

Laboratory Animal Environmental Enrichment

Summary/Purpose: Mandatory environmental enrichment materials / practices.

The *Guide for the Care and Use of Laboratory Animals** states “The primary aim of environmental enrichment (EE) is to enhance animal well-being by providing animals with sensory and motor stimulation, through structures and resources that facilitate the expression of species-typical behaviors and promote psychology well-being through physical exercise, manipulative activities, and cognitive challenges according to species-specific characteristics.”

In order to ensure animal use conforms to the Guide, EE adequacy will be reviewed by the IACUC in three ways: through proposed EE in animal protocol study applications, semiannual facility inspections, and semiannual program reviews. Animal study protocols **must** have scientific justification, approved by the IACUC, to provide anything less than standard enrichment materials or practices. Examples of species-specific EE are in the table below.

- * Guide for the Care and Use of Laboratory Animals (Guide), 8th Edition, National Research Council, 2011.

TABLE OF STANDARD AND SUPPLEMENTAL ENVIRONMENTAL ENRICHMENT

| Species | Standard Housing | Standard Environmental Enrichment | Supplemental Enrichment (as requested/approved by investigator) |
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| Mice | -Solid bottom plastic cage with wire bar lid -Water bottle -Corn cob bedding (1/8 or 1/4 inch) -Commercially available laboratory rodent chow (Teklad) | -Group housed -Nesting material (combination of nestlets & Krinkl Nest) Modaks mouse tube or cardboard tube | -Alternative nesting material (i.e., aspen shavings) |
| Mouse (single housed) – by protocol approval or medical/behavioral necessity (e.g., surgery, aggression) | -Solid bottom plastic cage with wire bar lid -Water bottle -Corn cob bedding (1/8 or 1/4 inch) -Commercially available laboratory rodent chow (Teklad) | -Nesting material (combination of nestlets & Krinkl Nest) Modaks mouse tube or cardboard tube | -Alternative nesting material (i.e., aspen shavings) |
| Rats | -Solid-bottom plastic cage with wire bar lid. -Water bottle -Corn cob bedding (combo – 1/8 and 1/4 inch pellets) -Commercially available laboratory rodent chow (Teklad) | -Pair housed -Cardboard tunnel | -Sanitizable toys (nylabones) - Krinkl Nest (pregnant/nursing females) -Treats as approved by investigator (i.e. sunflower seeds) |
| Rat (single housed) by protocol approval or medical/behavioral necessity (e.g., surgery, aggression) | -Solid-bottom plastic cage with perforated metal lid (OneCage) -Water bottle -Corn cob bedding (combo –1/8 and 1/4 inch pellets) -Commercially available laboratory rodent chow (Teklad) | Cardboard tunnel -Sanitizable toys (nylabones) | -PVC tubes, paper toweling, Krinkl Nest -Feed items, such as sunflower seeds -Nestlets, -Sanitizable toys (e.g., nylabones, cage-washable balls, etc.) (items under evaluation) |
| Rabbits | -Suspended floor caging -Water bottle -Commercially available laboratory rabbit chow (Teklad) | -Single housed -conspecifics visible through cage sides. | Fresh vegetables (e.g., carrots, sweet potato) |

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| | | <ul style="list-style-type: none"> -whenever possible, racks positioned so that other rabbits can be seen across the aisle -Rabbit huts -Sanitizable toys (e.g., diving rings, dumbbells, PVC pipe) -Loose Timothy hay or cubes | |
| <i>Guinea Pigs</i> | <ul style="list-style-type: none"> -Suspended floor caging -Water bottle -Commercially available laboratory Guinea Pig chow (Teklad) | <ul style="list-style-type: none"> -Group housed -Guinea Pig huts | <ul style="list-style-type: none"> -Timothy hay cubes -Seasonal treats such as green pepper slices |
| <i>Amphibians</i> | <ul style="list-style-type: none"> -Sanitizable aquaria or tubs -Pond water (wild caught) -Mineral supplemented Live feed (crickets/mealworms) or -Commercially available amphibian diet | <ul style="list-style-type: none"> Group housed as appropriate. | <ul style="list-style-type: none"> -Shelter structure such as over turned ceramic pots or sanitizable plastic containers - leaf litter - woodland debris (tadpoles) |
| <i>Zebra Finch</i> | <ul style="list-style-type: none"> -Breeding cages with solid bottom trays -Flight aviaries -Corrugated cardboard substrate -Water bottles and water baths -Cuttle bone -Perches -Commercially available Finch Feed (KayTee) | <ul style="list-style-type: none"> -Group housed -Static, natural and swing perches -2x weekly treats (boiled egg, whole grain bread) -Misting | <ul style="list-style-type: none"> -Seasonal greens -Nest boxes -Natural wood perches |

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| <p>Domestic Chick/Turkey Poults</p> | <ul style="list-style-type: none"> -Wire bottom hanging cages - Multi-level chick brooders -Poultry waterers -Poultry feeders -Commercially available chick starter (Purina, Ware Milling, Nutrena) | <p>-Group housed</p> | <ul style="list-style-type: none"> -Seasonal greens (e.g., Kale) -Fruits -Sanitizable toys |
| <p>Wild Turkeys</p> | <ul style="list-style-type: none"> -Outdoor pens with wood shaving or grass /dirt substrate -Perches -Automatic waterers Commercially available poultry feed (Nutrena, Naturewise Gamebird Feed) | <p>-Group housed as appropriate</p> | <p>-Seasonal leafy greens, corn, melon</p> |
| <p>Fish</p> | <ul style="list-style-type: none"> -Sanitizable aquaria -Static or flow through water system -Water conditioned or filtered to remove chlorine -Nutritionally complete fish food appropriate to species (Tetramin, brine shrimp, frozen live caught fish) | <p>-Group housed as appropriate</p> | <p>-PVC pipe or rocks for shelter/protection from dominant fish(wild caught fish)</p> |