



Welcome to PAH2!

While the new and improved version of this book is in the works, check out our Hedgehog Precision website or social media accounts for updates and additional care and supply sources.

My husband and I moved to Omaha, NE in 2019 to pursue developing high quality, insect-based diets for hedgehogs. We have a full line of hedgehog-appropriate foods and supplies available, which we've carefully developed after more than 15 years of caring for hedgehogs. Hedgehog Precision sales help support me while I work on the new book. We truly appreciate your support!

Kimberly Halzen (previously Goertzen)





Pet African Hedgehogs

A Complete Guide to Care

Kimberly Goertzen

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A PDF version of this entire book is available for free download at the website listed below, as well as information on donating to the author if you find the free resource helpful.

Book Website:

www.westcoasthedgehogs.com/files/hedgehogbook/index.html

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Introduction



Preface

Hedgehogs have been growing in popularity as pets every year. With so many ideas out there about proper care, it can be hard to know what to believe is the best for your pet. Remember that there is a lot of controversy over what works and what doesn't for many aspects of hedgehog care. Always use your best judgment when making decisions regarding your pet, and never be afraid to ask questions! Doing your research is the key to becoming a great owner. The hedgehog community has experts and beginning owners alike that can help you with whatever questions you may have.

This book is set up to explain in simple terms the care requirements of hedgehogs and what options owners have for each instance. I've done my best to give pros and cons to each choice and let you decide what works best in your situation. Remember that everything you do should be what is best for your hedgie, and not just what is easiest for you. It can be easy to take shortcuts or skip on expensive things, but remember that you've taken a responsibility by owning a pet. Doing the right thing is always better for everyone in the long run!

This is the second edition of *Pet African Hedgehogs*, the first completed in November 2009. I hope to release updated versions every few years as we learn even more about hedgehogs. I hope this book will help you get a better understanding of your current or future hedgie and his or her needs.

-Kimberly & Inky

Hedgehog Fast Facts

Let's start with the biggest misconception: hedgehogs are not porcupines, nor are they related. Though the two are often confused, there are very little similarities between them. Porcupines are rodents, and have long, detachable, barbed quills. Hedgehog quills are not made for "dropping" when afraid, and they don't have a formidable tail they can swipe at their predator. A hedgie's main defense is rolling into a prickly ball and hissing until the danger is passed.

Pet African hedgehogs are not "pygmy" as they are often incorrectly called. The term "pygmy" implies that they are miniature, which they are not. Our pets are



Porcupines look nothing like hedgehogs!

exactly the size they are supposed to be and have always been. The name African Pygmy Hedgehog was coined because of the size comparison between our pets and their wild European cousins. Sixteen species

of hedgehogs can be found wild in Africa, Europe, and Asia. There are no hedgies native to North America, South America, Antarctica or Australia.

Pet Hedgehog Taxonomy

Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Erinaceomorpha
Family: Erinaceidae
Genus: *Atelerix*
Species: *A. albiventris*

Hedgies were classified as insectivores before the order *Insectivora* was split in two, putting hedgehogs in the new *Erinaceomorpha* order. Naturally, the majority of their diet consists of a variety of bugs. For millions of years, they also scavenged on carrion, other small mammals and birds (mainly unprotected young), eggs, and small amounts of vegetation. In captivity most hedgies are given a diet that doesn't replicate this exactly, but the difference in longevity and health shows that it's still an improvement.

An odd fact about hedgehogs is that in some parts of Africa they are considered a fertility charm. Wild hedgehogs are often buried with seeds or plants. Sometimes just a quill necklace is believed to help the wearer conceive a child.

Hedgies have some unique anatomical traits that startle many new owners, but none are cause for alarm. The first would be the "reverse mohawk". Hedgehogs have a bald strip in the middle of their head, an inch or so back. This hairless, quill-less section of your

hedgie's head enables him to cross his visor quills and is a part of the ring of muscles that allows him to ball up when afraid.



The reverse mohawk (coronal parting).

Another thing that often concerns new owners is the "hedgie lump". This is a small, pimple-sized bump on a hedgie's chin. It usually has a few hairs on it. If you were to compare it to anything, it somewhat resembles a billy goat's beard. Both male and females have this lump. Any other lumps on a hedgehog's jaw are *not* normal however and should be looked at by a veterinarian immediately.



The "hedgie lump".

The last physical oddity would be the variation between the numbers of toes on the front feet. While it appears all pet hedgies have four toes on each back foot, some have dewclaws on the front feet and some do not.

The average lifespan of a hedgehog is 3-5 years, with most falling towards the younger side of the spectrum. Often these hedgegies could have lived longer if they had been cared for differently or received proper veterinary care. Unfortunately they are quite prone to cancer and in many cases it is not removable. There are many that have recovered from cancer and lived years longer, however.

Hedgehogs are not the best pet for kids. Young children usually quickly lose interest after the novelty wears off, or are put off by the animal's quills or nocturnal lifestyle. Older kids and teens will often change interests, as well as schedules and may decide later on that they can't or don't want to care for the hedgegie for its whole life. As a mature adult, is your responsibility to be sure that any pet you bring into your home will be well cared for as long as he lives.

Additionally, hedgehogs do *not* make good class or office pets. Along with never being awake for anyone to see them, hedgehogs are easily stressed and it would be cruel to subject them to such a stressful, fluctuating environment. Heating, light schedules, power outages, or lack of attention (or too much attention) are only a few huge reasons to choose a different, more suitable species if you must have an animal in the workplace.

Hedgehogs are very scent oriented and rely on their sense of smell for many things. When bonding with your hedgegie, it is important that he can smell you and associate your scent with safety. Using gloves, or even washing your hands with a different soap can confuse and possibly scare him. Leather gloves are never a good idea because they usually smell intimidating and will mask your scent.

The quills lay flat when the hedgehog is relaxed, and tense up when the hedgehog is threatened.

The tail is usually hidden or barely visible.



Hedgehogs walk on the pads of their feet, and properly cut nails should barely touch the ground.

Hedgehogs are not rodents and do not have continually growing incisors.

Hedgehog eyes do not have cone cells, which enable animals to see in color. They are nocturnal, and at night when they are usually active, color vision would not be very useful; even animals who can see color will only pick up shades of grey when it is dark.

Hedgehogs rely mainly on their sense of smell.

Quill Structure and Design

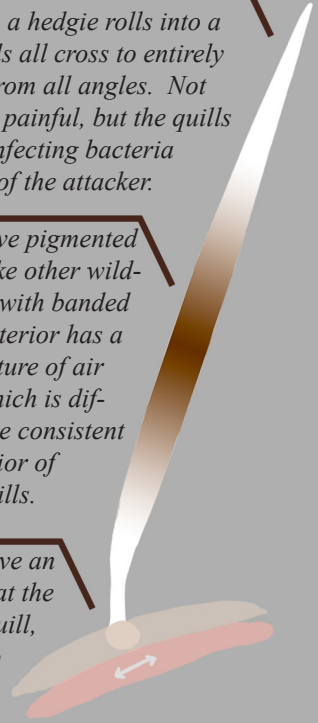
Note: I would like to acknowledge and thank Charles Sekafetz at Chemeketa Community College for allowing me to use their scanning electron microscope to study hedgehog quills at the microscopic level. At the time of publication, my personal study of quills (and several other specialized animal hairs, for comparison) is still under way. If you'd like to see what more I've written on the subject, feel free to check on my website listed in the back of the book!

Hedgehog quills are actually spines, but the term quill is so prevalent that everyone just calls them quills. The quills are modified hairs made of keratin, and the interior is an elaborate structure of hollow air chambers, so they are both lightweight and strong. The quills are locked into each follicle by a large bulb at the base of the quill, which prevents it from being pulled out of the body. An erector muscle under the skin enables a hedgehog to raise and lower his quills.

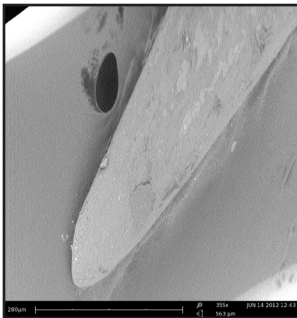
The quill tip is smooth and needle sharp. When a hedgehog rolls into a ball, the quills all cross to entirely protect him from all angles. Not only are they painful, but the quills easily push infecting bacteria into the skin of the attacker.

The quills have pigmented bands, just like other wild-type animals with banded hairs. The interior has a specific structure of air chambers, which is different than the consistent "foam" interior of porcupine quills.

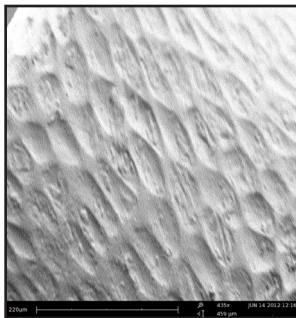
The quills have an angled stem at the base of the quill, allowing it to more easily lay flat when the hedgehog is relaxed, and flex to absorb a blow if he is attacked, preventing the quill from breaking.



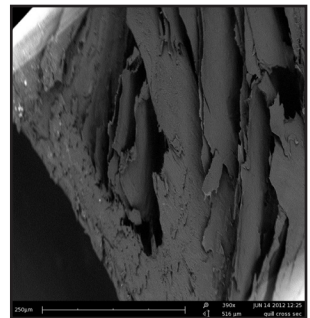
Here are a few of the images I was able to capture with the scanning electron microscope, taken at 220-280 micrometers.



The tip of the quill, showing its smooth surface (as opposed to the barbs that porcupine quills have).

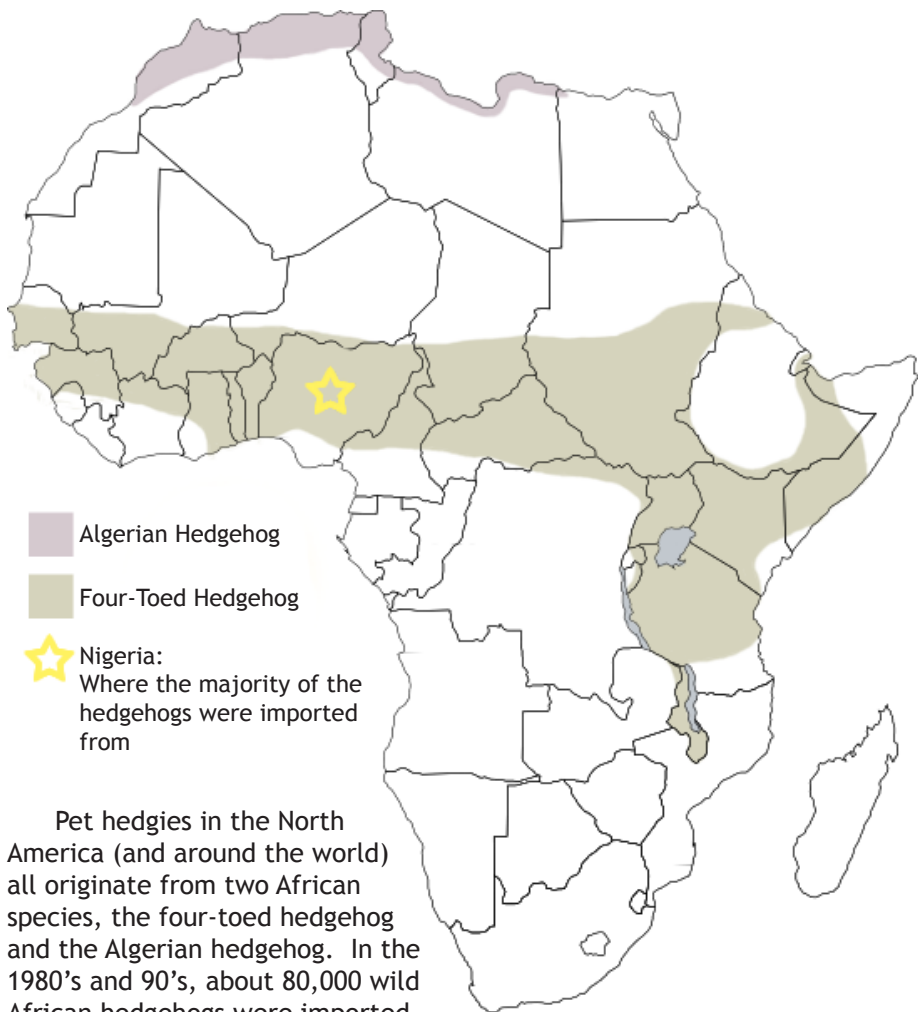


The quill exterior is smooth, but has very fine dimples like those on a golf ball.



The interior of the quill has many flaky layers that make up the walls of the air chambers.

Where Our Pets Came From



Pet hedgehogs in the North America (and around the world) all originate from two African species, the four-toed hedgehog and the Algerian hedgehog. In the 1980's and 90's, about 80,000 wild African hedgehogs were imported into the United States and Canada. Importation was cut off in 1994 after the USDA placed strict quarantines on imported animals. The original reason for bringing these hedgehogs into the United States was mainly for exotic pets, but also for blood clot research.

Believe it or not, the four-toed hedgehogs are somewhat viewed as pests in Africa. They are frequently found in dumps, earning them a reputation similar to wild rats here

in the US. In fact, that's where the majority of the imported hedgehogs came from: children were paid around fifty cents to collect the animals from the dumps. When they reached America, they were sold for hundreds or more a piece. A breeding pair could be upward of several thousand dollars! As captive breeding began and the fad started to die off, they lowered in price to the current "normal" of \$150-250 USD.



Preparing for a Hedgehog

Is a Hedgehog the Right Pet for You?

Before making any impulse decisions or bringing any animal home, you should first see if the animal will fit well with your personality and lifestyle, as well as you with the animal's. With hedgehogs, there are many crucial points that potential owners must understand before taking on the responsibility of getting a new pet. Purchasing or adopting an animal should be a life commitment, not a "get rid of it when you're done" type of decision.

Your Other Pets: First and foremost you should be sure you have enough time and space for a hedgehog. If you have other pets, think about how well you take care of them. Do you sometimes let cages sit for a few days longer than necessary before cleaning? Do you handle them as often as you should? If you aren't taking the best care of the pets you have already, getting a hedgehog is not a good idea. In addition, the smell of some pets is extremely stressful to hedgehogs. The smell of dogs or ferrets might be a constant nightmare for a timid hedgehog. If you have curious cats that you can't block off from the cage, they might also terrorize your hedgehog and get up to trouble.

Night Shift: Hedgehogs are nocturnal. Rarely will a hedgehog come out during the day, and make a habit out of it. Hedgehogs naturally get up at night, and sleep during the day. Some are grumpy when woken up during the day when they

want to sleep. You should make sure that you are comfortable with not seeing your pet "out and about". Parents who are looking for an interesting animal for their younger children, may want to look into other small animals that are active during the day. Children can quickly become bored with a pet that isn't awake when they are, and the novelty will wear off eventually. Also, if you are keeping the hedgehog in your bedroom or near where you sleep, consider the noises the hedgehog may make.

Even though some people claim that they have changed their hedgehog's schedules so that they come out during the day, it's an awful idea that should never be done. Altering light schedules, feeding only during the day, forcing the hedgehog to stay awake so they are tired at night, are all very cruel techniques to make a hedgehog something they are not. Doing so can cause extreme stress, lower the hedgehog's immune system, cause them to be constantly sick, attempt hibernation, and potentially die.

Temperature: To keep hedgehogs from attempting hibernation, they must be kept at warm temperatures. The entire cage should be kept at 73°-78°F (23°-25°C) constantly, avoiding fluctuation as much as possible. You will need a space heater, ceramic heat emitter, or other type of heating setup to keep the cage at this temperature. Hibernation is very dangerous (fatal if not caught early enough),

can lower your hedgegie's immune system, as well as make additional attempts more likely.

Self Defense: It's best to visit a reputable breeder or someone who owns hedgehogs and handle one, to see what the quills are like. Hedgehogs rely on their coat of quills for protection from predators. They are sharper than you might think! Make sure you are not allergic to the hedgehog, especially when the quills penetrate the skin. This will be unavoidable during ownership and you definitely don't want to be stuck with a pet you are unable to handle.

Solitary Animals: Hedgehogs do not need or crave companions. Males should never be housed together, they are territorial and almost never get along. Even supervised playtime is dangerous. Male-female pairings, unless one is altered, is also unacceptable. The female would constantly become pregnant and the parents will kill and eat the babies. This is horrible for her reproductive system and can make her very sick, not to mention it risks her life every time she gives birth. Opposite-sex playtime, as with males, is a very bad idea. It only takes moments for an "oops" mating to take place. Do not ever put two opposite sex hedgehogs in the same cage, carrier, or playpen unless you are planning on breeding, are an experienced hedgehog owner, have pedigrees on your animals, have a large amount of money saved for emergency procedures, and have a mentor to help you. Female-female pairing can work, under the right circumstances. Mothers and



Young females that are raised together are most likely to get along.

daughters, as well as sisters, usually get along best. Introducing a new female to an existing one may work out, but sometimes they will harm or kill one another. Never assume because two hedgehogs got along for one day, or even weeks, that they won't harm each other if housed together. Hedgies that have gotten along for years, can suddenly turn on each other and can kill the other. Likewise it's common for girls to get along outside of the cage, but fight when they have to share a cage. If you want an animal you can house multiple of together, a hedgehog is probably not for you.

Expenses: Another major thing to consider before looking into getting any pet, is if you can afford one. Hedgehogs can be very expensive to keep, and vet bills can quickly add up. You should always have money saved for vet bills (a few hundred is sufficient) and be prepared to spend it. The initial cost of getting a hedgehog can be quite high as well, with the supplies adding up to around \$450 and \$150-\$250 for the hedgehog. You should never assume you won't have to pay for vet care. If you don't want to spend money on vet bills, a hedgehog is definitely not for you.

Veterinary Care: Along with the above, you need to make sure you have a good vet before acquiring a hedgehog. Call around to see if there is an experienced exotic vet or other small animal clinic. Not all clinics that say they will see hedgehogs will actually be able to help with anything at all. Good vets are hard to find and unfortunately, many veterinarians still rely on dangerous, outdated material.

Illegal States: In some places, hedgehogs are not legal to own. If you live in any of the below states (updated June 2012) you are prohibited from owning a hedgehog. For the animal's sake, please do not try to keep one. When found, they are confiscated and oftentimes euthanized, and there's a good chance you'll be fined. It is also difficult to find vet care in these places.

In some areas hedgehogs are legal to own, but require a permit. Please check for any local laws before getting a hedgehog.

Illegal States:	Arizona California Georgia Hawaii Pennsylvania
Other Illegal Places:	Fairfax County, VA The 5 Boroughs of NY Washington, DC

Checklist:

- I have enough time and attention for a hedgehog and have a place to keep the cage away from other pets.
- I understand that hedgehogs are nocturnal and I can't change this.
- I understand the entire cage must be kept at 73-78°F (23-25° C) constantly.
- I understand that I will be poked by my hedgehog.
- I understand that hedgehogs are solitary and should not be housed together.
- I understand hedgehogs are expensive and I have money saved for emergencies.
- I understand that hedgehogs require vet care and that I already have a veterinary clinic chosen.
- I understand that some hedgehogs are grumpy and never become friendly.
- I understand that hedgehogs do defecate and urinate on people, sometimes frequently.
- I have time to spend each day taking care of and handling a hedgehog.
- I live in a place where I can legally own a hedgehog.

If the points above haven't turned you away, and you answered yes truthfully to everything on the checklist, a hedgehog might be a great fit for you!

Choosing a Veterinarian

Finding a good vet before problems arise is key to keeping your hedgehog healthy. If something goes wrong, you want to be able to go straight to the vet for immediate treatment instead of searching around for a clinic that will even see hedgehogs. The best way to

find a vet is by recommendation. If you have a reputable breeder near you, ask who they use and if they have references to other vets as well. Same with rescue stations, ask who they use or recommend. It's best to find a vet who has prior experience with hedgehogs if pos-

sible. Many will accept them, but haven't actually ever seen a hedgegie before. These vets are still good for medical knowledge, but it'd be good to check with the hedgehog community before treatment in case they prescribe something not safe for hedgegies (for example, vets often try to treat parasites with Ivermectin, though it's very easy to overdose and can be lethal).

Other suggestions for finding a good vet would be checking in with local wildlife rescues. They often work with good wildlife veterinarians that specialize in small unusual animals. Other small pet rescues for animals like ferrets or rats might have good recommendations for vets with experience with small exotic pets.

While quality is obviously the most important aspect of a vet clinic to look for, also try to stick close to home. You don't want to have to drive hours to get there.

See if you can talk with the vet before setting an appointment.

Make sure you can communicate well with them, and see if they take offense if you try to educate them about hedgehog care. A vet that is defensive about a client acting like they know more than they do, or telling you that their way is the only way is probably not a good bet - you want a doctor that is open to learning more, especially since care information changes so often.

Providing a copy of this book or referring to the free PDF copy is a great way to make sure your vet uses a reliable, up-to-date source if they're looking for care information.

Last but definitely not least, be sure to find your local 24/7 emergency hospital. If something goes wrong in the middle of the night, your usual vet (unless they're awesome and will come in at all hours) will be closed. Know where to take your hedgehog when you need immediate care and your vet isn't available.








This hedgehog was anesthetized with isoflurane gas before being treated for an injury.

Shopping List





Listed below are the bare necessities for owning a hedgehog. These are the bare minimum for your hedgehog's quality of life. Try to gather everything up before bringing your hedgie home.

Item	Example and Cost Estimate
<p>Cage: The cage should be at <i>least</i> 4 square feet in size, the bigger the better. It must have a solid floor, not wire flooring (like some rabbit or cavy cages). Also avoid unsealed wood, it is difficult to clean completely and can harbor mites. More information in "Choosing a Cage" (54).</p>	 <p>\$50-200</p>
<p>Bedding: You can use particulate or fabric bedding. Particulate would include wood shavings (such as aspen or kiln-dried pine; avoid corn cob, <i>never</i> use cedar), or recycled paper products (such as CareFresh or Yesterday's News). Fabric liners are made of fleece, corduroy, flannel, or other safe materials. Liners are preferred for a variety of reasons. Also because they are washable, they can last for a very long time. More information in "Fabric vs. Particulate Bedding" (52).</p>	 <p>\$30-60 lifetime for liners and blankets</p>  <p>\$50-100+ annually for shavings or paper bedding</p>
<p>Wheel: Whether you use a commercially made or custom made wheel, it should have a solid running surface, no crossbars and be at least 12" in diameter. More information in "Choosing a Wheel" (94).</p>	 <p>\$20-40</p>
<p>Hiding Place: This can be as simple as a shoebox with a hole in the side, plastic igloo, or sleeping sack. Your hedgehog just needs room to sleep and feel secure. If you use a box or igloo you still need to provide a blanket or bag to hide in as well.</p>	 <p>\$0-8</p>

Item	Example and Cost Estimate
<p><u>Food Dish</u>: The dish should be somewhat shallow and heavy so it doesn't tip. Hard plastic, ceramic and glass all work well.</p>	 <p>\$1-3</p>
<p><u>Water Dish or Bottle</u>: You can use a dish or bottle to provide water. In general dishes are preferred and hedgehogs will drink more and are more comfortable with bowls, but if you are using particulate bedding it may be easier to use a bottle. You want something you can easily clean and refill often. More information in "Cage Accessories" (63).</p>	 <p>\$1-6</p>
<p><u>Heat Source</u>: Ceramic heat emitters and space heaters are the most popular choices for keeping your hedgegie's cage warm. Ceramic heat emitters look like a flat light bulb and screw into a light fixture. They produce only heat and no light. They should be hooked up to a thermostat so they turn on and off to regulate temperature. Space heaters heat the whole room. Heating pads alone don't provide enough heat. You will also need a digital thermometer to check the cage temperature. More information in "Cage Heating and Lighting" (46).</p>	 <p>\$30-60</p>
<p><u>Food</u>: The average price for a 2-3lb bag of great quality cat food is around \$10-20, though if you are mixing several foods remember to consider the cost of each bag.</p>	 <p>\$10-20 per bag</p>
<p><u>Vet Fund</u>: Make sure you have money saved for emergency vet visits before getting a hedgegie. You never know when something might go wrong. Make sure this is money that you will not spend on anything else!</p>	 <p>\$300+</p>

Total Initial Cost: \$442-747
+ hedgeie, appx \$150-250

Here is a secondary list of supplies. They aren't absolutely mandatory, but usually get good use and make life easier on you and your hedgehog.

Item and Cost Estimate	Example
<p><u>Kitchen or Postal Scale</u>: You will want a scale to weigh your hedgie once a week or more often. Sudden weight changes are usually caused by health problems and catching them early on may save your hedgehog's life. The scale should weigh in 2 gram increments or less, for accuracy.</p> <p>\$10-30</p>	
<p><u>First Aid Kit</u>: Having a first aid kit prepared for emergencies is a very good idea. Some things to put in your kit would be vet information, oral syringes, Hill's A/D food, hand warmers, gauze pads, tweezers, etc. More information in "First Aid Kit" (110).</p> <p>Cost Varies</p>	
<p><u>Toys</u>: Good toys for hedgies include toilet paper tubes cut down one side, cat toys, and anything that does not have pieces that could come off, strings that could loosen, or gaps that could catch on hedgie's jaw or limbs. More information in "Toys" (98).</p> <p>\$0+</p>	
<p><u>Litter Box</u>: The litter box can be a low-cut cardboard box, an old cookie sheet, or one made for ferrets or rabbits. For litter you can use paper towels, CareFresh, or shavings, etc. Not all hedgies will use a litter box, but at least you'll have a place to put him or her when they need to potty during handling. More information in "Litter Training" (65).</p> <p>\$0-8</p>	

Where to Get a Hedgehog

There really are only three choices here: from a breeder, a pet store, or an individual who no longer wants theirs. If possible, you should always buy from a reputable breeder. A good breeder will keep pedigrees and health records of all their breeding animals, whether they register with the International Hedgehog Registry (IHR) or not. While IHR registration used to be considered a mandatory practice for breeders, many no longer use it because it takes so long to get a response. Even if your breeder does not register their hogs, owners can register individually. Good breeders will not breed animals with known hereditary problems. In the United States, breeders with three or more breeding females are required to obtain a USDA license, which means they are annually inspected to make sure they are taking good care of their animals. Keep in mind though just because a breeder is USDA licensed, does not mean they are reputable. All a USDA license means is that they're required to keep paperwork and they pass their inspection each year - not that they breed healthy animals, or give females breaks between litters, or any other crucial points to breeding. If a breeder has an extremely large amount of hedgies and is breeding constantly, doesn't know much about their animals, or seems to be more interested in money, they should be avoided at all costs. In general, though, most licensed breeders are trying to improve the breed by raising healthy, friendly hedgehogs.

