

Evergreen Avian & Exotic Animal Hospital

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Mice Faqs

-Cathy A. Johnson-Delaney, DVM

There are three kinds of domestic mice: pets, outbred and inbred. Pet mice are usually of indeterminate pedigrees. They are available in white, black, tan, brown and may not breed true to color. Outbred mice are laboratory raised using a random mating system, there are many registered uniform strains. Inbred mice are mated on a controlled basis for precise mutations or genetic or environmental conditions for research purposes.

Behavior: Mice are timid, social, territorial rodents that require gentle handling. They are escape artists, and active for periods both during the day and during the night. Mouse social system involves a male hierarchy—adult males may fight when initially caged together. Females with litters will defend their nests. Mice may bite or pinch with their teeth if roughly handled or startled. It is best to house males separately to avoid fighting. Mice that have previously been housed alone are more likely to fight when introduced to other mice.

Diet: Commercial rodent pellets with more than 14% protein are recommended (Example: Mazuri Rodent Diet or Oxbow Pet Products Healthy Handfuls). Because mice selectively eat only sunflower seeds, seed-based feed mixes do not provide adequate nutrition (fractures, growth, bone development problems result). Fresh water should be available always. If rearing pups (baby mice), softer pellets need to be provided for less than 3 week old. Babies start gnawing on pellets and drinking water from a low placed sipper tube around 2 weeks of age. They wean at 3 weeks. Handraising is difficult, it can be done by bottle every 4 hours.

Housing: The suggested minimum enclosure size is 12-15" X 12-15" X 6" for each adult mouse. A female with a litter requires 2-3 times that amount of space. Habitats that are appropriate for dwarf hamsters work well for mice. Enclosures may be metal (standard wire-mesh, rodent-type), plastic (shoebox style with mesh or slotted bar top), or converted aquarium with secure, metal mesh lid will also work. It should be large enough to accommodate an exercise wheel, nest area, and feeding area. Bedding can be shredded paper, hardwood shavings, or composite recycled paper pellets. Do not use cedar shavings. Tissue paper, paper towels, tissue, old socks or mittens make excellent nesting material for mice. All bedding should be changed at least twice a week or more often if odor, urine/moisture, or feces builds up. Room temperatures of 65-85 degrees F (avg 72) with humidity at 30-70% are ideal conditions.

Preventive Care: Good husbandry, sanitation and diet. In colonies or breeding households, routinely screen representative colony animals for subclinical infections. In large colonies, filter cages and specially chlorinated water may be needed for disease control. The best preventive care for individual pet mice is a good diet, good husbandry and sanitation.

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Quick Facts:

Physiologic	
Life Span	2 yr (depends on the strain)
Adult male body weight	20-40g
Adult female body weight	25-40g
Rectal body temperature	36.5-38 deg C (98-101 deg F)
Diploid number	40
Food consumption	15 g/100g/day
Water consumption	15ml/100g/day
Respiratory rate	60-220/min
GI Transit time	8-14 hours
Heart Rate	325-780 beats per min
Blood volume	7.6-8.0 ml/100g
Puberty (female)	28-40 days
Breeding onset (male)	50 days
Breeding onset (female)	50-60 days
Estrous (heat cycle)	4-5 days
Gestation period	19-21 days (add 3-5 days if postpartum estrus was used)
Postpartum estrus	fertile
Litter size	10-12
Birth weight	0.5-2.0 g
Weaning age	21-28 days
Breeding duration (commercial)	8 months
Milk composition	2.1% fat, 9.0% protein, 3.2% lactose

Breeding and Raising Young:

Mice are continuous, polyestrous rodents with only minor seasonal fluctuations. If the mouse is too young, or is over 10 weeks of age at first breeding, she may have reduced fertility. The first litter is usually smaller than subsequent litters. Estrus usually occurs in the evening and may last 12 hours. The female has a postpartum estrus (14-28 hours after giving birth), but none during lactation. Lactation may delay the implantation 3-5 days. Females who are not in heat can be synchronized by introducing a male. Usually all are ready for mating within 72 hours. There are two types of efficient breeding programs:

Polygamous: 1 male, 2-6 females housed continually together. Females are removed to separate cages prior to parturition. Postpartum estrus then is not utilized. Young are removed at weaning. Record keeping may be difficult; usually lower total litter numbers. The advantage is larger young and more weaned per litter.

Monogamous: 1 male to 1 female kept together continuously. The young are removed prior to the next birthing. This system utilizes the postpartum estrus, produces the maximum number of litters and makes record keeping easier. It does require more males, cages, labor.

A post-breeding plug in the vulva may be seen within 24 hours of mating. Weight gain and mammary development are noticeable at 14 days gestation. The female may go through a pseudopregnancy of 1-3 weeks duration if the mating was sterile. The mouse prepares a brood nest late in gestation. Several mouse families may occupy the nest and the young may suckle several dams. Do not disturb females with babies for at least 2 days after birth. The mammary anatomy: 3 pairs thoracic, 2 pairs of inguinal mammary glands are present.