

The Remarkable Purr of a Cat

Why and How do Cats Purr?

By [Franny Syufy](#), About.com

My mailbox often brings interesting challenges, as in this morning's short question from Gideon: "Do cats purr when they are alone?" What a great question! As I replied to Gideon, it is on the order of, "If a tree falls in the woods, and there's no one there to hear it, does it make a sound?" Or - "Does the light burn inside a closed refrigerator?" Yet, by far, I think the question about cats purring is the much more fascinating of the three. Truthfully, I don't know if cats purr when they are alone. It seems likely that they do, if one understands a little about why cats purr.

Most experienced "cat wranglers" now know that cats don't purr only when they are content and happy. They also purr during tense or traumatic moments. When suddenly and violently injured, even at moments near death, a cat will often purr. I've often likened this to saying, "Please don't hurt me any more. I'll be good," but recent studies have put a more scientific spin on this seeming anomaly.

It seems that the measurable Hertz of a cat's purr lies between 25 and 150. Coincidentally (or not) it has been found that sound frequency in this range can stimulate bone growth and healing.¹

That cats have remarkable endurance, and are quite stoic to trauma is well known to veterinary professionals; it is not unlikely that this instinct to purr under duress is directly related.

Purring under stress has more colorfully been described as the cat's *mantra*, e.g., a self-soothing, self-healing, relaxing, vibrating sound (sort of like the *Ommmm* one might hum while in the lotus position. Notice the vibration in your lips, nose and throat? I bet most of us, if we had our "druthers," would much rather be able to purr!

The Physiology of Purring

There seems to be two schools of thought here.

- The most popular one is quoted here:

One study determined that purring involves activation of nerves within the voice box. These nerve signals cause vibration of the vocal cords while the diaphragm serves as a piston pump, pushing air in and out of the vibrating cords, thus creating a musical hum. Veterinarian Neils C. Pederson, author of Feline Husbandry, believes that purring is initiated from within the central nervous system and is a voluntary act. In other words, cats purr only when they want to.²

- The other theory is that the sound comes more from vibrating blood vessels than in the voicebox itself. ³

The Happy Purr of a Cat

All domestic cats are born with the purring ability. A queen will purr while giving birth. It is unknown whether this is because of happy anticipation, or whether it is a relaxing "mantra." Kittens instinctively purr when nursing, and the momcat purrs right back at them. Your adult cat will purr at the drop of a hat whenever you're near, and especially when you are holding or petting him.

Cat purrs will range from a deep rumble to a raspy, broken sound, to a high-pitched trill, depending on the physiology and/or the mood of a cat. A cat will often "wind-down" when going to sleep, with a long purring sigh that drops melodically from a high to a low pitch. Does your cat's purr sometimes sound like an idling diesel engine? That's because at the lower range of 26 Hertz, the velocities are nearly the same.

The Healing Power of the Purr

Cats are often used as "[therapy animals](#)" in convalescent hospitals, or in retirement residences. It is an accepted fact that cat owners have lower blood pressure, especially in older people. The human-feline bond is never quite so close as when a person is holding and petting a purring, vibrating bundle of fur on her lap, and all is well with the world. You may even find yourself purring in response.