

Guinea pigs

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Varietal range difference

The most common varieties are:

- English and American - smooth, short hair (30-40 mm in length), which lies close to the body
- Abyssinian - short hair which forms whorls and rough, curly rosettes over the body
- Long-haired - Angora (smooth) and Peruvian (rough). These have hair that can grow to over 120 mm in length.

Physical characteristics

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| Size | mature animals have a stout build and are about 150mm in length |
| Weight | male: 900g - 1200g; female: 700g - 900g |
| Age at adult size | male: 10 weeks; female: 6-8 weeks |
| Average life span | 4-6 years |
| Weight at birth | 70g - 80g |
| Gestation period | 59 - 72 days (average 65 days) |
| Number of offspring | usually 2-5 |
| Litter frequency | 3-5 per year |
| Description at birth | completely covered with fur, eyes open, full set of teeth and fully mobile within 1 hour of birth |
| Desirable weaning age | 21 days (180g); females may come into oestrus at less than 4 weeks of age so weaning/separation of females from males should occur before this |
| Breeding age | males 650g (3-4 months); females 400g (3-4 months) - sows not bred before 6 months of age may experience dystocia (difficult labour) |
| Feet | 3 digits on hind limb; 4 digits on forelimb |
| Tail | none but has barely visible tail bone |

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| Body temperature | 37.2°C - 39.5°C |
| Heart rate | 230-380 beats/minute |
| Respiration rate | 42-104 breaths/minute |

General biology and normal behaviour

The guinea pig is a docile, stocky, tailless rodent originating from South America. Male guinea pigs are called boars and females sows. Unlike many other rodents, they do not stand on their hind legs, usually keeping all four feet on the ground. In the wild they do not burrow but live in the dugouts of other animals.

Guinea pigs are social animals. In the wild, they live in small family groups of 5-10 individuals in the burrows of other animals. Companionship is essential but adult guinea pigs introduced to each other may fight. Guinea pigs establish male-dominated hierarchies and subordinate animals may be chewed or barbered.

If males and females are housed together, a ratio of one mature male to 3-6 females works well. Young litter mates of the same sex are often good companions, with the proviso that, as the males mature, they cannot smell or see females. Males sensing females close by are likely to fight.

Guinea pigs are vocal animals: they purr, whistle, squeak and teeth chatter as a means of communicating with each other. They may also become vocal when stressed or in anticipation of food. Females with young make a soft clucking noise, while the young chatter.

To attract a male, a female on heat makes low, quiet bleats.

Guinea pigs are not ideal animals for observation, as they choose to spend a great deal of their lives hiding. However, they do respond to frequent, gentle handling. They rarely bite or scratch, but are very messy and have a tendency to scatter feed and bedding. As they mature, they like set handling patterns and may become agitated if feed or water containers are changed. They are extremely sensitive to being moved and as a result may freeze for 30 minutes or more.

Environment

In the wild, guinea pigs live in a wide range of environments, from rocky or mountainous regions to grasslands and swamps. They prefer subdued lighting and generally feed at dusk, sheltering in burrows during the day. Young guinea pigs adapt well to change but as they become older they become less adaptable.

Guinea pigs may be housed indoors or outdoors (in shaded situations with access to fresh grazing).

Outdoor hutting systems should provide a mixture of grazing area and solid floors.

However, whether they are housed indoors or outdoors, guinea pigs can become agitated if their cages are unclean or they are moved frequently.

Indoor cages should not be placed near windows, especially during winter or midsummer; in direct sunlight; in draughts from ventilators, windows or doors; in places exposed to fumes of any kind; over or near heaters; or where access is difficult.

Outdoor cages should be kept out of direct sunlight and strong winds and moved indoors or onto a veranda in cold weather. They should also be weatherproof and capable of protecting the animals against predators.

A variety of cages is available. They should be draught free, easily cleaned and dry. Hutches should consist of two connected compartments with an exercise area and a dark sleeping area. Guinea pigs need the last as a place of refuge to deal with stress.

Guinea pigs that have not been raised in wire-based cages may fracture their legs due to inexperience if they are transferred to raised wire-based cages. If wire-based cages are used, a section of solid flooring should be provided.

Open cages are only suitable for guinea pigs housed indoors and must have sides of at least 400mm in height. Outdoor cages must be completely enclosed to ensure that the animals are protected against predators.

A suitable cage for two guinea pigs is 1500mm in length and 800mm wide and high.

Up to about three weeks of age, guinea pigs are very active, playing with litter mates or alone. Adult guinea pigs, however, are relatively inactive animals; they do not climb or jump, but they require environmental enrichment in the form of hay or straw bedding to chew and burrow in, plastic tunnels or low ramps. Daily exercise in a safe, grassy area, protected from predators, is desirable.

Guinea pigs may stampede if scared or suddenly disturbed and may smother young or smaller animals. Good husbandry techniques must be applied to prevent this happening. Placing obstacles in the cage may decrease the incidence of stampeding and circling.

Guinea pigs prefer an environment in the range 18°C-22°C. Temperatures above 30°C and below 17°C are not well tolerated, particularly by young animals. Animals provided with suitable bedding and living in groups may be able to stand cooler temperatures.

Guinea pigs prefer subdued lighting and need well-ventilated but draught-free environments.