Pet stores, on the other hand, are almost always a disas-

ter. There are virtually none that actually know what they are doing and take good care of their hedgies. Unfortunately, hedgehogs at pet stores often come from mass-breeding mills where they are inbred and not cared for well. Even if a pet store tells you they do not buy from mills, don't take their word for it. Most ship them in from mills that they refer to as "good breeders". Even if they breed the hedgies themselves, the conditions are likely not much better. Some pet stores mean well, but just don't have the right information. Most of the books available are outdated, and many websites give the wrong advice. Along with the misinformation, most pet store employees are not educated on how to sex the hedgehogs and do not regularly handle them. Hedgies are often kept in mixed-sex groups in pet stores, and the young females often go to a home and give birth, far too young for their growing bodies. They also contract mites or respiratory infections very easily in the unsanitary conditions. In general if you are looking for a healthy hedgehog, a pet store is the last place to look.



Pet stores often keep their hedgies in filthy, crowded conditions and mixed-sex groups.

Unless you know that after the hedgehog is sold that the store will not restock with more, please do not buy an animal out of pity. Feeling bad for the hedgehog in the poor conditions and buying it is only telling the store that there is a market for the hedgehogs and that they should buy even more and treat them the same. While it may seem you are doing it a favor, you may be putting many more hedgegies through the same thing.



Buying from a friend or a person on Craigslist has its pros and cons. When buying from someone who is selling a hedgehog for cheap, or even giving it away, don't automatically assume you are going to save money. Sometimes hedgehogs come to you sick and the vet bills can be much more than the cost of a healthy hedgehog from anywhere else. The people rehoming the hedgegie are sometimes very uneducated on proper hedgehog care, and the hedgegie may be very grumpy, malnourished, or overweight. However, sometimes the owners are just unable to keep their pet and want it to go to a good home. It depends on each individual case. Just because the hedgegie is older or from another home does not mean it won't turn out to be an excellent, friendly pet.

◀ *A cheap rehome (like this malnourished, underweight baby) might cost you more in vet bills than a healthy, higher priced hog.*

Male or Female?

Both male and female hedgehogs make excellent pets. There are very few differences between the genders, and they are only anatomical. Personality depends on the individual hedgehog; neither sex is friendlier than the other. Males don't smell stronger than females, as in some other small animals. Females are induced ovulators and do not go into heat or have a "period" (if you find any blood, you should get to a vet immediately). Females seem to be more prone to reproductive cancers, but this is just an assumption based on the number of cases that

have been reported. Many males like to masturbate, and while some are discrete about the behavior, some aren't shy at all. This may bother some people. Males do not have prominent testicles like other intact male animals, such as dogs or rats.

If you want to try to keep two hedgehogs together, you will want two females or a male-female pair where one or both is altered. Remember that housing hedgehogs together does not always work and that you need to be prepared to separate them at the first sign of aggression or violence. This means

This is a female hedgie. The urethra and vagina share the same urogenital opening, located close to the tail. Females have five rows of nipples, which are less obvious on males. ▶



◀ *This is a male hedgie. His penile sheath is in the middle of his abdomen, rather than right next to the tail. It looks like a large belly button. Hedgehog testicles are internal and usually cannot be seen.*



having two of everything: two cages, two wheels, two sleeping places, etc. If you're having trou-

ble sexing your hedgie, you can try letting him sit in a clear container and looking from underneath.

Personalities

Each hedgehog has its own personality and habits. One type of personality may fit with yours better than another. General “groups” people can use to categorize are: *Cuddlers, Explorers, Loners, and Huffers.*

“Cuddlers”

These hedgehogs are laid back and like to relax. They enjoy bonding and just snoozing in your lap. These are good hedgehogs for beginner owners or someone wanting a hedgie that will appreciate company and handling.



Some hedgehogs love to be held and will open up to people quickly.

“Explorers”

These hedgehogs are active and don't like to sit still. During handling they will constantly be trying to run out of your hands, off your lap, and anywhere else they can. They sometimes need extra fat in their diet because they will burn so much off during their nightly run.

“Loners”

These hedgehogs are perfectly content to be left alone. They are happiest in their cage at night, running around without being bothered. While they likely won't be totally offended by being handled, they much prefer to keep their own schedule and regard you as the “food, water, and clean-cage giver” only.

“Huffers”

These hedgehogs are constantly afraid or just plain grumpy. They will almost always be balled up and hissing and clicking at you. With time they can come around, but it will require a lot of patience. New owners, unless they feel they are prepared for the challenge, would probably not want their first hedgehog to be this unsocial. Make sure you do not mistake a sickness or injury as a reclusive personality.

A hedgehog's personality may depend on several factors. The main contributor would be handling. A hedgegie that is used to being gently handled, frequently, is often far more friendly than one that is never handled, or is handled with gloves, or in an intimidating manner. The hedgehog's mother's personality likely contributes to how comfortable the baby is with humans as well.



Some are very curious and would rather run around than go back to sleep.



Others would rather keep to themselves than spend time socializing.



Huffy hedgehogs can be very fearful and will take a lot of work to trust humans, and may never become fully comfortable with handling.



Regardless of personality, most hedgies bond well by sleeping in a blanket or bag in their owner's lap.



We I come Home

Bringing Hedgie Home



When you go to pick up or purchase your new hedgehog, you should have a safe carrier for the ride back. A hard-sided cat carrier is safest for all car travel. If you were in a crash, hard sided carriers are less likely to collapse and crush your hedgehog, and are easily identifiable as pet carriers so the emergency response team can be sure to save your pet as well. If you have your hedgehog traveling in a purse or other small, soft sided carrier, you could lose your pet as they will probably not make rescuing your fancy bags a priority. Packing the carrier full of cozy blankets so your hedgie can burrow down and sleep will help keep him warm, comfortable, and safe. If your car won't be kept 73°F or above, you might want to add a hand warmer or two. Finally, if you have a long trip back, try to just let your hedgie sleep through it. Chances are you'll be driving during the day when he would be sleeping anyway, and he won't be interested in stopping every short while to be offered food and water. Some hedgehogs easily get motion sickness in cars, so

making the process as smooth and uninterrupted as possible is best.

Make sure you get a few weeks worth of the food your hedgie has been eating, or purchase the same brand and formula so you can slowly switch foods when needed. Until your hedgie is settled in, you should be feeding the same food he was eating before. This helps prevent stomach upsets during this stressful time. Don't be alarmed if you see any bright green poop - this is normal and should go away within a few days. If it doesn't, make sure you keep your hedgehog hydrated and get to the vet. You will want to check what he is used to drinking from, a water bowl or bottle. If it's different than what you'll be using, you may have to teach him how to use his new bowl or bottle. Some hedgehogs can get green poop and upset stomach from changes in water. Tap water quality varies greatly from place to place, and it might help to get a jug of water that he is used to when you pick him up if you think the change in water will be significant.

Keys to Settling In

The main concern once your hedgegie comes home is minimizing his stress as much as possible to provide a smooth transition into his new home.

Bonding is a big part of hedgehog ownership. You will want to stick to a routine of handling your hedgegie every day. This can be as easy as letting him sleep in a hedgegie bag on your lap, holding and petting, or supervising play in an escape-proof pen. Getting your hedgehog used to your scent is the most important part of bonding. Once he has associated your scent with safety and security, he will likely become more outgoing and be more comfortable with handling. Until your hedgegie is more comfortable in his new home, try not to overwhelm him with long periods of time socializing or introducing him to too many new sounds and smells at once. Remember to do things gradually.

New owners are often understandably nervous about picking up their hedgegie. Until you are used to the feel of the quills, it's safe

to pick him up with a baby receiving blanket, small fleece blanket, or a hedgegie bag (a fleece pouch). Also, try sitting on the floor or on the couch where, if he decides to take a flying leap or scares you into dropping him, there is a short ways to fall. There's no reason to use gloves when you can just hold with a blanket.

Quilling is a stage where young hedgehogs shed baby quills and grow in new ones. This occurs several times as nursing babies, again at 8-9 weeks and for some, a light quilling at 1 year. This can last for as little as a week to several months. If you get a baby hedgegie, do not be discouraged if your sweet pet suddenly turns into a hissing, grumpy ball. It is very uncomfortable for them to have the quills growing through their skin, and the best way to help them through it is to give oatmeal baths to sooth the skin, and handle very gently. Don't let your hedgehog scare you away with its attitude. If you leave him alone because you are afraid of the big huffy display, you are teaching



Don't start changing food until your hedgegie is settled in, usually after a week or two.

him that being grumpy gets you to go away. You don't want your hedgeie to get used to not being handled, it may have a negative effect on his temperament later in life.

One thing that many new owners are not prepared for is the messy wheel. Hedgehogs don't understand the concept of running on the same track of wheel over and over. Running in the wild, pooping is no big deal- just leave it behind! They don't make the connection that they poop and run over it again two seconds later. In the morning, owners are greeted by a delightful excrement mixture caked on the surface of the wheel and the feet of their hedgeie. Cleaning for some is no big deal, others throw a fit at the thought of scrubbing anything covered in fecal matter. You'll get used to it quickly, and cleaning will become a habit. Soaking the wheel in the sink or spraying it with a water/vinegar solution will help loosen most of it up and can speed up the process.

Don't be concerned if it seems like all your baby does is sleep and poop. Babies will often sleep 22 hours a day, getting up to eat and drink, and possibly run for a bit. They are growing and will become



It's great bonding to let your hedgeie just sleep on a blanket in your lap.

more active when they are older. Also, babies have a short digestive tract and limited bowel control. You will probably want to hold your hedgeie in a blanket or something easily washable, because they like to poop and pee at the most inconvenient times. Most hedgeies grow out of this, too.

You may notice your hedgeie sometimes frothing at the mouth, contorting into strange positions, and spreading this foam on his quills. This is completely normal, called "anointing". Your hedgeie doesn't have rabies and is not sick. You can find more information on anointing in the Behavior and Handling section.

If you get itchy hands after handling, or have small red dots everywhere your hedgeie's quills touch, chances are that something on the quills is irritating you when the quills poke through. You usually get used to this after spending more time with him. It can help to give your hedgeie a bath, that will remove most of whatever is on the quills from anointing or rolling around at night. If the problem continues, you may have an allergy that unfortunately will probably only grow worse with time.

Sometimes hedgeies will stop eating for a few days when they first get to their new home. This is fine for a day or two, but if he isn't eating anything after three days, it's imperative to get food into him. Talk to the previous owner or breeder for suggestions to get him to eat or talk to your vet. You can leave a few pieces of food in the igloo or wherever he sleeps if he doesn't seem to be eating. Some are shy at first and will only eat in the security of their hiding place.



Living With a Hedgehog

Finding Time for Your Hedgehog

While some owners have no problem making room in their schedule for their hedgegie, for others it can be hard to find the time to spend socializing each day. Ideally people say you should spend around a half hour with your pet daily for a healthy, well-bonded relationship. Realistically, many owners end up not sticking to that. While hedgegies don't need the constant interaction that, say, a ferret would require, they do need attention and handling. If you are cramped for time once in a while this can be easily remedied by fitting your hedgegie in with something else you have to do. If you don't always have time for one-on-one or supervised playtime (or if your hedgegie isn't the most active or outgoing), one of the below might suit your schedule.

TV and Computer Time: A great time for bonding is when you are preoccupied with a TV show, movie, or work on the computer. Grab hedgegie along with a blanket or snuggle bag, and let him relax in your lap. Many hedgegies enjoy this and will fall asleep on you. While this might not be considered "handling", it gets your hedgegie associated with your scent and helps them bond with you.

Shopping Trips: If your hedgegie is comfortable with the car and driving around, you can take him with you shopping. This can be exciting and a curious hedgegie would probably love to get out. More shy or grumpy hedgegies, or ones that get carsick would not be the best to take on an outing. Understand

the risks of taking your hedgegie into public places before bringing him along.

Reading or Other Hobbies: If you read, knit, crochet, sew, write, etc. these are all good times to have your hedgegie hang out with you. Same with TV and computer time, your hedgegie will probably be content sitting in your lap or exploring a bit while you are busy. If you're a student, you can bond during study or homework.

If you do have time to spend exclusively with your hedgegie (and you should!) supervised playtime is a great option. It's best to set up a playpen to avoid any escapes/disappearances, but you may decide to let your hedgegie roam around a room. If you do, it would be a good idea to vacuum beforehand to hopefully remove all the hairs or strings that could get caught around a leg. You also may want to put something down in case hedgegie decides that your carpet looks like a litter box, and block off any places your hedgegie could squeeze into or under and not come out. Sitting on the couch and just letting your hedgehog explore is also a fine way to get him used to handling. Holding, petting, playing with his ears and feet are great for getting your hedgegie more comfortable with you, and beneficial later in life when you need your hedgegie to cooperate for such things.

Make sure you keep a close eye on your hedgehog whenever he is out! There is more information on playpens (as well as going outside to explore) in the Exercise chapter.

Routines and Frequency

Daily:

- Check on hedgeie for any problems (hibernation, anything wrapped around legs, etc)
- Socialization for around ½ hour or so
- Refill water and give fresh food
- Clean wheel if needed, spot clean cage

Bi-Weekly:

- Change liners, spot clean cage
- Foot bath, if needed
- Clean wheel, if you aren't cleaning it daily

Weekly:

- Do a full-body check for anything out of the ordinary, lumps, scratches, swelling, etc.
- Completely change bedding, clean cage, wash dishes
- Weigh hedgeie at least weekly

Bi-Annually:

- Vet wellness visit for older hedgeies (3+)

Annually:

- Vet wellness visit, make sure everything is going smoothly
- Buy new food or other supplies if expiration dates are coming up

As Needed:

- Trim nails
- Full bath

Traveling With or Without Your Hedgehog

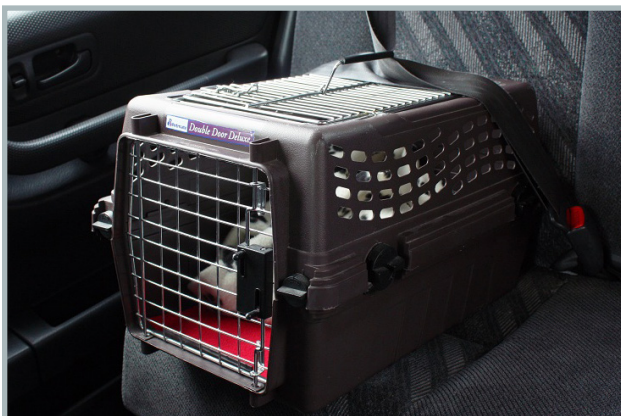
There are many things to consider before deciding to take your hedgeie with you on a trip, or leaving him behind. Whether he's allowed at your destination, whether he's easily stressed and wouldn't handle it well, whether you'll have time to care for him during the trip, whether you can keep him warm during travel and stays, whether you can find a good pet sitter or not, etc. are all concerns

that should be addressed before taking your hedgeie with you.

Travel by Car

Chances are, you will have to take your hedgeie places with you during his lifetime. Vet trips, going to a relative's, maybe even moving. Travel can be stressful, but doesn't have to be. Before deciding to take your hedgeie on anything but a short outing, you first need

This hedgehog's carrier is safely buckled in, packed with blankets and hand warmers, and ready for the drive.



to get him accustomed to his carrier and know what is normal for his behavior. If you notice that even a quick drive causes him to get carsick, try not to take him out unless absolutely necessary. If your hedgegie loves the attention they get when you are out and about, more frequent trips would be fine.

When traveling with a hedgehog in a vehicle, the best thing to use is a hard sided cat carrier. The carrier can be buckled into the vehicle to prevent injury in an accident. It won't go flying and hedgegie won't be squished by flying objects. A carrier is easy for rescue workers to spot and know that there is an animal in the vehicle. Smaller pet carriers or plastic cages are not as suitable but

will work in a pinch. You will want to find a way to secure the carrier to keep it from being tossed around and label it clearly in event of an emergency. In the back of this book you can find a carrier tag with the emergency information to fill in.

Travel cages are alternate housing when traveling overnight. This can be as simple as a plastic tub (with ventilation) or a pop-up dog crate. It should be a decent size so you can fit your hedgegie's wheel, dishes, and hiding place in it. If you are staying at a hotel and are worried about escapes, you can put the drain down and place the cage in the bathroom tub. If you are driving all night this is not



◀ *You can use a storage tub as a travel cage, and pack your hedgegie's supplies in it during the drive.*

This setup has just enough room for a suspended wheel, dishes, and a sleeping bag.



◀ *This 36 x 22" pop-up kennel was made for dogs, but works great as a large, easily portable travel hedgehog cage.*

absolutely critical. Your hedgie will be much safer in his carrier, so it's best to leave him there.

Other supplies you should try to bring are a bottle of water, food to last a few days, and vet information for a clinic near your destination as well as your usual clinic. These are all excellent things to have in case you have to stop unexpectedly on your trip. If you are going for several days, bring enough food, water, blankets, and hand warmers to last your hedgie for at least a week longer than planned, just in case.

Be sure that hedgie is warm but also not too warm when traveling. Hedgehogs can and often do get carsick while traveling. If you have air conditioning in your car, try to keep it at 75°. If that's too warm for you, you can keep it at normal temperature and use a hand warmer, SnuggleSafe disc, or other heating device to be sure your hedgie stays warm. Make sure whatever you use doesn't get too hot, and that it can't injure your hedgehog if he decides to chew on or dig at it. You can wrap the heat-

ing device with fleece to discourage this. Remember to never leave your hedgie unattended in the car! Temperatures can change inside drastically when you least expect it.

If you are traveling out of state, know the legal status of pet African hedgehogs in all other areas you will be traveling. The last thing you want is to have your hedgie confiscated from you.

Travel by Plane

There is a lot more to worry about when flying with your hedgie somewhere than driving. Your hedgie will likely have to fly in cargo, where you aren't able to check on him. Most airlines will require a health certificate from your veterinarian issued within 10 days of travel to accept your hedgehog. As with car travel, make sure each place you go is legal to have a hedgehog. If you must go to a state or county where hedgies are illegal, it's best to leave him home with someone you trust to care for him. You risk him getting confiscated and potentially euthanized, otherwise.

In Cargo: Hedgehogs are usually put in cargo if they have to travel by plane. While most do fine when shipped properly, some cases have ended badly. Understand the risks of shipping your hedgegie before deciding to do so.

-Temperature: Airlines have “climate controlled” cargo areas for pets, which means that area is supposed to be kept in the same temperature range as the cabin. In reality, that can be very cold for a hedgehog. Make sure your hedgegie has plenty of blankets as well as a hand warmer or two for additional heat.

-Handling: Your hedgegie in his airline-approved carrier will be taken and loaded onto the plane the same as your regular luggage. Some owners worry over the initial getting onto and off of the plane.

Once there, the cargo hold can be a loud, rattley place. Altitude changes and everything else going on can be very stressful.

Some airlines have cards that are dropped off with the flight attendants after the carrier has been loaded. If you are worried about your hedgegie not making it onto the plane, be sure to ask.

In Cabin: It is great if you are able to get permission to bring your hedgegie in cabin with you. Remember that airlines will require that any animal stay inside its carrier, properly stowed, for the whole flight. The cost is usually about the same as sending him in cargo. The carrier will take up part of your passenger space (under the seat in front of you, so the carrier must be small).

Capturing an Escapee

At some point in time, you might go to check on your hedgegie only to uncover the horror of... no hedgegie! Hedgehogs aren't the most agile of animals but they still do know how to escape. If your hedgegie goes missing, stay calm but act quickly. Lots of things can go wrong outside the safety of his cage.

Dealing with escapes should begin before one even occurs. Escape-proofing the cage is much easier than attempting to find your hedgegie after the fact. Check that all the doors close securely, the bars are not too far apart, the bars are blocked off if necessary (with a material such as corrugated plastic, cardboard, fabric, etc.) to prevent climbing, and that the cage doesn't have an open top. Even if your

hedgegie can't climb out of the cage, with an open top something could fall in and provide an escape route, or another pet could climb in and hurt your hedgegie or eat his food or what not. If you have the cage sitting on something off the ground, be sure that it can't slip off and fall to the ground.

Once you've escape proofed the cage, eliminating potential hiding places in the room is a good idea. There are lots of things in the average room that could function as hiding places, and removing those or blocking them off will make your search much easier in the event of an escape. Try not to leave piles of things all over the floor, which your hedgegie might try to get into. Blocking off ways to get under furniture is smart, as

well as keeping things like household cleaners or bait and traps for pests out of reach. Even just the residue on the outside of a spray bottle could be enough to make your hedgegie sick if he decided to anoint with it.

Finally, leaving out his carrier full of blankets with the door open might save a lot of time and stress by giving your hedgegie a safe and comfortable place to hide if he gets out. You can leave this out year round, and check there first if you have an escape. Keep it at ground level and preferably close to the cage.

If Your Hedgehog Escapes

- Double and triple check that he isn't in the cage. Sometimes they sneak under liners in weird places and it takes a second glance to find them. If he isn't there, look in places close to the cage. Oftentimes a hedgegie will quickly turn up close to the cage. If you don't find him within a few minutes of searching...
- Turn up the heat. Chances are it's colder than 73° wherever your hedgegie is hiding, and you want to minimize the chances of him attempting hibernation out there. In addition he'll be more likely to be active and move around if it's warmer, making it easier to find him. The colder it is, the more likely he'll just huddle up and not move.
- Shut all the doors. If the room your hedgegie was in is always closed, you have the benefit of knowing he's contained to that room. If not, shut all the doors you can, and you'll have to start the process of narrowing down what room he is in.

- In each room, carefully pick up everything off the floor. Hedgegies frequently hide in fabric like laundry piles, and inside backpacks, bags, or shoes. They are also likely to hide under appliances where it's dark and warm, like fridges, dishwashers, washing machines, dryers, water heaters, etc. Avoid running any appliances until you're sure your hedgegie isn't under or inside them. Moving machinery or hot air could squish or burn your hedgegie. Be very careful if you move any furniture or appliances that you don't crush your hedgegie in the process. Furniture like reclining/rocking chairs or pull-out sofas are notorious for injuring pets when they're opened up to look underneath. Use extreme caution if you open up or move these types of furniture.
- If you haven't found your hedgegie after searching through everything on the ground, and you still don't know what room he's in, you can start leaving out strong smelling foods to try to lure him out. Wet cat food, canned tuna, or canned insects all work.
- Lay down some newspaper on the floor, sprinkle flour on it, and put the food in the middle of the newspaper. If you stay up listening, you might be able to hear the newspaper crinkle, and if your hedgegie walks up to the food you'll be able to see the footprints in the flour. Once you see evidence of your hedgegie in one room, you can focus your search there.
- Look through everything you possibly can in the room, and make some noise in the process. If you thump on something that

your hedge is in, he might huff and give himself away.

- If you aren't able to locate and retrieve your hedge, you might have to try setting a live trap (rat or squirrel sized) and baiting it with food. If you set one, check it **constantly** so your hedge doesn't sit there long after being trapped. You can also just stay up waiting in the dark, listen for him, and quickly turn the lights on and grab him once he comes out. Fortunately most hedges when frightened will freeze and ball up, making that process pretty straightforward. If your hedge instead decides to book it for a hiding spot, at least you'll know where he is!

Once you've recovered your sneaky pet, be sure to thoroughly look him over for injuries. If he fell from the cage, he could have seriously hurt himself, along with the chances of strings or hairs caught around limbs, bug bites, or getting cold enough to trigger hibernation.

Keep a very close eye on him for the next several days. He could have eaten something bad out there that will cause digestive issues, or have a less obvious internal injury that he'll need vet attention for. He may also be more prone to hibernation in those following weeks, so try bumping the temperature up a bit, just to be safe.

Finally, find out how he escaped so you can prevent it from happening again. Leaving the cage door open is an easy one, but if he got out even with the cage closed, be sure you go over your cage and make sure it is totally secure before trusting your hedge to stay in it alone again. Make any modifications to be sure it's safe as soon as possible.

Remember to be patient and not panic if an escape happens. While it *is* dangerous for your hedge to be out and without heating, food, water, etc, some have still managed to live a long time in their owner's homes. Don't give up and be persistent and thorough!



Check carefully under and inside any furniture before moving or sitting on them!



Behavior and Handling

Interpreting Body Language

Hedgies often express themselves differently than other pets, and it can be hard to know what they are trying to get across. They are naturally prey animals, and their first instincts are to be defensive, not to attack or fight back when something frightens them. It's important to keep in mind that the most frequent reactions a hedgehog will make are out of fear.

Remember that sudden changes in attitude should be taken seriously. If it isn't something obvi-

ous like quilling or a strong smell irritating them, get to your vet. Hedgies hide illness very well and odd behavior can be one of the first signs something is wrong.

Also, don't be too concerned if your hedgie makes odd noises when he is sleeping. Some will snore and twitch as if they are imagining chasing mealworms in their sleep. You might still want to check each time your hedgie makes unusual sounds to be sure nothing is wrong.

Actions

- Rolling into a ball: Fear, mistrust, discomfort from being on their back.
- Quills up: Uncertainty, fear, irritation.
- Vibrating or shaking: Usually accompanies lots of hissing and popping, when a hedgie is extremely upset.
- Biting: Afraid, angry, attracted to the smell of the object, some bite for seemingly no reason at all.
- Self-anointing: No known reason why. Usually done on things that have a strong scent.
- Flailing legs when on back: restlessness, frantic, discomfort, needs to relieve himself.
- Splatting: Extremely relaxed or comfortable, but mostly done when they are overheated. They will stretch their legs out in front and behind them and "splat out" on their belly.

