

Can Experiences Be Passed On DNA

Have you ever wondered why pigeons who perform well in a certain one-loft race tend to breed pigeons that are also successful in the same race? Can grandchildren demonstrate similar results as well? Why do pigeons from the race team tend to breed better young for local racing?

This may be a result of Epigenetics, which means "above" or "on top of" genetics and refers to modifications to DNA that turns genes "on" or "off." These changes affect how cells read the genes, without altering the DNA sequence.

Although the genes remain the same, they read and act differently by those changes. Science has proven that more than traits are passed to future generations. In some cases, experiences are also passed on through DNA, although we don't really understand how it all works.

Studies have shown that experiences, especially traumatic ones, can be passed on to the next generation and, possibly, through multiple generations. Stressful experiences are more likely passed to future generations.

Would enduring tough weather and hawks, while navigating alone in a race, qualify as a traumatic experience? Could this stressful experience provide an advantage to the children and grandchildren, over the same course of a race? Is it possible that a disturbing event in a pigeon's life, might somehow benefit the children and grandchildren of that pigeon?

There is so much we do not understand. However, it appears that some experiences of breeders or the breeders' parents, may have an influence on the success of the young.

Epigenetic links have been proven in animal studies. Mice that were taught to fear the smell of cherries, while coupled with an electric shock, had pups through several generations, with signs of anxiety, when exposed to the odor of cherries, although they never "learned" the painful association.

This could explain why animals have an innate fear of certain things. Pigeons are not taught to be afraid of hawks, they just distinctly know to fear them. Pigeons instinctively know to head to the ground around falcons and fly to sky from hawks.