

Can dogs hear low frequency noise, or infrasonic noise?

Dogs generally cannot hear true infrasonic noise (below 20 Hz) and are actually less sensitive to low-frequency sounds than humans. While dogs hear high-pitched sounds (up to 60,000 Hz) much better than people, their low-frequency hearing range typically starts around 40–67 Hz.

How Dogs Experience Low-Frequency Sound:

- **Physical Sensation:** Instead of hearing infrasound, dogs likely feel it as vibrations, especially through their paws or whiskers.
- **Alert Behavior:** They may react to low-frequency noise (like thunder or heavy machinery) with confusion or anxiety, appearing startled, standing to attention, or hiding.
- **Behavioral Differences:** While people can hear down to roughly 16–20 Hz, dogs' ears are not designed to pick up these deep rumbles as sound.

While they lack sensitivity to deep, low-frequency noises, dogs' superior hearing at higher frequencies allows them to hear sounds up to four times further away than humans.

Can cats hear low frequency noise, or infrasonic noise?

Yes, cats can hear low-frequency noises and have an exceptional, broad hearing range that includes sounds well below and far above the human range.

Low Frequency and Infrasonic Hearing:

- **Lower Range Limit:** Cats can detect low-frequency sounds starting around **45–55 Hz**, which is similar to the lower limit of human hearing.
- **Infrasound Detection:** While they are less sensitive to very low frequencies compared to high frequencies, cats can detect sounds on the edge of the infrasonic range (below 20 Hz).
- **Sensory Input:** Cats may perceive very low-frequency sounds (like thunder, trucks, or heavy machinery) as vibrations felt through their paws and body rather than just auditory input.
- **Reaction to Low Frequencies:** Low-pitched, loud noises (like loud music or thunderstorms) are often uncomfortable or frightening for cats.

Key Takeaways on Feline Hearing:

- **Broad Range:** Cats have one of the widest hearing ranges among mammals, extending from approximately 45 Hz up to 64,000–85,000 Hz (64–85 kHz).
- **Superior High-Frequency:** While their low-frequency hearing is comparable to humans, their ability to hear high-pitched sounds is over three times better, allowing them to hear rodents.
- **Sensitivity:** Cats can detect sounds 4-5 times farther away than humans and can hear noises with much lower intensity (fainter).
- **Directional Ability:** With 32 muscles in their ears, they can rotate them 180 degrees to pinpoint the source of a sound with high precision.

In summary, while cats do not hear *better* than humans at the very lowest, deep-bass frequencies, they are highly attuned to lower-frequency rumblings and vibrations, often reacting to them with fear or anxiety

Can ferrets hear low frequency noise, or infrasonic noise?

Yes, ferrets are highly sensitive to low-frequency noise and are capable of hearing sounds within the upper range of infrasonic noise. Their hearing range is approximately 36 Hz to 44 kHz, with excellent sensitivity to low-frequency sounds, making them a common model for studying human-like hearing.

- **Low-Frequency Hearing:** Behavioral testing has confirmed that ferrets can detect tones down to 36 Hz at 60 dB SPL.
- **Infrasonic Sensitivity:** While humans generally hear from 20 Hz up, some studies indicate that ferrets can perceive frequencies that extend into the lower boundaries of human hearing (infrasound), with some data suggesting they can hear down to 16 Hz, similar to elephants.
- **Comparison to Humans:** Ferrets have similar low-frequency hearing abilities to humans, which makes them excellent models for studying how sound localization and pitch perception work in that range.
- **Sensitivity:** Ferrets are highly sensitive to sound and can be easily startled by loud noises.

Their hearing is specialized to detect low frequencies well, unlike many rodents whose hearing is shifted toward higher frequencies.

Can guinea pigs (= cavia) hear low frequency noise, or infrasonic noise?

Guinea pigs have highly sensitive hearing, but they are generally **not capable of hearing true infrasonic noise** (sound below 20 Hz) at typical environmental levels. While they can hear low-frequency sounds better than humans in some contexts, their hearing is specialized for higher frequencies (up to 46,000–50,000 Hz) rather than very low, rumbling sounds.

Here is a breakdown of guinea pig hearing regarding low-frequency and infrasonic noise based on research:

- **Infrasonic Sensitivity (Below 20 Hz):** Studies indicate that guinea pigs are very insensitive to infrasound. While they can detect vibrations, true auditory perception of frequencies like 5 Hz requires extremely high sound pressure levels (estimated around 124 dB SPL), meaning they do not "hear" low-level environmental infrasound.
- **Low-Frequency Sounds (20–100 Hz):** Guinea pigs can hear in this range, but studies show they are about 15 dB less sensitive to low-frequency ranges (50–500 Hz) compared to humans.
- **Physical Response to Infrasound:** Although they may not hear it, high-level infrasound (such as from heavy machinery) can still affect a guinea pig's ear by causing large movements in the cochlear fluids and inner ear structures.
- **Hearing Range:** Guinea pigs possess sensitive hearing, with an auditory range of approximately 50 Hz to 50,000 Hz.

