



Drug and Food Interactions

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Warfarin & Green Leafies

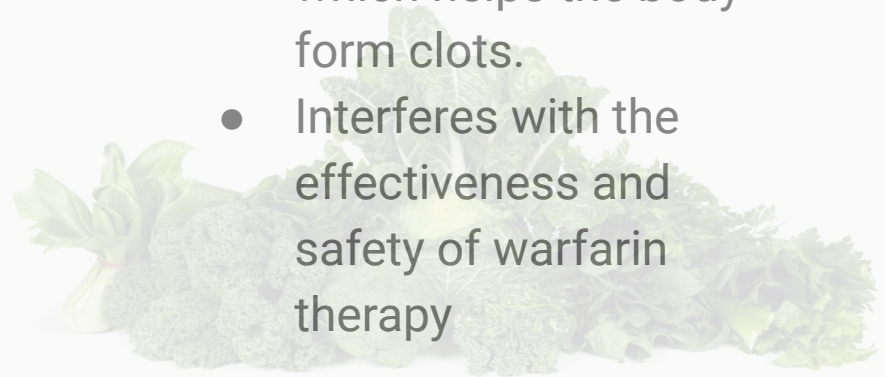
Warfarin

Therapeutic Class: Anticoagulant

Signs & Symptoms: increased blood clots, increased bleeding, imbalanced INR

Green Leafies

- Contains Vitamin K, which helps the body form clots.
- Interferes with the effectiveness and safety of warfarin therapy



Patient Experience

A 49-year-old woman is prescribed warfarin to treat a blood clot that has formed behind her eye. Her physician advised her to limit her intake of dark green vegetables such as spinach. She was used to eating several salads made with spinach a week, so she continued to eat her regular diet. This made her INR levels unbalanced at her next blood draw check.

Her physician reviewed possible causes and determined that it was most likely her diet. She now eats less spinach and other dark green vegetables, but did not have to cut them out of her diet completely.

Implementation/Community Resources

FACT SHEET FOR PATIENTS AND FAMILIES



Warfarin Eating Plan

What is warfarin?

Warfarin is a type of medicine called an anticoagulant (an-tye-oh-46-yoo-ahnt). These medicines help prevent blood clots. They are usually prescribed for the treatment of certain heart, lung, and blood vessel diseases because they can help prevent heart attacks and strokes. You may know of warfarin by its brand names "Coumadin" or "Jantoven."

What is a warfarin eating plan?

Vitamin K is found in many foods and helps your blood clot properly. But, it can change the way warfarin works. When taking warfarin, you have to be consistent in the amount of vitamin K you eat from week to week. This helps make sure that the warfarin dose is working correctly in your body and not putting you at risk for blood clots or bleeding.

How does it work?

1 The back of this handout gives a list of foods which are high in vitamin K. Your "plan" is to be consistent in the way you eat these foods. Most dark green leafy vegetables are high in vitamin K. But so are some other foods and oils. You can't eat "too many" or "too few" natural sources of vitamin K. In fact, you should continue to eat high-vitamin K foods consistently over the course of each week. For example, if you were eating 4 salads a week before starting warfarin, you should continue to eat 4 salads a week while taking warfarin.

2 Avoid alcohol. Alcohol changes the way warfarin works, making it difficult to manage your warfarin dose. If you drink and don't want to quit, be consistently moderate in your alcohol intake. For example, 1 daily drink for women, and 1 to 2 a day for men.



What do I need to do next?

- 1 Make a list of the foods you commonly eat and how often you eat them.
- 2 Work with your dietitian to figure out a food plan that works for your schedule and your family's budget.
- 3 Follow your food plan and make adjustments with you dietitian as needed.
- 4 Get your INR checked as often as your doctor recommends to make sure you are getting the right dose of warfarin.

My follow-up appointment

Date/Time: _____

Place: _____

Doctor: _____

3 Avoid certain supplements and herbal products.

These include:

- Herbal teas containing coumarin, such as chamomile, tonka bean, sweet clover or melilot, or sweet woodruff.
- Herbal supplements, such as ginseng, dong quai, red clover, echinacea, ginseng, ginkgo biloba, and feverfew.
- Supplements, such as fish oil, walnut oil, flaxseed oil, garlic oil, ginger, onion extract pills, vitamin C or E (in amounts greater than the recommended dietary allowance), coenzyme Q-10, glucosamine, and alfalfa unless your doctor specifically approves their use. Note: In food or food seasoning, fish oil, garlic, onion, ginger, and vitamins C and E are fine.

