

STANDARD OPERATING PROCEDURE

SOP 1.16: INFANT HAND-REARING PROCEDURE

1.16 – hand-rearing
Revised 14Sep2010
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AREA OF APPLICABILITY:

PURPOSE:

The purpose of this SOP is to provide a standard approach for the hand-rearing of old world monkeys (OWMs) which will result in the earliest independence from hands on nutritional support and introduction into the general animal colony in the absence of the biological dam or a lactating surrogate.

PERSONS RESPONSIBLE:

Trained Animal Services staff

FREQUENCY:

As indicated by the demand for infant care

DOCUMENTATION:

Infant Care Record Days 0 to 28 and Infant Care Record Days 29 to 84

MATERIALS:

- Key to nursery
- Bottles with nipples
- Hanging bottles with sipper tubes
- 5% dextrose
- Syringes and needles
- Graduated cylinder
- Infant formula
- Infant incubator
- Standard caging
- Heating pads
- Thermometers
- Standard feed (adult biscuits and fruit)
- Stuffed animals
- Towels
- Infant scale and container to hold infant
- Bottle brushes
- Appropriate personal protective equipment (PPE)
- SOP 2.13 - Sanitization of Animal Housing Areas
- SOP 7.03 – Psychological Well-being: Physical Environment

PROCEDURE:

NOTE: Only trained, authorized personnel are permitted to work in the nursery. Keys to the nursery can be obtained from any area supervisor, the colony manager, or the veterinarians.

Deviations from the following care schedule will only occur at the discretion of a veterinarian.

- 1.0 General nursery practices to be carried out for duration of hand-rearing:
 - 1.1 Infant monkeys should not be handled unnecessarily to minimize the possibility of inappropriate attachments to humans.
 - 1.2 As soon as possible, attempts will be made to reintroduce infant to dam (if appropriate) or to find a suitable foster dam. This will be done at the discretion of veterinary staff and colony management.
 - 1.3 Whenever possible, infants should have visual or auditory contact with other animals. If this is not possible, infants must be provided with stimulation through television and/or radio as per SOP 7.03.
 - 1.4 For socially housed infants, follow the feeding schedule of the youngest infant in the pair/group.
 - 1.5 Use a bottle brush to clean bottles and nipples after each use.
 - 1.6 Launder soiled towels and stuffed animals as needed.
 - 1.7 Document required information on Infant Care Checklist daily and submit to colony records weekly.
- 2.0 Infant housing
 - 2.1 0-28 days old (incubator housing)
 - 2.1.a Place heating pad on floor of incubator and cover the pad with one towel. Set heating pad on medium and allow appropriate amount of time for it to reach temperature. Maintain the heating pad on the medium setting until Day five. Reduce temperature setting to low on day five by following parameters outlined in Section 3.0 below.
 - 2.1.b Place infant into an incubator.
 - 2.1.c Provide infant with a stuffed animal.
 - 2.1.d Provide fresh water in a water bottle daily at the 0700 feeding.
 - 2.1.e Clean incubators at least once daily by replacing the towels and stuffed animal if visibly dirty. Visibly soiled towels and stuffed animals can be changed throughout the day.

- 2.1.f Clean incubator with an appropriate disinfectant every 2 weeks and when an infant is transferred out of the incubator.
- 2.2 29 days old and greater (standard cage housing)
 - 2.2.a Move infant into standard caging on day 29. Cover part of the cage floor with clean, dry toweling. Gradually remove the towels as infant becomes accustomed to the mesh flooring. Provide perches and durable toys.
 - 2.2.b Provide fresh water in a water bottle daily at the 0700 feeding.
 - 2.2.c Spot clean cages, replace towel if present, and provide a clean stuffed animal surrogate at least once daily.
 - 2.2.d Sanitize cage every 2 weeks following SOP 2.13.
- 3.0 Infant feeding, weight, and body temperature monitoring
 - 3.1 Day 0 (Day of birth):
 - 3.1.a Feeding times are: 0700, 0900, 1100, 1300, 1500, 1700, 1900 and 2100 hours. Begin feeding at first time point after an infant has been placed in the incubator.
 - 3.1.b Weigh infant **prior** to first feeding as described in SOP 1.07 and record weight.
 - 3.1.c Hand feed warm 5% dextrose (found in warmer in room [REDACTED] with a syringe with or without nipple. Wrap the infant in a towel and hold while feeding. Infants typically consume less than 1ml per feeding, but offer more if animal drinks all. Record amount consumed during each feeding period.
 - 3.1.d Verify that the incubator heating pad is set on medium and document the infant's rectal temperature at 0700 and 1900 hours. Contact a veterinarian if the infant's rectal temperature is under 97.5°F.
 - 3.2 Day 1 through Day 14:
 - 3.2.a Feeding times are: 0700, 0900, 1130, 1500, and 1900 hours.
 - 3.2.b Weigh infant daily, **prior** to first feeding as described in SOP 1.07 and record weight.
 - 3.2.c Prior to each feeding, remove bottle from cage, transfer contents to graduated cylinder and record amount of formula consumed by the infant

