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News Release

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Organs can be protected from damage by key protein, study finds

Fresh understanding of how body fat gathers around vital organs – including the heart – could help develop treatments for people affected by related conditions.

Researchers found that removing a key protein – which senses oxygen levels in fat cells – had a significant effect.

It produced new blood vessels that provide vital oxygen needed for healthy, efficient storage of fat. Crucially, it also allows fat to be stored away from the body's organs.

With obesity, for instance, fat tissue grows too quickly for normal blood vessel growth to keep up.

This leads to suffocation of fat cells, which then triggers damage and the release of a flood of lipids – a type of fat – as well as unhealthy hormones that attack organs like the liver, muscle and heart.

A team from the Universities of Edinburgh and Oxford, who deleted the protein – called PHD2 – in the fat cells of mice and humans, now hope to study the finding in detail.

Dr Zoi Michailidou, of the University of Edinburgh's Centre for Cardiovascular Science, says: "Medicines are being tested that may enable safe storage of fat in patients whose conditions, such as cancer, have an uncontrolled loss of fat tissue, causing problems for their therapy.

"By understanding how such medicines may improve blood supply, we hope to find strategies for treating fat storage problems, and may even inform new ways to tackle obesity."

The study, published in the journal *Diabetes*, was supported by the Wellcome Trust and British Heart Foundation.

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