

# Gene clue to statins side effect

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**Researchers from Oxford have discovered that a common gene variation is a major cause of a rare side-effect of the cholesterol-lowering drugs, statins.**

Their findings, published in the New England Journal of Medicine, could now lead to a simple genetic test to identify those people at increased risk of 'myopathy' – severe muscle pain and weakness which very occasionally can lead to muscle breakdown causing kidney failure and sometimes death. This would make prescribing of higher doses safer for those that need the greatest heart-protection benefits.



**Professor Rory Collins believes a DNA test based on the findings of this study could guide doctors when prescribing high doses of statins**

The research adds to the vast amount of evidence on statins, which remain one of the safest medicines available today. It is thought in England, 3.4 million people take them, saving nearly 10,000 lives each year.

British Heart Foundation Professor Rory Collins, at Oxford University's Clinical Trial Service Unit, led the study, which assessed the DNA of 175 patients taking a high dose statin regimen – 85 with myopathy and 90 without. The findings were then confirmed in 20,000 people taking a standard statin dosage.

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British Heart Foundation Professor Rory Collins, Clinical Trial Service Unit, Oxford University

Professor Collins and his team found that a variation in the DNA code of a gene called SLC01B1 was responsible for 60% of the myopathy cases in people taking high dose statin therapy.

SLC01B1 regulates the uptake of statins into the liver and the genetic variant seems to affect its function, causing higher levels of the statin to be present in the blood.

Professor Collins said: 'We believe this is the first time anyone has scanned the complete human genome for the genetic culprit of a drug's side effect and we're very excited about the results. A DNA test based on these findings could guide doctors as to whether a patient at high risk of heart disease will cope with a high dose of a statin, which might be more effective than a standard dose at preventing a heart attack or stroke. If a patient doesn't have the gene variation, they're likely to be at low risk of myopathy even on high statin dose.'

Professor Peter Weissberg, Medical Director at the BHF – part funders of the study – said: 'Perhaps in a few years this genetic test could be used to identify high risk patients who should not receive high doses of statins. Fortunately, statin-induced myopathy is very rare but for those who require a higher dose, a genetic test could be used to guide prescribing to avoid myopathy.'