

NHP Restraint Monitoring

378.1 Policy

Nonhuman primates that are placed in a primate chair or other restraint device (i.e., small test cage) must be monitored throughout the procedure according to the guidelines below. All restraint procedures must have been approved by IACUC. The level of monitoring during restraint is dependent on the type of restraint and/or experimentation as defined below.

378.2 Monitoring Levels

- 378.2.1 Level I** - The animal has been well trained (as per SOP 5.7) to the use of a primate chair and has no invasive procedures being performed during the use of the chair. The total length of experimentation does not exceed 120 minutes. (e.g. animal performing cognitive testing in chair)
- 378.2.2 Level II** – The animal has no invasive experimental procedures being performed but the length of experimentation exceeds 120 minutes or the animal is being trained to the use of a primate chair. The animal will undergo minor experimental manipulations or be exposed to a new procedure. (e.g. receiving a drug at a dose that the animal has received previously without complications, being trained in a new chair or experimental chamber)
- 378.2.3 Level III** – The animal is placed in additional restraint or the animal is involved in testing with higher potential for complications (e.g. the animal is restrained with a headpost, the animal is receiving a novel drug or a drug with high potential for complications)
- 378.2.4 Level IV**- The animal has undergone extensive experimental manipulations that result in impairment or the animal is undergoing an invasive procedure in the chair (e.g. animal has head implant and will have electrophysiological experiments performed, the animal has an impairment from a disease such as a neurologic condition)

378.3 Definitions

378.3.1 Direct monitoring is defined as:

- Person monitoring the animal is physically in the room and has direct visualization of the animal.
- Person is monitoring animal via video camera (live feed) that provides visualization of the animal to the person adequate to evaluate distress.
- Person monitoring the animal has visual access via a window, observation port or mirror that provides visualization that is adequate for evaluating condition.

378.3.2 Indirect monitoring is defined as:

- There is evidence that the animal is performing assigned tasks that can be

constantly monitored. This type of evidence may include: output to a computer being monitored for a task completion (visual or audible), electrophysiological recordings, or monitoring a physiological parameter such as pulse rate.

378.3.3 Environmental monitoring of Test Chambers is defined as:

- A testing chamber is a mini environment used for performing experimental procedures where all sides are enclosed (it has a continuous roof, floor and walls).

378.4 Monitoring Parameters

378.4.1 Monitoring animals in the Level I category:

- Animals must be checked by direct OR indirect monitoring throughout the procedure at a minimum interval of every 20-30 minutes
- If indirect monitoring is employed then the animal must also be checked by direct monitoring no less than once every hour.
- Documentation of monitoring is required every 20-30 minutes.

378.4.2 Monitoring animals in the Level II category

- Animals must be checked by direct or indirect monitoring throughout the procedure at a minimum interval of every 15-20 minutes.
- If indirect monitoring is employed then the animal must also be checked by direct monitoring no less than once every hour.
- Documentation of monitoring is required every 15-20 minutes.

378.4.3 Monitoring animals in the Level III category

- Animals must be checked by direct or indirect monitoring throughout the procedure with no lapse in monitoring to exceed 7 minutes.
- If indirect monitoring is employed then the animal must also be checked by direct monitoring no less than once every 15 minutes.
- Documentation of monitoring is required every 15-20 minutes.

378.4.4 Monitoring animals in the Level IV category

- Animals must be checked by direct or indirect monitoring throughout the procedure with no lapse in monitoring to exceed 7 minutes.
- If indirect monitoring is employed then the animal must also be checked by direct monitoring no less than once every 5-7 minutes.
- Documentation of monitoring is required every 15-20 minutes.

378.4.5 Monitoring animals in Testing Chambers:

- If animals are placed within a test chamber where all sides are enclosed, then the environmental parameters (temperature and humidity) within the chamber must be monitored and documented once prior to beginning the procedure and then every hour until the procedure is complete, as it is now the animal's immediate microenvironment.
- If the testing session is less than one hour, the parameters should be documented

- once prior to beginning the procedure and once when the procedure is complete.
- If multiple chambers within the same room are in use at the same time then documentation may be adequately accomplished by monitoring only one representative chamber.
- Testing chambers under ambient room conditions do not require environmental monitoring when they are not in use.
- Documentation should indicate that the temperature and humidity are within the acceptable ranges listed below.
- The veterinary department must be notified if the chamber values fall outside of the listed ranges. The session must be discontinued; the animal must be removed from the environment and procedures enacted to return the environment to the appropriate range.

378.5 Documentation of observation and/or monitoring.

This will be required every 20-30 minutes for Level I and 15-20 minutes for Levels II, III, IV by the individual performing the monitoring. This documentation can be designed by individual laboratories but must be maintained and available for review upon request. Documentation for indirect monitoring must include an indication that the animal is performing tasks or a physiological indicator that the animal is stable. Documentation for direct monitoring should note that the animal is not exhibiting any signs of distress. If continual monitoring is employed throughout the entire session then documentation may indicate this without requiring notations every 15-20 minutes. Documentation of the chamber environment should indicate that the temperature is within the acceptable range of 64-80 °F and that the humidity is within 30-70%. Documentation must be maintained in the laboratory for a minimum of 3 years.

NOTE: Individuals monitoring animals must have ready access to a radio in order to facilitate communications in the event of an emergency.

378.6 Document Properties

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Animal Level	Indirect or Direct Monitoring	Direct Monitoring Required	Documentation Required
I	Every 20-30 minutes	Every 1 hour	20-30 minutes
II	Every 15-20 minutes	Every 1 hour	15-20 minutes
III	Continual	Every 15 minutes	15-20 minutes
IV	Continual	Every 5-7 minutes	15-20 minutes

	Chair Monitoring			Chamber Monitoring
Animal Level	Indirect or Direct Monitoring	Direct Monitoring Required	Documentation Required	Documentation Required
I	Every 20-30 minutes	Every 1 hour	20-30 minutes	At the beginning then hourly
II	Every 15-20 minutes	Every 1 hour	15-20 minutes	At the beginning then hourly
III	continual	Every 15 minutes	15-20 minutes	At the beginning then hourly
IV	continual	Every 5-7 minutes	15-20 minutes	At the beginning then hourly