

# CARE OF GUINEA PIGS



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Guinea Pigs (*Cavia porcellus*), also known as cavies, are friendly rodents from South America that were domesticated between 500 and 1000 A.D. They were raised by the Incas and used as food and in religious ceremonies. During the 16<sup>th</sup> century they were brought to Europe and bred selectively by fanciers. They have been raised as pets and laboratory animals ever since. Today guinea pigs are popular pets due to their easy handling, docile and responsive behavior, and quite nature.

Through selective breeding, many colors and coat types are found in guinea pigs. Although the American Cavy Breeders Association currently recognizes at least 13 breeds, the 3 standard breeds of guinea pigs are most often seen in the pet trade. The American (English) has short, smooth hair, the Abyssinian has short, coarse hair that grows in whorls and rosettes, and the Peruvian guinea pig has long, silky hair.

## BEHAVIOR

Guinea pigs are typically easy going, hardy animals, but there are some behavioral peculiarities that owners and potential owners should understand. One important thing to remember is that cavies are resistant to environmental and dietary change. Proper diet should be established early in life and changes in the routine could lead to depression and refusal of all food. A sudden change in environment, or even in the way food is presented, may also lead to the same outcome.

They are social animals and prefer each other's company when housed together. However, pairs or groups should always be watched for signs of aggression, such as hair pulling and ear nibbling. If housed alone they will require plenty of play time with their human companions.

When frightened, guinea pigs will often freeze and become completely immobile, or they will make an explosive attempt to escape the danger. This is slightly different from the typical "flight or fight" response in many other animals.

Guinea pigs practice coprophagia, which means they eat their feces. This is a normal and important process for the guinea pig because of how their digestive system works. Cavies obtain valuable nutrients that can only be absorbed by passing food through the digestive system twice.

## **PROPER DIET for GUINEA PIGS**



Cavies are completely herbivorous, meaning they eat only plant material. This is easily provided through commercial guinea pig diets. The main part of the diet should consist of a good quality pellet diet and 1 tablespoon per adult per day can be fed by free choice. Guinea pigs under 4 months can be given unlimited pellets. They require 18% to 20% crude protein in the diet and at least 10% crude fiber. Grass hay, such as Timothy hay, should also be offered at all times. Hay provides the necessary fiber for digestion. Legume hays, such as alfalfa, should be avoided since these are high in calories and can lead to obesity.

**Do not feed rabbit pellets as a substitute for guinea pig pellets.** They are not equally nutritious. Unlike rabbits and most mammals, guinea pigs require high levels of folic acid and vitamin C. Guinea pig pellets are formulated with this in mind, while rabbit pellets are not.

Fresh vegetables and fruits are another important part of the cavy diet and provide vital vitamin C. Unlike most mammals, guinea pigs' bodies do not produce vitamin C and need to acquire it from their diet. Good quality pellets are usually supplemented with vitamin C, but after 90 days of storage at least half of the vitamin breaks down. This is why it is important to offer fresh foods high in vitamin C to your cavy. Vitamins can also be added to the drinking water by adding 50 milligrams of ascorbic acid (human vitamin C syrup) to 1 cup of drinking water, made fresh every 12 hours. Veggies should be washed before being served in order to remove any pesticide residues and should be removed from the cage after a few hours if uneaten. Fruits can also be given, but these should be regarded as treats and should not be the main diet.

### **Recommended Greens and Vegetables:**

Kale	Cabbage	Cabbage
Parsley	Cauliflower	Baby greens
Collard Greens	Brussels sprouts	Celery (especially leaves)
Broccoli heads and leaves	Dandelion greens	Romaine lettuce
Beet greens	Mustard greens	
Spinach	Turnip greens	

### **Recommended Treat Foods (Fed in moderation):**

Strawberries	Rutabaga	Peach
Raspberries	Kohlrabi	Cherries
Orange	Green peppers	Oats
Honeydew melon	Apple	Cereals

Food should be provided in heavy ceramic crocks that the guinea pig can not tip over or chew. Food bowls should be cleaned with soap and water on a regular basis and any time it is dirty. Guinea pigs are known to defecate in their food bowls, so the bowl may need to be cleaned often. Water can be provided in bottles with sipper tubes. Guinea pigs will often spit food particles back into the water bottle, so the tube and bottle may need to be washed with soap and water often. The bottle should be refilled with fresh water daily, even if the bottle is not empty.