Summary:

While they are not sensitive to low-frequency noise (like wind turbines or earthquakes),

they are highly sensitive to sudden, loud, or high-pitched noises (like screaming or whistling).

Can humans hear low frequency noise, or infrasonic noise?

Humans can generally perceive low-frequency noise (20–125 Hz) and sometimes hear or feel infrasonic noise (below 20 Hz) if the intensity is high enough. While often considered inaudible, these low tones can cause physical symptoms like dizziness, nausea, or ear pressure, as they can be felt as vibrations in the body.

Key Details on Infrasound and Low-Frequency Perception:

- **Definition:** Infrasound is defined as sound below 20 Hz, while low-frequency sound is generally considered to be below 125 Hz.
- **Threshold of Hearing:** Human hearing becomes significantly less sensitive as frequency decreases, meaning very high sound pressure levels are required to perceive these sounds.
- **Physical Sensations:** Because they are often felt rather than heard, infrasound can cause feelings of pressure, "fullness," or humming in the ears.
- **Sources:** Natural sources include earthquakes and thunder; artificial sources include heavy machinery, traffic, and air conditioning.
- **Health Effects:** Intense exposure to infrasound can lead to discomfort, dizziness, or headache, though it is usually harmless at low levels.

Can chickens hear low frequency noise, or infrasonic noise?

Yes, chickens can hear low-frequency noises and are highly sensitive to infrasonic noise (sounds below 20 Hz). In fact, research indicates that domestic chickens have better low-frequency hearing sensitivity than humans, exceeding the sensitivity of homing pigeons, with a range that extends down to at least 9.1 Hz.

Key findings regarding chickens and low-frequency noise:

- **Infrasound Sensitivity:** Chickens are capable of detecting infrasonic frequencies (below 20 Hz), which are inaudible to humans. They are particularly sensitive to these sounds, possibly as a way to detect environmental threats like thunder, avalanches, or earthquakes.
- **Hearing Range:** The audible range for chickens is approximately 10 Hz to 12,000 Hz, with peak sensitivity between 1,000 Hz and 3,000 Hz.
- **Unique Perception:** Studies suggest that chickens may perceive sounds below 32 Hz differently than higher-frequency sounds, with studies noting that they require additional training to detect these low frequencies, implying a different processing mechanism.
- **Mechanism:** Chickens detect these low frequencies with their ears, not merely through ground-based vibrations.

This ability to hear low-frequency sound helps them detect distant dangers, though they are generally less sensitive to high-frequency sounds (above 8-10 kHz) than humans.

Can horses hear low frequency noise, or infrasonic noise?

Horses have a wider, higher-frequency hearing range (55 Hz – 33.5 kHz) than humans (20 Hz – 20 kHz), but they are actually **less capable** of hearing very low-frequency (bass) sounds compared to humans. While they do not hear infrasound (below 20 Hz) well, **they detect low-frequency vibrations through their teeth and hooves.**

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Key Details on Horse Hearing:

- **Low Frequencies:** Horses miss roughly the lowest octave and a half of bass sounds that humans can hear. They generally do not hear below 50-55 Hz.
- **High Frequencies:** Horses excel at hearing high-pitched sounds, up to 33.5-.5 kHz, allowing them to hear the [ultrasonic shriek of a bat](#).
- **Vibration Detection:** Instead of hearing, **horses detect ground-based low-frequency vibrations (e.g., from predators or vehicles) through their hooves and teeth, which are transmitted to the middle ear.**
- **Sensitivity:** Their large, mobile ears can rotate to pinpoint sounds, and they can hear sounds at a lower volume and greater distance than humans.

While they are not sensitive to true infrasonic noise, their ability to feel ground vibrations and hear high-pitched sounds often **makes them react to environmental stimuli undetected by humans.**

Can horses hear low frequency noise, or infrasonic noise?

Pigs can hear low-frequency noises within the range of approximately 42-55 Hz, up to 40.5 kHz, making them highly sensitive to low-frequency sounds. While they hear well in the 250 Hz to 16kHz range, they are generally less responsive to pure infrasonic noise (below 20 Hz) compared to their high-frequency sensitivity.

