BIOCONNECT

Fostering Sustainable Innovation Inspired by Nature.

THE BIOMIMICRY CENTER | phoenixzoo | BIOMIMICRY INSTITUTE

| Jackrabbit

BIOCONNECT

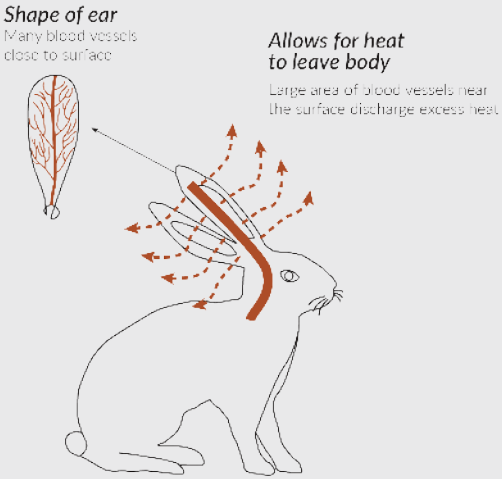
Biology:

Black-tailed jackrabbits (*Lepus californicus*) are a common hare that inhabit North American deserts, including the Sonoran Desert. Here, summer temperatures can rise to well over 100 degrees F. These hares are able to survive in such extreme temperatures because of some clever adaptations -- including very large ears. Jackrabbit ears are extremely long and wide. Some can be more than a quarter of the length of their entire body! By decreasing or increasing the flow of blood through their big ears, jackrabbits can control the temperature of their body.

The jackrabbit's ears provide a high surface area of exposed skin that contains an extremely large network of blood vessels near the surface. When in direct sunlight, these blood vessels constrict, or narrow, minimizing the amount of blood that is exposed to the broiling sun. This keeps the jackrabbit's body from heating up. The opposite happens in the shade. When the jackrabbit spends time in the shade -- which will be a lower temperature than in the direct sun -- the large area of blood vessels in their ears dilate, or become wider. This causes more blood to flow through the ears, where heat is lost to the cooler surrounding air, allowing the jackrabbit to cool down in a matter of minutes.

What can we learn from the jackrabbit about how to regulate temperature?

Diagram:



Scan the QR code to learn more