## **HANDLING GUINEA PIGS**

In general, guinea pigs are docile and non-aggressive animals that rarely bite or scratch when handled. They may voice their protest with a high pitched squeal and may struggle when being restrained. Cavies should always be handled with two hands and care should be taken not to injure them. **Children should always be supervised while handling or playing the guinea pig to avoid injury to the pet or the children.** When picking up a guinea pig one hand should be firmly under the chest and abdomen while the other supports the hindquarters. If the guinea pig squirms and struggles she should be handled close to the ground to prevent dangerous falls and jumps.

Since they are prey animals, a guinea pig should never be grabbed from above the way a predator would. This could cause them to either freeze up in fear or try to escape from the handler. If the guinea pig is shy or nervous approaching him in this manner can make him fear people.

## **HOUSING and ENVIRONMENT**

Guinea pigs need to be housed in an enclosure that is easy to clean and resistant to gnawing. They prefer quiet places free from noise and excitement, and need to be protected from other household pets, like cats and dogs. Household noise, such as loud televisions, radios, musical instruments, and vocal pets should be avoided in the area of the house the guinea pig is kept. High traffic areas should also be avoided as housing locations for the guinea pig. Constant exposure to other pets, especially predator species like dogs and cats, should be avoided as well. These are all examples of stress, which guinea pigs are very susceptible to, and can ultimately lead to disease and poor health.

Solid floors are best for preventing injury to the feet if they slip through. Broken legs are common in cavies that fall through the wire mesh and try to escape. Long term housing on wire mesh can also lead to foot pad and hock infections. The walls of the enclosure should be at least 10 inches tall to prevent escapes. Since guinea pigs are not great jumpers a lid may not be needed, unless there are other pets or young children in the house. Each adult should have at least 100 square inches of space, but when it comes to housing the rule of thumb is “the bigger, the better”. Guinea pigs are social and prefer to be kept in pairs but can be kept singly or in small groups if necessary, however, new males may fight in the presence of a female.

The ideal temperature range for the guinea pig is between 65°F and 79°F. They are very susceptible to hyperthermia and should never be exposed to high temperatures and humidity. They should also be protected from damp, cold environments, and should not be placed in direct sunlight.

There are many types of bedding materials available to use with guinea pigs. Aspen shavings and wood pulp or paper based beddings (such as Carefresh), are the safest. Be sure any bedding used is free of mold, mildew, or other contaminants before placing in the cage. **Do not use cedar, pine, or chlorophyll impregnated shavings** since they have been associated with respiratory and liver disease. The bedding may need to be replaced and the cage cleaned frequently since guinea pigs are messy creatures and produce a large amount of feces. Caging materials should be washed at least weekly with soap and warm water.

Guinea pigs greatly appreciate a shelter in their cage for them to hide in. Many pet stores provide these, which can come in plastic, metal, or wood. A cardboard box with a door hole cut into it also makes a

good cavy hiding place. Some guinea pigs also like large PVC tubes large enough for them to run through or hide in, and some even enjoy wooden chew toys in their cage.

## **BREEDING GUINEA PIGS**

Careful consideration should be taken before deciding to breed a guinea pig. Breeding and selling guinea pigs is not a good way to make money and can put unnecessary stress on the animals involved. Those who are seriously considering breeding cavies should thoroughly research the topic before attempting it.

**Breeding females should only be bred between four and seven months of age.** Waiting any longer than this can lead to serious, often fatal, problems associated with the pregnancy. When the female (sow) reaches seven months old her pelvis fuses, making the birth canal smaller and passing babies much more difficult. Males (boars) should be at least four months old before breeding.