Key details:

- **Hearing Range:** Pigs have a wide hearing range (42 Hz to 40.5 kHz) that extends into high-frequency ultrasound.
- **Low-Frequency Sensitivity:** Their hearing threshold begins around 42-55 Hz.
- **Behavioral Impact:** Low-frequency sounds can have a calming effect, while high-intensity, high-frequency noises can cause stress and reduced immunity.
- **Infrasound Detection:** While some studies focus on the ear's response to low frequencies, pigs' primary sensitivity is in the low-to-high acoustic range rather than pure infrasound.

Can fish hear low frequency noise, or infrasonic noise?

Yes, fish can hear low-frequency and infrasonic noise (below 20 Hz), often detecting sounds down to below 1 Hz using their otolith organs. Infrasound is critical for detecting predator-prey interactions and aiding navigation, with some species displaying avoidance responses to intense, low-frequency sound.

Key Details Regarding Infrasound and Low-Frequency Hearing in Fish:

- **Sensitivity Range:** While most fish are most sensitive to sounds between 100–300 Hz, they can hear well below 20 Hz (infrasound).
- **Detection Mechanism:** Fish detect these low-frequency sounds/vibrations via the [lateral line system](#) and inner ear otoliths, rather than a traditional eardrum.

- **Behavioral Impact:** Intense infrasound can act as a deterrent or stressor. For example, 10 Hz sounds have been shown to produce [avoidance responses](#) in juvenile salmon.
- **Species Variation:** While many species detect low frequencies, species with specialized structures (e.g., [Weberian ossicles](#) connecting the swim bladder to the inner ear) have a more acute hearing range.
- **Environmental Context:** Low-frequency noise from human activities, such as shipping, seismic surveys, and construction, can interfere with this sensory ability.

The ability to detect infrasound is widespread among fish, helping them navigate and interpret their acoustic environment.

What animals can hear low-frequency noise?

Using heart-rate monitoring, scientists have confirmed that [pigeons hear frequencies as low as 0.5 Hz](#), with increasing sensitivity from 5 Hz upwards; three times better than even an elephant.

Can you give an overview the sensitivity of which farm and pet animals to low frequency noise, even infrasonic noise? Can they hear or better sense or detect such noise? Also indicate whether such noise cause stress to them?

Copilot said:

Below is a clear, evidence-based overview of **how farm animals and pets sense low-frequency and infrasonic noise**, and **whether such noise causes stress**, based directly on the scientific and technical sources found above.

Sensitivity of Farm & Pet Animals to Low-Frequency and Infrasonic Noise

Animals often perceive sound very differently from humans, with many species hearing **lower frequencies** than we can—or *sensing* them through body vibrations, ground conduction, or pressure changes. [Multiple studies show that low-frequency noise \(LFN, typically 20–200 Hz\) and infrasound \(< 20 Hz\) can influence the physiology, behavior, and welfare of farm animals and pets.](#)

Below is a species-by-species overview, followed by general welfare impacts.

General Findings Across Species

1. Hearing and Perception of Low Frequencies

- Many farm animals have different and sometimes **broader hearing ranges** than humans, meaning they may detect noises humans cannot perceive, including LFN and infrasound.
- Animals rely more heavily on instinctual interpretation of unusual low-frequency stimuli as potential danger, making them **more reactive** to such noise than humans.

2. Physiological and Behavioral Stress Responses

- Noise—including low-frequency noise—can influence the **cardiovascular, gastrointestinal, endocrine, and immune systems**, causing arousal, sleep disruption, or pain.
- Farm animals under noise-related stress may show reduced productivity (e.g., milk let-down issues in cows, reduced feeding, agitation). Historical and experimental studies confirm strong physiological responses to loud or low-frequency sound.
- LFN from machinery is specifically identified as a **harmful factor**, particularly for sensitive populations like pregnant animals.

Farm Animals

Cattle (Dairy & Beef)

Can they detect low frequencies?

- Cattle hearing spans roughly **23 Hz to ~35 kHz** (from background literature), meaning they can detect some infrasound close to the threshold.
- Research notes that cattle respond behaviorally and physiologically to low-frequency noises from farm equipment and aircraft.

Stress effects:

- Studies show low-frequency or sudden loud noises can disturb **milk ejection reflexes** and increase stress hormones.
- Noise-induced agitation or startle responses documented historically during sonic boom tests.springer

Pigs (Swine)

Detection:

- Pigs have sensitive low-frequency hearing, with a range starting near **40 Hz** but also strong tactile/body-vibration sensing abilities.

Stress effects:

- Pigs show pronounced fear responses to unexpected or low-frequency loud sounds, including increased heart rates and agitation. Early research documents **alarm responses** and susceptibility to acoustic stress.springer

Horses

Detection:

- Horses hear from roughly **55 Hz to 33 kHz**, but are extremely sensitive to **vibrations** and **subtle low-frequency cues**, which form part of their prey-animal alert system.

