Genetic changes in father's sperm might explain autism risk

"DNA changes could explain why autism runs in families, according to study," The Independent reports. Research suggests a set of changes in a father's DNA – known as methylation – is linked to autism spectrum disorder (ASD) in their offspring.

Methylation is a chemical process that can influence the effects of genes on the body (gene expression), essentially turning off certain genes. This process can lead to both positive and negative changes in DNA. These types of changes are known as epigenetic changes.

In this small study of 44 men and their offspring, researchers scanned for epigenetic changes at 450,000 points on the DNA molecule. They compared the DNA results with the child's score on an ASD prediction test at one year of age, and then looked for regions of DNA where changes were linked to a higher or lower risk of ASD.

The researchers found 193 areas of DNA from the men's sperm where methylation levels were associated with a statistically significant increased risk of developing ASD.

Researchers hope the study will help them see how epigenetic changes might affect ASD risk. At present, there is no genetic test for ASD and the causes are poorly understood. The study suggests ways ASD risk could be handed down in families without specific gene mutations being involved.

We're still a long way from understanding the causes of ASD, and many cases can occur in children with no family history of the condition, but this study gives researchers new avenues to explore.

Read full original article: DNA changes in sperm may help explain autism