The sow's estrus cycle ("heat" cycle) lasts 14 to 19 days, but she is only receptive to the male for about 8 to 15 hours during this cycle. Sows will often return to "heat" within a few hours after giving birth, a condition known as "postpartum estrus". This allows her to nurse one litter while she is pregnant with another.

Pregnancy lasts between 60 and 70 days, which is relatively long compared to other rodent species. The gestation period (pregnancy) is shorter with larger litters and longer with smaller litters. The sow's abdomen will look enlarged during the later stages of pregnancy and her weight may actually double.

The actual delivery can be difficult to predict, since the gestation period is so long and the female typically does not build a nest. About a week before delivery the female's pelvis widens slightly. If this doesn't happen delivery of the young may be impossible without a cesarean section. A veterinarian should be consulted immediately if there are any concerns about the pregnancy.

If there are no complications delivery will take about a half hour, with an average of five minutes between each baby. Guinea pigs usually have between 2 and 4 babies, but can have anywhere between 1 and 13, although such a high number is rare. A cavy's first litter is usually very small, and unfortunately, abortions and stillbirths are not uncommon.

The young are very well developed at birth and weigh between 50 and 100 grams. Unlike other rodent species, they are born with a full hair coat, teeth, and open eyes. Mothers do not build nests for the babies and will nurse them from a sitting position. Young are actually able to eat solid food and drink water from a bowl shortly after birth, but should nurse from their mother for three weeks before weaning.

## **GUINEA PIGS QUICK FACTS**

Life Span: 4-6 years

Body Temperature: 98.6°F – 103.1°F

Pulse Rate: 230 – 320 BPM

Environmental Temperature: 65°F - 75°F

Humidity Range: 40% - 70%

Age of Sexual Maturity: 3 – 4 months

Breeding Age: 3 – 4 months (male)

3 – 7 months (female)

(Not after 7 months for female)

Gestation Period: 60 – 70 days

Average Litter Size: 2 – 4

Weaning Age: 14 – 21 days

## **MEDICAL PROBLEMS of GUINEA PIGS**

### **Dental Malocclusion (Slobbers)**



Dental malocclusion means the teeth (molars, premolars, or incisors) do not align properly when the guinea pig chews and the teeth become overgrown. The overgrown teeth can injure the tongue and cheeks and make it difficult or painful to chew and swallow food.

Slobbers in the condition where the fur under the jaw and down the neck remains wet from constant drooling of saliva. It is often a sign of dental malocclusion and should be investigated by a veterinarian immediately.

The veterinarian will examine the guinea pig's mouth and may need to trim the teeth down. Because of the small size of the mouth, and the stress the procedure places on the guinea pig, general anesthesia may be necessary. If there is damage to the inside of the mouth, or the cavy has stopped eating, antibiotics or assist-feedings may be needed to aid recovery.

There is no permanent solution to this problem. Periodic trimming or filling of the teeth is usually necessary. Malocclusion is known to be genetic, so the condition should be prevented in future generations by not breeding guinea pigs with the problem. Diet may also play a role. An excess of selenium in the diet may increase the chances of a guinea pig, so a veterinarian should be consulted if the guinea pig's diet may need to be changed.

### **Vitamin C Deficiency (Scurvy)**

Since guinea pigs can not make their own vitamin C, they must obtain it from the foods they eat. If their diet does not give them enough vitamin C, then scurvy can result. Signs include poor appetite, diarrhea, lameness, rough hair coat, teeth grinding, swollen and painful joints and ribs, reluctance to move, poor bone and teeth development, and spontaneous bleeding in the gums. Vitamin C deficiency is especially dangerous to young and pregnant animals, and if left untreated, the guinea pig could die.

Proper diet is the key to preventing this condition. Guinea pig pellets lose much of their vitamin C content after 90 days of storage and should be replaced at that point. Plenty of fresh foods should be provided along with the pellets to ensure sufficient vitamin C in the diet. When a guinea pig has scurvy he will typically be treated with supplemental vitamin C. Depending on the severity of the condition other therapy may be needed as well, but the sooner the problem is addressed the less damage the deficiency is likely to cause the guinea pig.