Stress effects:

- Horses can become unsettled, anxious, or display flight responses when exposed to unusual low-frequency mechanical noise. General research on farm animals confirms noise-related stress pathways.mdpi

Poultry (Chickens, Turkeys)

Detection:

- Poultry hear best between **250–3,000 Hz**, but can detect much lower frequencies via **body resonance** and **mechanoreception**.

Stress effects:

- Although less well-studied for infrasound specifically, poultry show strong stress responses (startle, piling, reduced growth) to low-frequency environmental noise. General evidence links noise to stress and behavioral issues in farm animals.mdpi

Pets (Dogs & Cats)

Dogs

Detection:

- Dogs are well-known for **high-frequency** hearing, but they also detect low-frequency vibrations and infrasound-adjacent rumbles such as storms.
- Their broader hearing sensitivity makes them more reactive to environmental noises than humans.soundcy

Stress effects:

- Noise is a major cause of anxiety in dogs. While high-frequency triggers (fireworks) are more documented, low-frequency rumbling (thunder, heavy machinery) can also initiate panic, shaking, or escape behaviors.soundcy

Cats

Detection:

- Cats likewise have highly sensitive ears that register quiet, low-frequency environmental sounds humans cannot detect. General pet noise sensitivity studies describe cats as comparably vulnerable to stress from environmental noise.

Stress effects:

- Behavioral signs include hiding, avoidance, hypervigilance, and altered feeding or grooming patterns.

Other Notes (Wild-Type Comparisons for Context)

While not farm or pet animals, elephants highlight the biological relevance of infrasound: They communicate at **frequencies as low as 5 Hz**, demonstrating that large mammals can meaningfully perceive deep infrasonic waves.

This helps validate assumptions that other large mammals (e.g., cattle and horses) also perceive low frequencies even when research is limited.

Summary

<p>Can farm animals and pets sense low-frequency and infrasonic noise? Yes. Many species detect some infrasound or at least sense low-frequency vibrations. Cattle, pigs, horses, and dogs are particularly sensitive. Does such noise cause stress? Strong evidence says yes. Low-frequency or infrasonic noise can:</p> <ul style="list-style-type: none"> • activate stress physiology (heart rate, hormones, immune response),

- alter behavior (agitation, fear responses),
- reduce welfare and productivity (e.g., milk let-down in cows),
- heighten anxiety in pets.

Species	Ability to Detect Low-Frequency / Infrasound	How They Sense It	Stress Effects Documented	Sources
Cattle	Detect low frequencies near infrasonic range; respond behaviorally/physiologically to low-frequency environmental noise. [mdpi.com] , [link.springer.com]	Airborne sound + bodily vibration sensitivity	Stress affects milk let-down, induces agitation and physiological stress reactions. [link.springer.com]	turn1search 1, turn1search 3
Pigs	Sensitive to low-frequency sound; strong reactions to low-frequency disturbances. [link.springer.com]	Hearing + strong vibrational sensitivity	Display fear, alarm reactions, elevated stress responses. [link.springer.com]	turn1search 3
Horses	Sensitive to low-frequency noise and environmental vibrations despite hearing range starting above infrasonic level; react strongly due to prey-animal instincts. [mdpi.com]	Hearing + ground/structural vibration sensing	Anxiety, arousal, flight responses when exposed to unusual low-frequency noise. [mdpi.com]	turn1search 1
Poultry	Limited low-frequency hearing, but can detect LFN via body resonance/mechanoreceptors	Body resonance + mechanoreceptors	Noise causes behavioral stress, agitation,	turn1search 1

	on; noise sensitivity known. [mdpi.com]		reduced welfare. [mdpi.com]	
Dogs (Pets)	Very sensitive overall; detect low-frequency rumbling (storms, machinery) despite well-known high-frequency hearing. [soundcy.com]	Hearing + vibration perception	Anxiety, panic, hiding; strong stress reactions to environmental noise. [soundcy.com]	turn1search 6
Cats (Pets)	Sensitive to subtle environmental LFN and vibrations; more sensitive than humans. [soundcy.com]	Hearing + vibration detection	Hiding, hypervigilance, behavioral stress. [soundcy.com]	turn1search 6
General Farm Animal Exposure to Machinery	Many machines (tractors, mixers, harvesters) generate infrasound above 86 dB, sometimes exceeding exposure limits. [researchgate.net]	Intense ambient airborne + mechanical vibration exposure	Potential welfare risks; pregnant animals especially vulnerable. [researchgate.net]	turn1search 4