Food group	Rich in vitamin K: Keep your intake of these consistent
Milk and dairy products 	Soy milk
Vegetables 	<ul style="list-style-type: none"> Dark green leafy vegetables: chard, kale, spinach, lettuce (bibb, endive, iceberg, red leaf), parsley, watercress, beet greens, collard greens, mustard greens, and turnip greens Broccoli and cauliflower
Fruits and fruit juice 	*None are rich in vitamin K. Your doctor may tell you to avoid drinking grapefruit juice at the same time that you take your Coumadin (doctor advice varies).
Grains 	*None are rich in vitamin K.
Meats and meat substitutes 	<ul style="list-style-type: none"> Liver (beef, pork, and chicken) and liverwurst Beef heart Soybeans
Fats and oils 	<ul style="list-style-type: none"> Canola oil Soybean oil Fat substitutes (such as Olestra) Margarine, mayonnaise, and salad dressing made from canola or soybean oil
Sweets and desserts 	*None are rich in vitamin K.
Other: teas, herbs, supplements 	Check with your doctor before taking any herbs or supplements. This includes: <ul style="list-style-type: none"> Green tea, black tea Tea leaves Seaweed (often used in sushi) Alfalfa

*Fruits, fruit juice, grains, sweets, and desserts are all LOW in vitamin K and will not affect your warfarin.

Where can I learn more?

An Intermountain dietitian can answer questions about this eating plan. If you have questions about your medicine or symptoms, ask your doctor. To locate an Intermountain dietitian, visit Intermountainhealthcare.org.

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<https://intermountainhealthcare.org/ckr-ext/Dcmnt?ncid=520472393>

- Teach patients about avoiding foods high in Vitamin K.
- Provide patients with a list of foods high in Vitamin K.

Atorvastatin & Grapefruit Juice

Atorvastatin

Therapeutic Class: Statin/HMG-CoA reductase inhibitor

Signs & Symptoms: increased levels of statins in blood; increased possibility of side effects such as joint pain or swelling, unusual bleeding or bruising, rash, itching, fatigue, nausea, vomiting.

Grapefruit Juice

- Increases the bioavailability and concentration of atorvastatin.



Patient Experience

A 74-year-old man is prescribed atorvastatin (Lipitor). He has a common cold. His mother always told him that grapefruit juice can cure illness because it is high in vitamin C. He has been drinking grapefruit juice for the past week to try to feel better. He finally went to the doctor and complained that he has been experiencing muscle and joint pain and digestion problems. His doctor asks what he has been doing to feel better and the patient tells him that he has been having grapefruit juice multiple times daily. He is told to stop drinking grapefruit juice as it negatively interacts with his atorvastatin by increasing the level of statins in his blood and causing greater side effects. He now knows not to drink grapefruit juice when he is sick.

Implementation/Community Resource

- Provide education to patient on foods to avoid while taking atorvastatin prior to discharge.
- Instruct patient to monitor for signs of increased cholesterol levels.



