

New no-needle approach to prevent blood clots

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Gary Raskob, Ph.D., is dean of the University of Oklahoma College of Public Health. Credit: OU Medicine

The dean of the University of Oklahoma College of Public Health and a team of scientists worldwide have found a better way to prevent deadly blood clots after joint replacement surgery - a major problem that results in thousands of unnecessary deaths each year. The research appears this week in the *New England Journal of Medicine*.

The research team, which includes scientists from Oklahoma, Denmark, Australia and Canada, set out to find a better way to prevent [blood clots](#) without increasing the risk of bleeding. Blood clots, known as deep-vein thrombosis (DVT), affect the large veins in the lower leg and thigh. If the clot breaks free and moves through the bloodstream, it can lodge in the lungs, a condition known as pulmonary embolism (PE), which is often fatal. Pulmonary embolism is the most common preventable cause of sudden death after surgery.

Current preventive treatments include uncomfortable injections and one oral anti-clotting medicine that is difficult for patients and physicians to manage. Researchers wanted to find something

better.

In a double-blind study of more than 3,000 patients, researchers tested a new type of anti-clotting drug called Apixaban, which is an oral medication. The medicine proved just as effective at preventing blood clots and reduced the risk of bleeding by half. Most importantly for patient convenience, it was much easier to use.

"This is a major step in our fight to prevent DVT and the many unnecessary deaths each year caused by blood clots after joint replacement surgery. We now have a better treatment that reduces the risk of bleeding, and a patient no longer has to endure injections by needle," said Gary Raskob, Ph.D., a lead researcher on the project and dean of the OU College of Public Health.

Raskob, who is a renowned expert in the field, said as our population ages, the number of hip and knee replacements will skyrocket in the coming years, so an easier to use and safe [preventive medicine](#) is essential. According to the American Academy of Orthopaedic Surgeons, more than 700,000 primary total hip and knee replacements are performed each year in the United States, and that number is expected to grow to more than 3.5 million by 2030.

On average, 1 percent to 3 percent of people undergoing total joint replacement will end up with a symptomatic deep-vein thrombosis (blood clot in the legs) or a pulmonary embolism (a blood clot in the lungs).

Apixaban is now being studied in Phase III clinical trials and, if approved by the U.S. Food and Drug Administration, will be an important option for patients having joint replacement surgery.

Source: University of Oklahoma

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