



Research Article

Use of primates in research: A global overview

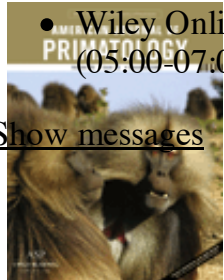
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nonhuman primates; research use; animal models

Abstract

We assessed the use of nonhuman primates and nonhuman primate biological material in research by reviewing studies published in 2001 in peer-reviewed journals. The number and species of primates used, the origin of the animals, the type of study, the area of research of the investigation, and the location at which the research was performed were tabulated. Additionally, factors related to the animals that may have affected the outcome of the experiments were recorded. A total of 2,937 articles involving 4,411 studies that employed nonhuman primates or nonhuman primate biological material were identified and analyzed. More than 41,000 animals were represented in the studies published in 2001. In the 14% of studies for which re-use could be determined, 69% involved animals that had been used in previous experiments. Published studies most commonly used nonhuman primates or nonhuman primate biological material from the species *Chlorocebus aethiops* (19%), *Macaca mulatta* (18%), *M. fascicularis* (9%), and *Papio* spp. (6%). Of these studies, 54% were classified as in vitro studies, 14% as noninvasive, 30% as chronic, and 1% were considered acute. Nonhuman primates were primarily used in research areas in which they appear to be the most appropriate models for humans. The most common areas of research were microbiology (including HIV/AIDS (26%)), neuroscience (19%), and biochemistry/chemistry (12%). Most (84%) of the primate research published in 2001 was conducted in North America, Europe, and

Japan. The animals and conditions under which they were housed and used were rarely described. Although it is estimated that nonhuman primates account for an extremely small fraction of all animals used in research, their special status makes it important to report the many husbandry and environmental factors that influence the research results generated. This analysis has identified that editors rarely require authors to provide comprehensive information concerning the subjects (e.g., their origin), treatment conditions, and experimental procedures utilized in the studies they publish. The present analysis addresses the use of primates for research, including the effects of a shortage of suitable nonhuman primate subjects in many research areas. *Am. J. Primatol.* 63:225–237, 2004. © 2004 Wiley-Liss, Inc.

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