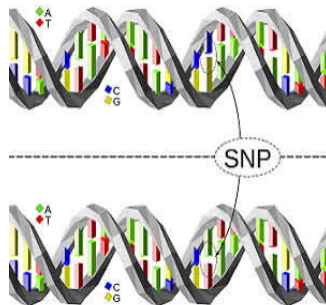## New Genetic Tool Identifies Risk of Coronary Heart Disease

New research by the British Heart Foundation (BHF) and the National Institute for Health Research (NIHR) has resulted in the development of a genetic risk score that can help identify individuals who may be at risk of coronary heart disease (CHD). The research is published in the _European Heart Journal_.

Approximately 2.3 million people in the UK are affected by CHD and it accounts for nearly 70,000 deaths in the region each year. It has been long known that genetic factors contribute to CHD risk. Previous research has already identified several Single Nucleotide Polymorphisms (SNPs) - very small differences in our DNA that vary from person to person.

During this research, the research team evaluated 49,000 SNPs and created a genomic risk score (GRS). The higher the GRS, the higher is the future risk of CHD. Individuals with a GRS in the top 20 percent had more than 5-fold higher life-time risk of CHD as compared to those who were in the bottom 20 percent. At present, clinicians use risk scores that are based on known risk factors such as cholesterol level, blood pressure, diabetes and smoking. But compared to the GRS method, the clinical scores are imprecise. The GRS score was found to be independent of these clinical scores. The researchers believe that by combining the two risk score tools, healthcare providers would be better able to predict people at risk of CHD in the next ten years.

BHF Professor Sir Nilesh Samani from the University of Leicester, an author on the paper highlights that this is the first time a study has shown the benefits of using a genetic risk score. He points out that since CHD starts at an early age, preventive measures should be applied much earlier in those who are at a high risk of developing the disease.The clinical risk scores currently used are not that effective in evaluating risk until middle-age and that is why the GRS, which can be applied at any age, can prove to be useful.

Dr Mike Knapton, Associate Medical Director at the British Heart Foundation, which helped fund the research, said, "This new tool could be invaluable in more accurately identifying people who are at an increased of developing heart disease. However, it's important to remember that having a genetic predisposition to coronary heart disease does not guarantee that person will have a heart attack. Thanks to research, much of it funded by the BHF, people identified as being at increased risk can reduce their chances of having a heart attack by stopping smoking, exercising regularly, managing their weight and taking prescribed medication, such as a statin."

Source: University of Leicester
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