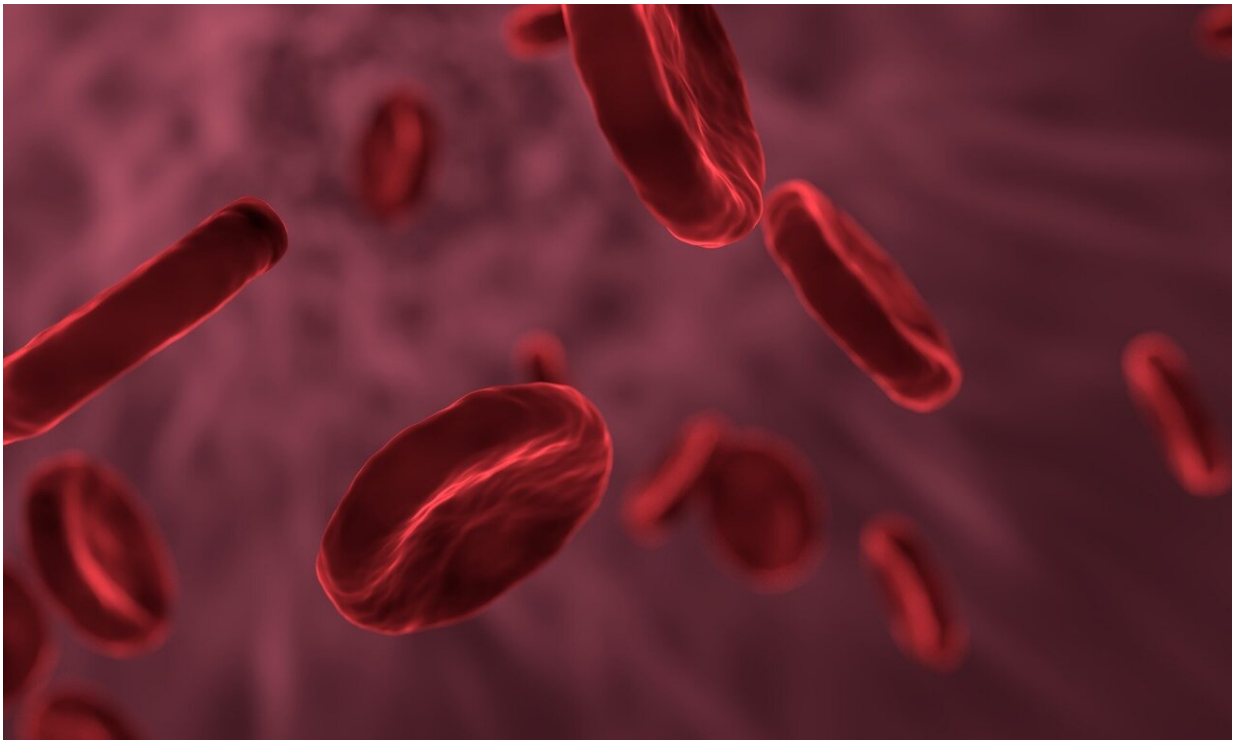


Metabolic syndrome associated with increased risk of blood clot recurrence

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People with metabolic syndrome—a set of conditions including obesity, impaired glucose metabolism, elevated levels of fats and cholesterol in the blood, and high blood pressure—are more likely to experience recurrent blood clots, according to a new study published today in *Blood Advances*. Among patients diagnosed with a type of blood clot known as

deep vein thrombosis (DVT), those who also had markers of metabolic syndrome were more likely to experience another venous thromboembolism (VTE) event. Furthermore, as the number of metabolic syndrome conditions that the patients exhibited increased, so too did their likelihood of experiencing VTE recurrence.

Obesity continues to become more widespread worldwide; increasing along with obesity is the prevalence of metabolic [syndrome](#), which is now estimated to afflict about 34% of the U.S. population. While previous studies have suggested the syndrome can be tied to higher risk of an initial VTE event, this is the largest study of DVT [patients](#) to date to show that metabolic syndrome plays an important role in VTE recurrence.

Researchers used a statewide database, the Indiana Network for Patient Care, to analyze 151,054 patients diagnosed with DVT between 2004-2017. They examined four metabolic syndrome components—hypertension ([high blood pressure](#)), hyperlipidemia (high levels of fat in the [blood](#)), diabetes (high levels of sugar in the blood), and obesity—and found that 68% of DVT patients had also been diagnosed with at least one of those conditions. The presence of comorbid metabolic syndrome was associated with a 17% increase in overall likelihood of blood clot recurrence.

The study also showed that the risk of subsequent blood clots increased with each additional metabolic syndrome component: patients without any of the four markers for metabolic syndrome had a VTE recurrence rate of 7%. Those patients who had been diagnosed with one component of metabolic syndrome were found to be at a 14% risk of additional blood clots, followed by 21% risk among patients with two components, 30% for those with three components, and 37% for those diagnosed with all four components.

"Our aim was to improve understanding of the effect of metabolic syndrome on blood clot recurrence," said the study's first author Lauren K. Stewart, MD, of the Indiana University School of Medicine's Department of Emergency Medicine. "If patients have VTE recurrence, their quality of life drops, and it drops a lot. We wanted to investigate possible comorbidities and factors that affect recurrence so we could stimulate research into new potential treatments."

VTE poses a significant burden not only to public health—it is estimated that around 900,000 people could be affected by VTE in the United States each year—but also to individual quality of life. Patients who have been diagnosed with DVT may experience chronic, debilitating pain; edema and swelling; and skin ulcerations.

The researchers suggest that addressing comorbid metabolic syndrome conditions among DVT patients may alleviate or prevent some of the harmful effects of VTE recurrence. "This study underscores the need for further research into co-treating metabolic syndrome in addition to prescribing anticoagulants," said Dr. Stewart. "Physicians may now want to consider checking other boxes—is the patient's hypertension being addressed? Is the hyperlipidemia, the glucose intolerance? Have I talked to the patient about exercise and diet?"

Another interesting finding involved the role of anticoagulant therapy: the researchers found that although patients who had been diagnosed with both DVT and metabolic syndrome had higher documented rates and duration of anticoagulant use, the link between metabolic syndrome and increased risk of VTE recurrence persisted. This suggests that metabolic syndrome may have an even greater effect on VTE risk than observed, and that the effect may have been minimized due to anticoagulant therapy.

Ultimately, the researchers hope their findings will empower patients

and physicians to work together to address the tie between VTE and [metabolic syndrome](#). "Having one or more of these conditions of obesity, hyperlipidemia, hypertension, or diabetes creates a worse outcome for patients with blood clots. But the good news is, all four of these conditions can be treated and modified," said Dr. Stewart.

Provided by American Society of Hematology

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