by subtracting the amount of formula remaining in the bottle from the original amount (60ml), less the amount that was hand fed. Record the amount consumed in the 'self fed' column on the Infant Care Checklist for the previous feeding time. EXAMPLE: 60 ml (starting amount of formula) – 10 ml (amount hand-fed, recorded in the Hand-fed column) - 20 ml (amount remaining in bottle, measured in graduated cylinder) = 30 ml (amount self-fed recorded on the Self-fed column).

- 3.2.d Discard remaining formula and clean bottle.
 - 3.2.e Mix formula as directed by the manufacturer. Place 60ml of formula into a clean bottle with a nipple. Place the bottle near the infant's mouth and encourage infant to drink. Once the animal has consumed its fill, record the approximate amount consumed under the 'hand fed' column of the Infant Care Checklist. Place the remainder of the bottle into the bottle holder on the incubator.
 - 3.2.f Note: For approximately the first 3 days in the nursery, wrap the infant in a towel and hold while feeding. After this time, if infant is able to, encourage it to self-feed from a bottle mounted in the incubator. Once the infant is able to reliably feed from the bottle mounted in the incubator, cease holding the infant while it is drinking. When necessary, direct the infant towards the bottle until infant consistently self-feeds.
 - 3.2.g Verify that the incubator heating pad is set on medium and document the infant's rectal temperature at 0700 and 1900 hours on Days 1-4. Contact a veterinarian if the infant's rectal temperature is under 97.5°F. With veterinary approval, reduce the heating pad setting to low on Day 5 and discontinue rectal temperature monitoring.
- 3.3 Day 15 through Day 28:
- 3.3.a Follow steps 3.2a to 3.2e.
 - 3.3.b Begin offering small pieces of wet (formula soaked) and dry biscuits and pieces of fruit cut into 1cm³ pieces twice daily (0900 and 1500 hours).
- 3.4 Day 29 through Day 55:
- 3.4.a Feeding times are: 0700, 0900, 1130, 1500, and 1900 hours.
 - 3.4.b Weigh infant weekly **prior** to first feeding on the first regular working day of the week as described in SOP 1.07 and record the weight.

- 3.4.c Intake will no longer be recorded unless indicated by decline in health status.
 - 3.4.d Mix formula as directed by the manufacturer. Provide approximately 120 ml of formula to each animal split, between two bottles, one with a nipple and one with a sipper tube. Encourage self-feeding by frequently directing the infant to the sipper tube as a source of food.
 - 3.4.e Provide small pieces of dry monkey biscuits ad libitum and fruit cut into 1cm³ pieces twice daily (0900 and 1500 hours).
- 3.5 Day 56 through Day 98:
- 3.5.a At day 56, formula feeding should begin to be eliminated, one formula feeding per week, in the order outlined below. **NOTE:** If the animal is not regularly consuming solid chow, elimination of feedings may need to be postponed. Contact a veterinarian for recommendations on how to proceed. Other major deviations should be approved by a veterinarian.
 - 3.5.a.1 Day 56, eliminate 1500 hours feeding.
 - 3.5.a.2 Day 63, eliminate 0900 hours feeding.
 - 3.5.a.3 Day 70, eliminate 1900 hours feeding.
 - 3.5.a.4 Day 77, eliminate 1130 hours feeding.
 - 3.5.a.5 Day 84, eliminate 0700 hours feeding.
 - 3.5.b Weigh infants weekly prior to first feeding on the first regular working day of the week as described in SOP 1.07 and record the weight.
 - 3.5.c Continue to provide small pieces of dry monkey biscuits ad libitum and fruit cut into 1cm³ pieces twice daily (0900 and 1500 hours). Gradually increase size of pieces until the animal is able to consume whole chow biscuits and normal fruit portions.
- 4.4 After infant has been weaned from formula, a veterinarian will assess the animal's health, and if appropriate, the animal will be relocated to the general colony by day 98. Prior to relocation, daily food intake will be determined and the information provided to colony management.

Approved by: [REDACTED] 17 Feb 2012
Attending Veterinarian (Date Approved)

Approved by: [REDACTED] 17 Feb 2012
Colony Manager (Date Approved)

Approved by: [REDACTED] 17 Feb 2012
Compliance Coordinator (Date Approved)