

HUSBANDRY AND MEDICAL CARE OF CALLITRICHIDS

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Abstract

Callitrichids, marmosets and tamarins are small Central and South American nonhuman primates. All are considered threatened in the wild and many are on the endangered species list (Convention on International Trade in Endangered Species of Wild Fauna and Flora: Appendix 1). Because of their small size and anthropomorphic appeal, people are interested in owning callitrichids as pets. Hand-raised bottle-fed babies are quite charming until sexual maturity, at which time they often become aggressive and unpredictable to humans, including their owners. Consequently, people should be discouraged from keeping callitrichids as pets. If a veterinarian is consulted about callitrichids by a potential owner before purchase, it may be possible to offer encouragement toward a more suitable pet (e.g., ferret and sugar glider). Copyright 2014 Elsevier Inc. All rights reserved.

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Before making a decision to care for callitrichids in one's practice, it is very important that he or she checks all requirements from regulatory agencies to ensure compliance, especially regarding waste and biohazard management. Ownership of nonhuman primates (NHP) may be illegal in certain states, counties, or cities/towns, with additional regulations implemented at any level of government. To determine regulations regarding NHP ownership, one should contact their state Division of Wildlife or Fish and Game Department (names vary for each state), and for specific restrictions, one should examine local animal ordinances and zoning laws as well as homeowners association ordinances. Moreover, certain species of NHP may be allowed or prohibited (i.e., based on the species, weight, and length of ownership). The United States Department of Agriculture (USDA) requires a license for exhibiting and breeding NHP.¹

Choosing to treat NHP is a decision that requires serious deliberation and a thorough understanding of the legal implications of treating these animals, both for the owners and for hospital personnel. A veterinarian is required to be the doctor of record for any NHP owner who has a USDA permit for his or her animal. This entails writing a veterinary plan, enrichment criteria and activities, means of euthanasia, periodic visitation and examination of animals at the facility, plans for periodic testing, and applicable vaccinations. Being a veterinarian for a USDA facility that houses NHP requires a degree of commitment beyond what is expected for many of the more traditional pets.¹

It has been this author's experience that, as a rule, tamarins have a more stable, less volatile personality

than marmosets have. As adults, tamarins have a tendency to be less aggressive and more predictable than marmosets. Unfortunately, marmosets have very winsome features that many humans find appealing and are capable of a variety of facial expressions. Tamarins have much less facial hair (with some notable exceptions); however, they too can produce many facial expressions.

Keeping callitrichids in the home should be discouraged. They scent-mark just about everything in their environment by rubbing their perineal area on objects inside and outside of the cage, including their stewards, leaving a musky/urine odor. Callitrichids are highly intelligent and inquisitive animals that need environmental enrichment. They should be challenged with activities and new

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objects to investigate, with foraging behavior required as part of their daily activities.

In the wild, callitrichids live in family groups consisting of a dominant female and a dominant male. The dominant female secretes a pheromone that suppresses ovulation in the other females. Female callitrichids have an estrous cycle, and not a menstrual cycle, as occurs in other female primates. This cycle is approximately 15 days in most species. Callitrichids become sexually mature at approximately 16 to 25 months of age; however, copulation and masturbation may occur much earlier. The gestation period is approximately 150 days. Postpartum estrus typically occurs 9 to 10 days after parturition, along with distinct mating and birthing seasons.² Most often, callitrichids have twins, although singletons, triplets, and quadruplet births may occur.

DIFFERENCES BETWEEN MARMOSETS AND TAMARINS

Callitrichids are classified as New World NHP. New World primates are from the Americas, whereas Old World primates are native to Eurasia and Africa. Differences in marmosets and tamarins can be classified using 2 methods. Taxonomists distinguish the differences between marmosets of the genus *Callithrix* and tamarins of the genus *Saguinus* based on their teeth. The incisors of marmosets are enlarged, so that they are the same length as the canines, enabling them to gouge holes effectively in trees, so as to consume the nutritive gums and saps (called exudates). The canine teeth of the genus *Saguinus* are longer than the incisors, which enables these animals to inflict a deeper bite.² Because of the longer length of a tamarin's teeth, some governmental agencies have classified these animals as more dangerous than marmosets.

Although the tamarin's teeth may allow a deeper bite, the temperament of the innocent-faced marmoset is much more likely, in this author's experience, to aggressively attack owners, often biting the nose or ears. Some marmoset bites have resulted in owners requiring emergency medical care, including a tetanus booster and surgery, often necessitating facial plastic surgery.

One of the problems with hand-raised callitrichids is that they often become fearless around humans. These NHP may actively and aggressively defend their territory and their owner against strangers and family members. A tamarin or marmoset may quickly jump to a visitor's shoulder and attack the face or the ears, biting quickly and deeply, holding on for a prolonged

bite. They may bite multiple sites in the same area, whereas other callitrichids may attack the hands, toes, or knees as the preferred sites. Occasionally, an enraged callitrichid may bite the owner in a case of misplaced rage when it sees a person perceived to be a threat. Tamarins may also attack and bite family members and strangers. Marmosets vocalize a very specific sound, a rapid tick-tick-tick sound when angry, just before and during an attack.

Most marmosets are in the genus *Callithrix*. Depending on which taxonomist is consulted, there are 3, 9, or 12 species. Some taxonomists divide marmosets into *Callithrix* (Atlantic) marmosets and *Mico* (Amazonian) marmosets (<http://www.biolib.cz/en/taxonsubtaxa/id602590/>). Some species overlap in certain regions of South America, resulting in intergrades or hybrids (although this term is not usually used with *Callithrix*). A marmoset in the overlapping area may be considered a hybrid, a subspecies, or a separate species, depending on the taxonomist. The common or cotton-eared marmoset is *Callithrix jacchus*. The black-pencil-tuft-eared marmoset is *Callithrix penicillata*. Other marmosets are *Callithrix kuhli*, the kuhli or black-tuft-eared marmoset; Geoffroy's marmoset, *Callithrix geoffroyi*; the pygmy marmoset, *Cebuella pygmaea*; and others, for example, *Callithrix aurita*, *Callithrix flaviceps*, *Callithrix argentata*, *Callithrix humeralifer*, *Callithrix mausei*, and *Callithrix nigriceps* (Figs. 1 and 2).

The Goeldi's monkey (*Callimico goeldi*) is in a separate genus and species. This NHP differs from the *Callithrix* group, as it usually only produces a singleton and also has many anatomical and physiological differences.

Tamarins commonly treated by veterinarians are members of the genus *Saguinus*. As with marmosets, there are subspecies of tamarins that are not usually considered intergrades. The red-handed tamarin (*Saguinus midas*) is threatened in its range in Suriname. It, in this author's opinion, has the best temperament, as far as pet qualities are considered; however, that does not mean that owning this NHP species as a pet should be endorsed. The cotton-top tamarin (*Saguinus oedipus*) is endangered, as defined by Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). With its shock of white hair sticking straight up on the top of its head, it is quite arresting. The mustached tamarin (*Saguinus mystax*) is primarily black with white hair on the upper lip. Other tamarins include the emperor tamarin (*Saguinus imperator*), with spectacular white facial hair resembling a handle-bar mustache; saddle-backed tamarin (*Saguinus fuscicollis*); and the white-lipped or red-bellied

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