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## Camel

**Biology:**

The dromedary camel, also known as the Arabian camel (*Camelus dromedarius*), lives in the hot, arid deserts of the Middle East, northern India and Africa--including the Sahara Desert. These large mammals have only one hump, long legs, and a really interesting nose. At night, the camel has a special strategy to conserve water that relies on the nose structure. During the day, they use the water conserved to cool their head and prevent their brain from overheating.

The dromedary camel's nose includes highly folded spongy bone structures known as turbinates. These turbinates are really elaborate with more than 1,000 square centimeters of nasal surface area (to compare, our human nasal cavity has a total surface area of only 160-180 square centimeters)! At night, temperatures outside are colder than the camel's internal temperature. When the camel inhales, the cool outside air passes through the turbinate nasal passages where heat is exchanged, and the nasal surfaces are cooled while the incoming air is warmed. Inside the camel's lungs, air is at body temperature and fully saturated with water. When the camel exhales, the warm air inside the lungs passes over the cool nasal surfaces and exchanges heat again. As this air is exhaled it cools, and water vapor in the outgoing air condenses onto the surfaces as liquid water- so they do not lose any of the precious moisture (Ask Nature). Helping to capture this moisture is the mucous membrane covering the nasal tract. It is hygroscopic, meaning it attracts water molecules.

***What can we learn from the camel about capturing liquids and protecting from loss of liquids?***

**Diagram:**

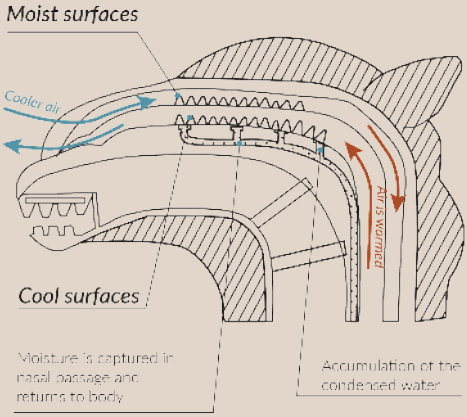


Diagram credit: Science Direct

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