Sounds

- Huffing and hissing: Fear, mistrust, anger, usually accompanied by erect quills. Some will huff with only their visor quills up, which indicates a more half-hearted irritation.
- Clicking and popping: Extremely afraid or angry.
- Purring: Contentment, trust.
- Snuffling: Happily exploring, curious, also called "wheefling". They will often wiggle their noses in the air and follow scents that interest them.
- Chirping: Hunger (mainly in unweaned hoglets), wanting attention, sexual interest in another hedgie.
- Squealing: Pain or frustration. Some will squeal when vomiting from an upset stomach or choking, or if they are unable to relieve themselves due to pain from constipation or urinary infections.
- The Hedgie Scream of Death: A high pitched squealing shriek. Extreme pain, anger - the cause should be investigated immediately.

Anointing

You may notice your hedgegie frothing at the mouth from time to time, and spreading this foam on his quills. This is a completely normal behavior most frequently known as anointing, also called self-anointing or “anting”. Your hedgegie doesn’t have rabies and is not having a seizure. Relax, sit back, and watch. The positions they can get themselves into can be quite entertaining. Some hedgegies anoint over nearly anything, while others never do.

What exactly is going on? Hedgegies will anoint when they encounter certain scents they like. This could be new hand soap, different food or treats, cleaner on the carpet, anything. Some like to anoint on their owner’s hair or clothes. It starts as a licking/nipping, and then you will see your hedgegie twist and contort to spread the saliva on himself, especially on the visor, shoulder and back quills. Sometimes it’s

only a few licks, sometimes they go all out and cover themselves with spit for minutes at a time. The anointing behavior is triggered from extreme olfactory (sense of smell) stimulation, and sometimes they’ll anoint over a scent in the air alone, without having an actual object to anoint from. Anointing hedgegies are usually very absorbed in the act and unaware of their surroundings, which makes it a convenient time to try trimming nails! If they anoint with something colored, like a strawberry, they might end up stained pink for a while.

Why do they do this? No one really knows why hedgehogs like to anoint. Some believe that in the wild, they would try to cover up their scent with something else, like an animal carcass. Others think they would anoint with poisons that they are immune to, in an attempt to scare off predators. The behavior has been compared to



Hedgehog necks and tongues are surprisingly flexible!



birds “anting”, in which a similar activity occurs. Birds will sometimes pick up insects (usually ants, hence the name) and put them in their feathers. There isn’t any definite answer for this either, though the guesses are similar to the reasons hedgies anoint, along with it possibly helping remove parasites. Research has shown that few of these solutions would make sense from a natural standpoint,

however. A more highly accepted perspective is that it might be used to increase their personal odor in order to help hedgehogs detect (and then avoid) other hedgehogs. Baby hedgies also anoint frequently, and an explanation might be that it helps mothers retrieve their young if they toddle off. Otherwise, it might simply be a nonfunctional response, like how cats just happen to love catnip.

Quilling

“Quilling” is the hedgehogified term for molting or shedding. Quilling is a natural process where a hedgegie loses its old quills and grows in new ones. It usually starts with a few quills falling out, and gradually more are lost as new quills grow in. Some hedgies are done in a week or so, some can take several months. A few hedgehogs lose so few quills that it’s barely noticeable. While a hedgegie might lose a lot of quills, the coat shouldn’t look too sparse or have bald patches. Some babies have thinner coats than others. Keep in mind that as long as you can see new quills growing in, seeing skin between quills is nothing to worry

about.

Hedgehogs quill repeatedly throughout their lifetime. They quill a couple times as babies before they are weaned, and some will have a small quilling at one year. The most significant quilling (and the one baby owners get to experience) is the 9 week quilling, which starts at about 7-12 weeks old. This is the most difficult quilling a hedgegie will go through. It’s like a child teething; the new quills growing in are painful as they pierce through the skin. Your hedgegie will likely get grumpy and less social during this time. Be patient and very gentle - it’s best to avoid touching his back or holding

him on his back in a ball whenever possible. This puts pressure on his sore and tender skin, and you don't want him to associate handling with discomfort. With consistent, gentle handling most get over their attitude as they finish quilling. Occasionally there is a hedgehog that after quilling will not revert back to a social personality.

To help soothe the skin, you can give your hedgegie a warm oat-meal bath. This can help soften the skin and allow the quills to come in easier. Owners often use Aveeno products, but you can just put a handful of dry oats in some pantyhose and swish it around in the water. You can also apply a small amount of flax, olive, jojoba, or vitamin E oil directly to the skin if you notice particularly uncomfortable spots. Be sure not to use more than a few drops topically. Because baths can be extremely drying to a hedgegie's skin, avoid

giving them too often. Two baths a week should be plenty during the worst times of quilling. More specifics on bathing can be found in the Hygiene chapter. You can also put a few drops of the oil onto your hedgegie's food to improve skin health.

Sometimes hair will fall out, but mainly they shed quills and not their fur. If you see a lot of fur loss, make a trip to the vet to rule out the possibility of parasites (mites are common) or a skin infection.

Outside of quilling, some hedgegies have light seasonal shedding, though it should never be as extensive as a full quilling. Hedgegies can also lose quills due to stress, malnutrition, hormone imbalances, or when recovering from parasites or illness. Abnormal quill loss should always be evaluated by your veterinarian.

Here you can see new quills growing through this young hedgehog's skin. The number of quills lost each day can vary from just a few to over a hundred.



Biting

Biting is a habit that no hedgegie owner wants to deal with. The first thing to do when trying to stop the behavior is to find out why your hedgehog is biting. Is there a good smell on your hands, is he afraid, or has it just become a habit to chomp on any exposed skin? Once you know the reason behind the bite you can get to work on preventing it. Remember that any animal with teeth can bite, and while most hedgegies will not they still always have that capability.

Reason for Biting #1: A “taste-testing” bite, or an anointing bite usually comes after some sniffing and licking. Something that smells good to them often results in anointing or nibbling on the object (in this case, you). The best way to discourage this is to not allow him to lick or nip you, and wash your skin with unscented soap to remove the attractant. Remember that these are “friendly” bites and your hedgegie doesn’t mean any harm.

Reason #2: When hedgegies smell things they don’t like or are stressed or uncomfortable they may

Interesting scents and textures frequently trigger biting.



bite. Some will bite if they smell other hedgehogs on your hands, if they’ve been forced to socialize too long, or if there is some other scent they don’t like (such as the smell of smoke, nail polish, or even flowers). Remove the offending odor or give your hedgegie a bit of a break, but just be sure not to respond immediately to the biting, which can teach them that biting gets them what they want.

Reason #3: Hedgegies will sometimes bite when they are afraid or angry. The hedgehog would most likely be rolled into a tight ball and hissing. If you go poking your fingers around in the poor guy’s face, expect to get bitten. If your hedgegie is like this, don’t put your skin where he can get to it. Let him calm down in a fleece blanket or something similar, and you can get back to handling him when he is not so upset.

Reason #4: Some hedgegies like biting just for the heck of it. This can be especially difficult when it’s unexpected and you don’t know why he’s doing it.



Reason #5: Biting other things is usually caused by two reasons. Firstly, the object smells/tastes good, or two, the object is intimidating/irritating. They will also bite things if they like the texture (leather is a good example). Some hedgehogs will bite their quills when rolled into a ball if they are upset.

Biting Tips

- When your hedgehog bites, don't put him immediately back into his cage. If you do, it will teach him that biting gets you to leave him alone.
- Some hedgehogs will bite when they are hungry. Try offering a bit of food when you take him out.
- Make sure you've washed your hands with the same soap before each handling. Unscented soap is

the least bite-provoking.

- If your hedgehog bites any skin they can reach, simply don't give him that opportunity. You can hold him in a blanket to keep your hands away from him.
- If your hedgehog bites and holds on, try not to flinch or yank your hand away; you don't want to injure his mouth or tear your skin. Usually if you wait quietly they'll eventually let go. Pulling your hedgehog away can cause him to grind into your skin harder. Some people have had success blowing gently in their hedgehog's face to get them to release their bite. You can also gently push whatever is being bitten towards the hedgehog's mouth, which is uncomfortable but not painful and can convince them to loosen their grip.

Hedgehogs and Other Pets

Lots of people join online forums and ask questions like "will my dog eat my hedgehog when he comes home?", or "can hedgehogs and ferrets get along?", or even "can I house a hedgehog and a guinea pig together?"

The first thing that anyone wondering these things should do, is sit back and think **why** would you want to have your hedgehog and other pets socialize? Hedgehogs, first and foremost, are solitary by nature. They don't need or crave interaction from humans or other animals. They are defensive prey animals, and can be very easily stressed from exposure to other pets, even if they appear harmless. The fact of the matter is, there isn't any considerable benefit to the hedgehog for putting him

through the potential danger of interacting with other animals - and it's your hedgehog's welfare you should be concerned about, not your own amusement.

One excuse that is often used in support of allowing other pets to socialize with hedgehogs is that "hedgehogs have a great defense system!" However, they fail to mention that we have bred hedgehogs to be calmer, sweeter, and less reactive pets. A pet hedgehog is not going to have the same fast, extreme reflexes as a wild hedgehog. Even through the quills, a quick snap from a dog or cat could very seriously injure or kill your hedgehog. Cats are more likely to tolerate and respect hedgehogs after getting a noseful of quills, but you shouldn't have to rely on your

hedgehog to defend himself, in order for him to be safe. If your pets don't seem to be genuinely happy and enjoying their time together should you have them socialize, don't push it, just let them both play individually.

Animals such as prey driven cats or dogs (such as terriers, sight hounds, etc.) and ferrets are especially likely to intimidate your hedgegie, and less likely to "play nice". Even if you think you know your cat, dog, or other pet, never take an eye off them with your hedgegie

around. It would only take a moment for something to go wrong.

Hedgehogs should never be housed with any other species. Not only do hedgehogs have completely unique care requirements, but if one should turn on the other, there is no escape from the cage and it would end badly, to say the least. Overall, it's better to be safe than sorry, but if you decide to allow your pets to mingle, take every precaution for both pet's safety and never, *ever* leave them unattended.

Dealing with "Boy Time"

More often than not, male hedgehog owners will witness, or find evidence of, their little boy not being so "little" anymore. Yep, as uncomfortable as it tends to make people, male hedgegies frequently masturbate.

Some boys are politely discreet and won't display their manly bits for you. Others, though, could care less about the audience and will go at it with no sense of decency at all. Tucking his head under himself accompanied with smacking sounds, or walking around with his back arched or twitching his back end are all signs to either cover any children's eyes or awkwardly explain what is going on! Try not to be alarmed if you see his penis - when it is fully out of its sheath, it can be nearly the size of one of his legs.

Boys are fairly spontaneous about when they decide to masturbate. Day or night, in their cage or not, audience or not. These acts of self-enjoyment are nothing to worry about; they are totally normal. It doesn't mean your

hedgehog needs to be bred, or that he has hormone problems. It just means he might want some privacy! There's not really any way to prevent it.

The main annoyance that comes along with "boy time" is when there is semen left over either on your hedgehog's belly or on his blankets. Unfortunately once it has dried, it can be extremely difficult to wash out. If you see white or yellowish substances dried on your male hedgehog's belly or jaw, your best bet is to soak him in warm water for a while, and hope you can gently scrub it out.

For blankets, if a washing or scrubbing by hand won't get it out, you can try using a bit of nail polish remover (diluted acetone), soak some into the fabric, and work it out with a toothbrush or your fingernails. Keep in mind the solution might discolor the fabric. Once you've removed the mess, wash the blanket again to be sure there isn't any residue left from the nail polish remover. The strong scent could bother your hedgegie.

Tips on Bonding



Things to do to help your hedgegie warm up to you:

- Put a t-shirt that you have worn for a day or so in the hedgegie's cage, so they can sleep in it. This will associate your scent with safety and security. Make sure it does not have any loose threads that limbs could get caught in.
- Keep a schedule. The times you turn lights on and off, feed, clean, and handle your hedgegie should be consistent each day. This will help your hedgegie know what to expect and not take them by surprise each time you take them out.
- Wash your hands before handling with the same soap each time. Your hedgehog will associate this smell with you, which will make them more comfortable. Hedgegies like routines.
- Be patient and gentle. If your hedgehog is timid and takes a long time to unroll, just let them relax under a blanket or in a

sleeping sack. If you let them sleep on your lap while you watch TV or use the computer, this will help them realize that you don't mean harm, and that you can be comfortable to snooze on too. Never handle your hedgehog roughly, you could lose all the progress you've made bonding up to that point.

- Let them potty a few minutes after you wake them up. Some hedgegies will be extremely wiggly or grumpy if they need to 'go' and don't want to do it on you. You might want to have an out-of-cage litter box and leave him or her alone for a few minutes to do their business. Not letting them get it all out will eventually result in them pooping and peeing all over you or themselves, neither of which is particularly enjoyable on your part.

Things not to do:

- Handle your hedgehog with gloves. Doing so will mask your

scent so that your hedgie will never become accustomed to you. The smell of gloves, especially leather ones, can be frightening and cause an already afraid hedgehog to bite and make things worse. Using a blanket is much better.

- Talk loudly or play loud music near you hedgie. Hedgehogs are sensitive to noise. Chances are that if something is loud for you, there are nerve-grating higher pitched ultrasonic sounds along with it that your hedgie will pick up.

- Handle your hedgehog right after eating, handling another animal, or touching anything strong smelling. If you smell like food, you may get bitten. If you smell hostile, you may get bitten. More likely, though, your hedgie will just huff and ball up more than normal. If you don't smell like yourself, your hedgie won't know that it's you, and not a dog, or a cheeseburger, or a car you've been working on. Wash your hands well to make sure the smell is gone to avoid any identity mix-ups.



A big part of bonding is being sure you handle your hedgehog gently. Hedgehogs feel safest belly down. To pick up your hedgie bare-handed, start by approaching him on both sides with your hands.



Next lift him off the ground with a slow and steady "scoop".



Give him a chance to situate himself in your hands so he feels supported and safe.

Housing and Husbandry



Cage Heating and Lighting

Preventing hibernation and keeping your hedgehog at a proper environmental temperature is absolutely crucial to his well being. African hedgehogs, after living in the deserts for ages and ages, did not evolve for a great ability to hibernate through cold weather. They don't build up "brown fat" for the winter, and are simply not equipped for hibernation like other hedgehog species. Pet African hedgehogs, when faced with a cold environment, will attempt to hibernate and if not caught quickly, will die. Too cold or hot of an environment or an insufficient light cycle (more on this later), along with triggering hibernation or aestivation, also can lower activity levels and prevent your hedgehog from exercising properly, eating enough, and can lower his immune system. Think about if you were expected to live in a 40°F house with only shorts and a t-shirt. You wouldn't want to get out of bed either!

It isn't hard to prevent hibernation, and once you have heating and lighting set up, it isn't much effort other than just checking that the temperature is good each day. We'll start with lighting, since it's the most simple to set up.

Hedgehogs need a consistent light cycle of 12-14 hours of light a day to help them balance their "internal clocks".

You know how if you take a long flight somewhere, the time change can throw you off and make you feel tired, disoriented, or sick? Hedgehogs feel the exact same way if their "sun" doesn't rise and set

at the same time each day. Even if your hedgegie is kept warm enough, he can still attempt hibernation from poor lighting alone. One of the main reasons hedgehogs should have an artificial light source is to override the natural light cycles. Shortening daylight hours in winter can trigger hibernation.

A proper lighting setup only needs to consist of a light (which can be a reptile light, a desk lamp, or even the room lights) and a timer. Some owners choose to turn the lights on and off at the same time every day, but it's much easier to not worry about forgetting each day. Set your timer to be on for 12-14 hours (7 am to 9 pm, for example) and plug your light source into that. Don't worry about having a "special" light for your hedgegie. They are asleep all day in their blankets, they won't be sitting out needing fancy UVB lighting. As long as it's light, it works.

Hedgehogs need a consistent environmental temperature of 73°-78°F (23°-25°C) at all times for their health and comfort.

There are a few ways to make sure your hedgehog's cage maintains a good temperature. The best heaters to use are ceramic heat emitters and space heaters. You could heat your whole home, but that gets very expensive and often people are uncomfortable in such warm temperatures (and with the expense associated with it!). Remember that different heaters are better suited to different cages. No heat setup when used properly should pose a significant fire risk.

Type of Heater	Pros and Cons
<p><u>Your Home's Heating System</u>: To use your home's heating system you would just turn up the thermostat to keep the entire house at an appropriate temperature.</p> <p>This option is suitable for all cage types as the entire room would be kept warm.</p>	<p>Pros: Heats the air well, doesn't require additional equipment.</p> <p>Cons: Can be extremely expensive, if you have a wood burning fireplace it can be hard to keep the temperature constant, it may not be comfortable for people to live in such high temperatures.</p>
<p><u>Ceramic Heat Emitter</u>: A CHE screws into a lamp just like a light bulb, but produces only heat, no light. They look like a flat ceramic light bulb. Buying the bulb online is recommended if you want to save money, in stores they are usually about twice the cost as you can find online. Because they are usually screwed into a metal dome lamp, it's necessary to either have wire bars (like the cage top) to put the lamp on or find a way to attach it securely to prevent it from falling and burning anything.</p> <p>As long as you use a thermostat properly, they can work with all cages, though you should take extra caution that tub style cages don't overheat since they can hold in heat so well.</p>	<p>Pros: Good for heating the cage and not the whole room, uses significantly less energy than other options so is cheap to operate, simple to use.</p> <p>Cons: If you buy the CHE bulb in store it may be fairly expensive. If the room your hedgeie is in is usually very cold, a CHE may not be enough to keep the temperature up. A CHE requires more equipment than other options: the CHE bulb, the lamp, and the thermostat to regulate the heat.</p>
<p><u>Space Heater</u>: There are many, many kinds of space heaters, from oil filled to ceramic to infrared and more. Most models have a thermostat and you just plug it into the wall, set the temperature, and it takes care of the rest.</p> <p>Space heaters are also suitable for all cage types as the entire room would be kept warm.</p>	<p>Pros: Great if you want to heat the whole room, easy to operate, usually have a built in thermostat, easily portable.</p> <p>Cons: Use significantly more electricity than a CHE so are more expensive to operate. Older models can be more of a fire hazard, but one with appropriate safety features (such as automatic shut off if it tips over) should not be a serious concern.</p>

“Why can’t I use a heat pad?”

While heat pads are nice for supplying additional heat for sick or elderly hogs, they aren’t enough to heat the whole cage. They only heat the cage floor, not the air, which is what hedgehogs need. Using them for additional heat in sleeping areas is fine, but keep in mind that your hedgegie may not want to leave the warmth of his bed, or the temperature change from his bed to the rest of his cage could trigger hibernation. There are lots of different heat pads, from reptile heat pads or tape, human heat pads, nursery (used for plant seedlings) pads, or even under-the-desk foot warmers. If you do decide to use a heat pad for something, it’s best to get one without an automatic shut off after a certain amount of time, and be sure it has temperature control, or buy a rheostat to turn the energy down manually. It’s better to have a heat pad on low all the time, instead of it getting very hot, turning off, turning on again, over and

over. Heat pads are also prone to shorting out and can be a fire hazard.

Regardless of what kind of heat setup you decide on, remember to use common sense and be safe about burns and fire hazards. Don’t put flammable things near heating elements and be sure your hedgegie can’t climb up anywhere where he could be burned. Make sure your smoke alarms have good batteries and are working properly. If you must use extension cords (especially for space heaters), make sure they are a good thick gauge (12-14 gauge or larger is recommended). Finally, make sure that any appliances that need grounded (have three prongs instead of two) are hooked up properly to prevent fires.

Also remember to have a thermometer in or near your hedgegie’s cage, so you can glance at it frequently to be sure the temperature is stable.



Ceramic heat emitters and space heaters are the highest recommended options for keeping your hedgehog warm.



If you put a light on a timer...

What you'll need:

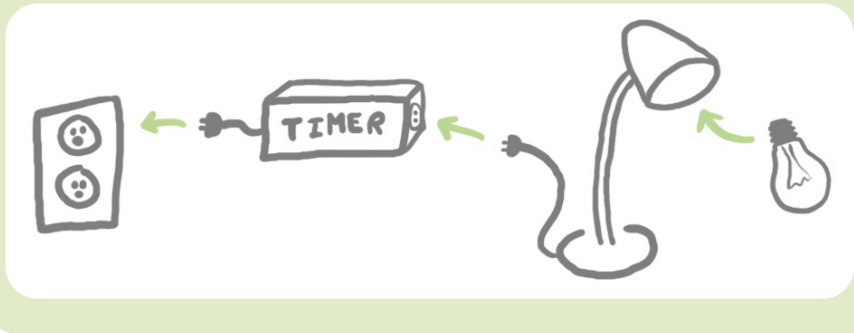
Light bulb: Any type of light bulb will do. Fluorescent bulbs and LEDs (Light Emitting Diodes) are the most eco-friendly and energy efficient, though.

Lamp: Any type of lamp will do. Make sure the lamp will support the light bulb wattage.

Timer: There are many types of timers out there, from very basic on/off timers to ones that can be programmed to have certain things on during different intervals during the day. For controlling a light alone, a simple on/off timer is all you'll need.

How to use it:

Put your bulb in the lamp, plug the lamp into the timer, and plug the timer into the wall. Set the timer to turn on and off at the desired times. For specifics for your equipment, please consult its user manual.



If you use a CHE...

What you'll need:

CHE bulb: The main choice you'll have to make when buying the CHE bulb is what wattage to buy. 60, 100, and 150 watt bulbs are most common. If you have a decently large cage (4 feet or longer), you may want to consider setting up two CHEs evenly spaced over the cage instead of just one. A 60-100 watt bulb is usually sufficient for the average cage. 150 watts will probably be overkill, however, if your lamp is set up a short distance away (opposed to directly on top of the cage), you may want the higher watt bulb since the heat will need to spread over more area.

Lamp: The lamp you use for your CHE is actually critically important for heat distribution in your hedgeie's cage. If you have a small

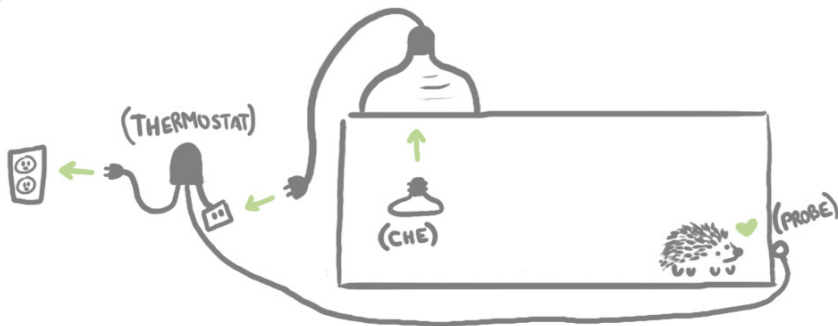
(continued on next page)

dome (5.5", for example) all the heat will be directed down, and not spread out over a larger area (like a wider 10" dome would). The wider dome on the lamp the better, and be sure that it will support the CHE wattage you decide to use. There is a little sticker on the inside of the lamp that says what wattage bulbs are safe to use.

Thermostat: To keep the temperature constant, you will need to have a thermostat set to turn the CHE on and off. Be sure you buy a thermostat (a device that turns the device on when the temperature is too low, and turns it off once it reaches the desired temperature) and not a rheostat, which only "turns down" the power a device receives. There are many suitable thermostats sold for use in reptile and other pet setups. Just be sure it will support the wattage you will need (add up the watts each device you'll have hooked up to it), has a temperature probe to put in your hedgegie's cage, and has a decent temperature control (most are just an analog dial, but some are digital, which is convenient but not necessary).

How to use it:

Screw your CHE into the lamp, plug the lamp into the thermostat, and plug the thermostat into the wall. Place the thermostat probe in or directly outside your hedgegie's cage, making sure that your hedgegie can't reach it (and possibly sleep on it, throwing the temperature off from his body heat). Finally set the thermostat to the desired temperature and monitor it for the next day or two and adjust it as necessary.



If you use a space heater...

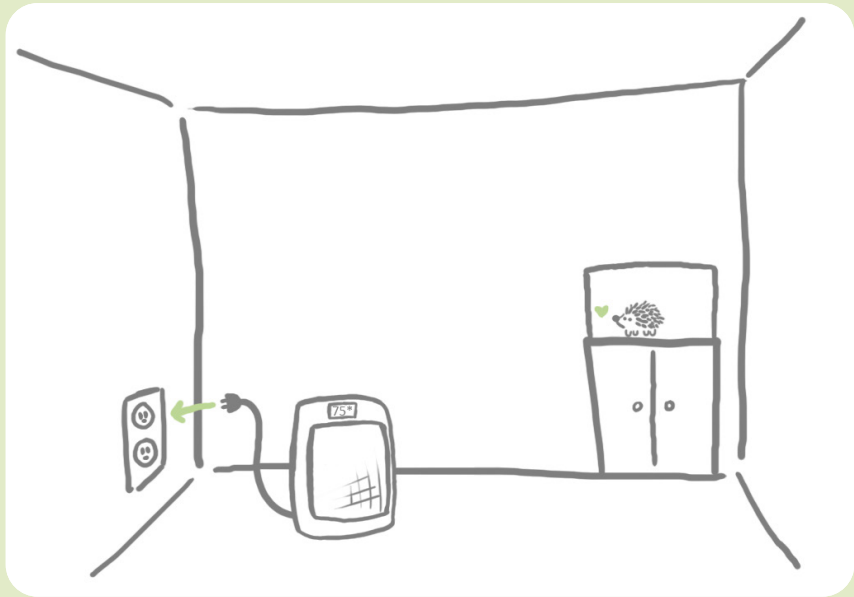
What you'll need:

Space heater: The two most popular types to choose from are ceramic space heaters, which are inexpensive, or an oil filled radiator, which are more expensive. You can typically expect to spend \$20-70 USD on a new space heater. Be sure to look for safety features like automatic overheat protection and automatic shut off in event of the heater tipping over. Try to find one with a built in thermostat that actually specifies a temperature, and doesn't just have a few unmarked options for "low medium and high" temperatures.

