

Vitamin K Foods and What You Should Know About Taking with PrTaro-Warfarin (Warfarin sodium tablets, USP) Patient Education Sheet

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Why is vitamin K important when taking Warfarin?

Warfarin is an anticoagulant that is used to prevent the formation of blood clots. Blood clotting involves proteins made by your liver that depend on vitamin K. Warfarin prevents blood clot formation by inactivating vitamin K [1, 2].

Many different foods contain varying levels of vitamin K (see page 4 for a table of those foods), so those foods can influence how effectively warfarin is working.

Additionally, multivitamins, vitamin K supplements, other natural health products, high protein diets, and some beverages can also change warfarin's effects. The following guidelines compare and contrast Do's and Don'ts to help you understand how each of these factors can influence warfarin's effects.

Foods that contain low, moderate, and high levels of vitamin K [4, 5, 7]

This is not a list of foods to avoid, but a guide on the vitamin K content of certain foods.

| Food category | Low vitamin K | Moderate vitamin K | High vitamin K |
|---|--|--|--|
| Vegetables | Other vegetables Green beans, Carrots Cauliflower, Celery, Corn Cucumber (peel removed) Eggplant, Mushrooms Onions, Green pepper Potato, Pumpkin Sauerkraut (canned) Tomato | Pale leafy greens Iceberg lettuce Greens Asparagus Cabbage (red, white) Pickle (dill) | Dark leafy greens Broccoli, Brussels sprouts Cabbage (green) Collard greens Endive (raw) Kale (raw, leaf) Lettuce (bib, red leaf) Parsley, Spinach Swiss chard Turnip greens (raw) Watercress (raw) |
| Fruits | Apple, Banana, Blueberries Grapes, Grapefruit Lemon, Orange, Peach | Avocado | |
| Oils | Corn oil, Peanut oil Safflower oil, Sesame oil Sunflower oil | Cottonseed oil Margarine Olive oil | Canola (rapeseed) oil Mayonnaise Soybean oil |
| Meats | Beef Chicken Pork/Ham | | Liver |
| Fish | Mackerel Shrimp Tuna | | |
| Cheeses, dairy, and fermented products | Butter, Cheeses (hard and soft), Eggs, Milk, Sour cream, Yogourt | | Natto (traditional Japanese soya bean) |
| Beverages | Coffee, Cola, Fruit juices Tea (black, green) | | |
| Nuts | Cashews Pine Nuts | | |
| Other | French fries (fast food) Nachos (fast food) | | |

References

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- Hornsby LB, Hester EK, Donaldson AR: Potential interaction between warfarin and high dietary protein intake. Pharmacotherapy 2008, 28(4):536-539.
- Vitamin K monograph [Natural Standard Database www.naturalstandard.com]

Dos and Don'ts with taking vitamin K foods, multivitamins, and supplements

- ✓ **DO keep your intake of vitamin K foods consistent.** If you eat or drink food products that contain vitamin K, such as green leafy vegetables, it is important to keep your intake levels approximately the same from day to day [3].
- ✓ **DO check with your health care provider before you start taking multivitamins.** Many multivitamins contain low levels of vitamin K. If you have been taking a multivitamin, it is important that you take it on a regular basis [3, 4].
- ✓ **DO check with your health care provider before you start taking vitamin K supplements.** Some natural health products contain vitamin K only, usually at higher doses than in multivitamins. There are two general forms of vitamin K supplements – vitamin K1 (phylloquinone or phytonadione) [4, 5], and vitamin K2 (menaquinone or menatetrenone) [4, 5].
- ✓ **DO check with your health care provider before you start taking any new natural health products.** Natural health products other than vitamin K can also increase or decrease the effects of warfarin, and these effects vary from individual to individual [1, 2].
- ✓ **DO check with your health care provider before changing your diet.** Aside from vitamin K containing foods mentioned in the table on page 4, a range of commonly consumed foods and beverages can alter your warfarin levels.

Alcohol, grapefruit, cranberry, green tea Some commonly consumed beverages also alter the effects of warfarin. Consuming large quantities of alcohol, grapefruit, or cranberry (fruit or juice) have been linked with an increase in warfarin effects, leading to bleeding [2]. Green tea (*Camellia sinensis*) contains high levels of vitamin K, so consuming large quantities of green tea can decrease the effects of warfarin [2], similar to vitamin K foods.

High protein diet Some individuals on high protein diets have experienced a decrease in warfarin effects, requiring an increase in their warfarin dose [6]. It is thought that taking extra protein increases proteins in your blood. Warfarin binds to these proteins, making the bound warfarin inactive. When there is more circulating protein in your bloodstream, more warfarin binds to these proteins, and so less of it is available to prevent blood clotting. This is why taking higher levels of protein in your diet may require an increase in your warfarin dose [4, 6].

If you are taking warfarin, do not change your intake of protein in your diet before speaking with your health care provider. Additionally, speak with your health care provider about monitoring your PT/INR closely if you consume alcohol, grapefruit, cranberry, and green tea products.

X DON'T change your intake of vitamin K foods suddenly. When you increase your intake of vitamin K foods, it can make warfarin work less effectively. In turn, your warfarin dose may need to be increased to prevent blood clots. If you decrease vitamin K foods, your warfarin dose might need to be decreased to prevent bleeding [4].

X DON'T take new vitamin K supplements on your own. Consult with your health care professional before starting any vitamin K supplement to ensure that you are taking the correct form, the right dose, and at the correct frequency. Some individuals who have had a difficult time controlling their clotting time may benefit from taking an extra vitamin K[4]. Speak with your health care professional first before you begin any new vitamin K supplement.

X DON'T take new multivitamins on your own. Your health care professional will advise you on whether or not taking a multivitamin is suitable for you.

X DON'T take new natural health products on your own. Do not start to take other new natural health products - such as herbs and vitamins on your own while taking warfarin. For example, taking fish oil can increase the effects of warfarin, increasing one's risk of bleeding [1, 2]. Another popular herbal product Panax ginseng can decrease the effects of warfarin, increasing one's risk of blood clotting [2, 3]. There are many more natural health products that influence warfarin's effects. For a full discussion of natural health products and warfarin interactions, please see "What You Should Know About Taking Herbs with TARO-WARFARIN".

X DON'T change your diet significantly on your own without informing your health care provider.

Additional recommendations when taking warfarin [3, 4]

- ✓ **DO take the prescribed dose of warfarin at the same time each day.**
 - ✓ **DO have your blood tested regularly for its clotting time (PT/INR).**
 - ✓ **DO contact your health care professional immediately if you experience unusual bruising or bleeding.**
- **For more recommendations please see our Do's & Don'ts sheet on What you need to know when taking Taro-Warfarin.**