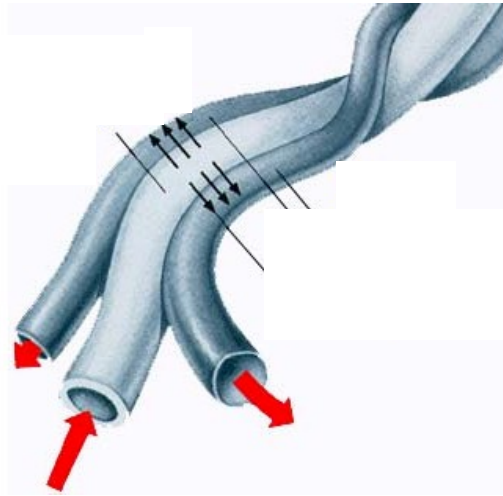


Round: 2A
Category: Biology- Easy
Time: 3 minutes

Heat loss in water is about 27 times faster than in air at the same temperature. Despite this incredible rate of heat loss, marine mammals maintain a core body temperature somewhere between 96.8-98.6°F.



One mechanism by which marine mammals maintain their body temperature is indicated by the diagram above.

1. What is this mechanism called? (4 pts)
2. How does it help marine mammals conserve heat? (6 pts)
3. List five other mechanisms that marine mammals use to maintain body temperature. (10 pts)

ANSWER

ANSWER

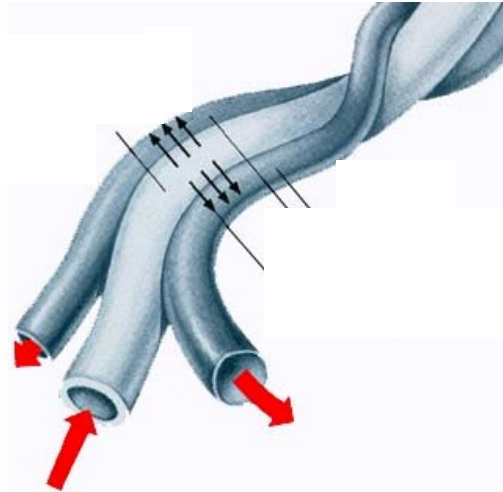
ANSWER

Round: 2A

Category: Biology- Easy

Time: 3 minutes

Heat loss in water is about 27 times faster than in air at the same temperature. Despite this incredible rate of heat loss, marine mammals maintain a core body temperature between 96.8 and 98.6°F.



One mechanism by which marine mammals maintain their body temperature is indicated by the diagram above.

1. What is this mechanism called?

Counter (1 pt) current (1 pt) heat (1 pt) exchange (1 pt)

2. How does it help marine mammals conserve heat?

Heat from the blood traveling through the arteries (2 pts) (from the body core) is transferred to the blood traveling through the veins (2 pts) (from extremities).

Therefore, heat is not lost to the environment and is carried back to the body core (2 pts).

3. List five other mechanisms that marine mammals use to maintain body temperature (2 pts each)

- *Increased metabolic rate/ increased heat production*
- *Insulation (blubber, thick fur)*
- *Decreased surface to volume ratio (fusiform shape, reduced appendages)*
- *Reduced peripheral circulation*
- *Behavioral (sea otters warm their feet in the air)*