant pain can ensue. High pressure water jet has been successfully used for the stunning of pigs and is an accepted method in Switzerland Schatzmann et al. It should not be used in cats due to the high conductivity of their coats Green Only specialized equipment should be used for this method of euthanasia. High voltage stunners are more effective. Animals must be suitably restrained so that the tongs can be accurately applied. Electrodes must not be applied behind the ears or on each side of the neck which would paralyse the animal without rendering it unconscious, resulting in severe pain and suffering. Care must be taken to ensure that the animal does not receive an electric shock before the electrodes are correctly applied, for instance by contact with other animals being stunned or having a wet skin. The apparatus should have a device which prevents operation if the minimum required current cannot be passed, as well as devices to measure length of time of application, voltage indicators and current level. If the animal is not correctly stunned it may be paralysed whilst remaining fully conscious and is able to feel pain. It may be used on older rats and rabbits up to 1 kg if they are sedated or stunned prior to dislocation. Gregory and Wotton showed that there is not always immediate unconsciousness in poultry using this method. Care must be taken to ensure complete separation.

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## Chapter 2 : Trauma Resuscitation Resources

*For any significant blunt force trauma from MVC or penetrating injury, what would be your S&S and IOS? S&S: blows to the head sustained during incident, producing LOC, AMS, change in LOC, combativeness, difficulties moving extremities, HA w/ nausea & vomiting.*

What constitutes traumatic hematuria peds, other criteria? When not to place catheter? Pelvic fx from blunt injuries. If SP tube, almost always develop stricture. Blood confined to Colles fascia. What results in a sleeve hematoma anterior urethra? In whom do you repair immediately with anterior urethral injuries? Low velocity gunshot, stabbing , penile fx. Otherwise delay weeks. How often do you get bladder injury with pelvic fractures? If you have pelvic fx and gross hematuria, what should you order? How do you manage an intraperitoneal injury? Ex lap, watertight closure in layers. In which cases should an extraperitoneal rupture be repaired? Renal exploration - use transperitoneal approach control vessels prior to entering Gerotas Sudden deceleration injury in kids may result in what injury due to spine more mobile What is most accurate test to assess ureteral injury? How do you perform an on-table IVP? What is blood supply to omentum when using as an interposition? UCO first days , then watch JP output. If remains low, then can remove. Stent removed in weeks. How do you do it? Ureter brought above IMA. If small injury, stent. If large, then debride and UU. How do you manage a trauma ureter? If pt unstable, then ligate ureter non-absorbable , perc tube. Otherwise, if stable, manage as other injuries. How do you manage a delayed ureteral injury? Neph tube, antegrade stent. Perc drain for urinoma. What are options if entire ureter is gone? How do you manage major skin loss of scrotum? Blood between tunica albuginea, vaginalis. Testis rupture most common cause. How do you manage hematoceles? Small stable hematoceles no active bleeding , manage conservatively. Large hematoceles, Prompt drainage prevent infection, pain, ischemia from compression. If suspected testis injury, prompt surgical intervention Removing ad is a premium feature Upgrade and get a lot more done!

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## Chapter 3 : Lecture Archive - UCLA Head and Neck Surgery - Los Angeles, CA

*Penetrating trauma, gross hematuria, pediatric (w/ > 50 RBC, blunt trauma w/ microscopic hematuria and shock (SBP trauma? Mechanism suggests GU trauma (rapid deceleration, flank trauma), clinical findings suggest (flank ecchymosis, flank pain, posterior rib fractures.*

Improved trauma management with advanced trauma life support ATLS training. Journal of Accident and Emergency Medicine 14 2: Radiology in the Trauma Room [http: Trauma team training in a distributed virtual emergency room. Stud Health Technol Inform ; Simulation in critical care and trauma education and training. Curr Opin Crit Care ; Incorporation of a computerized human patient simulator in critical care training: J Trauma ; Evaluation of trauma team performance using an advanced human patient simulator for resuscitation training. Crit Care ; 6: Patient assessment and trauma care simulator. Trauma assessment training with a patient simulator: Military Psychology ; 7: Critical training for pediatric emergencies. Qual Saf Health Care ; 13 Suppl 1: Simulation of trauma management: Comparison of self-reporting of deficiencies in airway management with video analyses of actual performance. Level One Trauma Anesthesia Simulation. Hum Factors ; Group decision-making during trauma patient resuscitation and anesthesia. Virtual reality, robotics, and other wizardry in 21st century trauma care. Surg Clin North Am ; Use of a human patient simulator in the development of resident trauma management skills. Early experience with simulated trauma resuscitation. Can J Surg ; Videotaping in the admitting area: Eur J Emerg Med ; 4: Video assessment of trauma response: Am J Emerg Med ; A virtual reality trauma simulator. Med Teach ; Task complexity in emergency medical care and its implications for team coordination. Team coordination and breakdown in a real-life stressful environment, Proceedings of the Human Factors and Ergonomics Society 42nd annual meeting, Communication Technology in Trauma Centers: How frequently should basic cardiopulmonary resuscitation training be repeated to maintain adequate skills? Do-not-resuscitate order after 25 years. Crit Care Med ; ResusSim a PC advanced life support trainer. Evaluation of the effect of a computerized training simulator ANAKIN on the retention of neonatal resuscitation skills. Teach Learn Med ; From Resusci-Anne to Sim-Man: Prospective observational study on the incidence of medication errors during simulated resuscitation in a paediatric emergency department. Orlando, FL, , pp 29 Stern D: Improving resuscitation team performance using a full body simulator, International Meeting on Medical Simulation. Lauderdale, FL, Truog RD: What does "resuscitate" mean in a do-not-resuscitate DNR order? Anesth Analg ;](http://)

## Chapter 4 : *Â§,-,-,Â§Ã´Â§, - [PDF Document]*

*Published as a chapter in Journal of Trauma Nursing, vol. 3, no. 1, pp. , Emergencies of the Head and Neck by David Eisele and Shelly McQuone.*

## Chapter 5 : Genitourinary Trauma Flashcards by ProProfs

*Penetrating injuries are very rare but may occur in skating sports, skiing, or mountain biking. Any signs of injury such as abrasion, bruising, swelling, or wounds should alert the rescuer to the potential for injury to critical structures in the anterior neck.*

## Chapter 6 : Toxicology of Solvents - PDF Free Download

*DDS Professor and Chairman Department of Maxillofacial Surgery Berlin Trauma Center Hospital of the University of Berlin Berlin Frau Langner Feuchtwangen Head and Neck Trauma TN Titelei Head and Neck Trauma An Interdisciplinary Approach Arne Ernst.*

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Chapter 7 : [calendrierdelascience.com](http://calendrierdelascience.com) - personal ebook library

*Cummings, Ch. 8 History, Physical Examination, and Perioperative Evaluation; Ch. 9 General Considerations of Anesthesia and Management of the Difficult Airway October 1, Dr. Ali Razfar.*

Chapter 8 : Switzerland: Berne

*Ch. Hearing Assessment in Infants and Children David W. Proops Ch. Audiometric Screening Ch. Blunt and Penetrating Neck Trauma in Children Erea.*