

# New treatment for thrombosis discovered

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Scientists from the University of Reading have announced a major breakthrough in understanding how to control blood clotting which could lead to the development of new treatments and save the lives of thousands of people each year.

Doctors have known for some time that high levels of blood [cholesterol](#) can increase the risk of suffering from a [heart attack](#) or a stroke. Controlling [cholesterol levels](#) has therefore become an important way to reduce the risk of these serious diseases. This has led to the development of drugs that control the function of a protein within our bodies called LXR which regulates cholesterol.

However, researchers from the School of Biological Sciences have discovered that this protein has a double life.

The protein also appears to be involved in inhibiting the function of [blood cells](#) known as platelets, a role that is unconnected to cholesterol levels but which results in reducing the blood clotting response. In the research blood clot formation was inhibited by 40%.

Drugs that target LXR may therefore have benefit in reducing cardiovascular disease for two separate reasons: preventing [thrombosis](#), and controlling cholesterol levels.

Professor Jon Gibbins, Director of the University's Institute for Cardiovascular and Metabolic Research, said: "While blood clotting is essential to prevent bleeding, inappropriate clotting within the

circulation, known as thrombosis, is the trigger for [heart](#) attacks and strokes - which kill more people in the UK each year than any other disease.

"This ground-breaking study paves the way for new and more effective medicines to prevent thrombosis."

The study was funded by the British Heart Foundation and Heart Research UK. Researchers found that targeting the LXR protein with anti-thrombotic drugs in mice reduced the size and stability of [blood clots](#) (thrombi). The treatment allowed initial thrombi to form (a physiological process necessary to prevent bleeding after injury to blood vessels) but reduced by approximately 40% the stability of the thrombi, preventing clots blocking blood vessels.

Collectively, heart and circulatory diseases cause more than one in three of all deaths in the UK, accounting for more than 191,000 deaths each year.

Professor Jeremy Pearson, Associate Medical Director at the British Heart Foundation, said: "Both anti-clotting and cholesterol-lowering drugs are vital in reducing the chance of a heart attack or stroke in high-risk patients, but are not always effective and don't suit all patients because of the risk of side-effects.

"This exciting discovery by Professor Gibbins' team shows that drugs which lower cholesterol through targeting LXR protein can also reduce harmful blood clotting - potentially opening up paths towards new, more effective treatments."

**More information:** The paper, LXR as a novel anti-thrombotic target, by Spyridon M, et al, appears in *Blood*, the journal of the American Society of Hematology.

Provided by University of Reading

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