Key genetic players in diabetes identified

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Scientists have discovered a network of genes for type 1 diabetes (T1D) and identified a key player that controls the network. This development will help researchers focus their efforts to improve drug treatments for type 1 diabetes and could have an impact on other diseases where inflammation plays an important role.

In recent years, genome-wide association studies (GWAS) have identified a number of individual genes that increase a person's chance of developing diabetes. However this is the first time that researchers have been able to identify an entire network of genes, single out the key players that control the network and determine a person's chance of developing T1D.

Dr. Stuart Cook, from the MRC Clinical Sciences Centre at Imperial College London, who led the study, said:

"If we think about our genes as being similar to a football team - it is one thing to know that the team you're playing against has 11 players, but another to know who their main match winners are. What we find exciting about these results is that, for the first time, we have been able to identify the most important genes - who the strikers are, as well as who the team captain might be that coordinates the other players. Applying this knowledge to find out more about the key players that cause disease will help researchers find better ways to develop more targeted treatments in the fight against diabetes."

By using a variety of techniques to analyse human and rat genes, the researchers found that the "gene networks" that are active in our immune systems could have an important role in T1D.

Type 1 diabetes makes up around 10 per cent of the total number of people who have diabetes. A child in the UK has around a one in a thousand chance of developing the disease.

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