

Feeding hedgehogs in our care

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1 General information

The composition of the food given to hedgehogs needing care must be based on the food that a hedgehog eats in the wild.

Hedgehogs belong to the insectivore family. This can be seen in their teeth, in the composition of their gastric juice and in the type of digestive system that they have: for example, the ratio of body length to intestinal length is 1:3 in cats (carnivores), 1:4 in hedgehogs, 1:14 in pigs (omnivores) and 1:20 in cattle (herbivores).

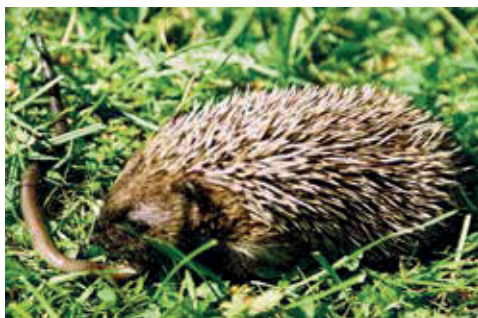
2 Natural foods

Based on scientific studies of the stomach and intestinal tracts of hedgehogs that were run over and from hedgehog droppings collected, we know quite a lot about their natural diet.

2.1 What do hedgehogs eat in nature?

Their main food is ground beetles, something we hardly register because they – like most hedgehog food sources – are nocturnal. Butterfly larvae, colloquially called “caterpillars”, are also important prey.

Especially in spring and late autumn earthworms come in at the top of the menu.



Earwigs are a delicacy whereas snails are not. Hedgehogs don't particularly like them because of their slime – much to the chagrin of gardeners.

Table 1: Relative importance of some hedgehog food animals (according to Wroot, 1984)

Food animals	Nutritional importance	Share of feed gross energy
Beetles	very important	27,9–56,3 %
Butterfly larvae	very important	17,7–43,1 %
Earthworms	very important	12,3–33,9 %
Earwigs	important	1,5–10,5 %
Beetle larvae	important	0,4–10,5 %
Snails	less important	1,3–5,6 %
Gnats and flies	less important	2,9–7,0 %
Centipedes and millipedes	less important	0,3–2,2 %
Woodlice	unimportant	0,1–1,1 %

According to most scientific studies, the eggs of ground-nesting birds play almost no role in the food spectrum of hedgehogs.

It is however known that hedgehogs can be quite active in taking eggs from some seabird colonies.

Mice are much too fast for the rather slow moving hedgehog. The fact that vertebrate remains have nevertheless been found in hedgehog droppings would indicate that the spiny knights ate carrion, i.e. the remains of other predators.

2.2 Dietary composition

The hedgehog's insect-based diet is rich in protein and fat: 100 g of an average mixture of insects and molluscs, contains about 16 % protein, 4 % fat, 2 % carbohydrates and just under 3 % indigestible components, i.e. fibre.

2.3 The fruit myth

In the gastrointestinal tracts of most of the hedgehogs that were run over, as well as in faecal samples taken, plant material could be seen. Some of it was finely chewed and came from the digestive tract of caterpillars or earthworms. But also unchewed and undigested plant material, especially grass, was found in the samples. Researchers assume that it was accidentally eaten along with other food.

Contrary to popular belief, fruit is not part of the hedgehogs' diet. If you see a hedgehog with an apple, he is only picking off the insects and worms. Like many mammals, hedgehogs also like sweet things. That's why they sometimes snack on overripe fruit.

tinned cat food is given during the whole period of care. ³



Apart from medical treatment, a hedgehog's nutrition is the most important contributor to its recovery. So here especially we shouldn't be too sparing or lazy.

A mixture of basic and supplementary food is much richer in calories than tinned cat food alone. In addition, the hedgehog's digestive system is not put under so much strain when the food is mixed like this because the portions can be smaller. 100 g of tinned cat food corresponds to 75–80 kcal, 100 g of minced beef corresponds to approx. 225 kcal. Therefore 50 g tinned cat food + 50 g minced beef (cooked) have approx. 150 kcal. The mixture thus contains – for the same amount of food – twice as many calories as cat food alone!