Thermostat (if one isn't already built in): Read the thermostat section under "If you use a CHE". For safety, be sure that the thermostat has plug-ins for grounded appliances (most space heaters need to be grounded) and not just two-pronged ones.

How to use it:

Plug it into the wall and turn the thermostat to the desired temperature. Occasionally the temperature a space heater will heat to isn't consistent with what the thermostat says (like heating the room to 70°F when it's set to 60°F), so you may have to adjust it up or down until it reaches the actual temperature you need.



Fabric vs. Particulate Bedding

The debate of what bedding is best for pet hedgehogs has been ongoing since they were first kept as pets. The general consensus is that fabric liners are the safest, most comfortable, and most cost effective choice. The extensive list of problems with shavings and other loose bedding make them a less popular choice with most hedgehog owners.

Liners: Cage liners are made from fabric to fit the bottom of the cage. These are changed twice a week or so, and are washable. Most fabrics are durable and the liners will last a very long time. You will likely only need to buy them once for your hedgegie's life. They can be made of fleece (most popular), flannel, corduroy, or vellux. Vellux is more easily shredded if your hedgegie decides to dig. Fleece also seems to like to make little "pills" of fluff which you may find caught on your hedgegie's nails or in his quills. Fleece and vellux do not need to be hemmed at the edges because they will not fray. Flannel or corduroy should be hemmed so no loose threads can catch limbs. Light colored liners are great for

monitoring a hedgegie's health, because you can easily notice any blood or unusual changes in urine or feces. Some people don't like the idea of washing something covered in hedgegie poop in the same washer that they do their clothes. That is a personal preference but if you spot clean and shake off the liners before washing, they should not be too bad. It's best to use unscented laundry detergent to avoid bothering your hedgegie's sensitive nose.

Pros: Comfortable for hedgegie, easy to change, cost effective, no loose pieces to be kicked into the water dish, easy to notice health problems, aesthetically pleasing, are a good choice for people with allergies to wood bedding.

Cons: Can smell if not changed often, possible washing inconvenience, hedgegies might burrow under them and tip over dishes and accessories.

Wood shavings: If you are using shavings, you will want a cage with a base several inches deep so they don't spill out everywhere. Aspen shavings are the safest to use, with kiln-dried pine in second as accept-

Here is a small ►
cage setup
with a single
layer fleece
liner...

(the top of the
cage was left
off for sake of
visibility)



able. Aspen shavings are the only phenol-free shavings available. This is the reason for not using cedar or any untreated pine or other type of shavings. The aromatic oils are toxic to small animals and cause serious respiratory problems. With kiln-dried pine, most of these phenols are removed, but some are still there after the treatment. Shavings can be messy and dusty, but for someone more concerned for odor control this may be a popular choice. Remember though that you shouldn't ever put off cleaning to the point where you are relying on the wood scent to keep the smell down. You should spot clean daily and completely clean the cage and replace shavings once a week or so.

Pros: Allows a hedgegie to dig around in a loose substrate, may help minimize odor.

Cons: Messy, dusty, pieces can get caught in eyes/nose/genitals, can harbor mites, can have harmful phenols, food dumped out of the dish will fall to the bottom of the shavings and be wasted or make it harder to monitor eating habits, hard to use a water dish since shavings will constantly be kicked into it, harder to observe health issues if you can't easily see if your

hedgegie is bleeding or relieving himself regularly, more expensive than liners.

Pelleted wood bedding: Pelleted wood bedding such as non clumping Feline Pine or Equine Fresh are similar to using shavings, but in a healthier form. Pellets are usually less dusty, and most products are kiln dried to remove most of the phenols from the wood. Because the pieces are larger than shavings, there is less of a chance for pieces to get stuck in genitals and in general they stick to things less (since shavings are notorious for getting stuck on hedgehogs, their sleeping sacks, even in your carpet).

Pros: Cleaner and healthier than shavings, very absorbent, similar in price to paper bedding.

Cons: More expensive than shavings, risk of blockage if ingested.

Paper bedding: CareFresh, Yesterday's News, and Cell-Sorb are a few popular recycled paper products. These substrates are similar to shavings and wood pellets, but without any harmful phenols. They are often extremely dusty though (some products more than others) and can contribute to dry skin.



◀ ...and here is the same setup with aspen shavings. Which looks more comfortable?

Some hedgehogs decide that the bedding is tasty and will eat it. This is dangerous and can cause a potentially fatal blockage. If you notice your hedgeie eating the bedding (note eating, not anointing with), switch to something that they decide doesn't taste as good.

Pros: Less harsh on the respiratory system as shavings, allows digging.

Cons: Dusty, more expensive than shavings, food can still be wasted and health concerns less easily observed just like shavings.

Other bedding: Corn cob is not recommended. It does not absorb urine, and molds easily. The pieces also easily get stuck uncomfortably in a hedgeie's genitals. Using no bedding at all is not a good idea because whatever surface your hedgeie is on (plastic, metal, etc.) would likely get cold and not be comfortable. As previously clarified, hedgehogs must not be kept on wire floors because their feet and nails are not made for anything but solid surfaces, and they

are painful and dangerous to walk on. Newspaper is acceptable for temporary bedding but not ideal for long term use. As it gets wet the ink will stain your hedgeie, it isn't very absorbent, and depending on your location the ink may be toxic.

So what bedding is best to use?

Considering nothing but your hedgehog's health, fabric liners are the best bedding. They are not dusty, don't have sharp pieces to lodge in places they don't belong, are comfortable to walk on, and enable you to offer food and water in dishes (which is best for your hedgeie) and makes it easier to monitor any health issues. Second up would be pelleted wood and paper bedding, for their lower risks of respiratory problems compared to untreated wood. Thirdly, shavings come in as fine to use but not as desirable, and then any other bedding (like corncob and newspaper) are not popular for good reason! Choose a bedding based on your hedgeie's health and comfort, and your cleaning needs.

Choosing a Cage

Now that you know what heating setup and bedding will work best for you, you can choose what cage will suit your needs as well. Two square feet used to be considered the bare minimum for a cage size, but a cage that small cannot even fit all the necessities (wheel, igloo, dishes, etc.) your hedgeie will need. The more widely-accepted bare minimum is four square feet of floorspace, which offers enough room for all the supplies and a bit of room to move between them. Six or more square feet is pre-

ferred. If you are able to have two square feet or more of *empty* space left after adding the wheel, hiding place, and other accessories, that would be ideal. Get or make the largest cage you can afford and be able to properly heat.

The floor must be solid with no bars or gaps for the hedgeie to walk on. Hedgeie feet are not built for walking on anything but solid surfaces. Forcing them to live on a wire grate or similar surface is very difficult/uncomfortable and will likely result in bloody, muti-

lated paws. Also, it would be much easier for a hedgeie to become too cold and attempt hibernation.

Avoid unsealed wood for any part of the cage. It can harbor mite or other parasites, as well as smell strongly of phenols which can irritate a hedgeie's sensitive nose and lungs. It is very difficult to keep clean if your hedgeie is living on it because it will soak up urine and other liquid. If you are making or buying a cage with wood, use a non-toxic sealant and be sure to let it air out before using.

Don't get a cage that has large spaces (more than 1 inch wide or so) between the bars on the sides. Small hedgeies can squeeze through these holes, or worse, get stuck halfway. If you want, you can find a way to block off the sides so your hedgeie can't fit through.

Make sure that the cage has large doors or is easy to take apart to reach inside. Many cages have doors that are too small to fit a regular sized wheel in and out for cleaning. It is very inconvenient to try to pick up your hedgeie if he is sleeping in the corner and you can't reach him either.

If you decide to use a second level, it needs to be entirely enclosed. If it is open on one side,

it is necessary to make a wall and enclose the ramp as well. Falls from only inches have proven fatal. Make sure that the ramp or tube up is not too steep, or your hedgeie may have trouble getting down. Also, keep in mind that many hedgeies will not use another level. Hedgehogs don't naturally climb around and utilize vertical space, so a single-level cage is ideal.

Ventilation is also crucial. While you want to prevent drafts and retain some heat by enclosing the sides of the cage, be sure they aren't too enclosed. A hedgehog running on his wheel can generate lots of odor at night and it's best for the cage to be able to air out. A reasonably sized cage (4 square feet or larger) will be open enough on top to not require ventilation in the cage sides - such as using plastic storage bins or a C&C (cubes and coroplast) cage with coroplast lining the inside of the cage walls to prevent climbing. Smaller cages like glass tanks (which are not recommended for a variety of reasons) that are totally enclosed except for the top do not have enough ventilation, and unless you can drill holes in the sides, they are nearly impossible to make suitable.



Hedgeie says...

- NO puny tiny cages**
- NO wire grates**
- NO unsealed wood**
- NO wide bar spacing**
- NO tiny cage doors**
- NO unenclosed ramps**
- NO unenclosed lofts**
- NO restricted airflow**

Commercial Cages:

Buying a commercially made cage is a great choice for those who are less handy and not excited about building their own cage, and want something that may be more sturdy or escape proof than one custom made. Bought new, these cages can sometimes be unreasonably expensive, but often you can find used cages in great condition for fair prices. Try checking your local classifieds (like craigslist, Kijiji, Hoobly, eBay Local, etc.) or nearby thrift stores for a good deal. You

might be able to get good prices on cages online as well, but watch out for high shipping charges. The most popular commercial cages are plastic based, wire topped cages made for rabbits or guinea pigs. They are the cheapest of commercial cages and very suitable for hedgies. Ferret or chinchilla cages are also often used, but require a bit of modification to be safe. Aquariums and glass tanks are not recommended for many reasons, listed below.

Plastic base, wire top: These cages, usually designed for ground-dwelling rabbits and cavy, are convenient to use for hedgies since all the floorspace is on one level. They have great ventilation, usually deep pans that will prevent bedding from spilling on the floor if you use loose substrate, are easy to heat. However, they also can have small doors that restrict easy cleaning, the bars may need to be blocked out of your hedgehog's reach to prevent climbing (and subsequently, falling and getting injured), and many cages are too small. You'll probably want to buy a large or extra large model. Super Pet and Marchioro are popular brands.



This Super Pet "extra large" sized cage is big enough for a hedgie and has a door on top large enough to remove a wheel for cleaning.



This Super Pet "large" sized cage is the smallest that will fit a hedgehog comfortably. The whole wire top easily comes off for cleaning in addition to the door on the front of the cage (which is not large enough for a wheel).

Ferret / chinchilla cages: Some ferret and chinchilla cages are becoming more popular as people like the larger doors for ease of cleaning, and the ability to use multiple levels to house individual hedgehogs. Midwest's Ferret Nation and Critter Nation cages work great for hedgehogs. However, you can't use them the same way you would for a ferret. The ramps they provide to reach the extra shelves are made with wire bars and not safe. You would have to build a gradual, entirely enclosed ramp up to the shelf or additional level, which also must be entirely enclosed. Many people just remove the additional levels, or remove the ramp and just keep them out of their hedgehog's reach and store supplies on them. Vinyl dryer vent tubes or ones made for ferrets make fine "enclosed ramps", though keep in mind it will be difficult to get your hedgehog out of a tube if he decides to sleep inside it. Lofts and additional levels can be enclosed using coroplast, cardboard, or other materials as a wall. Also, some hedgehogs will simply refuse to use an extra level. If your hedgehog doesn't seem to want to use his loft, don't force him to go up there by putting his food and water on a different level. Just keep his supplies on the main level and either leave the loft, or remove it if it doesn't get any use.



This single section of a Ferret Nation cage is set up to be safe for a hedgehog with an entirely enclosed loft and tube down. Using the shelf and ramp as they come for ferrets would not be safe, so modification is necessary if you decide you want to offer more than one level for your hedgeg.

Aquariums / glass tanks: Many new owners are misinformed by pet stores and told that hedgegies can live in small glass tanks. Unfortunately, there are many problems associated with using tanks as a cage and they are strongly opposed by the hedgehog community. There are no benefits to using a tank that you can't achieve using a different type of cage. The main problem with using tanks is simply that people don't want to buy ones that are actually large enough for their hedgegie. Large tanks are incredibly expensive and unless you are a wizard, nearly impossible to move with just one person. This makes thorough cleaning much more difficult. Many tanks that have enough floorspace for a hedgegie are too short to accommodate a large enough wheel, and then the ones that are tall enough, have very poor ventilation. Imagine running through your own excrement all night and having that stench just sitting in the bottom of your cage for you to inhale. Tanks are also harder to keep warm. Reptile owners are used to using heat pads with tanks, but heat pads don't heat the air the way hedgegies need and can burn your hedgehog if he lays directly on it. Because they are only open on top, space heaters may not heat the inside of the tank sufficiently. CHEs are pretty much the only option, and you have to be careful where you set it up, since placing it directly on the tank lid might be too close (burning hazard) or too heavy for the lid to support, depending on the material the lid is made of. You may be able to double up your lighting cycle and heating by using a reptile heat lamp during the day, though you will need a separate heat source for night. Overall, it's just a pain compared to heating other cage types. The smallest size tank that would fit a hedgehog's wheel and supplies comfortably would be a "40 gallon breeder" sized tank, with dimensions 36 3/16" long by 18 1/4" wide by 16 15/16" tall.



This "40 gallon breeder" sized tank is the minimum size you can use for a hedgehog.

Homemade Cages:

Building your own cage is nearly as popular as buying a commercially made one. Many people who want to save money, give their hedgeie a larger living space, or want to make a more creative home often are able to do all of the above by making a cage out of nontraditional materials. C&C cages, tub cages, and vivariums all are fantastic choices

when assembled safely. It's easy to give your hedgeie a lot of floorspace with a C&C cage; tubs connected together can be creative and cost effective, and custom made vivariums are an attractive choice for those who value how aesthetically pleasing their hedgeie's accommodations are. Building a home for your hedgeie is a great way to make sure the cage fits everyone's standards.

C&C cages: C&C, or Cubes & Coroplast, are widespread cages made of wire storage cube grids and corrugated plastic to prevent climbing. These cages were originally conceived by the guinea pig community to offer their pets more space to roam. To build one, you will need three squares minimum for the **floor** of the cage (the grids are usually a bit over one foot square). Since hedgeies are great escape artists, you'll also need to make a lid. You can use grids for this, wire closet shelving, or get creative with something else that allows airflow. If you have a small hedgeie (under 300 grams), be especially careful about escapes. Some can fit right through the squares, and others may try but get stuck. If you think your hedgeie might try to escape, block off the grids within reach with coroplast, plastic place-mats, plexiglass, or something similar.



This 2x3 cube cage offers lots of room to move around, so exercise is not just restricted to running on the wheel.



A 1x3 cube cage is the smallest you can make for your hedgeie to still have a comfortable amount of room. There is space for all the necessary accessories and room to move between them.

Tubs: Tub cages are most commonly used by breeders who need cages that are quickly cleaned, easy to stack or put on racks, and are cost effective. They have caught on with owners who are attracted to the low cost of buying the plastic tubs, and the possibility of connecting many together into a cage with different “rooms”. Tubs are lightweight and if you use multiple, can be disassembled and nested together for easy transport. The plastic is easy to clean, and the way most tubs are wider on top than bottom offers a bit more ventilation than cages with straight solid sides, like glass tanks. To prevent escapes, it’s best not to leave the lid off, so a bit of modification is necessary. Most plastics are soft enough for you to cut “windows” out of the tub lid or the sides of the tub using a dremel, exacto knife, etc. You can then drill small holes around the edge of this window and wire on $\frac{1}{4}$ to $\frac{1}{2}$ inch hardware cloth, window screening, or a similar material to allow airflow. It’s best to either have a large “window” in the lid, or at least two on different sides of the cage to allow air to pass through. Simply drilling holes in the sides of the cage will not allow enough airflow if you have the lid on.



Large christmas tree tubs work great if you want to use a tub for a cage, but want one large enough to use on its own and not have to attach multiple together. The coolers between these two tubs are individual sleeping areas.

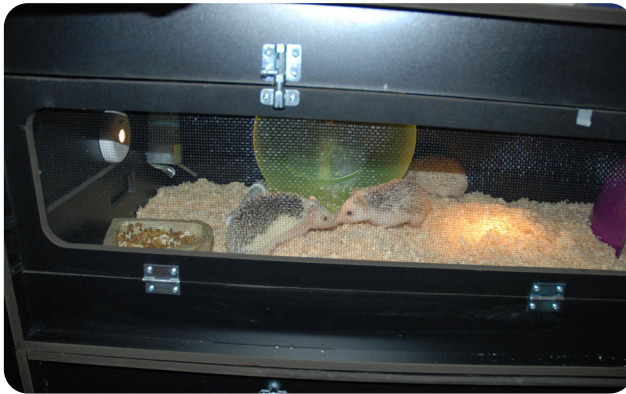


A tub this small is ideal for quarantine or travel, but doesn't offer enough room for your hedgeie to really stretch and move around.



If you want to get creative, you can attach multiple tubs together with 4" vinyl dryer tubing or ferret tubes. This cage has individual tubs for sleeping and food and water dishes, as well as a suspended wheel and spare room to run around.

Vivariums: Vivariums have not yet caught on in North America as much as in Europe. These custom made cages are ideal for hedgehogs when built properly and can be made to match the decor of your house. The main drawback of vivariums is the high cost of purchasing one custom made, or the large amount of effort that goes into designing and building one yourself. There are some commercially made for reptiles, but they usually lack sufficient ventilation. Practical design when building a vivarium is extremely important to make sure your cage is safe and comfortable for your hedgehog, and also functional for you. Ventilation is very important: it is not recommended that the front of the viv is solid glass or plexiglass. Instead, you should use a wire mesh that allows airflow. Vents on the back or sides of the cage alone will not provide enough ventilation for your hedgegie. Because most are made of wood, you will want to be sure you seal any wood that your hedgehog will be in contact with (so you can sanitize it) and let it air out before use. There are many examples you can find online for ideas for building your own vivarium. Just be sure you are confident in your DIY skills or in the skills of the person building it for you!



You can find many commercially and hand made vivariums online. The main concerns are making sure there is proper ventilation and that the wood (if any is present) is sealed so it can be cleaned properly.



What about no cage at all?

Having your hedgeie roam the house is pretty unrealistic for the average household, but is possible for someone aware of the risks involved and willing to compromise their usual comforts and routines for their hedgehog. Allowing your hedgeie to have free reign of a room or several rooms in your house is great because they get a chance to run around naturally, and not just on a wheel. There are many precautions you should take though before setting your hedgeie loose.

The first concern with free roaming is your hedgehog's safety. In a cage, you know your hedgeie is confined to a safe environment. In a larger space, there are many many things that can go wrong.

- Firstly would be keeping the entire area warm enough. Your hedgeie will be running around on the floor, and since heat rises, it'll always be colder on the ground. Will you be able to heat the whole room, or the whole several rooms you'll be using? That means having space heaters set up to keep that space heated constantly. You have to be careful to block off the space heater from your hedgeie, so he can't burn himself on it.
- What furniture is in the area you'll be dedicating to your hedgeie? Be careful of anything he can squeeze under or behind, especially reclining furniture, which are notorious for crushing small pets in the gears when an unsuspecting owner sits down. You may have to find a way to block off certain areas of a room.
- You have to be relentless in your cleaning, since any threads

or hairs on the ground can wrap around your hedgeie's limbs and cut off circulation.

- What about encountering pests? Will your hedgeie run across any potentially diseased or poisoned insects, mice, etc?

- What cleaning solutions will you use? You'll have to be sure anything within your hedgeie's reach is cleaned with safe, nontoxic cleaning products.

Along with your hedgehog's safety is your own comfort. Are you willing to spend so much time cleaning? Will you get furious every time you accidentally step on a shed hedgehog quill?

- Hedgehogs poop, pee, and shed quills. None of these are particularly fun to step on, or look good to unexpected guests. You'll need to be okay with the fact that there will be messes.

- What about the floor? Is it carpet? Keep in mind that your hedgehog will be pooping and peeing all over this area, and won't reliably use a litter box. You probably don't want quills getting buried or urine soaking into your carpet. Wood or linoleum is better suited for cleaning.

- If the area you're using is a part of your living space, will you be comfortable at those warm temperatures?

- Additionally, will you be able to keep the floor clear from any dangers to your hedgeie? You won't be able to just toss a laundry basket on the ground and leave it. Some people might struggle to remember they can't just throw things on the ground.

You can find more suggestions and information about pet-proofing your house online. Try searching “ferret proofing” or “rat proofing”

a room; you can find personal experiences and more specific instructions for sharing your living space with a pet.

Cage Accessories

So by now you should have an idea of what cage you’ll use, how you’ll heat it, and what type of bedding you’ll use. Now all you

need to add are accessories and a hedgie!

Here’s a quick recap of the necessary cage accessories:

Hiding place: Your hedgie should have a place to sleep in security and comfort. It’s best to give your hedgie a shelter to sleep in, but also fill the shelter with blankets to curl up in as well. It’s much more comfortable for them and helps them stay warm. The hiding place can be a:

- Plastic igloo - the large size is best for hedgehogs. The medium is too small for most hedgies, and the extra large gives a bit too much space (unless you are housing two hedgies that like to sleep in the same area, then the space would probably be appreciated).
- Ice cream bucket - you can cut a hole in the side of one of these as long as you make sure the edges are not sharp. You can sand them down or cover them with a safe tape.
- Cardboard box - make sure it doesn’t have any odd smells. Aired out shoe boxes work well.
- 4” diameter PVC fittings - not ideal, but you can use elbow PVC fittings for your hedgie. The main downside to these is that they are open on both sides and don’t offer your hedgie much escape from the light to sleep.
- Sleeping bag/blanket - usually you’d put the bag or blanket inside one of the above, but some hedgies don’t mind just using a blanket or hedgie hat without a “shelter” above it.



Food dish: The food dish should be low to the ground (preferably under 2” tall for your hedgegie’s comfort) and wide to prevent tipping, and be made of a safe plastic, glass, or ceramic material. Check where the dish is made before purchasing if you are concerned about lead content.



Water dish/bottle: If you decide to use a dish, follow the above advice for food dishes. For a water bottle, be sure to get one that is reliable and won’t leak randomly. Many cheaper brands of water bottles have a habit of “sticking” and not letting the water out, or dripping if it is rattled (or for seemingly no reason at all).

Water bottle use is very controversial. While some find that hedgegies get enough water from them, others find that hedgegies drink much more from a bowl, and will drink from them over a bottle if given the choice. Water dishes are easier to clean and you are less likely to leave it for several days without refilling with fresh water. The drinking position is more natural from a dish. Some incidents have been reported of hedgehogs cutting their tongues and chipping their teeth between the nozzle and ball. If you do use a bottle, be sure to place it so the nozzle is at your hedgegie’s level. If he has to tilt his head up to reach it, it’s too high.



Litter box, wheel & toys: You can find information about wheels and toys in the Exercise chapter, and information on litter boxes and training are later in this chapter.

Cleaning

If you use liners: You should change liners every few days. These can be shaken off outside and put in a hamper or trash bag, and saved until you wash. You should also change your hedgeie's blanket/hat/bag often.

If you use loose bedding: You should throw out all bedding and clean the cage weekly at least. A common mistake with this bedding is putting off cleaning too long. Just because you can't see it/smell it, doesn't mean it isn't dirty. If your hedgeie uses one corner mainly for bathroom duties, you can scoop that area out daily.

When cleaning, avoid using any scented soaps or cleaners for your hedgeie's supplies. Hedgehogs have very sensitive noses, and if you can smell it, he can *really* smell it.

The cleaners listed below are by no means the only things you should use - they are just some of the more common ones. There are lots of great cleaners out there. Check the bottle, be sure it doesn't smell too strongly, rinse and dry, and you should be good.

Commonly used cleaning supplies:

Dish soap: Dish soap is safe and widely used. Remember to rinse the object well to remove all resi-

due.

Vinegar: Regular white vinegar is great for cleaning and deodorizing. Since it is a weak acid, it helps reduce and prevent bacteria growth. Many people use a half water, half vinegar solution for cleaning wheels and other accessories. Diluted vinegar works better for loosening up dried messes than water alone. The vinegar smell (which a lot of people don't like) dissipates quickly once dry.

Bleach: Bleach can be used for sanitizing, but needs to be diluted according to the directions on the container. Make sure you rinse the object very well and let it dry and air out before returning it to your hedgeie.

Chlorhexidine solution: This antimicrobial chemical is safe to use for cleaning. (It is also used as a topical disinfectant for animal wounds) Two tablespoons of concentrate per gallon of water is the appropriate dilution. Chlorhexidine also goes by the names Nolvasan and Chlorhexiderm.

Unscented baby wipes: If you just need to wipe off a few toys, or the wheel if it isn't too dirty, baby wipes work well. They can also be used to give a quick "foot bath" if your hedgeie needs it.

Litter Training

Many people are disappointed to hear that the majority of hedgehogs will not consistently and reliably use a litter box. While some will get into the habit of using one, most hedgeies will relieve themselves on their wheel and wherever else they please. Often-

times they'll find a place in their cage they like to potty best. It's easiest to just put the litter box there, instead of trying to convince him to use a different spot. If you are spot cleaning regularly anyhow, it shouldn't make too much of a difference if he uses a litter box or

not. Please note that you should never expect to be able to train your hedgegie to refrain from relieving himself on his exercise wheel. Pooping on the wheel is just what hedgegies do, there's no changing it. Occasionally there will be an exceptionally bright hedgehog who will think to hang his or her butt over the edge of the wheel to poop, but those individuals are few and far between. Litter training is usually an effort made by owners to contain the messes their hedgegie makes *outside* of his or her wheel.

