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Identical twins are not so identical – 10th January, 2021

Level 4

A study shows that while identical twins look alike, they are not clones. Scientists analyzed DNA from 387 pairs of identical twins. They looked for mutations in the early stages of development. A mutation is a change in the sequence of the DNA. This can occur when a cell splits. A change can cause slight differences in the DNA when it splits. A tiny change can create differences in height, intelligence, eye colour and in how it is to catch a disease.

The study shows that in about 15 per cent of identical twins, one twin had many mutations that the other did not have. This difference helps explain the "nature versus nurture" debate - whether socializing and upbringing affects human behaviour. The research shows that a tiny difference, and not environmental factors, could be the reason for behavioural characteristics or medical conditions.

Level 5

A study shows that while identical twins can look alike, they are not clones of each other. Scientists analyzed the DNA from 387 pairs of identical twins. These are people born from a single fertilized egg. The scientists looked for mutations in the early stages of development. A mutation is a tiny change in the sequence of the DNA. This can occur when a cell divides. This change causes a slight difference in the DNA when it duplicates. A tiny change can create differences in height, intelligence, eye colour and even in how easy someone can catch a disease.

The study shows that in about 15 per cent of identical twins, one twin carried a "substantial" number of mutations that the other did not have. This difference is important as it sheds light on the "nature versus nurture" debate. This is whether human behaviour is caused by socializing and upbringing, or by a person's genes. The research shows that this tiny difference, and not environmental factors, could be the reason for different behavioural characteristics or medical conditions. A professor said a genetic mutation may be the source of a disease or trait.

Level 6

A new study shows that while identical twins can look perfectly alike, it is not a perfect similarity. They are not clones of each other. Scientists at the University of Iceland analyzed the DNA from 387 pairs of identical twins - babies born from a single fertilized egg. The scientists compared the DNA with that of the twins' parents and children. The geneticists looked for mutations in the early stages of development. A mutation is a tiny change in the sequence of the DNA that can occur when a cell divides. This change causes a slight difference in the DNA replication process. A single, tiny change can create differences in height, intelligence, eye colour and even in susceptibility to disease.

The study shows that identical twins do not share totally identical DNA. In about 15 per cent of identical twin pairs, one twin carried a "substantial" number of mutations that the other did not share. The scientists say this difference is important as it sheds light on the "nature versus nurture" debate. This is whether human behaviour is determined by the environment, socialization and upbringing, or by a person's genes. The research shows that this tiny difference, and not environmental factors, could be the reason why one twin develops different behavioural characteristics or medical conditions. Professor Kari Stefansson said a genetic mutation may be the source of a given disease or trait.