3 Feeding hedgehogs in our care

The hedgehogs' natural diet is by necessity diverse. This principle of variety should also be applied when feeding hedgehogs. Often nothing more than



Good food consists of a combination of both basic food and supplementary food.

The ratio mix should be 50:50, i.e. one half canned food, one half supplementary food (e.g. meat, egg, fish).

3.1 Basis food

As a “basis food” a high quality wet cat food with a meat content of at least 60 % is recommended. Wet cat food with 7.5 % to 10 % protein, contains considerably less than a hedgehog’s natural food and is therefore relatively low in calories: As a basis food it is however useful because if the high content of vitamins and minerals. The raw protein content should be at least 10 %, the raw fat content at least 5 % and the moisture content 78 % at

most. In addition, the following should not be added to the canned food: animal or vegetable protein concentrates, sugar, molasses, cereals, vegetable by-products, preservatives, colourings and gelatine. In order to prevent the hedgehog settling on one flavour, you should not only feed different types of one brand, but also the products of several manufacturers. The “basis food” is augmented with “supplementary food”, i.e. with different kinds of meat, with egg or fish.

Table 2: Nutrient information (according to M. Neumeier / C. Schiller)

Nutrients ¹	Crude protein	Crude fat	Carbohydrates	H ₂ O (water)	Kilocalories
Natural food (mean value)	15,7	4,1	1,9	73	108
Wet cat food (average, usual standard quality)	7,5	3,5	8	81	75
Wet cat food (average, good quality)	10	5	</= 4	78	80

¹ Where the combined totals don’t add up to 100 % of the nutritional value, this is because the individual nutritional values represent an average figure, and also the crude fibre and crude ash contents are not specified here.

3.2 Supplementary food

Basically, meat, fish and eggs are only fed after they have been cooked thoroughly; this is in order to kill pathogenic germs, above all salmonella. The most common supplementary food is minced beef or pork. Which is either fried or cooked in a very small amount of water. It is not really clear whether you can give pork to hedgehogs. When feeding carnivores, pork is generally not used because of possible allergic reactions. Thoroughly cooked pork, which kills not only bacteria but also the pathogens of viral diseases – e.g. Aujeszky - is however considered acceptable for hedgehogs. Cooked chicken or turkey

meat is cut into small pieces; larger portions can also be put through a mincer. Eggs are particularly popular with hedgehogs when scrambled: the scrambled egg is fried in a pan – naturally without spices but with a little fat – until it has thickened. You can, of course, also feed them hard-boiled eggs, but some hedgehogs separate out the egg white, something that is not possible with scrambled eggs. Depending on local or current availability, other foods can be added to their basic diet: e.g. mutton or game meat, innards such as liver and heart, salt and freshwater fish, sea animals and day-old chicks.

Table 3: Recipes for feed mixtures (according to M. Neumeier / C. Schiller)**PLEASE BE AWARE: All recipe ingredients (except cat food) must be cooked, i.e. boiled / fried!**