Bedding should be in the form of softwood shavings, coarse sawdust or shredded paper, with hay (or straw without grass seeds) being added for nesting. Sufficient bedding should be provided to enable animals to burrow/tunnel under it. New litters should not be disturbed for at least one week after the birth.

Cages and feed containers should be cleaned daily, with soiled bedding material being removed and replaced with clean bedding. All bedding should be changed weekly and the cage scrubbed vigorously with detergent and hot water or a mild disinfectant and then thoroughly rinsed. A mild acidic formula may be required to remove urine scale. Guinea pigs are notoriously messy and require frequent cage cleaning to avoid stress.

Food and water

Guinea pigs are herbivores and must have vitamin C in their diet to maintain good health. Guinea pigs, like primates, lack the enzyme L-gulonolactone oxidase, which is required to produce vitamin C.

Animals should be fed twice daily. Guinea pigs do well on a balanced diet of commercial pellets, supplemented with fresh produce and hay. Guinea pigs have a daily food requirement of approximately 6g of food per 100g of body mass but this varies depending on the animal's physiological state and the type and quality of the diet. Demand feeding often provides the best alternative, provided that the animals' weights are monitored to prevent excessive gain.

Freshly-milled guinea pig pellets (less than 90 days old) are required to ensure vitamin C levels are maintained. Fresh fruit and vegetables, such as cabbage, kale, green feed, carrots and pumpkin can supply vitamin C in the diet or, if vitamin C levels are not supplied in the feed, it can be provided in the drinking water.

Guinea pigs have a high dietary fibre requirement and good-quality lucerne hay can be fed for the purpose.

As guinea pigs' teeth grow continuously throughout their lives, the provision of gnawing blocks and raw fruit and vegetables can assist in the maintenance of teeth and the avoidance of teeth problems.

Guinea pigs need 10mL -15mL of water per 100g of body weight but this may vary depending on their physiological state and environment. Inverted glass or plastic water bottles with metal sipper tubes are recommended. Guinea pigs will chew and occasionally spit food up and block the tubes, so these should be checked at least twice daily and the animals provided with two or three drinking bottles.

Food and water containers should be suspended away from bedding, as guinea pigs tend to defecate and urinate in open containers.

Note that guinea pigs are very fussy eaters and may refuse to eat or drink if feed or feeders are changed.

Handling

Guinea pigs need to be handled calmly and with care to prevent distress and injury to them and their handlers. Regular, gentle handling and the provision of treats at the time of handling helps to reduce the animals' fear of being held. Long-haired guinea pigs require daily grooming to ensure that their coats do not become matted and soiled.

Guinea pigs sometimes freeze when being transported and provision should be made for somewhere for them to hide. They will recover well if left undisturbed for approximately one hour. Unlike mice and rats, they usually do not chew through transport containers.

Ensure good ventilation, no overcrowding and a small amount of hay to help protect animals placed in transport boxes.

All teachers and students must maintain a high level of hygiene before and after handling animals, washing their hands with warm soapy water and obtaining appropriate first-aid or medical treatment for bites. The gentle nature of guinea pigs makes them one of the easiest laboratory animals to handle. They rarely bite but they can, and will, if handled incorrectly.

They should be lifted by grasping them under the trunk gently but firmly with one hand, while supporting the rear quarters with the other hand. Great care should be taken when handling pregnant females.

Guinea pigs are extremely sensitive to over-handling. Only one student should handle an animal in any one session.

Guinea pigs differ from one another in temperament only those that do not show distress when handled should be used. Sudden noises or movements should not be permitted near the animals.

Correct method for holding a guinea pig



Disease prevention

Disease control methods and external parasite control programs should be developed in consultation with veterinarians. All activities must be documented in the appropriate records.

Signs of illness

The first sign noticed is often a change in the animal's natural demeanour: it may be listless or lethargic. Closer examination may show variations in:

- body temperature;
- gastrointestinal functions, such as diarrhoea, weight loss or loss of appetite;
- urogenital functions, e.g. abortion, infertility or abnormal discharges or changes in frequency or volume of urine; and
- respiratory functions, e.g. persistent coughing, gasping or panting;

or evidence of:

- skin conditions, such as lesions or abnormal growths;
- tucked-up appearance, stiff gait or abnormal posture, patchy coat or loss of hair;
- excessive scratching or rubbing;
- swollen joints or limping; and
- dribbling.

Animals with any of these symptoms should be isolated from other animals immediately and their cages disinfected fully.

A failure to thrive or grow is another sign of illness.

If an animal shows signs of ill-health or distress, immediate veterinary advice should be sought.

Illnesses, injuries and treatment given must be documented in the appropriate records including the SAEC's [Form C1](#).

Euthanasia

In the case of a guinea pig becoming so sick, diseased or injured that recovery is unlikely or undesirable on humane grounds, euthanasia must be arranged with a veterinarian or a person competent in the technique for guinea pigs.

A record of deaths is required for the annual report, [Form D](#), to SAEC and all deaths resulting from unexpected or adverse events must be reported immediately to the SAEC using [Form C1](#) and [Form C2](#).

Fate planning

A fate plan should be considered before using a guinea pig in any program. Guinea pigs that are no longer required must be re-homed.