What Box to Use: Using a shallow box or pan is best. Find one that will keep the litter in well, but will also be easy for your hedgegie to get into. If it takes a lot of effort to climb into the litter pan, your hedgegie isn't going to go through the trouble. Plastic pans are best, since they can be washed and reused over and over. Cardboard boxes or trays work as well, but need to be replaced frequently. Two popular litter box options are

ferret sized corner litter boxes, and simply putting a tray (cardboard, old cookie sheet, etc.) under the wheel that sticks out a few inches in the front, leaving room to catch poop. Wherever you place the box, don't put it too close to your hedgegie's sleeping or eating quarters, most animals don't like to eat and sleep in the same place they poop.

What Litter to Use: Most people use a loose bedding in the litter box, along with liners or a different substrate as the main bedding. Paper products, wood pellets, and wood shavings are all possibilities. Head back a few sections to read up on the pros and cons of different types of bedding if you like. It's good to have a litter that contrasts from the bedding in the rest of the cage. This will help your hedgegie distinguish between the "potty area" and "keep clean area".

How to Promote Using the Litter Box: The easiest way is to just put the litter box wherever your hedgegie



is used to going. Under the wheel is a common place, or in a corner of the cage. Some people pick up droppings from around the cage and put them in the litter box so their hedgegie will associate the box with relieving himself. Some hedgegies may be brighter than others and catch on to this, others may not. Another trick people have tried is to take the droppings from another hedgehog and putting them in the litter pan in hopes of instigating a territorial response where their hedgegie will potty over the top of the other droppings to cover up the inferior scent. It's debatable whether our pet hedgehogs would

even act in that manner in the wild, so there's no guarantee that approach will work. If it would, though, it'd work best with males, and using the droppings of another male. Finally, if you catch your hedgegie using the pan, you can offer him a mealie or another form of positive reinforcement. If you catch your hedgegie about to eliminate in the wrong place, you can quickly pick him up and place him in the litter box to finish his business.

Don't feel bad if your hedgegie never catches on. Some are more compliant than others, it just depends on the hedgehog.



You can cut out the front of a milk jug and fill it with litter to use as a cheap DIY litter pan. If you leave the handle on, you have an easy way to pick up the pan and dump old and scoop new litter as well!



Housing Hedgehogs Together

Despite the fact that hedgehogs are solitary creatures, some people get it in their heads that their pet must have a friend. It is important to know that this is simply not the case. Hedgehogs do not need or crave companions, and are happiest to have their own living space. It IS possible to have two or more hedgehogs cohabit successfully, but then you have the problem of the hedgehogs bonding and becoming depressed and lonely when one dies. Keeping hedgehogs together, to put it simply, complicates things. You have to worry about whether they get along, and then you have to worry about how they'll cope on their own after inevitable separation. You have the worry of not knowing exactly how much each hedgegie eats or drinks or runs because they share the same dishes and wheels. When one has a health problem, it's harder to pinpoint the cause when you're looking at the actions of multiple

animals and not just one. If you're determined to keep hedgehogs together despite these concerns, please also consider the requirements below:

Firstly, the most common pairings to make are a female-female pair. Females are more likely to get along than males, who rarely will tolerate each other. It's also possible to do a male-female pair, though one of them **MUST** be spayed or neutered. It is absolutely **NOT** acceptable to have an opposite sex pair where both are unaltered. The female will constantly be pursued by the male, become pregnant, birth the babies, and then most likely the parents will cannibalize the litter from the mother's stress of not having her own space. This seriously increases her chances of reproductive problems and risks her life each time she gets pregnant. For your pets' sake, do not keep mixed sex pairs together, even temporarily. It only



Hedgehogs are more likely to get along if they have lived together from a young age, rather than introduced after establishing a solitary lifestyle.

takes a moment and your thoughtlessness could be the end of your female as she dies of birthing complications. Additionally, male-male pairings are rarely successful and usually only by people who have extensive experience with hedgehogs and are capable of understanding and acting on the individual animal's needs. Please only keep females together or males and females where one or both are spayed and neutered.

Next, there isn't much of a benefit to housing hedgegies together space or supplies-wise. You should have an even larger cage, because you will need to offer two of everything: two sleeping places, two wheels, two water bowls, two food dishes, etc. If you force your hedgehogs to share all the same supplies, there's a much higher chance of fighting due to competition for food or the wheel. Make sure you have two of everything and a large enough cage to fit all these supplies. A C&C cage may be best because it is easily expandable to a good size for multiple hedgegies.

Finally, you should have a

second cage on hand in case you do need to separate them. There are no guarantees that two hedgehogs will get along, even if raised together from birth. If there is bloodshed, separate them. Minor shoving and tussles may not be cause for concern, but as soon as the fighting gets serious (biting, injuries, constant pestering and following around) you'll need to separate them. It may take a week or more for two hedgehogs to become acquainted and respect one another. It's best to introduce them on neutral ground (where neither feels the need to defend their own territory). Until you are certain they are not bickering with each other, keep a very close eye on them for injuries. It's best if you can have their cage in your bedroom so if they squeak or scream you will hear it and can separate them immediately. Please note that hedgehogs that have gotten along for months, even years, can suddenly turn on one another and cause serious injury or even death. Always be prepared to house them individually.



Here's an example C&C cage setup that can comfortably house two hedgehogs.



Nutrition

Choosing a Staple Diet

A hedgegie's diet has a huge effect on their overall health. It's important to feed high quality foods and try to offer a variety of both staple foods and treats such as insects, fruits, veggies, meats, and eggs to make sure your hedgehog is getting all the nutrition he needs. Currently we don't know a great deal about hedgehog nutrition like we do for dogs or cats. Certain foods are recommended because they have had the best effect on hedgehogs' health and overall longevity. For this reason, it is important to remember that our pet hedgehogs are a hybrid of multiple wild African species. This hybrid does not exist in the wild, and our pets would unlikely survive, and certainly not thrive in the wild. The hedgehogs our pets descended from only lived two or three years maximum in the wild. Captive bred hedgegies are now living much longer, on average 3-5 years. If given proper veterinary care they can live even longer. This is one reason why we do not try to closely mimic wild hedgehog's diet - they seem to thrive on the foods we're feeding now, so why change a good thing?

The main choices owners have to choose from for a staple diet are cat food, dog food, or "hedgehog food". You can find more information about the unsuitability of these "hedgehog foods" later in this chapter. Remember, it doesn't matter what animal the food was marketed for, as long as the ingredients and guaranteed analysis are good. Along with the nutritional content, you should consider the size, shape, and hardness of the individual kibbles. It can be hard

for a hedgegie to eat, or even be a choking hazard if the pieces are too big. Some owners have found that hedgegies have an easier time eating "X" or "Y" shaped kibble over circular pieces. Dog food pieces are often harder than cat food, which can make the pieces even harder to eat. Crushing the food, while inconvenient and facing the worry that your hedgegie might not like crushed food, will make munching much easier.

Unfortunately, because different foods have different moisture contents, it can be hard to compare the guaranteed analysis between two foods without having to crunch some numbers. The protein, fat, fiber, etc. percentages are all based on the moisture content of the food. In order to accurately compare different foods, you need to figure out what the percentages would be at 0% moisture (also known as Dry Matter Basis, or DMB), not say, 3% for a dry food, or 82% for a wet food.

So how do you calculate for the dry matter basis? It's not too hard! Start by subtracting the moisture content of the food from 100. Then all you have to do is take the protein, fat, fiber, or whatever content and divide it by that number. Here's an example:

Example Dry Cat Food

Protein: 32%

Fat: 9%

Fiber: 1.5%

Moisture: 4%

So first, subtract the moisture from 100:

$$100 - 4 = 96$$

cont. next page

Now, divide each of the protein, fat, and fiber values by this number:

DMB Example Dry Cat Food

Protein: $32/96 = 33.3\%$

Fat: $9/96 = 9.4\%$

Fiber: $1.5/96 = 1.6\%$

And there you have your DMB! Let's try another one.

Example Canned Cat Food

Protein: 10%

Fat: 5%

Fiber: 2%

Moisture: 78%

Subtract the moisture from 100:

$100 - 78 = 22$

DMB Example Canned Cat Food

Protein: $10/22 = 45.5\%$

Fat: $5/22 = 23\%$

Fiber: $2/22 = 9.1\%$

See how even though the canned food seems to have lower values, it's actually even higher in protein, fat and fiber than the dry food? Be sure to convert foods to DMB before comparing values.

Now that you know how to find the DMB of foods, you should probably know the proper percentages to aim for when choosing a food. Dr. Wendy Graffam of the Bronx Zoo completed research on hedgehog nutrition and shared these suggested values in 1998 (all are calculated on a dry matter basis):

Protein: 22%

Fat: 5%

Fiber: 15%

Unfortunately, there aren't many good foods out there with these values, so there isn't any widespread evidence showing whether a diet with these values

is actually any better than what most owners feed. The most common healthy diet used is a mix of good quality cat foods with these recommended values (based on dry matter basis, and derived from a consensus throughout the hedgehog community):

Protein: max 35%

Fat: max 15%

Fiber: min 2%

There have been concerns about diets that are very high in protein causing kidney problems. However, research has shown that healthy animals do not struggle with high protein diets. Animals that already have renal problems, however, should not be fed a high protein diet to avoid accelerating their disease. If this is a concern to you, feel free to discuss options with your vet. The thing to remember is that hedgehogs don't *need* high protein diets.

As for fat, 15% is considered the maximum for hedgehogs overall, though individual hedgehogs have different needs. Some put on weight easily and should be fed a diet of even lower fat, such as 10%. Then there are some that run constantly and need a higher fat diet to keep weight on. These hedgegies may need a diet of up to 20% fat. It just depends on individual circumstances.

As for fiber, you only really need to worry if your hedgegie isn't "regular" in his bowel movements. Most hedgehogs don't have a problem digesting quality cat food diets. Adding insects to your hedgegie's diet can help if you think he needs more fiber. The exoskeletons of crickets and mealworms are an excellent source of fiber.

Some people in the past have recommended adding bran flakes or Grape Nuts cereal as an additional source of fiber, which is fine, but most hedgehogs will just eat around them and leave them in the bottom of the bowl, so they aren't very effective.

Ingredient wise, high quality dog food is likely to be the most suitable for hedgehogs, even over cat food. However, most people feed cat food because the pieces are smaller, so a hedgehog can actually eat them without us having to crush up every piece of food. It's important to realize that cats are obligate carnivores, which means they eat strictly meat, no fruits or veggies or grains. Dogs are omnivorous, and will eat all of these things. These fundamental differences aside, many pet food companies usually aim to appeal to pet owners and not the pets themselves, and put ingredients in cat foods that cats shouldn't actually have. For example, putting fruits and veggies in a cat food: most cat owners think that fruits and veggies sound great and healthy, without realizing that their cat shouldn't actually have them. This means that whether you're buying a cat or dog food, even though both have very different needs, middle and low quality foods will have similar ingredients. You will find that in the very highest quality cat foods, they are almost entirely meat and have very high protein percentages. High quality dog foods are more likely to include carbohydrates like rice or potatoes, as well as fruits and vegetables. Because hedgehogs are omnivorous they have similar nutritional needs and digestibility to dogs, rather than

cats.

So why not just use a wet dog food? Well, it's definitely possible, but it's recommended to use dry food for the convenience. One bag of dry food will last a long time, and you don't have to worry about it going bad before your hedgehog can eat it all. When feeding a wet food, you have to worry about bacterial growth on the food. Always dispose of leftover wet food immediately in the morning and wash the dish before feeding the next night. Dry food is beneficial in that the crunchy nature can help keep teeth clean and stimulate the gums (sort of like us humans flossing). The one downside to dry food is that the large, hard pieces can wear your hedgehog's teeth down prematurely and are not very easy to eat. Imagine having to eat whole ice cubes for all your meals: they're hard, and it would tire out your jaw! It's recommended for your hedgehog's sake to crush (not to a powder, just into smaller pieces) or cut (with a pair of sharp scissors) your hedgehog's dry food.

That's a lot of information to take in! **Here's a recap of hedgehog dietary needs:**

- Small pieces no larger than pea sized, smaller is preferred. You can crush or cut up larger pieces if necessary.
- Guaranteed analysis of less than 35% protein, less than 15% fat, and at least 2% fiber.
- High quality ingredients, with meat as the first ingredient. Avoid corn, vague descriptions (such as "animal by-products"), any by-products, as well as BHA, BHT, and ethoxyquin, which are

all linked to cancer. You can read more about identifying good, wholesome ingredients later in this chapter.

- Read on to learn about treats and supplements to give in addition to your hedgehog's staple diet.

Reading the Label

While trying to decipher what a food label means can be pretty daunting, it's important to be able to understand what exactly is in the food so you can choose the best for your pet. Fortunately once you understand how each part of the label works, it's easy to glance through and decide whether different brands are worth using or not. This section of the book is mainly directed towards cat and dog food, though it applies to other pet foods as well.

The first rule of thumb before we actually get to labels: Never judge a food based on the pictures on the bag! That happy cat running through what appears to be wholesome ingredients falling from the sky has *nothing* to do with how good the food is. Don't fall for the marketing ploys!

As for the actual label, you have two parts to worry about. First off you have the ingredient list. This is the list of everything the manufacturers put in the food, in order by weight. Please note that this is the mass of different ingredients *before processing*. In order to make their food appear better than it is, companies can use healthy ingredients that retain a lot of water (and therefore weigh more) and then use dehydrated versions of less desirable ingredi-

If you can find a food that meets all of the above, that's perfect! Usually the best foods all around are medium to high quality cat foods, because they combine good ingredients and guaranteed analysis with small, easier-to-eat kibbles.

ents. Another sneaky trick they use is "ingredient splitting". This just means if they have "corn", they can list it as "corn meal" and "corn gluten" (etc) separately so other better ingredients might be listed ahead of them. For example, you could put 10lbs of corn in a batch of food with 8lbs of chicken, but then split the corn into "5lbs corn meal" and "5lbs corn gluten" so instead of listing corn first, you'd list the chicken. Not all pet food companies are so manipulative, but many are, so it's good to be aware and keep a look out.

When you are looking at the ingredient list, it's most important to look at the main ingredients. Everything else is important too (especially if it's an unhealthy preservative or dye), but when you're looking for quality, your best bet is to just identify and consider the main ingredients. To do this, all you need to do is look for the first source of fat listed in the ingredients. This could be an actual fat (chicken fat, poultry fat, animal fat, beef tallow, etc) or an oil (corn oil, cod liver oil, soy oil, etc). The main ingredients will include this source of fat and all the ingredients listed before it. Usually there are less than ten main ingredients in a food. All the other ingredients are just traces of vitamins and miner-

als, flavoring, preservatives, etc. So if you see carrots, peas, apples, and bananas listed, make sure they are actually main ingredients before you get excited about it. There's a good chance it's just a teeny tiny amount in the food.

The second part of the food label is the guaranteed analysis, which we've already discussed! Remember to always convert to

dry matter basis or check that the foods have the same moisture content before comparing values. Careful for the "minimums" and "maximums"; for example, if you have a food that's "13% fat min", the fat percentage could be higher.

Don't forget to check the expiration date when buying a bag of food! Manufacturers put deadlines on there for a reason!

Here's what to avoid:

- *Any corn*, whether ground corn, corn gluten meal, just straight corn, any of it. Corn isn't the worst thing in the world, and it's so common that it can be hard to find foods without corn, but it's not a quality source of nutrition. As a protein source, it is very indigestible, and the harder it is to get nutrients out of the food, the more your hedgehog has to eat, the more he'll poop, and the more food you'll have to buy.
- *By-products*. If you had the choice to offer your pet legitimate meat or the skin, feathers, feet, beaks, tongues, etc, which would you prefer? By-products are the nasty stuff that no one else wants to eat, so they put it in pet food.
- *Generically named ingredients*. If you have an ingredient called "animal fat", you have no idea what source of fat that is. Even "poultry fat" is still too generic. Look for specifically named ingredients, like "chicken fat". Vague names like "animal blood meal" are just sketchy.
- *Sweeteners*. A food ought to have good enough ingredients that we don't need to coat it in sugar to persuade an animal to eat it. Avoid cane molasses, corn syrup, sugar, etc.
- *Artificial preservatives, flavors, and colors*. There are certain dyes put in foods that have been linked to health problems, so avoid dyed food. Usually if the food is dyed it's a lower quality brand anyhow. Avoid BHA, BHT, ethoxyquin, and propylene glycol. These preservatives have been linked to many, many health problems, including cancer. Also, avoid foods that include fish meal as a main ingredient. It won't be listed individually in the ingredients, but by law in the USA all non-human grade fish meal must be preserved with ethoxyquin.

Here's what to look for:

- *Specifically named ingredients* when it comes to meat. Chicken fat, lamb meal, deboned chicken, duck, beef meal, etc. are all far better than "poultry fat" or "animal digest".
- *Quality meat sources* as main ingredients. A good food will have a quality meat as the main ingredient. Some may have multiple meat sources.
- *Safe preservatives*. Mixed tocopherols, ascorbyl palmitate, ascorbic or citric acid, rosemary, sage, or clove extract are all safe. Just make sure to avoid the bad ones listed above.

Ingredients

Ground whole corn, meat and bone meal, corn gluten meal, animal fat (preserved with BHA), powdered cellulose, dried plain beet pulp, artificial flavors, salt, vegetable oil (source of linoleic acid), vitamins, choline chloride, minerals, added colors (red 40, yellow 5, blue 2).

Guaranteed Analysis

Crude Protein	30.0% min
Crude Fat	10.0% min
Crude Fiber	2.0% max
Moisture	4.0% max

Example Cat Food Label

Here are two fake labels as a visual for some of the tips discussed on the past few pages. The first one is a typical low quality food, and the second is high quality.

*The first fat source is animal fat, so the main ingredients are **ground whole corn, meat and bone meal, corn gluten meal, and animal fat (preserved with BHA)**.*

This ingredient list includes a lot of fillers (corn, powdered cellulose), vague sources for animal-derived ingredients, dangerous preservatives (BHA), artificial flavors, and added colors.

The guaranteed analysis is fine, though the protein is coming from low quality sources. The low fiber can be supplemented with insects in the diet.

Ingredients

Deboned chicken, chicken meal, oatmeal, ground barley, canola oil (preserved with mixed tocopherols), tomatoes, rice bran, whitefish, natural chicken flavor, carrots, spinach, sweet potatoes, apples, blueberries, ground flaxseed, ground millet, vitamins, minerals, choline chloride, mixed tocopherols (added to preserve freshness), taurine, rosemary extract.

Guaranteed Analysis

Crude Protein	35.0% min
Crude Fat	15.0% min
Crude Fiber	3.0% max
Moisture	4.0% max

*Here the first fat source is canola oil, so the main ingredients are **deboned chicken, chicken meal, oatmeal, ground barley, and canola oil (preserved with mixed tocopherols)**.*

These ingredients are specifically named, higher quality sources, and don't contain any nasty stuff.

Here the guaranteed analysis is fine as well, though the fat may be a bit high for some hedgies.

Commercial Hedgeie Food

Some people feed commercial hedgehog food because a vet or pet store recommended it to them, or simply because it is marketed for hedgehogs, so it must be good for them, right? Unfortunately these foods are usually extremely low quality, made with fillers, by-products and unhealthy preservatives. If you compare the ingredients, some are similar to an extremely low quality cat food. Some brands have seeds or dried fruit which can be difficult to chew, can be choked on, or get stuck in the roof of a hedgeie's mouth. They can also be toxic (such as raisins). Vitakraft hedgehog food has puffed wheat, raisins, and peanuts in the first ingredients! There are a few okay hedgehog foods out there, but in general they should be avoided. It is healthier and probably more convenient to choose a mix of cat foods over any hedgehog food.

Some hedgehog foods are fine to feed in a mix, but you should not feed only hedgehog food. None of them are as good as even a medium quality cat food. The following brands are okay to feed, but preferably in a mix of other high quality foods:

- Spike's Delite (any formula)
- Sunseed Sunscription Vita Hedgehog Adult Food
- Brisky Diets Hedgehog Feed
- 8 in 1 Pet Ultra-Blend Select Hedgehog Food
- L'Avian Hedgehog Food

The following should be avoided at all costs. There have been cases of hedgehogs dying of malnutrition from some of these foods, and overall they have very poor

quality ingredients:

- Brown's Zoo Vital Hedgehog Food Premium Diet
- Vitakraft Hedgehog Food
- Pretty Pets Premium Hedgehog Food
- Mazuri Insectivore Diet or Insectivore Gel
- Insectivore-Fare made by Reliable Protein Products
- Exotic Nutrition Hedgehog Complete

Check out the ingredients in some of these foods - they are about as nutritious as cardboard.

Vitakraft Hedgehog Food

Puffed wheat, rolled oats, raisins, crushed peanuts, cod liver oil, sunflower seeds, shrimp, sugar beet syrup, dried pork meal, ground prawn, corn meal, puffed corn, soybean oil, rice flakes, honey, dehydrated carrots, nutmeg fine, calcium propionate.

Exotic Nutrition Hedgehog Complete

Bloodmeal, soybean meal, ground corn, corn gluten meal, whole roasted soybeans, tallow, cane molasses, dried beet pulp, dried mealworms, yeast culture, *L. acidophilus*, *S. faecium*, *S. cerevisiae*, choline chloride, vitamin E supplement, copper sulfate, zinc proteinate, manganese proteinate, copper proteinate, cobalt proteinate, thiamine

Exotic Nutrition... cont.

monoitrate, vitamin A supplement, vitamin D, vitamin E supplement, zinc oxide, biotin, folic acid, niacin supplement, pyridoxine hcl, dehy alfalfa meal, pantothenic acid, riboflavin supplement.

Insectivore-Fare

Porcine by-products, fish meal, poultry meal, shrimp meal, wheat flour, dried bakery products, crushed roasted peanuts, dried kelp, fructose sugar, corn syrup solids, water, spirulina, lactic acid, phosphoric acid, calcium propionate (preservative), iodized salt, calcium carbonate, concentrated carotene, calcium chloride, propylene glycol, vitamin E supplement, taurine, vitamin A acetate with d-activated animal sterol (source of vitamin D-3), vitamin B-12 supplement, riboflavin, niacin, calcium pantothenate, choline chloride, menadione sodium bisulfite complex (source of vitamin K activity), pyridoxine hydrochloride, thiamin mononitrate, ascorbic acid, sodium selenite, manganous sulfate, zinc sulfate, copper sulfate, ethylene diamine dihydriodide., magnesium sulfate, P-amino benzoic acid, folic acid, sulfur, biotin, natural and artificial flavors.

Now compare those to these high quality cat food examples. The main ingredients are meats, and they don't contain massive amounts of fillers or other harmful ingredients.

Castor & Pollux Organix Indoor Adult Cat Food

Organic chicken, chicken meal, organic peas, organic brown rice, organic barley, salmon meal, organic flaxseed, pea protein, organic chicken fat (naturally preserved with mixed tocopherols and citric acid), powdered cellulose, natural chicken flavor, minerals (zinc proteinate, iron proteinate, copper proteinate, manganese proteinate, calcium iodate, sodium selenite), dried egg product, salt, choline chloride, potassium chloride, vitamins (vitamin E supplement, niacin, l-ascorbyl-2-polyphosphate, vitamin A supplement, riboflavin, calcium pantothenate, thiamine mononitrate, vitamin B12 supplement, pyridoxine hydrochloride, biotin, folic acid, vitamin D3 supplement), taurine, yeast culture, dried enterococcus faecium fermentation product, dried lactobacillus acidophilus fermentation product, dried aspergillus niger fermentation extract, dried trichoderma longibrachiatum fermentation extract, dried bacillus subtilis, fermentation solubles, rosemary extract.

**Natural Balance Limited
Ingredient Diets Green Pea &
Duck Formula for Cats**

Peas, duck, duck meal, pea protein, canola oil, flaxseed, natural flavor, calcium carbonate, choline chloride, taurine, DL-methionine, natural mixed tocopherols, zinc proteinate, vitamin E supplement, niacin, manganese proteinate, copper proteinate, zinc sulfate, manganese sulfate, copper sulfate, thiamine mononitrate (vitamin B-1), vitamin A supplement, biotin, potassium iodide, calcium pantothenate, riboflavin (vitamin B-2), pyridoxine hydrochloride (vitamin B-6), vitamin B-12 supplement, manganous oxide, sodium selenite, vitamin D-3 supplement, folic acid.

Halo Spot's Stew Cat Grain-Free Chicken Recipe

Chicken, eggs, pea protein, vegetable broth, chicken fat (preserved with mixed tocopherols and citric acid), whole peas, chicken liver, flax seed, salmon oil (preserved with mixed tocopherols), pea fiber, sweet potatoes, apples, green beans, carrots, blueberries, alfalfa, cranberries, zucchini, calcium sulfate, DL-methionine, potassium chloride, taurine, inulin, salt, vitamins (folic acid, vitamin A supplement, vitamin D3 supplement, vitamin E supple-

ment, vitamin B12 supplement, choline bitartrate, niacin, D-calcium pantothenate, ascorbic acid, riboflavin supplement, thiamine mononitrate, pyridoxine hydrochloride, biotin), minerals (zinc proteinate, iron proteinate, cobalt proteinate, copper proteinate, manganese proteinate, magnesium proteniate, calcium iodate, sodium selenite), dried lactobacillus acidophilus fermentation product, dried bifidobacterium longum fermentation product, dried enterococcus faecium fermentation product, dried lactobacillus plantarum fermentation product.

How Much to Feed

Unless your hedgehog has health restrictions, you should have a full bowl of food available to your hedgegie 24/7. If your hedgehog is overweight and needs to lose a few grams, the best way to do that is to increase exercise and not to limit food. Most hedgehogs that become overweight are the result of insufficient exercise or a diet too high in fat, not overeating. As long as the food you are feeding is low fat (below 15%) and your hedgegie has a suitable wheel, you should have nothing to be concerned about.

