

PARKINSON'S^{UK} CHANGE ATTITUDES. FIND A CURE. JOIN US.

Genes and Parkinson's

Your questions answered

What are genes?

DNA contains the recipe for making living things. And segments of DNA called "genes" are the ingredients. Each gene adds a specific protein to the recipe.

Proteins build, regulate and maintain your body. For instance, they build our bones, enable muscles to move, control digestion, and keep your heart beating.

What can genes tell us about Parkinson's?

People with Parkinson's don't have enough of a chemical called dopamine because some nerve cells in their brains have died. But how and why these nerve cells die is still unknown. Changes in certain genes seem to make the nerve cells that die in Parkinson's more vulnerable.

Can Parkinson's be inherited?

In most cases (95%), Parkinson's is not directly inherited. However, in a very small number of families (around 5%) Parkinson's does seem to be inherited. In these rare cases, changes in specific genes have been identified which directly cause Parkinson's.

For the vast majority of people (95%) the causes of Parkinson's are still unknown. But genetic susceptibility combined with lifestyle, environmental factors and ageing are all thought to be involved.

How many genes have been linked to Parkinson's so far?

This research has confirmed five new genes involved in Parkinson's, bringing the total to eleven.

People who have subtle changes in these genes seem to be slightly more susceptible to developing Parkinson's. But these slight genetic variations are not enough to cause Parkinson's on their own, so most people with these subtle changes still don't get Parkinson's.

What did we already know about genes?

We knew that rare changes in certain genes can directly cause Parkinson's - but that they only account for about 5% of all Parkinson's.

We also knew about more common changes in six genes that make people who have them slightly more susceptible to developing Parkinson's but do not directly cause the condition. These genetic changes are found at higher rates in people with Parkinson's compared to people without the condition but do not directly cause Parkinson's.

Why is this new research important?

Subtle variation in our DNA influences how likely we are to develop different health conditions.

Investigating the role that genes play in Parkinson's is moving us closer to understanding what causes the condition. Whilst it's still very early days, studying these genes more

closely will open up new research avenues that mean we can develop treatments that can slow, stop or prevent Parkinson's.

This new research has substantially increased our understanding of these common but low-risk genetic changes. We now know that eleven different genes are involved in non-inherited forms of Parkinson's.

Most health conditions arise due to a mixture of things in our genes, environment and lifestyle. This study helps us understand more about the genetic factors involved in Parkinson's.