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Guide for the Care and Use of Laboratory Animals (8th edn)

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Book Review

Guide for the Care and Use of Laboratory Animals (8th edn)

by the National Research Council of the National Academies
Washington, DC: National Academies Press, 2011

The *Guide for the Care and Use of Laboratory Animals* by the Institute for Laboratory Animal Research (ILAR) of the National Research Council in the USA, is well known among most individuals involved in laboratory animal care and use. Most of the time insiders refer to it as the 'Guide'. In the year 2011, ILAR published its eighth edition. This new edition gathered the latest facts, incorporated up-to-date knowledge and reorganized the contents to provide better guidance to laboratory animal care and use programmes.

The history of the Guide began in 1946, when Dr Nathan R Brewer and his colleagues in the Chicago area started to improve the care and wellbeing of laboratory animals by exchanging ideas at monthly meetings. The activities of this group led, in 1950, to the foundation of the Animal Care Panel (ACP), which became a growing non-profit organization and was later renamed as American Association for Laboratory Animal Science (AALAS). In 1963, the Animal Facilities Standards Committee of the ACP prepared the first edition of the *Guide for the Care and Use of Laboratory Animals*. Gradually, the Guide has become the primary reference in many research organizations in the USA, and compliance with it is obligatory for the Public Health Service (PHS)-assured institutions. When the Association for the Assessment and Accreditation for Laboratory Animal Care (AAALAC International) expanded its activities beyond the USA and went international, the Guide became a resource for animal care and use programmes around the world. Today the Guide is one of three primary standards AAALAC uses to evaluate an institution's animal care and use programme. The other two documents are the *Guide for the Care and Use of Agricultural Animals in Research and Teaching (Ag Guide)*, FASS 2010; and the *European Convention for the Protection of Vertebrate Animals Used for Experimental and Other Scientific Purposes*, Council of Europe (ETS 123).

Over time, the Guide was updated several times culminating in the seventh edition being published in 1996. In the last decade, laboratory animal science advanced so significantly that another update was considered necessary to promote the best animal care and use practices. In 2006, a committee was appointed by the National Research Council in the USA, and started the process of updating the Guide. This process was accompanied by extensive public hearings and solicited comments from a wide range of scientific communities and the public. Fifteen years after its seventh edition, the new eighth edition of the Guide was finally completed and published.

The Guide is not a handbook; it is an extensive collection of detailed descriptions of standards for all components of a good laboratory animal care and use programme. The frame of the book not only focuses on the wellbeing of lab animals, but also on the health and safety of people working with animals.

Compared with the previous edition, the eighth edition is organized differently. After a brief overview, the Guide is divided into five chapters covering details of recommended standards for the care and use of laboratory animals. In addition, extra information related to the Guide can be found in the appendices at the end of the book.

The first chapter introduces and defines the key concepts and terms used in the Guide. It describes the goals of the Guide as well as the intended audience and how to use the Guide. The overall intention is to support the readers to build a programme which creates a system of self-regulation and regulatory oversight, a concept that has been proven of value in many research situations. The concept of the 3Rs (Replacement, Reduction, Refinement) was always part of the philosophy of the Guide. In this eighth version now, this concept is mentioned *expressis verbis* and the individual definitions of each 'R' are outlined.

Chapter 2 highlights the components of a state of the art animal care and use programme. After a short summary of the programme management, the chapter defines in details the respective roles and responsibilities of programme oversight. In the past, the primary responsibility of programme oversight fell primarily on the Animal Care and Use Committee (IACUC); now it is shared with the institutional official (IO) and the attending veterinarian (AV). The chapter further defines the roles and responsibilities of the key management for all elements of the programme and supplies definitions for regulations and policies. Many recommendations on occupational health and safety are provided here. The need for a disaster plan is now changed from the 'should' to the 'must' requirement.

Environment, housing and management of laboratory animals are the topics of the third chapter. It should be noted that, in this chapter, a new section was added for addressing the care and use of aquatic animals. With this, the authors acknowledge the increased importance of these species, especially zebrafishes, in the laboratory environment. As in the previous editions, this chapter provides well-organized tables for quick references for housing space for species typically used in research. It is important to mention that the Guide stresses in particular for this topic the uses of a performance-based approach to decide on the space requirements for each particular case. Therefore, the recommended space is now defined as 'recommended *minimum* space'.

The next chapter discusses issues related to veterinary care. It covers regular aspects of veterinary care in laboratory animals, such as acquisition and clinical care of animals, surgery, pain management and anaesthesia, and preventive medicine. The Guide gives a lot of importance

and authority to the attending veterinarian, and lists a number of functions and activities for this figure. Newly added in this chapter is a section on animal biosecurity, further defining the term and standards for this important aspect of an animal care and use programme.

The standards for the physical plant are specified in the last chapter of the Guide. In addition to general considerations, a number of standards have been exemplified to help promote better designed animal facilities. This new edition incorporates many new recommendations for special facilities, including barriers, imaging and irradiation, to reflect the new diverse environment.

As with previous editions, the new edition has kept the same wording to differentiate the degrees of importance in suggested standards. In general, there are three categories for need on implementation of a given programme element, that are 'must', 'should' and 'may'. If a requirement is stated as a 'must', it simply indicates that this issue is imperative for a valid programme, while 'should' expresses a strong recommendation and 'may' is considered nice to have for an excellent programme. New readers to the Guide may be surprised that the book does not give clear numbers and instructions, but instead uses a performance-based approach. These performance standards, in contrast to engineering standards, are intended to give flexibility to the responsible individuals to reach the desired goals. Performance standards are more applicable for different environments, such as different sizes or locations of facilities.

Laboratory animal care and use is a complex subject. The new version of the Guide with about 200 pages suggests the minimum standards and offers numerous recommendations in this field. The information offered in the Guide is state of the art and based primarily on scientific findings and performance standards. Each chapter is followed by a considerable number of references on the specific topic. And for those who prefer more specific and/or further reading on

a particular topic, there are more references in Appendix A. Nevertheless, where no or little scientific studies exist, the authors draw back on good practice standards.

There might be some concerns in the international audience that the Guide could focus too much on the US regulatory environment. Sure, the Guide is primarily a US product, and there are some references to US laws and regulations. However, when the Guide was being updated, the authors clearly took an international perspective. In fact, four of the 14 members of the update committee were non-US individuals. It is also apparent, by reading the Guide, that the standards have a more universal and pragmatic approach.

With the new edition of the Guide, the number of pages in the book increased, along with an increase in the number of 'must' and 'should' standards. This clearly benefits the well-being of the animals and animal user safety, both of which should have the highest priority! One major downside of the new standards is that it may increase costs of running an animal care and use programme.

In general, the Guide is well structured and easy to read. Throughout the text there are grey boxes, which highlight the definition of certain key terms. The included references are well chosen and enable an interested reader to dive deeper into a specific topic. The index at the end provides quick and organized access to the subject material. This book must be strongly recommended for those who are (or will be) involved in laboratory animals care and use, and it is an essential resource for those planning for AAALAC accreditation, also in Europe as it covers many areas not included in the new European legislation.

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