Usually a hedgegie will eat around 1-4 tablespoons of kibble a night. This varies with what size the kibble is (you can fit more small pieces in a tablespoon than large pieces) as well as the nutritional content of the food. The more fillers there is in a food, the more the hedgehog will eat and defecate. Growing babies will sometimes eat more than adults.

Many hedgehog owners will count how many pieces of food their pet eats each night, to make sure they are eating enough and to be able to quickly notice changes in food intake. This is a good way to catch health problems before they get worse - hedgegies are good at hiding illness, but changes in appetite or activity will often give them away. If you notice any abnormal changes in your hedgegie's behavior or eating habits, check in with your vet. Taking action on changes like this could save your pet's life.

If you decide you would like to keep track of how much your hedgegie eats each night, you can either count food pieces, or weigh the food. If you're weighing (on

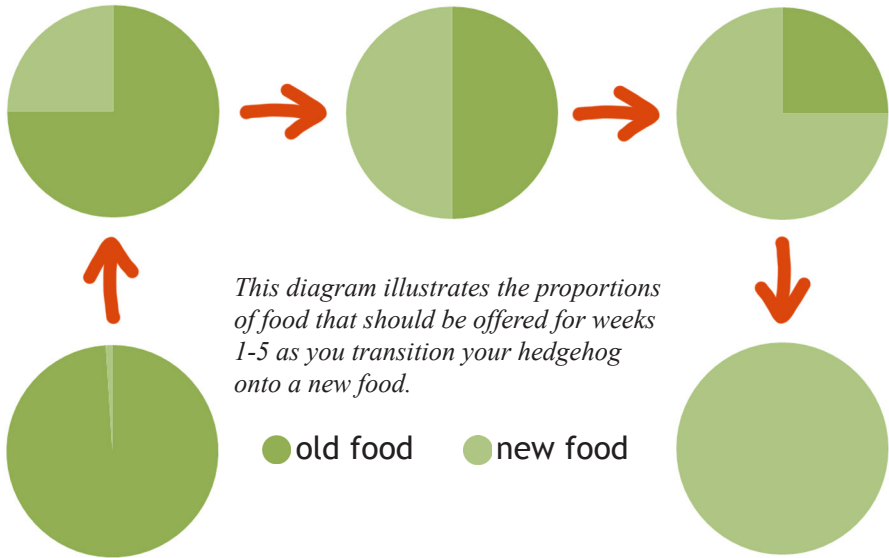
a kitchen or postal scale), all you need to do is weigh the bowl of food when you fill it up at night, and then subtract the weight of the bowl of food in the morning after your hedgegie eats. That way you can just keep track of how many grams he eats. This works best with dry food; wet food will dry out overnight as well and the water that evaporates will give an inaccurate idea of how much your hedgegie is eating.

If you decide to count kibble, start by counting out a full bowl of food, and the next day count how many he ate that night. The next night, you can try offering the number he ate plus 20 or so pieces, and gradually decrease the number til you reach a good amount where he leaves just a few pieces each night. That way he doesn't eat it all and go hungry, but you also don't waste too much food when you replace it each night. Plus it's easier to count how many he ate when there are only a few pieces left!



One hedgegie's nightly ration, counted out to 80 kibble - enough to make sure he doesn't go hungry, and just enough make sure there aren't too many leftovers that become stale and go to waste.

Switching / Adding Foods



It is important to switch foods or add foods slowly. Hedgehogs can easily get an upset stomach and green stool from any sudden diet changes. If you are switching to several new foods or are adding more than one, make sure you do each one separately and monitor how your hedgegie does with each one. Wait at least one week between each food to see if there are any problems with a certain one. Your hedgehog may be allergic to something you didn't know about, and being able to determine which food caused it is important.

Completely switching foods should be a gradual transition over several weeks. Here is an idea of how those weeks should go:

- **Week 1:** offer regular food, with new food as a treat only (just around 5-10 kibble a night)
- **Week 2:** $\frac{3}{4}$ old food, $\frac{1}{4}$ new food

- **Week 3:** $\frac{1}{2}$ old food, $\frac{1}{2}$ new food
- **Week 4:** $\frac{1}{4}$ old food, $\frac{3}{4}$ new food
- **Week 5:** should be eating all new food

Some hedgies don't like the idea of a gradual transition. If the old food is absolute junk compared to the new food, he may just leave the old food for the new stuff. Others might want nothing to do with the new food. You can try putting both foods in a plastic bag together, so they smell the same, or crushing the new food at first and dusting it on the old food. If your hedgehog just doesn't want to change at all, you can try offering the amount of new food by itself until around midnight, then add the old food. If he thinks that he won't be getting anything else, he may decide eating the new food is better than nothing.

Vitamins and Supplements

If you are feeding a good, high quality diet, your hedgegie shouldn't need any additional vitamins or supplements. However, some things can still be very beneficial. Most supplements you would give are marketed for humans and bought in your local pharmacy. Avoid any "supplements" marketed for rodents or other small animals, such as salt licks or yogurt drops. These are sugary, high in sodium, and are pretty much as healthy as you eating a box full of Peeps marshmallows. Vitamin powders made for reptiles, depending on what they contain, may or may not be bad for your hedgegie (by overdos-

ing on vitamins they already get elsewhere). It'd be best to not use them unless you know exactly what you're doing and have consulted your vet.

So what are recommended vitamins and supplements? The three listed on the opposite page have been used with good results. Read carefully, and do additional research if you can. If you are unsure about the dosage or what results to expect for any supplement, it'd be best to discuss it with your vet. Remember hedgehogs are tiny, and look at how small an amount humans take as a supplement. They don't need much.

Insects

Is it Necessary to Feed Bugs?

Insects are the main staple in a wild hedgegie's diet. While it is great to offer them as a bit of variety in their diet, however, hedgehogs do not need insects in their diet to survive. Hedgegies in the wild also eat bits off of carcasses, eggs, small animals they can catch, and a small amount of vegetation. Pet hedgegies fed a diet of high quality cat foods can thrive without any insects as a supplement.

Benefits:

Insects are nutritious and provide additional fiber to a hedgegie's diet, as well as being mentally stimulating by allowing them to "hunt" for prey.

Safe Insects to Feed:

Pretty much any insect that is quarter-sized or smaller and bred for reptile or other pet food is fine

to offer. Bugs raised for bait are not a good idea because they likely aren't kept in sanitary conditions and could make your hedgegie very sick. The insects listed below, if raised for pet food, are safe to feed hedgegies. All values are on dry matter basis.

Insect	Protein	Fat
Mealworm larvae	52.7%	32.8%
Mealworm pupae	54.6%	30.8%
Mealworm beetle	63.7%	18.4%
Crickets	64.9%	13.8%
Earthworms	62.2%	17.7%
Wax worms	42.4%	46.4%
Silk worms	64.0%	10.0%
Phoenix worms	48.4%	26.8%
Horn worms	61.0%	21.7%
Hissing roaches	74.4%	14.1%
Dubia roaches	91.7%?	17.4%

Vitamins and Supplements

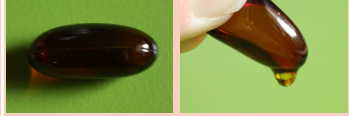
Flax or Fish Oil: Flax and fish oil are both great, widely accepted supplements. There are dozens of internal health benefits, but the main noticeable effect is healthier skin and fur. It can especially help hedgehogs with dry, flaky skin to improve their condition. Fish oil is a great source of the Omega 3 fatty acids DHA and EPA, and flax oil contains ALA (which is converted by the body into DHA and EPA). So both are beneficial, but fish oil is less work for the body to process. Some owners prefer not to feed fish oil because of the potential fishy smell. If you can, try to find cold pressed or unrefined oil, which will have been extracted mechanically and not with potentially harmful chemicals that also reduce the quality of the oil.

Acidophilus (*Lactobacillus acidophilus*): This supplement is a beneficial bacteria that can help restore a hedgehog's gut flora to normal. Animals that are or have recently been on antibiotics will not have a good balance of bacteria in their digestive tract, and supplementing with acidophilus can help build those bacteria back up. Because hedgehogs are lactose intolerant, it can also help reduce the effects of lactose foods (which is why yogurt is better tolerated by hedgegies than other dairy, it has this bacteria in it). Most hedgehogs will not need this on a regular basis, and just on an as-needed basis to help regulate the gut flora.

Glucosamine Chondroitin: This supplement is usually given to active people/animals or ones with joint problems, as it contains two molecules that make up and keep strong the cartilage found in the joints. The theory behind it is to provide these molecules so they are available when the body needs to repair the cartilage, such as after strenuous exercise or from arthritis or obesity (which puts extra stress on the joints). They don't cause cartilage formation, just help repair. If your hedgegie already has joint issues, talk to your vet about using a specific medication, as this will only help maintain healthy joints.

Instructions for Use

You can find fish or flax oil right in your local pharmacy. Look for "soft gel" type capsules, which will last longer than an opened bottle. Hedgehogs don't need much, just a few drops on their food each night.



This supplement (for humans) comes as a powder in plastic capsules. You'd break open the capsules and dust a small amount on your hedgegie's food. Once a container has been opened, it needs to be refrigerated.



This comes as a tablet that can be ground up into a powder. A pinch on your hedgegie's food each night is good, though it doesn't need to be given every night. It can't be overdosed either, so don't worry about measuring out too much or too little, the excess will just leave the body as waste.



The Superworm / Giant Mealworm Debate:

Whether giant mealworms (hormonally enhanced mealworms) are safe to feed hedgehogs is an ongoing debate. The main concern is that these worms have powerful jaws and can bite a hedgegie, even after swallowed. If a hedgegie doesn't properly chew the worm, they can bite the stomach wall, or even continue biting for short periods of time after dying. There have been confirmed necropsies of animals that have died from giant mealworm bites to the esophagus and stomach. The other concern is that we're not sure what kind of effect these hormones can have on our pets. Really, feeding anything on growth hormones isn't a great idea. There are Zophobas morio worms (also known as superworms) that are the larvae of a species of darkling beetle, like mealworms, but they are naturally large and not fed growth hormones. These can also bite. Cutting the heads off the worms prior to feeding will prevent this from happening. The hormone issue is not something you can avoid, you would just have to feed superworms and not giant mealworms if you decided to use these larger worms.

Feeding Instructions:

The amount of insects you feed your hedgegie is up to his health and your preferences. Some hedgegies have a fast metabolism and can eat many high-fat worms without becoming overweight, others quickly become "fluffy" if fed them often. For a hedgegie that is on the smaller side or can stand to gain some weight, feeding worms nightly is fine. 3-5 mealies a night is on

Make sure you gut load live food!

"Gut loading" is a term used to describe feeding healthy food to the insects you will soon feed to another pet. Offering fresh fruits and veggies to your mealworms, crickets, or other bugs to eat for a day or so before feeding them to your hedgegie will flush out any of the old food in their system (especially important if you aren't sure of the quality of food they were getting at a pet store or what not), and replacing it with what you can be sure is good fresh food. This is also a great way to supplement your hedgegie's diet with small amounts of foods they won't eat straight. Hedgegie won't eat carrot? Feed him mealworms that have carrot in their guts! Gut-loaded insects are much healthier than "empty" insects.

average acceptable. It really just depends on your individual circumstances. Feed fatty insects sparingly if you're worried, and if your hedgegie puts on excess weight, just decrease the amount in his diet. Crickets and roaches are great if you want to feed insects to a larger hedgegie, since they are lower in fat than most worms.

Other Notes:

If you are squeamish or aren't able to keep live bugs, you can also try canned or freeze dried crickets/mealworms/grasshoppers/etc.

Remember that lots of hedgehogs will refuse to eat insects; some are even afraid of them. You can try cutting open a mealworm and rubbing the juices on your hedgegie's mouth to entice him to eat. Many people have tried this with success.

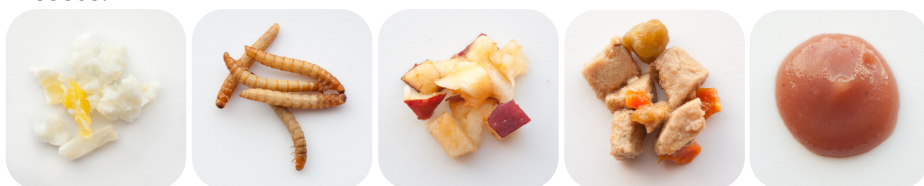
Treats

Here is a list of some **acceptable** treats to offer:

- Unseasoned meats: (baked, boiled, browned or roasted) beef, chicken, duck, lamb, turkey, fish, etc.
- Fruits: apple, banana, blackberries, blueberries, cantaloupe, cherry, cranberries, honeydew, kiwi, papaya, peach, pear, plum, pumpkin, raspberries, squash, strawberry, watermelon
- Veggies: asparagus, bell peppers, broccoli, carrot, celery, cilantro, corn, cucumber, green beans, green pepper, peas, spinach, sprouts, sweet potato, turnip, zucchini, leafy greens
- Unseasoned eggs: scrambled, hard boiled, etc. (it's recommended they be cooked)
- Baby food: all flavors should be fine, Gerber Baby meat sticks and sweet potatoes are popular
- Wet cat food: choose one without by-products or unhealthy preservatives and feed in moderation, they are usually very high in protein and fat
- Cottage cheese and non-sugary yogurt: hedgies are lactose intolerant, but some like this in very small amounts.
- Insects: as covered on the previous page

Some treats that are **unacceptable** to offer are:

- Anything citrus: oranges, lemons, limes, grapefruit, pineapple, etc.
- Most dried fruits: these can be choked on, and can get caught in the roof of the mouth or stuck in the teeth
- Raisins: besides the fact that they are dried fruit, grapes and raisins are toxic even in very small amounts.
- Avocados: toxicity unknown
- Onions, garlic, chives: these contain poisonous sulfur compounds that are dangerous in large amounts - it's safest to avoid them
- Rhubarb leaves: they're not good for dogs, so it's safe to guess they aren't good for hedgies either
- Human junk food: these are high in fat, salt, preservatives, and many other things bad for hedgies.
- Chocolate: same as for human junk food.
- Peanuts and other legumes: these can get caught in the roof of the mouth and are easily choked on.
- Pits and seeds: these can be toxic (depending on the fruit) and are a choking hazard. Hedgies are not rodents, they aren't made to gnaw open seeds.



Scrambled eggs, mealworms, apple, wet cat food, and baby food are all great treats.

Make sure every treat is unsalted and unseasoned. Veggies are fine fresh or steamed. Make sure whatever you offer is cut into pea-sized pieces, too large can be a choking hazard or get stuck in the roof of your hedgegie's mouth. Lunch meat is not a good idea because of how processed it is. They are often smoked, salted, or preserved, and are high in fat. Don't overfeed fruits or vegetables, they are very watery and can cause stomach upsets and loose poop.

It's best to try only one new treat at a time. This is important to avoid stomach upsets (which are common with new foods) and to narrow down what it was if your hedgegie had any problems with something offered. If you offer too many things at once, you won't be able to tell which it is that is causing the problem.

A lot of hedgegies are not very open to trying new foods. Keep offering the treat for several nights, or wait a while and try again. Sometimes what they refused one night they will devour the next. Try putting the treat in his food dish with his normal kibble. Warming up the treat a bit can also make it smell more appetizing. Remember that some hedgegies will just refuse to try new things. As long as he is getting a good mix of high quality foods you shouldn't need to worry.

If you open up a jar of baby food or wet cat food, you can freeze the remaining into ice cubes that way it stays fresh longer. This is especially helpful if your hedgegie only eats a tiny bit and you don't want to waste half the jar/can. If you have fruits or veggies you want to save, this works well for them as well.

The “DIY” Diet

Author's Note: I would like to make a disclaimer before starting this section of a book that these comments on commercial pet food-free diets are my own personal opinions and deductions based on my experience and research on the topic. I am not a vet and not an expert, so there's a chance I could be wrong and there are definitely things I have yet to learn about this topic. Though I've had the content reviewed and approved by a pet nutritionist, the information here is mainly to help direct and motivate those with the capability of providing a better food, in the right direction, as well as to hopefully convey the importance of balancing a diet and not just throwing different ingredients together and calling it good.

The idea of a “DIY” diet has been toyed with in the hedgehog community but never fully caught on, since there are so many places that could go wrong when one tries to attempt to balance the nutritional needs of their pet without veterinary involvement. Since there is such limited feedback on how hedgehogs have fared when fed a homemade diet, I recommend that you please tread carefully and work with a vet to ensure you're providing your hedgegie with all the nutrients he needs. You may want to print this section of the book and share some of the nutritional values with your vet so they have some background on a hedgehog's needs. A homemade diet can be a tremendous improvement from plain old kibble, but it can also cause some serious problems if you over or under-dose different

vitamins and minerals. If you plan on making the effort and spending the money to provide a great fresh diet for your hedge, be sure it is wholesome and complete! Another key thing to remember is to keep your own opinions of “delicious” and “healthy” in check. While you might think a diet consisting entirely of veggies is the healthiest it gets, it’s important to remember that we’re trying to replicate a more natural diet here for hedges, which is insects, not leafy greens.

As a conclusion to my novel of an intro here, I just want to be sure to mention that in my opinion, feeding a high quality cat food is still a completely great and acceptable diet. Most people don’t have the spare time to take on a challenge like this, but I applaud those who do. If you read through this section and feel bad about feeding a commercial diet, try not to! Considering reasonable convenience, high quality dry cat or dog food is an easy, simple, balanced, and totally fine way to go.

Getting Started:

Okay do-it-yourself-ers, so now we can get started discussing how to formulate healthy, balanced, fresh and delicious meals for your spoiled hedgehogs! Before starting a grocery list and pulling out the food processor, make sure that you really do want to dedicate the time and effort to not only come up with a great food (which, by the way, you may want to search online to see if any good recipes have been developed since this book was published) but you also are willing to spend the time to cook up this food for your hedge each time a batch runs out. Are you comfort-

able paying for everything too? Hedges don’t eat so much where the price increase would be substantial, but it’ll be more expensive home cooking than buying a bag of cat food. And finally, you have a vet, but is your vet generous and educated enough to spend time going over your diet with you to be sure it’ll cover all of your hedge’s nutritional bases? If you feel comfortable with your answers to these concerns, let’s continue!

Oh, the benefits of feeding homemade food over a plain kibble diet, even high quality kibble! I’ll list as many as I can think of, though I’m sure there are



Owners have to find a middle ground between healthy, wholesome foods and overall convenience.

more. The first thing is that you're tailoring this food for a hedgehog's needs, not a cat. That's a big start. Their needs are similar, but not the same. Your hedgegie will have the luxury of eating foods with a variety of textures and flavors, instead of struggling to crunch up hard, bland kibble at every meal. Less wear down on the teeth and over-exertion of the jaw is a huge improvement, and will help keep your hedgegie's teeth in shape for his whole life. The ingredients are likely to be much, much higher quality when you are buying human grade foods compared to the refuse and remains that are blended up unrecognizably in a way consumers aren't able to identify (and be grossed out by) what's in the food they're buying for their pets. You don't have to worry about what sort of preservatives may have been added, or if there will be sharp shards of bone or other filler ingredients. No sweeteners or artificial flavors, since your food will taste and look good enough to stand on its own. There are many concerns pet owners have had with the unknowns in commercial pet foods, and you are able to avoid those unknowns by picking only healthy and safe ingredients. Commercial foods are constantly suspected for causing or triggering a myriad of health issues, such as food allergies, cancer, and more diseases than I care to list. On top of all these things, you can earn bonus points by taking the extra step to purchase your ingredients from local, sustainable, and humane sources - something I personally value and think is well worth the price.

The situations in which I feel it

wouldn't be best to feed a home-made diet are times like when you have a hedgehog that's eaten kibble its whole life and isn't open for such a dramatic dietary change, or if you really need the convenience and reliability of commercial food that already has everything figured out for you, or even if you don't have the kitchen and fridge space to be able to store your hedgegie's rations among all the people food. (Hey, there are family members out there that don't understand how delicious chopped up cockroaches and organ meat are to hedgegies - we can't blame them for not wanting that sitting next to their lunch meat!) Some people love hedgegies but aren't fond of putting a handful of bugs in their blender, and that's okay. Just do what works best for both you and your pet.

Okay, so what are my hedgegie's dietary needs? Let's start with what they eat in the wild. In Africa, a native hedgehog would travel many miles in a night chowing down on beetles, ants, centipedes, earthworms, even scorpions, and whatever other insects they come across at night. In addition to insects (which keep in mind are the staple of their diet) they are also known to scavenge a bit and pick off deserted carcasses, or raid nests of baby mice or birds for helpless young. It's said they will also eat minimal amounts of vegetation, but I don't know what sort of vegetation that would include - fruits, vegetables, grass? I have no idea, except for the fact that it would be up for grabs on the ground in Africa.

So, unfortunately we have no idea what the actual protein, fat, and fiber percentages are for that

Hedgehog Dietary Need Recap:

- **Hedgies can thrive on food formulated to meet the needs of dogs and cats**
- **It is recommended to use insects as a protein source in addition to meats and not just meat alone.**
- **It is important to talk to a vet or nutritionist to make sure that your fresh food is balanced at all times, and that you don't lose essential nutrients through cooking, refrigeration, etc.**

varied diet of the wild hedgehog. However, we do know that pet hedgehogs have been predominantly fed cat food over the last many many years and hedgehogs of all stages of life have thrived. While Dr. Wendy Graffam had suggested the values of 22% protein, 5% fat, and 15% fiber, we have all the evidence we need in order to know that hedgehogs can grow and maintain a healthy weight on the same values a cat needs. Those values are generally much higher for protein and fat, and much lower for fiber. I find it safe to say that if one was to just be sure to properly formulate a homemade food for a cat's consumption, it would be sufficient for a hedgehog. Same goes for dogs: less people feed dog food because the pieces are too big and hard for hedgies to eat, but the nutritional content should be as good if not better than cat food. This is where I think owners should start when creating their own recipe. Get the dog or cat food figured out, especially with vitamin and mineral supplements, and then work with your vet to tweak it to be more hedgie friendly, aka, incorporating insects!

To finish up my conjecture as to what hedgies need to thrive, I'd like to include a few more dietary recommendations from Dr. Wendy Graffam. I am not aware of how she determined these numbers or how accurate they are, but they are the best I have and may be helpful to you, so it's up to you if you want to use them instead of whatever a cat or dog would need.

This is also the main component of developing a diet yourself that I feel the least comfortable advising on. Measuring and supplementing specific dosages of vitamins and minerals is not something I currently have a thorough knowledge on, so please do speak with your vet when it comes down to these nitty gritty things. When things are cooked, frozen, or just sit around a while, proteins, vitamins, minerals, and all that good stuff can break down and lose their value. It's important to find out what sort of deterioration might occur in your food and what you can do to maximize or maintain their effectiveness. Nutritional deficiencies can be complicated and are important to figure out before your hedgie has issues. Calcium and magnesium deficien-

cies are usually the main concern when supplementing a homemade diet. Unfortunately, I wasn't able to find a hedgehog recommendation for magnesium, I would suggest following the recommendation for cats or dogs. So far I know of no research showing whether taurine is beneficial or necessary in a hedgehog's diet, but I'm inclined to

say (based on the fact that hedgehogs do just fine on dog food and are not similar to cats in the ways of night vision and overall digestion) you should not have to specifically supplement taurine in your diet. The meat sources in your food will provide some taurine anyhow, if you are concerned.

Dr. Wendy Graffam's Dietary Requirement Suggestions for Adults:

70-100 Calories per night for a 400-600 gram hedgehog (this can vary greatly depending on the life stage and how active your hedgehog is)

Calcium: 0.9%

Phosphorus: 0.9%

Ca:P Ratio: 1:1

Iron: 75 ppm

Copper: (mg/kg) 4-23 7-16 3-7

Manganese: (mg/kg) 11-146 11-70 5

Zinc: (mg/kg) 20-175 100-190 30

Whew, so if I haven't lost you yet, congrats on making it through the most complicated part! Now comes the challenge of finding ways to provide hedgegies with what they need through healthy ingredients. Fortunately this isn't too complicated: you have **protein, fat, carbs, fiber, vitamins, and minerals** to balance out. As a general guideline, you want to keep your proportions along the lines of the chart to the right. My percentages and suggested food sources here are based off dog suggested requirements (which I feel are more closely related to hedgegies' needs than cats), then altered slightly to fit a hedgehog's needs.

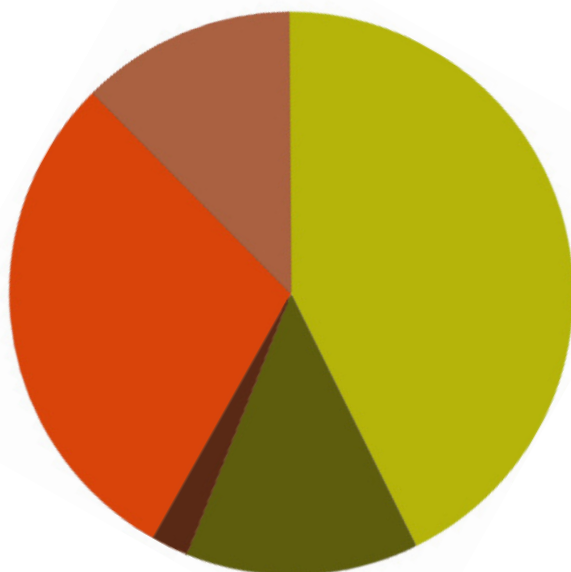
Finally, be sure to evaluate your final recipe with your vet to be sure it does meet protein, fat, fiber, vitamin, and mineral needs and get help supplementing if necessary. And as always, make sure

your hedgegie has a fresh bowl of water available at all times.

Time and money saving tips:

- Mix up a batch of food to feed your hedgehog(s) for up to a month or so, and freeze individual nightly portions in ice cube trays or baggies, so you can thaw a fresh portion each night.
- Use jars of baby food that last forever instead of frequently buying fresh fruits and veggies.
- If you do have extra fruits and veggies, chop them up and store them in the freezer for later.
- Buy frozen pinky mice if you decide to include them in your diet, instead of buying them live.
- Find a local, clean, reliable butcher and see what sort of deals you can get on the parts of animals that people don't want but your hedgegie does, such as chicken organ meat.