Recipes (100 g feed mix ¹)	Crude protein	Crude fat	Carbo-hydrates	H ₂ O % (water)	Kilo-calories
50 g cat food + 10 g chicken liver + 40 g chicken meat with skin	18,4	7,5	1,6	69,0	140
50 g cat food + 50 g chicken hearts	14,1	5,2	1,4	75,6	102
50 g cat food + 50 g day-old chicks	12,5	5,0	1,1	70,0	92
50 g cat food + 50 g chicken wings	18,4	8,5	1,0	68,5	185
30 g cat food + 70 g scrambled eggs	14,2	11,4	1,2	70,7	154
50 g cat food + 20 g beef liver + 30 g beef (medium fat)	17,3	7,3	2,3	70,9	137
50 g cat food + 25 g beef heart + 25 g beef (medium fat)	16,7	5,0	1,2	73,6	111
50 g cat food + 50 g mutton (fat)	16,2	14,8	1,0	64,6	194
50 g cat food + 25 g scrambled eggs + 25 g minced beef	15,9	9,08	1,4	70,1	142
50 g cat food + 50 g hake	15,0	3,3	1,0	76,3	94
50 g cat food + 50 g Pacific salmon	15,5	3,2	1,0	76,7	89
50 g cat food + 50 g squid	14,2	3,1	2,2	76,7	88
50 g cat food + 50 g prawns (shrimps)	14,4	3,3	1,4	77,2	87
50 g cat food + 25 g Silkworms soaked in 25 g water	18,0	9,5	1,9	65,8	165

¹ Where the combined totals don't add up to 100 % of the nutritional value, this is because the individual nutritional values represent an average figure, and also the crude fibre and crude ash contents are not specified here.



Due to the poor calcium-phosphorus ratio, supplementary food needs itself to be supplemented with calcium such as feeding lime (without vitamin additives) or eggshell powder (dry and pulverise raw eggshells, then sterilize them in the oven at 120° C for 30 minutes). For each 100 g of supplementary food add 0.5 g (½ knife tip full) of calcium powder. With a varied diet additional vitamins or minerals are not necessary.

For seriously ill hedgehogs and those who refuse to eat, feeding them with relatively expensive reptile food – which broadly corresponds to the hedgehog's natural food – is often a lifesaver. Suitable foods are insects (grasshoppers, crickets, house crickets) and insect larvae (buffalo worms, mealworms, Zophobas, wax worms, drone brood). On the other hand, most hedgehogs spurn dried insects like those that are offered by some manufacturers as a special delicacy.

! Insect larvae may only be fed to hedgehogs in small quantities: This is due to their high fat content, and the resulting depletion of B vitamins that occurs through their consumption.

3.3 If the faeces stinks

A diet exclusively of wet cat food almost always causes soft, stinking excrement. The unpleasant effects of such a one-sided nutrition can be reduced with the addition of dietary fibres: Both vegetable raw fibres (e.g. wheat bran, oat flakes) and animal products (cartilage, connective tissue, chitin) are suitable for this. For problems with intestinal motor function (caused e.g. by intestinal inflammation, food intolerances) an increased proportion of dietary fibres can also be helpful. Over the long term however, a varied diet made up of a mix of freshly prepared food is much healthier for the hedgehog.

3.4 Dry hedgehog food

Feeding hedgehogs commercial dry food is not recommended, especially not – as is stated on some packaging – as the sole, main or rearing food. Emaciated and growing hedgehogs in particular have an especially high protein requirement. On

top of this, their natural diet is composed of only small amounts of carbohydrates and these are the largest component in dry hedgehog food. In addition, the dried food is usually eaten selectively, i.e. not all components are consumed equally. Moreover, dried food is – as the name suggests – dry. The hedgehog must therefore drink a sufficient amount of water in order to ensure that the mixture in the intestines is correct. If a wild animal is not used to such dry food and its water intake cannot be actively influenced, you must ask yourself whether and how such food can be tolerated at all.

As „emergency rations“ during hibernation, i.e. to show whether a hedgehog has interrupted his hibernation and is interested in food, dry food can be put out. An awake hedgehog should be provided with normal wet food again.

Table 4: Nutrient composition in % dry matter (according to Struck/Meyer 1998)

	Dry hedgehog food	Recommendation for hedgehog food
Raw Protein	18–27 %	30–50 %
Crude fat	9–25 %	21–34 %
Carbohydrates	44–64 %	bis 58 %



3.5 Food quantity and weight gain

Juveniles may gain up to 20 g per day in the first days after being placed in human care. Such high increases in weight can be explained by the filling of their previously empty intestine, but also by the „filling up“ of a dehydrated animal through increased water intake. In the further course of care for young hedgehogs an increase of 10–15 g per day should be aimed at.

