

# BIOCONNECT

Fostering Sustainable Innovation Inspired by Nature.



## Biology:

Coyotes (*Canis latrans*) are native to North America and can be found in many different environments from Alaska and New England to Mexico and Panama. They even thrive in heavily populated cities! Coyotes have a variety of adaptations that allow them to survive in these environments, which can range from dry and hot during the day to below freezing at night.

The coyote's fur has a few very important functions: in addition to camouflaging and protecting from harmful UV sun rays, it acts as insulation in both winter and summer. At night and during cooler months, this fur layer prevents the coyote from cooling down too fast.

Coyotes also pant to cool down, using a strategy called evaporative cooling. Evaporation removes heat and acts as a cooling mechanism (when liquid transforms into air/gas). As the coyote's body temperature rises, their respiration (breathing) rate increases; cooling results from the evaporation of water in the nasal passages, mouth, and lungs-- which is why they keep their mouth open when panting. Both sweating and panting cause the coyote to lose precious water, which then must be replaced if the animal is to maintain effective heat regulation.

*What can we learn from the coyote about maintaining homeostasis?*

## Diagram:

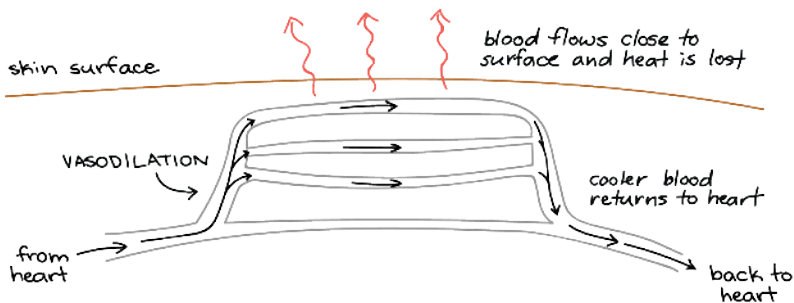


Image Source: Khan Academy



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