Recommended Diet Breakdown:



- **25-30% Protein**
Insects (mealworms, roaches, crickets, silkworms, etc.), Meat (poultry, pinky mice, etc.)
- **10-13% Fat**
Animal fats (found in the insects/meats), Oils
- **40% Carbs**
Grains, Fruits, Veggies
- **10-15% Fiber**
Insect exoskeletons, Grains, Fruits, Veggies
- **2% Vitamins and Minerals**
Discuss with your vet what may not be covered in your other ingredients.

Last notes about feeding homemade diets: After you've put all this effort into coming up with a good food, there's a chance that your hedgegie will refuse to eat it, preferring the commercial food they were raised on. What animals grow up eating critically influences their tastes and preferences later in life. Some hedgegies simply don't want fresh food, or only certain ingredients. I recommend keeping the different ingredients in their original state and texture (rice still in grains of rice, meat still in little chunks of meat) but if necessary you might try blending all the ingredients together to ensure your hedgegie can't just pick out their favorite parts. If you have trouble transitioning your hedgegie over, you can try crushing up their old kibble and dusting it on their new

food to encourage them to eat, or even working with your vet to find a way to cook the food into kibble-like bites as they adjust. Keep an eye on how your hedgegie's digestive system handles the change in food as well. A brief digestive upset is to be expected, but should clear up within several days. Also carefully monitoring your hedgegie's weight, activity, and general health is critically important to make sure the diet really is an improvement from what they were eating before.

I hope this is a good start into a fairly complicated but exciting topic of hedgehog nutrition. If you try a homemade diet, the community is always happy to hear how things turned out! I highly recommend sharing your success (or challenges) to help inspire and inform others.

Raising Mealworms



If you have more than one hedgeie, or one hedgeie that eats a lot, it might be beneficial to raise your own mealworms. It is fairly easy to set up a low-maintenance farm. You can find information online about raising most other feeder insects (some of which are more healthy than mealies), but mealworms are the most popular for their simplicity.

You will need:

- One or more containers, preferably a plastic tub. Shoe totes and stacking drawers work well.
- Substrate - this can be wheat or oat bran (best), chick mash, crushed plain cereal, etc.
- Food/water source - carrot, potato, apple
- 10 + Mealies

Setting up your farm:

1. Put anywhere from ½ to 3 inches of substrate in the tub you are using to house your mealworms.

2. Make sure you have a safe place to store the tub. You don't want to accidentally tip it over and get hundreds of baby mealies in your carpet! A dark, relatively warm area is best.

3. Toss in the mealworms, pupae, and/or beetles. You don't need a lid on the container, since the mealies can't climb up the plastic sides, pupae can't move, and beetles can't fly.

4. Feed your farm small quantities of cut apples, carrots, or potatoes for moisture. Check on these every few days at least to be sure they aren't molding. The mealworms and beetles will also eat the substrate.



Here hundreds of mealworms are swarming to a piece of apple.

Tips:

Don't toss the bedding that you've housed beetles in! They lay their eggs in the substrate, and are practically invisible until they are a few weeks old. If you are wondering why you never get any baby mealies, make sure you aren't replacing the bedding, and that the beetles aren't overcrowded in their container (they may start eating the eggs).

If you ever need to "pause" your mealworms' growth, you can put them in the refrigerator, which will make them semi-dormant. This can be helpful if you need lots of mealworms of a certain size over a period of time, since they won't grow or pupate.

Exercise



Choosing a Wheel

The exercise wheel is absolutely crucial to a pet hedgehog's well-being. They will spend hours running miles and miles each night. Without a wheel, some hedgehogs will pace and run in circles, or find other (often dangerous) outlets for their energy. Other will simply sleep when they would be exercising and become overweight.

A suitable wheel will be at least 12" in diameter, have a **solid running surface**, and **not have crossbars** (bars that support the wheel and reach across the diameter of the wheel).

Most commercially made wheels have 12" diameter as their largest size. It's important to get the biggest one you can because a hedgegie will quickly outgrow anything smaller. Forcing them to run in a too-small wheel can cause serious back issues (because they have to arch their backs to run), prevent them from running at a normal healthy pace, and might prevent them from wheeling altogether.

The solid running surface is



Cake top style wheels are ideal for both hedgehogs and their owners when it comes to safety, comfort, and cleaning.

Wheel Requirements:

- 12" diameter or larger
- Solid running surface
- No crossbars or spokes
- One that is easy to clean

equally important. Wire mesh wheels, the cheap ones usually used for rodents, aren't ideal for hedgegies. Along with their dangerous crossbars the wire mesh can snag and pull out toe nails, and is less comfortable than a smooth surface to run on. Wheels like the Silent Spinner have a groove down the middle that can also catch toes. A totally solid plastic surface is ideal.

The crossbars on wheels that are open on both sides are dangerous for hedgegies, who are less agile than mice or rats and more likely to hurt themselves. Some hedgegies will fling themselves off of their wheel, jump off suddenly, etc. which gives them ample opportunity to smack their faces with the bar whizzing past them. Depending on the structure of the wheel stand, it's also possible to snag and break a leg between the crossbars and the stand.

The most ideal wheels are ones custom made for hedgegies. Not only are they safe, they are also catered to hedgegie owners and much easier to clean than commercial wheels. They may cost slightly more than buying a wheel in your local pet store, but the time you'll save cleaning and the comfort of knowing your hedgegie won't harm himself should make up for the difference.

Commercially Available Wheels

Comfort Wheels by SuperPet

These are widely available and can be found at almost any pet store. You will need the largest size (12"). They come with a coated wire stand, but should be attached to the cage as well as they can tip over.

Pros: Solid running surface, no crossbars, widely available.

Cons: Can be noisy (squeaking/rattling), the grooves may be uncomfortable on a hedgehog's feet after extensive running.

Recommended



Silent Spinners by SuperPet

Also widely available but less popular, the Silent Spinner is a controversial wheel. Some people like it because it can be less expensive than other wheels. There have been cases where the yellow nut in the middle of the wheel had unscrewed and the wheel has fallen on the hedgehog, as well as the groove in the center of the running surface ripping off toenails. It comes with a wire stand as and should be attached to the side of the cage as well to prevent it from tipping over.

Pros: Semi-solid running surface, no crossbars, widely available.

Cons: Gap in center of the wheel which can catch nails, has been known to fall apart, can be noisy, harder to thoroughly clean than other wheels.

Not Recommended



Run-Around Wheels by SuperPet

These mesh-surfaced wheels are the worst option out there. They don't have a solid running surface, do have dangerous crossbars, and can be really hard to clean. They also don't stand up well to constant use and cleaning and are prone to rusting.

Pros: inexpensive.

Cons: wire mesh surface is uncomfortable to run on and can rip out nails, crossbars, metal can rust and tends to squeak horribly, difficult to clean.

Not Recommended



Commercially Available Wheels

Flying Saucers by Ware Manufacturing

These wheels are unique in their disc-like shape. Originally designed in metal for chinchillas, these wheels are made of hard plastic and sit directly on the stand. Because they are relatively new to the hedgehog scene, it is not certain whether running on the slight angle has any negative effects on hedgies, though most hedgehogs will run both directions on the wheel which may “level out” these potential effects.

Pros: Silent, easy to clean, no bearings, no crossbars, solid running surface, shorter than upright wheels which may be ideal for shorter cages, inexpensive.

Cons: Larger hedgies (400 grams +) may cause it to rattle or loosen the plastic holding it onto the stand, possible joint concerns due to the running style, may fling poop off the wheel around or even out of the cage.

Recommended



Wodent Wheels by Transoniq

Wodent Wheels, as their name implies, are more made for rodents than hedgehogs, who are less agile. The enclosed nature can help trap in fumes from when the hedgie eliminates, and it can be a pain to take apart to clean. For hedgies that like to jump on and off at random times, the alternating doors on the entrance side might cause some problems.

Pros: Solid running surface.

Cons: Have to take apart to clean, enclosed, multiple “doors” are considered crossbars.

Not Recommended



Quality Cage Wheels by Quality Cage

Quality Cage wheels are made of powder coated sheet metal and are similar to the wire mesh wheels, just with a solid metal surface.

Pros: Solid running surface.

Cons: Crossbars, poorly placed supports, metal can be cold.

Not Recommended



Custom Made Wheels

Homemade Cake Cover Wheels

Bucket wheels used to be the most popular until Sterilite cake covers were discovered as an amazing option for making wheels. These have become the most popular wheel for hedgies and are the ideal. They are large enough, have a smooth surface, no crossbars, have a lip around the edge that keeps them from warping (a problem with bucket wheels), the non-stick surface makes them easier to clean, and are usually made with silent bearings. They are also made to have height and angle adjustments to accommodate for different needs. There are several people who sell homemade cake cover wheels that you can buy from, or if you trust your DIY skills you can make one yourself.

Pros: Silent, solid and wide surface, no crossbars, easy to clean, angle and height adjustable, customizable.

Cons: A bit larger than other wheels, though not unreasonably large.

Homemade Bucket Wheels

These bucket wheels are very similar to the cake cover wheels, just made with a modified bucket instead. They have been used and enjoyed for years and are a great option along with the cake cover wheels. There are several people who sell homemade bucket wheels that you can buy from, or if you trust your DIY skills you can make one yourself.

Pros: Silent, solid and wide surface, no crossbars, easy to clean, angle and height adjustable, customizable.

Cons: Cheap buckets may warp with time, small buckets may not be a comfortable size for hedgies.

Cleaning the Wheel:

Unfortunately, nearly all hedgehogs have the inconvenient habit of relieving themselves on their wheel. There's no way to train

Highly Recommended

Try searching “custom hedgehog wheel” to find current wheel sellers! Pictured is the *Carolina Storm Wheel* by Larry Thomason, complete with a litter pan under the wheel.



Highly Recommended

Try searching “custom hedgehog wheel” to find current wheel sellers! Pictured is the *Carolina Storm Bucket Wheel* by Larry Thomason.



them not to do this, it just happens naturally. So, cleaning the “excrement cement” covered wheel is an unavoidable part of hedgehog ownership.

You should clean your hedgeie's wheel every day if possible, otherwise, every other day. Leaving the wheel covered in poop for your hedgeie to run on each night is not cool. If you have trouble keeping up with the wheel cleaning, you might consider buying two wheels that way each night you can swap them out, providing your hedgeie with a clean wheel and having the chance to wash the dirty one later.

Every owner tends to come up with their own wheel cleaning routine, depending on the type of wheel they have, the messiness of their hedgeie, and where they are able to clean it off (some people are willing to use the bathtub or kitchen sink, some are not!). Essentially you just need to get the wheel wet (by spraying it or running it under water), letting the mess "loosen up", and then scrub and wipe it off. If you are cleaning frequently, this shouldn't be hard at all. It's recommended to use a vinegar solution or something similar for cleaning the wheel, it will work better than water alone.

Toys

Aside from the wheel, most hedgeies aren't terribly enthusiastic to play with toys. Some are more adventurous than others, but some just prefer to spend time running, so don't feel bad if your hedgeie doesn't seem interested in the toys you provide. Your hedgeie isn't going to fetch a ball or jump through hoops for you, but they'll still interact with things. Some will play tug-of-war, or push things around. Many like to "tube", sticking their head into one end of a toilet paper roll and running around wildly.



A good example of what most hedgehog owners wake up to in the morning.

If you use any strong or dangerous cleaning products (such as bleach), make sure you rinse the wheel extra well before returning it to your hedgeie's cage. Hedgehog noses are sensitive and close to the wheel's surface when running. Inhaling or ingesting any fumes or residue can be dangerous and unhealthy.

Below is a partial list of toys people have used in the past.

- Toilet paper tubes (cut open lengthwise)
- Toy balls (cat, ping pong, etc)
- Small stuffed animals
- Boxes large enough to fit inside
- PVC pipes, 4"+
- Dig boxes filled with fleece fabric pieces, rice, or smooth rocks large enough not to be a choking hazard

Safety Precautions: Any toys should be carefully inspected

before giving to a hedgeie. Sharp edges, holes, and loose pieces are especially dangerous. Make sure there is nothing dangerous inside if your hedgeie happens to be able to tear it apart.

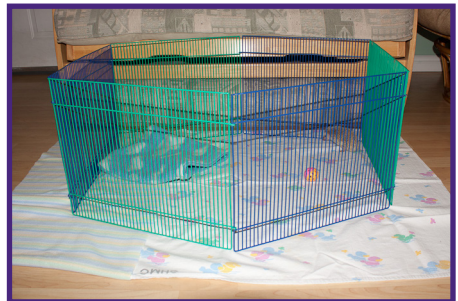


Playpens

Some people use playpens to provide additional exercise room outside of their hedgeie's cage. Most pens made for ferrets or rabbits are escape-proof enough for use with hedgegies. Ones for smaller animals like hamsters may not be tall or heavy enough to contain a hedgehog. The main concerns are that your hedgeie can't climb out (to avoid this, make sure the bars are vertical and tall enough) and that he can't root under (make sure it's heavy enough and there aren't gaps at the bottom (such as if you placed it in grass) for him to squeeze out of). Hedgegies are experts at disappearing the moment you turn your back! Depending

on the type of pen you have, you might want to come up with some fabric or mesh top/bottom to make absolutely sure your hedgeie can't escape.

Some options to consider other than an actual pet playpen are making a pen out of C&C cubes, wire closet shelving, large cardboard boxes, kiddie pools, children's playpens, or even pop-up puppy playpens that have mesh sides. Some of these are easier to escape from than others (notably the kiddie pools which should be supervised at all times or enclosed somehow) so they might need some modification before you can leave your hedgeie in one unattended.



Pop up dog playpens and small pet playpens with vertical bars are popular options for allowing your hedgeie to run around safely outside of his cage.

Going Outside

Taking your hedgehog outside can be very fun if you do it safely. Before taking your hedgegie out, consider these things:

- Is there a chance of insecticides/pesticides where my hedgegie will be?
- Are there other animals or insects that could harm my hedgegie?
- Is my hedgegie going to find and eat any harmful bugs?
- Will I be able to catch my hedgegie if he decides to make a run for it?
- Is it warm enough outside? Remember that the ground is colder than air temperature.
- Are the plants safe?

Remember to keep your eye on him at all times! Looking away for just a second is long enough for him to dart out of sight. Our pet hedgegies are also usually friendly enough not to ball up to their “full potential” when in danger. An unsuspecting, laid-back hedgegie could be injured or killed by another animal as easily as any other small pet.



Helping an Overweight Hedgeie Lose Weight

Most hedgegies become overweight from lack of exercise or food too high in fat. It is rare for a hedgehog to overeat and gain excessive weight, but it happens occasionally. If you get a rescue/rehome hedgeie that needs to lose weight, remember that it is very stressful to be switching homes and that you shouldn't change too many things at once. Oftentimes very obese hedgehogs have other health issues and you need to be careful with them and their care.

First, make sure your hedgeie is indeed overweight and not just large. Hedgegies can range from 250-1000 grams for a healthy adult weight. As long as your hedgehog does not have fat pockets under the armpits and can roll into a full ball, he is probably not overweight. Some overweight hedgegies will have a "hump" of fat over their shoulders, so that can be used as an identifier as well. Hedgegies are naturally "teardrop" shaped, so looking a bit round is not a huge concern. Having a little bit of extra weight is actually very helpful in case your hedgeie gets sick. A very skinny hedgeie that gets sick can't afford to lose any weight.

Lastly, if your efforts end up fruitless and your hedgeie just won't shed those extra grams, try not to worry too much. Yes, it's not healthy for him or her to be obese, but unfortunately some hedgegies are just genetically prone to be obese. "Hefty" hogs can still live long and happy lives. Just be sure you do what you can to keep him healthy.

Lack of exercise: Make sure your hedgeie has an appropriately sized cage and a good wheel. If your hedgeie refuses to use the wheel or exercise in general, you can scatter the pieces of food around the cage so he has to move to get to them. Swimming is a good low-impact exercise, though should be used with caution as many hedgegies don't like the water and frequent "swims" can dry out the skin. Letting your hedgeie run around in a playpen or other enclosed area each day is good too, in general just encouraging activity is best.

High fat diet: The obvious solution to this is to switch foods to a lower fat diet. Your hedgeie will probably want to eat only the old food because the higher fat tastes better, but be persistent and make him eat the new food. Pet hedgegies should have under 15% fat in their diet. Cut back on treats if you feed fatty treats like mealworms.

Overeating: Usually this is not the reason a hedgehog is overweight. If you switch to a lower fat food, your hedgeie should eat about the same quantity but lose weight. If they don't lose weight through exercise and a lower fat diet, you can try limiting their food intake. Use common sense when deciding how much you want to offer each night. You don't want to starve your hedgeie, just prevent him from overeating. You might want to discuss options with your vet before deciding to do this.



Hygiene

Trimming Nails

It's important that you are capable and comfortable with trimming your hedgehog's nails. When they get too long, they can easily snag on things, cause a hedgegie to stop wheeling because of the discomfort, or even curl into the pads of the feet. You may have a hard time cutting nails because your hedgegie does not cooperate. Having a friendly hedgegie is very helpful, as well as having an extra hand. One person can hold hedgegie and the other can trim. If you go to the vet and your hedgegie is sedated, you can have the vet trim nails then as well. You won't be able to go to the vet for every time your hedgegie needs nails trimmed, though, which will be every few weeks. To get your hedgehog accustomed to you touching his feet, you can make it a habit to gently play with his feet when handling.

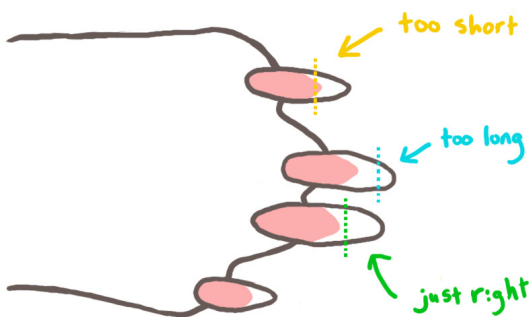
Knowing how far to cut can be difficult also. Hedgehog nails are similar to dog or cat nails, with a sensitive "quick" (shown in pink). This is a small blood vessel. It is painful to the hedgegie if pressure is put on it, or if it is cut.

The best thing to use to trim nails is human baby nail clip-

pers. Pet clippers are often too big and make it hard to see where you are cutting. Cuticle clippers also work, but there is a greater chance that you could snag a bit of toe or foot while using them. You don't need to trim every nail in one sitting. You're doing well if you get one or two feet done!

If you cut the quick, use quick-stop, cornstarch, or flour to stop the bleeding. Flour stings the cut the least, but quick-stop works the most quickly. Sometimes you nick the toe only barely and it does not need anything on it. Don't feel bad if you cut the quick once or twice. Almost every owner has done it at one time or another.

If you are having difficulty with a squirmy or scared hedgegie, there are a few things you can try. The most recommended is to do them while hedgegie is in the bath. That way the hedgehog cannot ball up, and you can try to get them done quickly. It can be stressful, but gets the job done. You can also put your hedgegie on a sort of grid (like one side of a wire storage cube) and grab a foot as one falls through.



If your hedgegie's nails haven't been cut in a long time, the quick might be overgrown too. you may have to only cut off little bits at a time, allowing the quick to recede back to a healthy length over a period of weeks.



Here are a few shots of hedgegie feet before and after nail trimming (the nails were not very long to begin with):

Front

Before

After



Back

Before

After



And here are a few more examples of too-long and just-right nails, if you aren't sure if your hedgegie's nails need trimmed:

Too Long



Just Right



Bathing

Hedgehogs do not require full baths very often. Try to bathe your hedgegie only when necessary, since it's stressful and can dry out the skin. However, it is understandable if you want to give your hedgehog a bath after he has anointed with something gross, been outside in the dirt, or is starting to develop

yellow fur on the belly. Once every two months is an acceptable frequency, though twice a year may be better. It is perfectly acceptable not to fully bathe your hedgehog at all, unless he's very grimy or it's causing him health issues (urine burns, for example) or a health issue requires it (you would want

to wash off crusty mite gunk, or excessive skin flakes). If your hedgegie is quilling, you can get away with a bath once or twice a week. If you use oatmeal wash and/or flax oil, it can help relieve his skin from the quills growing in.

Giving your hedgehog a bath:

- Make sure tub/sink area is clean and the room is warm, with no drafts.
- Have everything you will need right there- towel, wash, oil, clippers, etc.
- Fill the tub with 2-3 inches of warm water.
- Gently place hedgegie in the most shallow section of the tub or sink.
- Using a cup or your hands, scoop some water up onto his back- not on his face or ears.
- Once hedgegie is sufficiently wet, get a small dollop of soap in your hand.
- Before hedgegie can squirm away, massage the soap mainly into his belly fur, and into his quills if necessary.
- Use the cup or your hands again to rinse hedgegie off.
- If needed, you can quickly remove hedgegie, drain the dirty soapy water, and refill.
- After hedgegie is rinsed off, you can drizzle a bit of oil onto his skin between his quills to moisturize the skin.
- Another quick rinse to spread the oil around, and you're done!
- Collect hedgegie in his blanket or towel, and keep him warm until he is dry.

What soap to use:

A lot of people are unsure as to what they should use to wash their hedgegie. Baby shampoo should be

avoided because it can be harsh and drying on the skin. Moisturizing cat or kitten shampoos are usually safe because they are made for animals that groom themselves. Dog and other larger animal shampoos are usually scented and may have strange chemicals in them, so they should be avoided. Soap like Aveeno Soothing Relief creamy wash for babies (or the generic brand of that) are usually gentle and moisturizing. You can also get plain packets of colloidal oatmeal, which is a powder and can be mixed into the water. This works well as a skin moisturizer. Regardless of what you choose, make sure to rinse your hedgegie well at the end of the bath. Lingering residue can be itchy and attract dirt.

At the end of the bath, you can use a bit of oil in the final rinse. Just drizzle a bit of your choice of oil onto his back between the quills - flax seed, olive, vitamin E, and jojoba are all fine to use. Fish or cod liver oil is safe, though is much more stinky to use topically.



Aveeno baby products are popular among owners as a hedgehog "shampoo". Flax, olive, vitamin E, and jojoba oil are all safe options if you decide to put some oil on your hedgehog's skin.

Notes: If your hedgegie likes to relieve himself in the bath, it might help to let him poop first in a litter box. Remember to watch the water temperature! It is easy to overlook how warm the water is. Some hedgegies like a rubber mat or some other form of traction so the sink or tub is not so slippery. Many are also scared or stressed by the running water, so keep that in mind and try to have the sink or tub filled prior to putting your hedgegie in.

Foot Baths:

A foot bath is a shorter, easier way to get rid of “poopy-boots”. Usually just a walk around a wet towel or paper towel will do the trick, or a half inch of water in the sink. No soap, less stress, and much less drying on the skin. Some people have had success using unscented baby wipes for this as well. Your choice will probably depend on how bad your hedgegie’s feet are - wipes for quick jobs, and walking around in the sink for heavy duty poop boot removal.



Poopy boots before... and after!

Be sure to NEVER use a product containing Tea Tree Oil. This is toxic and fatal to hedgehogs! Check the ingredients before you use anything.



Support your hedgegie in your hands if he’s scrambling to get out of the bath. You can use a toothbrush to gently scrub out dirty anointing spots, misplaced poop, or get to bits of bedding stuck between the quills.

Health



The Importance of Keeping Frequent Records

Some people might wonder what the big deal is about keeping records. If you don't write down how much your hedgeie weighs, what's the big deal? While yes, your hedgeie himself won't suffer if you just toss his food in his bowl each night and don't count it out, it can still be very beneficial to know these things. Why? It's not for your hedgeie day-to-day, but it's for you to get to know your hedgeie and be able to pick up on little changes, so you can act on them quickly before anything goes wrong.

Simply writing down when something seems off can be very helpful when down the road your hedgeie develops some kind of problem, and you need to look back and see nights when, for example, he didn't run on his wheel. Even if you don't keep daily records, it'd be good to have a small notebook on hand for occurrences like these. Jotting down the date and a note like "ate less than normal" or

"seemed to be walking funny" can be the difference between being able to quickly identify and treat a problem at the vet, or having trouble diagnosing the problem, or worse, not noticing it exists. If something happens and your hedgeie has a problem that got progressively worse, it'd be important to be able to look back and see when those symptoms started occurring.

Keeping daily or weekly records helps you get a good feel for what's normal for your hedgeie and what isn't, and can encourage you to be more attentive when feeding, cleaning, handling, etc. Some things that are recommended to keep track of are weight, food intake (by weight or by number of food pieces each night), and wheeling activity. Some other things you should always keep note of are that the temperature stays constant (and you may want to note if your hedgeie is exposed to the cold), and that your hedgeie is free from any physical health problems. A quick check each day to make sure there's no hair caught around a limb, or a lump forming, or gross gunk building up anywhere will give you peace of mind and ensure you keep your hedgeie in great shape. Catching problems quickly is absolutely imperative if you want to have the best chance of treating them and getting your hedgehog back to normal. Noticing a drop of a few grams in weight or a few pieces less of food eaten each night, for example, are important health alerts to keep on top of.



You can hook up a bike computer to your hedgeie's wheel to track how much he runs each night.

When to See a Vet

The first thing you should do if you notice your hedgehog acting funny is bump up the heat, find out what the problem is, and then get to a vet ASAP if the situation is serious. If the situation is not as dire, your best bet is to try to schedule a vet visit within the next few days, sooner rather than later. If something just seems amiss and needs checked out, you don't need to get in immediately. If your hedgegie is lethargic and won't "wake up", though, that's an emergency, and should be treated as such. Most vets can get you in immediately as an emergency, and if not, there are emergency clinics that you can try as well.