Emaciated, adult hedgehogs needing care should gain about 10 g per day;

well-nourished adult hedgehogs only need to maintain their weight. In any case fattening up should be avoided. Young hedgehogs should never weigh more than 750 g during the care period, the average weight of adult hedgehogs is about 1000 g.

Undernourished or severely emaciated hedgehogs should initially be given very small portions every two hours so as not to strain their circulation too much.

TABLE 5, in conjunction with TABLE 3, shows the number of calories required for the desired weight gain.

Table 5: Energy requirements of growing hedgehogs according to Struck/Meyer (1998)

Hedgehog's body weight	Increase in body weight per day	Daily energy requirement
bis 100 g	5 g	32 – 42 kcal
100 – 200 g	5 – 10 g	42 – 84 kcal
200 – 500 g	10 g	84 – 120 kcal
500 – 1000 g	10 g	120 – 180 kcal



Beware of malnourished hedgehogs!

If they are allowed to eat as much as they like in the first few hours after begin taken in, this can lead to a circulatory collapse!

3.6 Dental care

Once or twice a week the following foods can be added to the normal moist food: boiled and skinned chicken giblets with bones, boiled beef bones or spare ribs for gnawing. The gnawing is good for their teeth and helps against boredom, just like the dried chicken necks that are available in pet shops.

4 Problems with nutrition

The most common cause of a refusal to eat is an infestation of internal parasites. In this case even the best food will not make the hedgehog eat. First the inter-

nal parasites must be eliminated through medication. Other infections can also cause loss of appetite.

Problems in the mouth cavity often prevent a hedgehog from eating. It may have loose teeth, massive tartar build-up, a foreign body in the palate, even a broken jaw or pathological changes in the oesophagus. Of course, in all these cases an immediate visit to the vet is necessary.

If a prickly patient is so sick or weak that it cannot eat himself, he must be force-fed; otherwise it may dehydrate or lose too much weight. For force feeding, protein-rich dietary foods for cats and dogs are suitable, such as „Hill's Prescription

Diet Canine/Feline a/d⁸ or Royal Canin „Convalescence Support Instant Diet Canine/ Feline“. They are available from the vet.



In the transitional period, you can also feed them low-lactose, ready-to-use cat milk. Portions of 10 to 30 ml are given four to five times a day depending on the weight of the animal. In addition, normal food should be given, so that it can start feeding itself independently as soon as possible (see also book „IGEL IN DER TIERARZTPRAXIS“).

5 Unsuitable foods

Hedgehogs do not feed on fruit: see section 2.3. They eat it mostly out of boredom, in times of hunger or when, for example, a pear is overripe and sweet. One or two slices of banana for dessert will not harm any hedgehog. But not everything that humans eat is also good for animals. For

example, avocados – very popular as an addition to hedgehog food – contain the poison persin. Persin has no negative consequences for humans, but it is poisonous for some animals when eaten in large quantities. In the absence of research, it is not known what the dangerous dose for hedgehogs is. But do hedgehogs really need avocados? The answer is NO!

Milk and dairy products (yoghurt, quark, cottage cheese) are also not suitable for hedgehogs because of their lactose content. Hard cheese contains virtually no lactose, but it is salty and therefore also taboo.

Salty and sweet foods are generally not recommended, so keep your hands away from smoked or fried fish, honey, raisins and cookies!

Walnuts and hazelnuts are vegetable foods that hedgehogs also do not need. In nature there are almost never cracked nuts (not even peanuts!) to be found. Sunflower seeds are not part of the hedgehog's diet either.

As many hedgehogs taken into care have problems with their stomachs and intestines, it is even more absurd to feed them with questionable supplements: In such a case it would not be possible to determine, for example, whether the green faeces are a sign of intestinal inflammation or just the result of adding quark.

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