



# Rodents

What are hairy (usually), warm-blooded and produce milk for their young?

## Mammals

### A Quick Refresher on Mammals

Mammals are **vertebrates**, or animals with backbones. All mammals are warm-blooded and produce milk for their young. Most have hair or fur and have teeth that help them cut or chew their food. All young mammals rely on the mothers for food when they are born and stay with them until they are able to fend for themselves. Mammals have a very well developed nervous system and a high degree of intelligence and resourcefulness not found in other animals.

Mammals evolved from reptiles and first appeared 200 million years ago. These first mammals lived in trees and were only 5cm (2 inches) long. Now there are over 4,500 species of mammals that come in all shapes and sizes. Most mammals live on land and walk on four legs, but there are also mammals that hop (kangaroos), walk on two legs (humans), live in water (whales), and fly (bats).

Mammals that are alive today belong to three groups. Below are some examples of animals that belong to each group.

**Monotremes** are the smallest group of mammal with only three animals. They are found in Australia, Tasmania, and New Guinea. Unlike all other mammals, monotremes lay eggs. Although the mothers produce milk for the young, they do not suck from a nipple, but rather, lick up the milk from a patch on the mother's belly!

**Examples:** duck-billed platypus, spiny anteaters

**Marsupials** are often called pouched animals.

They give birth to live young, but the young are born when they are still very undeveloped. They nurse on their mother's milk in a special pouch on her abdomen while they complete their development. About two-thirds of the 250 species of marsupials live in Australia, Tasmania, or New Guinea. The only marsupial that lives in North America is the opossum.

**Examples:** kangaroo, koala, bandicoot, wombat, Tasmanian devil, opossum

**Placental** mammals are by far the largest group of mammals. When most people think of mammals these are the ones they think of. Compared to marsupials, young placental mammals spend a long time developing inside the mother's womb. While inside they are nourished by the placenta which absorbs nutrients from the mother's blood and delivers them to the developing animal.

**Examples:** rodents, bats, carnivores (dog, bear, hyena, coyote, weasel, wolf, fox, racoon, otter, skunk, tiger, lion, cat, sea lion, seal, walrus), cetaceans (whale, porpoise, dolphin, manatee), primates (humans, monkeys, apes, chimpanzees), elephants, insectivores (hedgehog, mole), hoofed mammals (horse, zebra, rhinoceros, pig, hippopotamus, deer, giraffe, camel, llama, moose, antelope, goat, sheep, cow), anteaters and aardvarks, rabbits and hares.



*Mammals come in many shapes and sizes.*

# All About Rodents

## What is a Rodent?

The largest group of mammals by far is the rodents. More than one-third of all mammals (over 2,000 species) are rodents. They are found all over the world except Antarctica, New Zealand and a few small islands.

## Characteristics

So what makes a rodent different from other mammals? The most distinguishing characteristic is their teeth. All rodents have a pair of upper and a pair of lower teeth called **incisors**. Unlike our teeth, these incisors don't have roots, and they never stop growing! To keep these teeth from growing into their brains, rodents grind their teeth against each other. This friction is similar to using a grindstone to sharpen a knife. "Self-sharpening" not only keeps the teeth short, but it also keeps the edges very sharp, almost like a chisel.

You might have guessed that the word *rodent* means "to gnaw." In addition to grinding their teeth together, gnawing on objects (pipes, furniture, buildings, wood molding, etc.) helps keep their teeth short and sharp.

## Did You Know?

Not only do rodent incisors keep growing, they are very hard too. Rodent teeth are harder than lead, aluminum, copper, and iron. Rats often gnaw through metal pipes. After that, gnawing through PVC pipes, plastic containers or cereal boxes is easy.



*Rat incisors and the damage they can do on plastic garbage cans.*

## Yes, These are Rodents

mouse, rat, hamster, guinea pig, woodchuck, muskrat, gerbil, squirrel, chipmunk, prairie dog, gopher, beaver, porcupine, chinchilla, vole, lemming, agouti, marmot, capybara

## Mammals, but NOT Rodents

bats, rabbits, moles, shrews, hedgehogs

## Rodents as Pests

While most rodents spend their lives away from people, there are a few rodents that spend their lives near people. These are called **commensal** rodents. The word commensal means "sharing one's table". The most common commensal rodent pests in the United States are the house mouse and the Norway rat.

Rats and mice cost billions of dollars in lost crops each year, and some are carriers of human diseases such as bubonic plague, typhus, and Hanta fever. However, various rodent species are economically important as sources of food or fur in many parts of the world, and others are used extensively in biomedical research.

## Can't go over it, Can't go under it, Might as well go through it

Rodents use their incisors to gnaw through wood, plastic, lead, aluminum siding, glass, and cinder blocks. They can also squeeze through very small openings. Rats can fit through holes the size of a quarter, and mice can fit through holes the size of a dime.

## Eew, Gross

Mice and rats leave droppings and urine wherever they go. A house mouse can produce 50-100 droppings a day, while a rat can leave as many as 50!

## Gross (but, cool)

Rodent urine glows a blue-white color under ultraviolet light. Some pest managers and food inspectors use black lights to check for rodent trouble.



### Life Cycle of the Norway Rat

The Norway rat is the most common and economically important rat in the United States. It is sometimes called the brown rat, house rat, sewer rat, and wharf rat. A mature female rat can give birth to about 20 young (pups) a year (four to six at a time), if she lives that long. In the wild, the average life span of a rat is less than one year. The females generally live longer than the males. The young are born in a nest. They are hairless, and their eyes and ears are closed. Within two weeks their eyes and ears open, they become furry, and they begin exploring the nest area.

If the mother rat has become wary of rodenticides or traps, many of her young will learn to avoid them. Young are totally weaned at 4-5 weeks old when they weigh approximately 1.5 ounces. At three months old, the pups are independent of their mother. They will mate and live in the same location or move to a new nest area. Rats are aggressive and live in colonies. The dominant males and ranking females will have the best nests.

### Rats Can:

- fit through holes the size of a quarter.
- leap up three feet from a horizontal surface.
- jump horizontally over four feet.
- reach things 13 inches above them.
- fall more than 50 feet and survive.
- dive and swim underwater for 30 seconds.
- tread water for three days.
- swim as far as ½ mile in open water.
- gnaw through wood, lead pipes, cinder blocks, aluminum, sheet metal, exposed edge of glass.

### Look, smell and listen:

### Top 10 signs you have a rodent problem

10. odor
9. sounds
8. live or dead rodents
7. urine stains
6. grease marks
5. runways
4. burrows
3. gnawing damage
2. tracks
1. droppings!



### Life Cycle of the House Mouse

Environmental conditions such as the availability and quality of food can influence the frequency of pregnancies, litter sizes, and survival. Under ideal conditions, females can produce as many as ten litters (about 50 young) in a year. The life span is generally less than one year.

Mice, like rats, are born hairless with closed eyes and ears. By three weeks old, the young begin to take short trips away from the nest and start to eat solid food. They are sexually mature at five to nine weeks old.

### Mice Can:

- fit through holes the size of a dime.
- leap up one foot from a horizontal surface.
- run up almost any vertical surface.
- travel upside down clinging to wire mesh.
- swim, but usually do not dive under.
- survive in freezers for several generations.
- easily run on electrical wires or rope.