Major red flags:

- **Blood.** If isn't coming from a minor cut or from a bloody toenail, it's serious. Female hedgehogs do not menstruate, and blood in the stools, urine, or from the mouth/nose/ears/eyes need immediate vet attention.
- **Lethargy.** If your hedgegie has been unresponsive for over an hour, and has not improved from added heat, something is wrong. Do not put your hedgegie in water

to "wake him up".

- **Diarrhea** or green stools. Not as serious, but if these don't go away in a few days, you should have your vet examine your hedgegie and do a fecal exam.
- **Vomiting** for no obvious reason. If it isn't caused by food or water that didn't agree with him, motion sickness, or choking, it could be very serious.
- **Runny nose, excessive sneezing.** Signs of an upper respiratory infection. These will only get worse with each day they are left untreated and can become fatal.
- **Obviously critical things.** Paralysis, twitching, gasping, strange breathing. Unfortunately some of these things are often seen when a hedgegie is at his end. Sometimes they are caused by other things though, and can be helped if they get vet treatment quickly.

The key is to get vet help **FAST!** Don't wait around to "see if he'll get better". The faster you get him to a vet when something goes wrong, the better chance he has of making it.

If you notice something is wrong with your hedgehog, don't delay. Contact your vet and get him in as soon as you can - immediately, if it's an emergency.

First Aid Kit

There are times when your pet gets a minor injury, the power goes out, or you are just not able to get to the vet in an emergency. These situations can be remedied (if only temporarily) with some simple planning ahead. A first aid kit for your hedgie can have many of the things you keep in a human first aid kit. Make sure you know how to use everything in the kit before you are in a situation where your pet's health counts on it! Also make sure to keep an eye on expiration dates

and replace things as needed. Talk to your vet if you need to know what different things are for and how to use them properly.

Some of the things on this list aren't emergency related, like acidophilus or canned pumpkin. They're still useful to have on hand when you need them, though, such as if your hedgie gets an upset stomach. Or like lanolin, if your hedgie gets dry ears. Or Rescue Remedy for relieving stress, etc.



Some good things to have in your first aid kit include:

- Card with vet information and contacts
- Emergency cash
- Hand warmers
- Bottled water
- Extra stash of food to last a few days
- Small flash light
- Kitchen or postal scale
- White blankets/liners
- Paper towels
- Roll of toilet paper
- Small scissors
- Human nail clippers
- Tweezers
- Cotton swabs/Q-Tips
- Saline rinse (contact lens solution)
- Hydrogen Peroxide

- Chlorhexidine solution (safe topical disinfectant)
- Neosporin/Polysporin/triple antibiotic ointment
- Water-based lubricant
- Vitamin A/D cream
- Rescue Remedy
- Acidophilus, bene-bac supplement, or plain yogurt
- Lanolin (bag balm/human nipple cream)
- Hill's A/D canned food
- Pedialyte or generic electrolyte solution
- Boost, Ensure, Pediasure- vanilla or strawberry flavor
- Canned pumpkin
- Human first aid kits also work well for many objects, such as bandages and small packets of Neosporin

Hibernation

In our pet hedgies, hibernation can be fatal. Hibernation is when a hedgehog gets too cold or senses shortening daylight hours and shuts down their body for winter. For European hedgies, this is normal. For our desert hedgies, it doesn't work the same - they don't hibernate naturally. Being hedgehogs, they technically have the capability of hibernating, though they are not physically built to withstand cold temperatures. After being bred in captivity for many years, our pets have become even more dependent on consistent, high temperatures and steady light cycles to balance their own circadian rhythm. Cold temperatures, sudden drops in temperature, and short or random light cycles can cause a hedgie to attempt hibernation. Once they have entered hibernation there is a period of time where if they are

caught and warmed up, they can be saved. Otherwise they are incapable of coming out of the slumber and will die.

To prevent hibernation, make sure you have a way to keep your hedgehog's cage a consistent temperature and provide a consistent light cycle. Details on heating and light cycles were discussed in the Housing and Husbandry chapter.

A hedgie that is attempting hibernation will have a cool belly and act lethargic. They may wobble if they walk, or not come out at all from their sleeping area. Unusual behavior should be taken very seriously and be remedied as soon as possible. If you are not sure why your hedgehog is acting strange, please keep him warm and contact your vet.

If you ever find your hedgie hibernating, he needs to be warmed

up immediately, but in a gradual manner. Body heat is the best way to do this. Lightly wrap your hedgegie in a small blanket or towel and rest him on your belly. You can also use a human heating pad, but they can get very warm so supervision the entire time is necessary. The key here is to start warming him up as soon as possible after realizing he is too cold, but not shock him with sudden hot temperatures. If after 45 minutes or so your hedgegie has not responded to warming, something is wrong. Get to your

Scruffing

Scruffing a hedgegie is similar to scruffing other small animals, only you have to be careful of the quills. When your hedgehog is relaxed with his quills down, gently grab the skin on his neck, over the shoulders. Hold the skin as loose as you can. If you pinch hard or squeeze the skin, it can be very painful to him and he will remember it. The next time you try to scruff him it will be that much harder! Remember to always support the lower body, whether it is with your other hand or resting him on your knee or another surface. Your hedgegie may try to ball up, and if he is very scared you might want to find a different way of doing whatever it was that needed done. Scruffing can be useful when you need to get a good look at your hedgehogs underside, for syringe feeding (only small doses, not whole meals - your hedgegie would not be comfortable being scruffed for an extended amount of time), or for nail trimming if you have another person to trim while you hold him.

vet immediately.

The after effects of hibernation attempts are bad as well. A hedgehog that has attempted hibernation is likely to try again within a week or two. Make sure the temperature is kept a few degrees over what he is typically fine at just to be safe, and make sure to check on him often. His immune system will be more weak, so take care not to expose him to anything that might make him sick. Be sure to give him lots of love and be thankful you caught him in time!



Syringe Feeding

Sometimes it's necessary to syringe feed your hedgegie, whether he is on medication, can't or won't eat on his own, or just needs to be given water or electrolytes. If possible, it's best to get your hedgegie used to syringe feeding before it's required. Many hedgehogs find the process less than fun, so anything that will make them cooperate later on will help!

You will need:

- Paper towels or absorbent blankets - this can get messy
- Food or meds - make sure it's smooth to avoid clogging the syringe
- Syringe - these are oral (needle-less) syringes, it's best to use one 1-5 mL in size

1. Start by warming up the food if needed. Fill the syringe and test the food for temperature if you do heat it up.
2. Lay some blankets or paper towels in your lap, and get your hedgegie ready.
3. The best way to hold your hedgegie for this is a natural, upright position. You do NOT want your hedgegie on his back on a ball, where he could choke. You might be able to hold him with his back up against you, with your hand on his belly. This works well with squirmy hedgegies. Scruffing (see opposite page) also works well with hedgehogs that aren't stressed too badly by it.
4. Begin feeding. Squirt a small amount of the food into the side of his mouth (not straight back-you could easily choke him). Wait for him to swallow, smack his lips,

possibly anoint. It might take some time for him to swallow, but just be patient. Rubbing the underside of his mouth and throat might help in convincing him to swallow.

5. Be careful not to squirt too much in at once: if he can't swallow it all or catch his breath, he'll inhale the food, which is called aspirating. A hedgegie technically won't choke on syringed food, he will aspirate, which is almost more dangerous. If your hedgegie does aspirate, immediately lower his head and allow him to cough and sneeze the liquid out. Wipe his nose if you can as he sneezes, to be sure he doesn't inhale it back in. Imagine how painful it is when you accidentally inhale food or water, and understand that it can be hard to recover and breathe. Give your hedgegie a break if possible.

6. Repeat step 4 until finished.

7. When you are done, clean up any mess you may have made, and give your hedgegie some love for his cooperation! Mealies are a good reward.



The "back to belly" approach.

You might find it a good idea to run the food through the syringe a few times before actually feeding. This can help break up some of the chunks that might block up the syringe. Remember if it does



Hill's A/D is a great recovery food that is easily syringed and can be bought through your vet.

get clogged, to dislodge that piece of food somewhere other than your hedgie's mouth. You don't want all the pressure to build up and shoot the food into the back of his throat.

If your hedgie stops eating, you will need to feed him yourself. Fatty Liver Disease can set in quickly after a few days of not eating and can kill your hedgie. It's best to crush his regular food to a powder and soften it to feed in these cases. This way you can avoid too much of a stomach upset by feeding something he's used to.

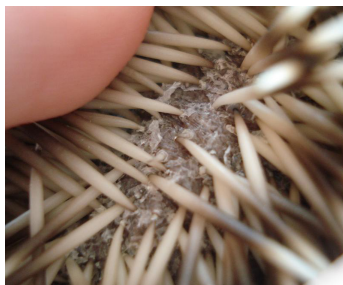
Common Health Issues

Common Health Issues

Dry Skin

Description: Generally includes dry, flaky skin and scratching. Is sometimes mistaken for mites, but is usually caused by too many baths, poor diet, particulate bedding like shavings or paper products, or a very dry environment.

Treatment: You can buy flax seed, vitamin E, or olive oil capsules at grocery or health stores. Flax seed oil is highly recommended because it still allows the skin to breathe, and can be washed off. You can drip this directly on your hedgie's skin in the bath, or add it to their food. Drizzling a few drops on the food once or twice a week, or even every night will help with the skin health and should show improvement in a few weeks. If the humidity in the room he's in is very low, you might consider investing in a warm mist humidifier to keep the humidity up. And lastly, you can give your hedgie a bath and gently scrub some of the skin flakes off with a toothbrush. If your hedgie's skin doesn't clear up, you may want to go to your vet for a skin scrape to see if there isn't an underlying problem.



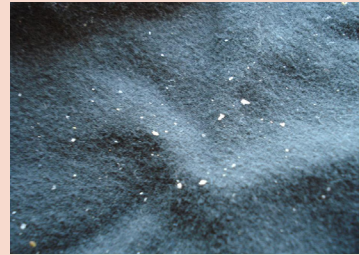
If you look between your hedgie's quills, you may be able to see loose skin flakes, which are very common.

Common Health Issues

Mites

Description: Hedgehogs are very prone to getting sarcoptic mites, especially when kept on shavings. Many hedgehogs from pet stores come home with mites, and mites can be introduced through bags of shavings as well. Excessive scratching, large skin flakes, and orange crust around the base of the quills are all indicators of mites.

Treatment: You will have to go to your vet to get treatment for these parasites. Revolution is recommended as it is topical and is not too harmful if overdosed. Ivermectin is one medicine that many vets try to use, but try to avoid it if at all possible. It is a series of injections and is very easy to overdose. There have been many hedgehog deaths due to the use of Ivermectin. You may want to preventatively treat your other pets as well, in case the type of mite your hedgehog has can be passed on to their species.



If you rub your hedgegie's back on a black cloth, skin flakes may come off. Looking at them under a bright light can give you an idea of whether your hedgegie has mites - if they move, they're probably bugs! This isn't a foolproof way of diagnosing a mite infestation and if you want accurate results you'll need to have a skin scrape done at your vet.

Tattered Ears

Description: Sometimes hedgehogs will get a crusty buildup on the edges of their ears, or they can be tattered from mites, other parasites, or fungus.

Treatment: You can purchase lanolin (human nipple cream) or vitamin E cream to rub on your hedgegie's ears. If you do this every night or every other night, within a week or so, most of the unhealthy skin should come off. If the problem persists, you may want to consult your vet to see if your hedgegie needs treated for a fungus or other problem.



Sometimes tattered ears are due to a crusty buildup, and sometimes the ears themselves become split and raggedy. If they don't clear up easily, you can discuss treatment with your vet.

Obesity

Description: Hedgehogs are prone to becoming overweight if they are unable to get enough exercise. Some are genetically prone to obesity and retain weight despite the best attempts to keep healthy. A hedgegie is overweight if there are apparent fat bulges in the armpit/thigh areas,

continued on next page

Common Health Issues

over the shoulders, or cannot roll up into a complete ball. Be careful following the advice of misinformed veterinarians, there is no “ideal” weight for all hedgehogs. One hedgehog’s ideal weight may be 250 grams and one may be 600. Just because your hedgehog weighs a lot does not necessarily mean he’s overweight. If he seems well-proportioned, can roll into a ball, has a good diet and exercises regularly, you shouldn’t try to force him to lose weight.

Treatment: There are several ways to help a hedgegie lose weight. They are discussed in the last section of the Exercise chapter.

Bloody Feet

Description: Sometimes hedgegies love their wheels so much that they run their feet raw. This is especially common with wheels that have raised grooves on them. Hedgegies can also accidentally catch a toenail on a loop or string on a towel or something else and tear it off. If your hedgegie gets bad “poop boots” and you don’t wash them off, the caked on feces can cause the skin to crack and bleed, and possibly become infected.

Treatment: Fortunately, hedgegie feet heal quickly. If you notice your hedgegie’s feet are/were bleeding or raw, give him a warm foot bath and let him walk on a paper towel to dry them off. You will probably want to remove the wheel for one night, as well as make sure the rest of the cage is clean (so he doesn’t get anything dirty on his feet). It shouldn’t take more than a night or two for your hedgegie’s feet or nails to be all healed up.

Please make sure that the blood is indeed coming from the hedgegie’s feet and not anywhere else. If it looks like it could be urinary, uterine, or anything similar, please get to your vet as soon as possible.



Make sure your hedgegie has a good wheel to run on to prevent him from becoming overweight.



Be especially careful of places your hedgegie’s nails or toes could get caught. This poor hedgehog got his toenail ripped off in the groove in the middle of the running surface on this Silent Spinner wheel and bled excessively.

Common Health Issues

Upper Respiratory Infection (URI)

Description: Hedgehogs naturally have a wet nose (like a dog), but a dripping nose is not normal. If your hedgegie is sneezing, has cloudy or green mucous, or licking their nose excessively, it's likely he has a URI.



Your hedgegie's nose should be moist but not dripping.

Treatment: It is important to get URIs treated quickly, as they can progress into life-threatening pneumonia. Get to your vet quickly, and they should prescribe antibiotics to help your hedgegie recover.

Urinary Tract Infection (UTI)

Description: Urinary tract infections in hedgegies are basically the same as humans. If your hedgegie seems to have trouble urinating or looks like he or she is in pain, or has blood in the urine, he may have a UTI.



Keeping your hedgegie hydrated is important for urinary health.

Treatment: You will need to go to the vet for diagnosis and medicine. If you have a female hedgegie, you should have a fine-needle aspiration done (this draws urine directly out of the bladder) to make sure the problem is urinary and not uterine.

Tumors, Abscesses, and Cysts

Description: Sometimes hedgehogs will get lumps and bumps on their bodies. These, if caught early, can often be removed before they get too bad. Some tumors are cancerous (and unfortunately many are). Oral, uterine, mammary, and intestinal cancers seem most common. Abscesses and cysts still require veterinary care but are less life-threatening.



Treatment: If you notice anything unusual on your hedgegie, get to your vet as soon as possible. Tumors can grow exponentially overnight, and oral cancers are particularly aggressive. Immediate treatment is necessary. With abscesses and cysts, they get worse with time and can be very painful. Any lumps on your hedgegie should be removed or drained.

This female hedgehog has a mammary tumor. After the photo was taken, it was removed and she returned to her happy healthy self.

Wobbly Hedgehog Syndrome

Wobbly Hedgehog Syndrome (WHS) is a devastating, fatal neurological disease. In some ways similar to Multiple Sclerosis in humans, WHS gradually deteriorates a hedgehog's ability to function and leads to paralysis. Usually the back legs are affected first, becoming weak and unresponsive. This causes the legs to be dragged, or the hedgehog being unsteady and having difficulty moving around, hence the "wobbly" name. It then spreads to the front legs and spine. Usually the onset of WHS is gradual and suddenly seeing these symptoms would point to a different problem, often temperature related. On occasion rapid deterioration may indicate a brain tumor or other serious condition. There is no known cure for WHS, but there are things you can do to improve the quality of life for your pet.



Hedgies battling WHS may reach the point of total paralysis.

Symptoms: WHS usually starts with leg dragging, inability to stand up straight or walk in a straight line. With time it progresses to the front legs and spine, causing the hedgie's muscles to be stiff and contract. This makes movement difficult and painful. Hedgehogs with late

stages of WHS are feeble and barely moving. Decreased activity and weight loss are often seen because of the limitations from the disease. WHS symptoms usually begin to occur by the time the hedgie reaches two years old.

Cause and Cure: There are no known cures for WHS, nor are we exactly sure what causes it. According to current research, it is a hereditary disease. The only way to prevent passing it on to future generations is for breeders to stop breeding hedgehogs with WHS in their background (or hedgehogs with unknown backgrounds that could have WHS) and hope to prevent the propagation of the gene.

Treatment: If your hedgie comes down with WHS, don't give up, and don't let your pet give up. There's a lot you can do to improve quality of life and even prolong it. *Try to make everything easier on him.* Using shallow dishes or putting kibble on the ground near them helps with eating. If they are still able to wheel, make sure it is low to the ground or has a gradual, safe ramp up to it. The surface should not be slippery when wet. No lofts or second floors for climbing. If you use a bottle, try to lower it or use a shallow dish for water. Keep everything nearby so he doesn't have to walk a long distance to get to any of his necessities.

Massage can help increase mobility and reduce contractions and painful spasms when your hedgie tries to move. There are a lot of things you can do right when mas-



Helping keep your hedgegie's body moving when he isn't able to do so himself can help relieve and prevent some of the pain and muscle loss that WHS causes. This hedgegie is getting belly rubs and leg massages.

saging your hedgehog, but it's easy to overdo it or injure him too. If you are interested in doing this, it would be a good idea to get in contact with someone like Laura Ledet who has experience with it. Her contact information is listed in the Resource chapter. A basic massage would start with warming up your hedgegie's belly in general by lightly stroking the abdomen in a clockwise motion- the digestive tract moves in this direction and it helps it along. Gently rubbing the base of the legs, lightly pinching and rubbing your hedgegie's back, shoulders, and spine helps warm up the muscles and make them more comfortable. You can rub the legs and slowly move the joints in a walking motion. One of the most important muscles is the orbicularis- this is the muscle that allows a hedgehog to roll up in a ball, and erect its quills. Gently kneading this muscle can help relieve spasms greatly. If your hedgegie does not seem like he's enjoying his massage, stop and give him a break. Coping with WHS is hard and it's very easy to wear him out. Next time, try a slower,

shorter routine.

To keep your hedgegie enjoying life, try to support independence and give them a sense of still being able to do things for themselves. You can stimulate senses by offering favorite treats, or letting them go outside and sniff around in the grass. Giving them things to lean against helps them to walk. Make sure you spend time just giving them love- letting them sleep on your chest while reading, for example, keeps them warm and close to their best friend.

As the paralysis gets worse, you may need to syringe food and water. Soft food smoothies can be made of multiple ingredients, or you can buy the canned version of the food they were originally eating. Get some oral syringes of different sizes, try them out and use one that works well and gives just the right amount of food. You don't want a huge one or a super small one. Your hedgegie should take several syringes of water a day, perhaps less if the food is very watery. Hedgegies need about 5-10 mLs of water daily. How much food

they will take depends on the individual, but if they are hungry give them as much as they like. During your daily care, make sure to weigh and record your hedgehog's weight. Try to maintain weight if possible. This can be hard, however, because of the muscle mass lost.

Lastly, you should get in contact with other hedgehog owners through the mailing lists and forums in the Resources chapter, and do research to see if anything new has been discovered, treatments that have worked, etc. If you find you are unable to continue to care for your sick hedgehog, this community can help get him to someone who

can. Getting support from people who have gone through this before you can be invaluable.



The more WHS progresses, the more your hedgehog will rely on you for daily care.

The Elderly Hog

As much as we all wish it wouldn't happen, our pets eventually grow old. As your hedgehog ages, there are a few things to keep in mind to make sure he stays healthy and comfortable. Most hedgehogs are considered seniors by 4-5 years old.

The first thing is to know and accept that changes occur. Older hogs might not run as much, eat as much, or poop as much. Their eyesight and hearing may decline, and they might start coming out at odd hours of the day without regard to their light schedule. Sometimes to avoid walking too far or leaving the warmth of their bed they'll start to potty in their sleeping area. Their teeth are eventually lost or wear down, and they might have a hard time eating foods that need a lot of chewing. They may spend more time sleeping and be less energetic than in their younger years. Just like elderly people, they are more

easily exhausted and stressed, and care should be taken not to expect them to act younger than they are. A hedgehog at two years old might love to take trips with you, but at six years old, maybe he'd rather stay home and rest. Older hedgehogs may also have a lower immune system, and care should be taken to especially ensure they aren't exposed to anything that could make them sick.

As long as your hedgehog is still healthy, there aren't too many changes you need to make. He may want a bit more warmth to keep his old joints comfortable, so extra thick blankets or a heating pad set on low under his bed may help. If he loses teeth or has a hard time with hard food, you might try softening his kibble with water, or switching to a canned or pouched food that's easier to eat. If your hedgehog has a hard time maintaining a healthy weight, you can feed

Here is a photo of my hedgehog Inky at about 5 years and 2 months old.

He has been showing many signs of aging, including his faded and freckled mask, loss of teeth, lowered immune system (resulting in frequent infections), decrease in activity, joint discomfort, and weight loss. A soft, supplemented diet, frequent baths, and anti-inflammatory meds have kept him comfortable.



high fat treats or switch to a higher fat food. Shallow food and water dishes also help so it doesn't take as much effort to eat and drink. Lowering the wheel if you can may help him get onto it easier and encourage him to stay active.

If your hedgie seems in pain, be sure you talk to your vet about what you can do to keep him comfortable. There may be medications you can add to his food to help relieve pain.

It's even more important to keep good records of your hedgie's weight, activity, and eating habits as he gets older. This is when most problems start occurring, so picking up on weight loss or appetite decrease is important. You will probably want to take your hedgie in to the vet more frequently as well, if you were going in for annual visits it's recommended to increase visits to twice a year. The better you and your vet know your hedgehog, the easier it will be to detect and treat problems as they arrive.

When it's time to say goodbye...

Even worse than talking about pets growing old, is pets passing on. Sometimes hedgies will pass

at home, and sometimes the best thing is to help them cross over. Just keep him comfortable until the time comes, and you've done the best you can. If your hedgie's quality of life declines, please do what's best for him and try not to hold onto him for too long. If he's in pain, can't eat or drink on his own, can't control his elimination or struggles to move around, chances are if he's not recovering, his time has probably come. But if he is still fighting, help him fight! But if he doesn't seem happy, the most humane thing is to help end his suffering.

I'd hate to end this section on such a sad note, so I just want to mention that if you care for a hedgie all the way up to this point, kudos to you. Taking care of an older animal to the very end is one of the most kind, compassionate things you can do. It's hard and heartbreaking, but just think of how happy you kept them and that you helped give them a great life. Every animal dies eventually, but they deserve to be comfortable, cared for and loved until that point - and if you provided that, they had everything they could have wanted.



Resources

Helpful Pages and Charts

If you would like to download these templates in a higher quality to print, they are uploaded here for your convenience: tinyurl.com/pah2-resources
 This link will redirect to a public Google Drive folder.

While you should have a business card for your vet on hand, you may find it helpful to have one of these cards filled out for anyone who may be caring for your pet.

Veterinarian Information	
Patient Name: _____	Species: _____
Owner: _____	
Owner Contact: _____	
Clinic: _____	
Doctor: _____	
Address: _____	
Phone: _____	
Hours: _____	
Other Notes: _____	

If you are traveling with your hedgehog, it's recommended to have a card with your contact information attached to the carrier in the event of an emergency.

picture here	Pet Name: _____
	Gender: _____ Species: _____
I am temperature sensitive! PLEASE KEEP ME WARM. (74-78°F)	
Owner: _____	
Phone #: _____	Notes: _____
2nd Contact: _____	
Phone #: _____	_____
Vet: _____	_____
Phone #: _____	_____

Hedgehog Daily Log: (example)

Date	Weight	Food Offered	Food Eaten	Wheeling/Activity	Notes
00/00/00	321 grams	80 kibble	74 kibble	1.35 miles	cut nails

Vet History Log: (example)

Date	Purpose for Visit	Doctor Seen	Results	Follow-up Instructions	Cost for Visit	Notes
00/00/00	annual check-up	Dr. Smith	all clear!	come back in a year	\$60.00	none

Hedgehog Websites, Forums, Mailing Lists and More

Books

Author's Note: Unfortunately, there is not a single other book currently in existence that I think is free of serious errors when it comes to responsible hedgehog care - not even recent ones. I would not recommend using other hedgehog books as additional resources for information. The only book I'd recommend for information is Nigel Reeve's book listed below - it's a scientific read and only really useful if you're interested in learning more about the history and habits of wild hedgehog species, and not about hedgehogs as pets.

Hedgehogs (Poyser Natural History)

Nigel Reeve

Published 05/24/1996 | ISBN-10: 085661081X | ISBN-13: 978-0856610813

Websites

Author's Note: Though these websites are owned and maintained by great people who know what they're doing, sometimes pages get left and never updated. Please be careful about following out of date advice! Oftentimes there will be incorrect info on the site, but if you talk to the actual people, you'll get a different answer.

International Hedgehog Association: www.hedgehogclub.com

Hedgehog Welfare Society: www.hedgehogwelfare.org

Hedgehog Central: www.hedgehogcentral.com

Worldwide Hedgehog Breeders List: www.hedgehogbreeders.org

West Coast Hedgehogs (author's site): www.westcoasthedgehogs.com

Communities

Author's Note: These are great communities of experienced people who can help you with specific questions and problems, plus love to share pictures!

Hedgehog Central Forums: www.hedgehogcentral.com/forums

hedgehog_help group: pets.groups.yahoo.com/group/hedgehog_help

hedgehogwelfare group: pets.groups.yahoo.com/group/hedgehogwelfare/

Individuals

Author's Note: Laura Ledet has been kind enough to give permission to be listed here as a resource. Please only contact her in appropriate situations (WHS questions).

Laura Ledet: www.angelfire.com/wa2/comemeetmyfamily/wobblyhs1.html
sshalar16@msn.com