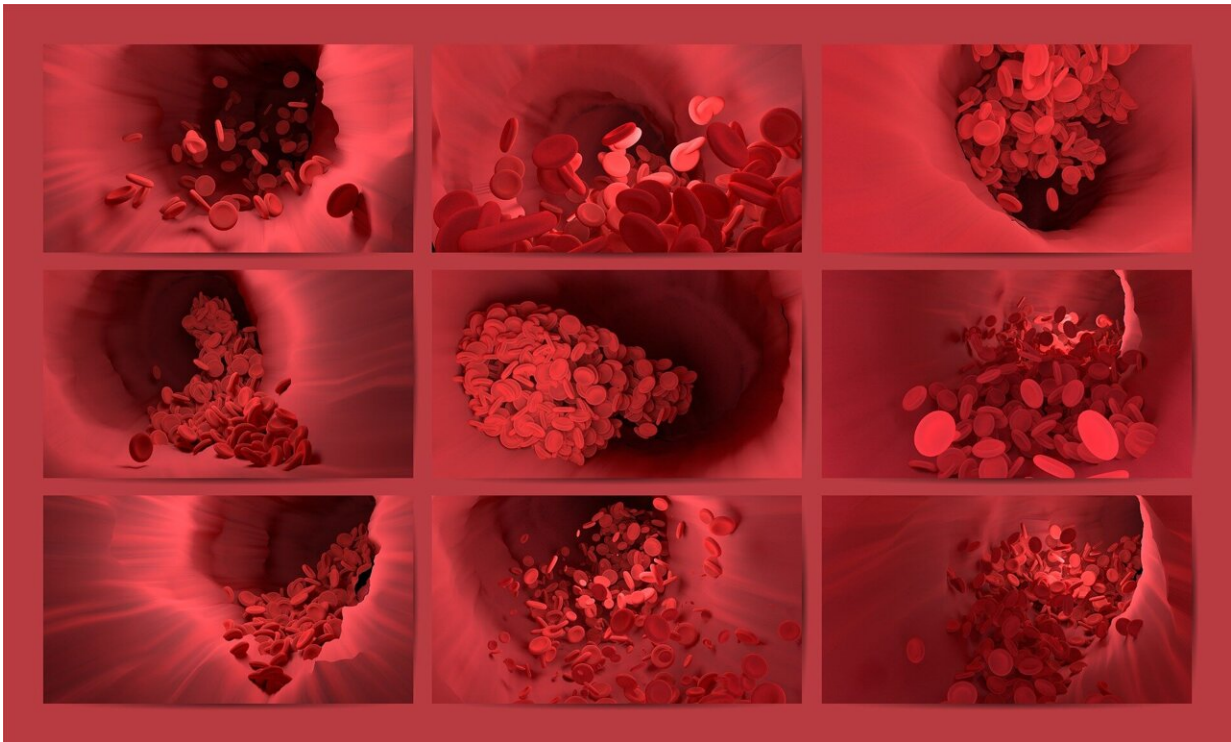


# New research discovers new role for blood clotting protein in triggering inflammation

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Research by Royal College of Surgeons in Ireland (RCSI) University of Medicine and Health Sciences has discovered a new role for the blood clotting protein known as von Willebrand Factor (VWF), which could lead to the development of new treatments for patients with inflammatory and blood clotting disorders.

Published in *Nature Communications*, the research finds that VWF plays an important role in regulating immune responses at sites of blood vessel injury. This means that the protein has a newly discovered role in repairing damaged [blood vessels](#) in addition to its role in [blood clotting](#).

Deficiency in VWF is called "von Willebrand Disease" and occurs in about 1 in 1,000 people in Ireland. People with this condition have increased risk of serious heavy bleeding. In contrast, people with high levels of the [protein](#) in their blood are at risk of developing serious blood clots. For example, very high VWF levels have been implicated in the unusual blood clots seen in the lungs of patients with severe COVID-19.

This research shows, for the first time, that VWF not only regulates blood clotting at the site of damage but also triggers local immune responses. Understanding this new biological role for VWF in regulating [inflammatory responses](#) may offer the opportunity to develop entirely new treatment options for patients with inflammatory and blood clotting disorders, such as von Willebrand Disease, [deep vein thrombosis](#) and myocardial infarction.

Lead author of the research Professor James O'Donnell, Director of the Irish Centre for Vascular Biology at RCSI School of Pharmacy and Biomolecular Sciences, said, "For more than 50 years, it has been known that von Willebrand factor plays a key role in preventing bleeding by acting as a glue at the site of injury. This research now helps us to further understand the role that VWF plays in linking blood coagulation and inflammation and thereby paves the way for the development of new treatments."

The research was conducted by RCSI in collaboration with Trinity College Dublin and the National Coagulation Centre in St James's Hospital, Dublin.

**More information:** von Willebrand factor links primary hemostasis to innate immunity, *Nature Communications* (2022). [DOI: 10.1038/s41467-022-33796-7](https://doi.org/10.1038/s41467-022-33796-7)

Provided by Royal College of Surgeons in Ireland (RCSI)

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