### **Heat Stress (Stroke)**

Guinea pigs are very susceptible to heat stroke, especially overweight and heavily furred cavies. Environmental temperatures above 85°F, humidity above 70%, inadequate shade or ventilation, overcrowding, and other stresses all contribute to heat stroke.

Signs of heat stroke include panting, slobbering, weakness, reluctance to move, and convulsions. Heat stroke can lead to death if the problem is not corrected early enough. Heat stressed guinea pigs should

be misted with cool water, bathed in cool water, or have rubbing alcohol applied to their foot pads. Once this initial first aid measure has been taken a veterinarian should be contacted.

Prevention is the key to avoiding this condition. Guinea pigs should be given proper housing with shade and ventilation. In the summer months it is best to use air conditioning to provide optimal temperatures, but in the absence of air conditioning, a fan operating over a container of ice directed towards the enclosure, or a cool misting of water can help.

### **Alopecia (Hair Loss)**

Hair loss is a common problem with guinea pigs and has many causes, which is why it should be investigated by a veterinarian as soon as possible. One reason a cavy might lose his hair is barbering, or hair chewing. This typically occurs in groups of guinea pigs where one individual is dominant over all the others. The dominant cavy will chew the hair of other guinea pigs that are lower in the social hierarchy (“pecking order”) of the group. The dominant individual will show no signs of hair loss. The only way to treat this problem is to separate the guinea pigs from each other if it develops into a serious problem. Some guinea pigs will chew their own hair, which may indicate boredom. Providing hay and chew toys may help discourage this.

Another cause of alopecia can be ringworm. Ringworm is not actually a worm, but a fungus, and is more common in young animals because their immune systems are less developed than in adults. Guinea pigs can be asymptomatic carriers (they can have the disease and not show signs) and signs will only appear after the animal is stressed or overcrowded. Ringworm can be easily transmitted through direct contact with an infected animal or through contact with infected caging, bedding, or other materials the guinea pig has been using. It is diagnosed by plucking some hairs close to the area of hair loss and placing them on a medium. If ringworm is present it will grow on the medium over the course of a few weeks. Ringworm is a zoonotic disease, meaning it can be transmitted to people.

### **Pneumonia**

Bacterial pneumonia is one of the most common diseases in guinea pigs, especially in humid or damp environments. Respiratory infections are caused by several bacteria and virus species and can be obtained from other household pets, such as rabbits and dogs. Many of the disease causing organisms normally live in small numbers in the respiratory tracts of healthy guinea pigs, but grow in number and become infectious when the guinea pig is exposed to stress, inadequate diet, or improper care or housing.

Symptoms of pneumonia include dyspnea (trouble breathing), discharge from the nose or eyes, lethargy (lack of energy), and lack of appetite. In some cases sudden death can occur without any signs at all. Occasionally middle or inner ear infections accompany respiratory infections, so incoordination (irregular movements), twisting of the neck, circling to one side, and rolling may also be seen. Diagnoses of the infection may be done by culturing any discharge from the nose, throat, or mouth in order to grow and identify the culprit bacteria. Radiographs (x-rays) may also be needed to look for congestion in the lungs. Treatment for the disease is antibiotic therapy and supportive care, but the disease can be prevented or controlled through proper husbandry, avoidance of stress, and separation from dogs, rabbits, and infected guinea pigs.

### **Bacterial Enteritis (Intestinal Infection)**

Several bacteria can be responsible for infections of the gastrointestinal tract in guinea pigs. They can be transmitted to guinea pigs through contaminated greens or vegetables, or in contaminated water. Intestinal infections are seen mostly in stressed animals, young or old animals, pregnant sows, and guinea pigs with nutritional deficiencies, but all guinea pigs can get the disease. Symptoms include scruffy hair coat, weight loss, weakness or lethargy. Diarrhea may or may not be seen.

