

**Prevention of Blood Clots for Patients Undergoing  
Total Hip Replacement (THR) or Total Knee Replacement (TKR) Surgery**

**If you are planning to undergo THR or TKR surgery,  
this information is of great importance to you.**

**Risk of Blood Clots**

The best available reliable evidence indicates that out of 100 people undergoing total hip and total knee replacement surgery, between 39 and 53 of the people will experience a blood clot (deep vein thrombosis abbreviated as DVT) in a leg.

Sometimes the blood clot causes no problems, but sometimes the clot can cause leg swelling which persists. Rarely a blood clot can travel to the lungs causing what is called a pulmonary embolus.

For every 300 people who experience a pulmonary embolus, one will die from the severe lung damage and oxygen problems caused by the clot in the lung.

**Preventing Blood Clots in Legs: Benefits and Risks**

**Benefits**

The best available reliable evidence (AHRQ strength of evidence rating: Low) indicates that adults who are treated with medications that prevent clots (anticoagulants) together with mechanical devices that squeeze the legs after total hip or total knee replacement surgery until they leave the hospital stay can dramatically lower the risk of blood clots. With treatment to prevent blood clots, the rate of clots drops by more than half.

**Risks**

The major risk of medications that prevent clots is bleeding. If 100 people who have total hip or total knee replacement surgery take anticoagulants, reliable studies report that 1 to 3 people will have severe bleeding (severe bleeding will require stopping the medication and sometimes a transfusion).

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<b>If 100 people undergoing <u>total hip</u> replacement make the choices below:</b>	<b>What is likely to happen:</b>
1. No prevention	About 39 out of the 100 people undergoing total hip surgery will experience a blood clot in a leg.
2. Anticoagulation alone	About 22 out of the 100 people undergoing total hip replacement surgery will experience a blood clot in a leg.*
3. Anticoagulation with mechanical devices	About 11 out of the 100 people undergoing total hip replacement surgery will experience a blood clot in a leg.*
<b>If 100 people undergoing <u>total knee</u> replacement make the choices below:</b>	<b>What is likely to happen:</b>
1. No prevention	About 53 out of the 100 people undergoing total knee replacement surgery will experience a blood clot in a leg.
2. Anticoagulation alone	About 30 out of the 100 people undergoing total knee replacement surgery will experience a blood clot in a leg.*
3. Anticoagulation with mechanical devices	About 15 out of the 100 people undergoing total knee replacement surgery will experience a blood clot in a leg.*

\*Calculations for blood clot (DVT) risk reduction are based on Agency for Healthcare Research and Quality (AHRQ) data. AHRQ may have included some relative risk data for hip fracture surgery in some hip and knee DVT calculations.

**Other Information**

There are several medications used for preventing blood clots. Which drug is best for you depends upon many factors such as other health problems you may have.

Your doctor will help you decide which drug is best for you.

**Where did this information come from?**

1. The information provided above came from a medical team that included orthopedic surgeons, internal medicine specialists, pharmacists and other health professionals at Kaiser Permanente Hawaii and Delfini Group who reviewed hundreds of studies in 2008 and 2009 and selected information from the most reliable studies.
2. Sobieraj DM et al. Venous Thromboembolism Prophylaxis in Orthopedic Surgery [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2012 Mar. Available from <http://www.ncbi.nlm.nih.gov/books/NBK92319/PubMed> PMID: 22536611.