



Name:

Date:

Snake Hearts

Many large snakes eat as rarely as once every three months. When they do eat, however, they eat whole animals, such as deer or wild pigs. In order to digest these large meals, the heart and other organs inside the snake's body suddenly grow much larger. The heart, for example, does this so that it can pump blood around the body much faster. This allows the snake to digest food more quickly. After the snake has digested the meal, the organs go back to their usual size.

One snake that does this is the Burmese python. American biologist Leslie Leinwand and her team at the University of Colorado Boulder decided to research exactly how the Burmese python manages to expand its heart so dramatically. The team found that certain chemicals in the snake's blood cause the heart to grow. When the team added the snake's blood to cells taken from mice's hearts, they were surprised to find that the cells also began to grow.

After further experiments, Leinwand removed the chemicals from the snake's blood and gave them to living mice. As a result, the mice's hearts grew dramatically. Leinwand believes that her research may be able to help humans with heart diseases. Human hearts grow larger in two ways, one unhealthy and one healthy. When people have high blood pressure, for example, the muscles in their hearts grow to help the heart push blood around the body. This kind of growth actually damages the heart and makes it weaker. On the other hand, when people do exercise, their hearts grow larger in a healthy way.

According to Leinwand's research, the chemicals in the snake's blood cause the heart to grow in the same way that exercise usually does. She believes that if she could make a drug from these chemicals, it could cure certain heart diseases in humans. She says that more research is needed and that it will be years before a drug could be developed. However, she believes that the discovery is very exciting because it shows that the chemicals taken from one creature can affect the heart of a completely different creature.



Snake Hearts

1. Many large snakes change the size of their hearts in order to
 - a. make more space for the whole animals that they eat.
 - b. better digest the blood of the animals that they eat.
 - c. be able to catch more food more quickly.
 - d. help them digest large meals more quickly.

2. What is one thing that Leslie Leinwand's team learned about Burmese python blood?
 - a. It has the effect of making mice's heart cells grow larger.
 - b. It can be used to increase the size of farm animals.
 - c. It expands dramatically when added to the blood of other animals.
 - d. It reduces the size of mice's hearts while the mice are sleeping.

3. What happens to the heart of a person with high blood pressure?
 - a. It becomes able to produce more blood to pump around the body.
 - b. It becomes weak and damaged as a result of becoming bigger.
 - c. It has to be supported by various muscles in the body.
 - d. It has to be given a special medicine to help it grow.

4. Leinwand believes that
 - a. humans should drink snake blood in order to live a healthy life.
 - b. the drug she makes will benefit snakes and other wild animals.
 - c. her research can be used to develop medicine for some heart diseases.
 - d. Burmese pythons can protect humans from diseases spread by mice.