The veterinarian may have the stool evaluated for specific bacterial species so the proper antibiotic can be chosen. Antibiotic therapy and supportive care is the typical treatment.

### **Bacterial Pododermatitis (Footpad Infection)**

Footpad infections are common in guinea pigs, especially those housed in cages with wire or mesh floors. Fecal matter that has not been cleaned off the wire also contributes to this problem. Signs of pododermatitis include swelling of the feet, lameness, and the reluctance to move. Foot pad infections are painful and the guinea pig may vocalize this discomfort. The infection can move deeper into the tissues if left untreated and cause problems with the muscles and bones. Arthritis can also be a result. Treatment is often topical antibiotics and periodic dressing of the feet. Every few days the bandage may need to be changed until the feet are healed. Healing time can be lengthy. Pododermatitis can be prevented by providing proper housing and by keeping the environment clean and dry.

### **External Parasites (Mites and Lice)**

Guinea pigs are susceptible to external parasites, most commonly lice and mites. Lice are tiny, wingless, flattened insects that live within the hair coats of the animals they infect. Mites are bug-like microscopic organisms that infect the top layers of skin in infected animals. Some mites are zoonotic, meaning they can infect people, however other mites and most lice do not.

Mite infections are typically more severe than lice and can cause intense itching and scratching, hair loss, and crusting skin. Some guinea pigs only show signs of hair loss and skin crusts. If the infection is bad enough it can cause the guinea pig to injure himself. Wounds, scratches, or wild running or circling behavior might be seen. Mites are transmitted through direct contact with infected guinea pigs, and are most common when new guinea pigs are introduced into an existing group. New pets should be kept separately until they are checked for disease and infection.

Mites are confirmed by a veterinarian with a test called a skin scrape. Skin cells and hairs are looked at under the microscope and are evaluated for adult mites and eggs. Treatment consists of a series of injections of a specific anti-parasitic medication at roughly 2 week intervals. The veterinarian will decide how many injections in the series are needed to fight the infection.

Lice infections often go unnoticed unless they are heavy infestations that come with itching, scratching and hair loss. Guinea pigs can get two different types of biting lice that abrade the skin and then feed off the body fluids that come out of the wounds they have just made.

A veterinarian can diagnose an infection of lice by looking at the hair coat and examining hairs under the microscope for adult lice or eggs. Treatment comes in the form of an insecticidal shampoo prescribed by the veterinarian. Lice are transmitted the same way mites are, through direct contact, so the same precautions should be taken to avoid lice.

## **SENSITIVITY TO ANTIBIOTICS in GUINEA PIGS**



Guinea pigs are very sensitive to certain classes of antibiotics. For this reason **guinea pigs should never be treated at home without prior consultation with a veterinarian.** Many oral and injectable antibiotics that are safe in other animals have been found to be deadly in guinea pigs. Some topical antibiotics have also been found to have negative effects.

The following is a partial list of dangerous antibiotics. Even if a medication is not on the list it is not necessarily safe to use. Any antibiotic that is used incorrectly can be lethal.

### **Harmful Antibiotics**

Ampicillin

Penicillin

Bacitracin

Gentamicin

Erythromycin

Lincomycin

Clindamycin

Streptomycin

Vancomycin

Tetracycline

The main reason some antibiotics are so toxic to guinea pigs is due to type of normal microbes in the gastrointestinal tract. All animals have certain types of helpful bacteria living inside them that aid digestion. In guinea pigs, the bacteria they have are completely destroyed by certain antibiotics. When this happens it disrupts the balance of good and bad bacteria, produces harmful chemicals in the body, disrupts digestion, and can lead to death. Diarrhea is commonly seen. Some antibiotics can be toxic without disturbing the digestive system and can be lethal.

Some antibiotics are considered safe for guinea pigs, which an experienced guinea pig veterinarian can prescribe in case of illness. During antibiotic therapy, probiotics or other supportive therapy may be recommended by the veterinarian to prevent digestive problems.



**The important thing to remember is that it is never a good idea to medicate a guinea pig without consulting a veterinarian first.**