

## Warfarin Antidotes

Warfarin, also called Coumadin, is an oral anticoagulant used in the prevention of thrombosis and embolism. Warfarin inhibits vitamin K epoxide reductase and leads to depletion of active vitamin K to be used by blood coagulation proteins. Therefore, warfarin toxicity leads to hemorrhage. A common scenario that leads to overdose is ingestion of rat and mice pesticides. Additionally, many commonly used medications interact with warfarin which can predispose to a high risk of bleeding or causes the dose of warfarin to be insufficient to protect against thromboembolic events. The pharmacologic action of warfarin can be reversed by vitamin K and fresh frozen plasma. However, the onset of vitamin K is not immediate. When more immediate reversal is necessary, fresh frozen plasma can be used to replace factors II, V, VII, IX, X, and XI.



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### Antidotes

#### Vitamin K

##### Viking (K) King

Vitamin K is involved in the production of coagulation factors II, VII, IX, X, protein C and S. Giving vitamin K can help reverse the anticoagulation effects of warfarin but it does not have immediate onset of action.

#### Fresh Frozen Plasma

##### Frozen Plasma-TV

Fresh frozen plasma (FFP) refers to the liquid portion of human blood that has been frozen and preserved after a blood donation. FFP replaces factors II, V, VII, IX, X, and XI and helps to reverse warfarin effects much quicker than vitamin K.