Training Techniques to Enhance the Care and Welfare of Nonhuman Primates

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KEYWORDS

• Animal training • Positive reinforcement • Animal welfare • Negative reinforcement • Nonhuman primate training

KEY POINTS

- Nonhuman primates are excellent subjects for the enhancement of care and welfare through training.
- The application of positive reinforcement techniques to specific aspects of the management of captive nonhuman primates spans a wide range of species, social contexts, and housing situations (eg, laboratories, zoos, and sanctuaries).
- There is an increased interest from regulatory and accrediting agencies to insure improved conditions for captive nonhuman primates, apparent by the various standard guidelines, accreditation standards, and protocols available for the 3 primary types of nonhuman primate holding facilities.
- PRT is an invaluable component of captive animal management when it is used to enhance husbandry and medical care, mitigate aggression and increase affiliative behaviors and improve social management, reduce fear and anxiety, and enhance environmental enrichment programs; all contributing to an overall improvement in psychological well-being.

INTRODUCTION

Nonhuman primates are excellent subjects for the enhancement of care and welfare through training. The broad range of species offers tremendous behavioral diversity, and individual primates show varying abilities to cope with the conditions of captivity, which differ depending upon the venue and housing situation. In 1987, the Animal Welfare Act mandated that facilities housing nonhuman primates must provide for their psychological well-being; positive reinforcement training (PRT) has achieved wide recognition as a valuable tool for contributing to that objective.

The application of positive reinforcement techniques to specific aspects of the management of captive nonhuman primates spans a wide range of species, social

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contexts, and housing situations (eg, laboratories, zoos, and sanctuaries). Conditions for captive nonhuman primates vary widely depending on the situation. Housing in laboratory facilities may include small cages with a single individual, pair, or group housing, and corrals with large social groups. Zoos have social groupings of differing sizes, emphasizing natural behavior, public display, education, and reproduction. Sanctuaries typically have nonbreeding groups, which may consist of multiple species and varying numbers of individuals, and are not regularly on public display. In every venue, regardless of the institution's mission, a primary objective is to provide excellent care while addressing animal welfare and minimizing stress. Positive reinforcement training improves care and reduces stress by enlisting a primate's voluntary cooperation with targeted activities, including husbandry, veterinary, and research procedures. It is also used to improve socialization, reduce abnormal behaviors, and increase species-typical behaviors.[1–4] Environmental enrichment programs can be enhanced and expanded when PRT is applied.

There is an increased interest from regulatory and accrediting agencies to insure improved conditions for captive nonhuman primates, apparent by the various standard guidelines, accreditation standards, and protocols available for the 3 primary types of nonhuman primate holding facilities. Laboratory facilities are held to standards outlined in the "Guide for the Care and Use of Laboratory Animals" (2011),[5] which recommends that "Habituating animals to routine husbandry or experimental procedures should be encouraged whenever possible as it may assist the animals to better cope with a captive environment by reducing stress associated with novel procedures or people. In most cases, principles of operant conditioning may be employed during training sessions, using progressive behavioral shaping, to induce voluntary cooperation with procedures" (p. 64–5). In a recent 2010 report, of site visits to chimpanzee facilities in the United States, The Office of Laboratory Animal Welfare (OLAW) also supported the notion that PRT may help in reducing stress and concluded that when safe and feasible nonhuman primates should be afforded positive reinforcement training opportunities.[6]

The Association of Zoos and Aquariums (AZA) Animal Care Manuals (ACM) specify training and enrichment techniques to provide for improved care, welfare, and management of captive nonhuman primates. In the 2010 Chimpanzee ACM,[7] it is stated that "the use of positive reinforcement training as an animal care and management tool offers many benefits for chimpanzees and staff. One of the greatest benefits is to gain the voluntary cooperation of the chimpanzees in husbandry, veterinary, and research procedures. The fear and stress associated with these procedures, as well as the need for restraint and anesthesia can be significantly reduced. Greater choice and control can be provided to trained chimpanzees, contributing to their psychological well-being."[8] And it continues with further discussion regarding specific behaviors that can be trained through PRT: "using operant conditioning techniques, chimpanzees can be desensitized to frightening or painful events, such as receiving an injection, so that the event becomes less frightening and less stressful."[8] Voluntary cooperation reduces the need for physical restraint and/or anesthesia, and the accompanying risks associated with those events.[9,10]

The In Press Guenon Care Manual states that guenons "should be trained with positive reinforcement techniques for the routine modification of behavior to achieve management, husbandry, veterinary, and research behaviors, enhance socialization, facilitate introductions, and augment enrichment opportunities. Animal positioning should be achieved through the use of targets; animals should not be pushed, pulled, or coerced for routine training activities. Routine husbandry practices should include: shifting animals for activities such as daily cleaning, enrichment, exhibit maintenance, training animals to approach the cage front for close visual inspection of entire body,