



# Heat Stress in Rabbits

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Understanding how the rabbit cools itself helps us to provide the most comfortable environment for our rabbits in hot, humid weather and help to prevent heat stress.

The rabbit is cooled by 3 primary factors: Respiration, Ears and Nasal Mucosa.

Eighty percent of heat dissipation in rabbits occurs through the evaporation of moisture during respiration (breathing). Fans help this cooling process by speeding evaporation. Cooling also occurs through nasal mucosa (by air passing over mucous membranes). The ears are also important for cooling as the blood moves to the farthest (coolest) points away from the body core. The rabbit will also stretch its body out as far as possible to cool through radiation/convection. Rabbits do not have many functional sweat glands, so only lose a small amount of moisture through the skin due to perspiration. The rabbit's fur further inhibits the process of the rabbit being able to cool itself by evaporation of moisture from the skin.

Since the rabbit cools primarily through respiration, it is important to provide air movement throughout the cage to evaporate the moisture from the rabbit's breath. In a serious situation of heat stress, you will notice moisture around the rabbits face (especially around the mouth and nose) because the moisture is not evaporating.

Temperatures approaching 90 degrees Fahrenheit can be dangerous to rabbits, and temperatures in the 80's can also be a concern if the humidity is high. Rabbits should never be placed in full sun.

A frozen bottle placed in the cage may be of only limited help without the proper air movement and evaporation, but can aid in cooling surrounding air.

While inexpensive box fans are most commonly used in rabbitries, they are also the least safe as they are not designed for agricultural use. The fan motors may overheat and malfunction, resulting in a possible fire hazard. Fans should be plugged into GFI receptacles to minimize risk of fire in the rabbitry.

Poor maintenance can reduce a fan's efficiency by 40% or more. Keep fans free of fur and dust and also maintain them according to manufacturer recommendations. When rabbits are molting, fans may need to be cleaned as often as daily for full efficiency.

"Swamp coolers" can be used in dry climates, but are of little value in humid areas because the moisture does not evaporate as well.

Screens over windows should be cleaned daily and can be wiped off with a wet paper towel or brushed off to remove dust and hair that will block airflow.

Cages should also be kept free of hair and there should be air movement along the ceiling to avoid "dead air" spaces near top cages.

Aged, overweight and pregnant rabbits are most susceptible to heat prostration.

Symptoms include:

- Rabbit stretched out and panting.
- Moisture around face and/or drooling.
- Bloody discharge from mouth/nose.
- Enlarged blood vessels in ears and mouth turning blue.

If a rabbit is showing signs of heat stress, move it to a cool area and place a fan nearby to create a gentle breeze on the rabbit. In advanced cases, dip the rabbit in tepid (not cold) water. Electrolytes can also be given during stressful summer heat.

If proper steps are taken to keep rabbits cool, they can remain relatively comfortable even in high temperatures.