Spironolactone & Licorice



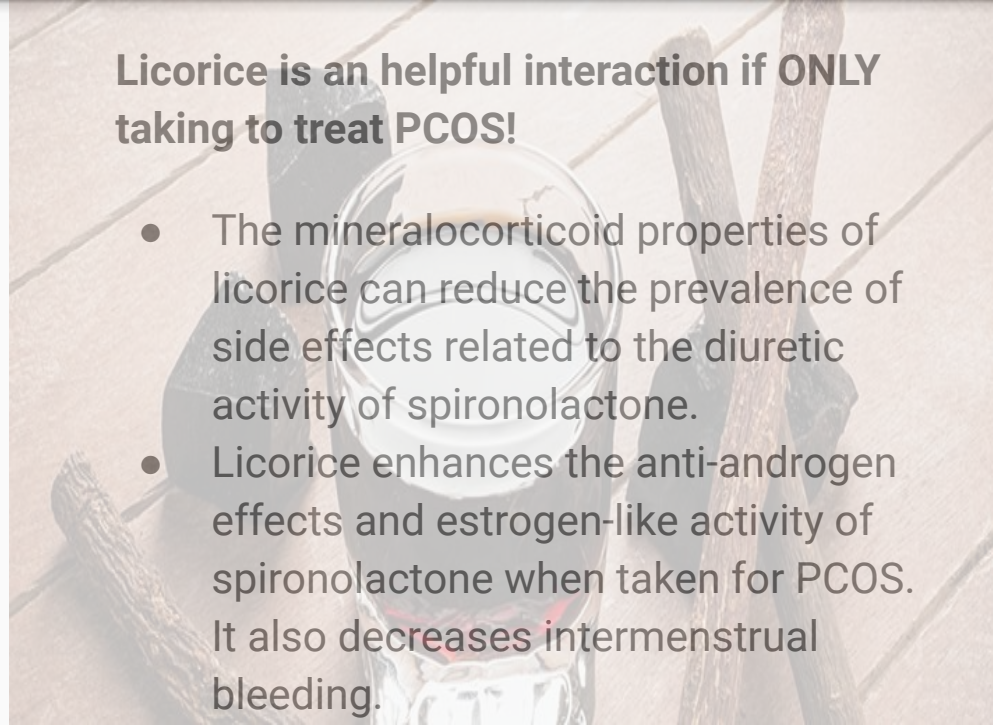
Spironolactone

Therapeutic Class: Potassium-sparing Diuretic

Signs and symptoms of volume depletion:
diminished skin turgor, dry mucous
membranes, tachycardia, orthostatic
hypotension

**Licorice is an helpful interaction if ONLY
taking to treat PCOS!**

- The mineralocorticoid properties of licorice can reduce the prevalence of side effects related to the diuretic activity of spironolactone.
- Licorice enhances the anti-androgen effects and estrogen-like activity of spironolactone when taken for PCOS. It also decreases intermenstrual bleeding.



Patient Experience

A 29-year-old female patient is being treated with spironolactone for polycystic ovarian syndrome. The spironolactone drug therapy has been causing the patient to experience stomach upset, nausea, vomiting, and diarrhea. Her physician suggested that she snack on licorice during the day. The licorice has an anti-androgen effect that decreases those symptoms that are associated with volume depletion.

This education provided by the physician helped reduce the patient's side effects and improve her level of comfort.

Implementation/Community Resource

- Advise patients on spironolactone not to consume high potassium foods.
- Always consult a physician before starting any herbal or natural supplements.
- If taking spironolactone to treat high blood pressure, licorice is contraindicated as it reverses its effects.

Some communities offer nutritional programs that we can encourage patients to attend for help with nutrition related to their disease processes and/or the medication that they are taking.



Digoxin & Wheat Bran

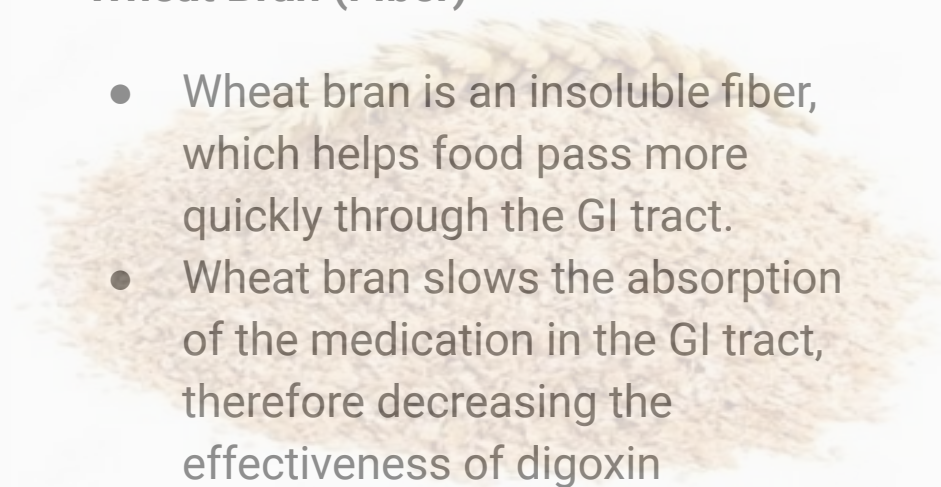
Digoxin

Therapeutic Class: Cardiac Glycoside

Signs & symptoms: irregular heartbeat, tachycardia, dyspnea, edema

Wheat Bran (Fiber)

- Wheat bran is an insoluble fiber, which helps food pass more quickly through the GI tract.
- Wheat bran slows the absorption of the medication in the GI tract, therefore decreasing the effectiveness of digoxin



Patient Experience

A 65-year-old female is searching the internet for ways to aid with her recent constipation. She finds that wheat bran is a good natural source of dietary fiber and can help relieve mild constipation as well as preventing other colon diseases. She calls her sister who is a nurse to ask what her opinion is on the effectiveness of wheat bran. Her sister reminds her that she should not eat wheat bran while taking her digoxin medication because it will decrease its effectiveness.

Implementation/Community Resource

- Digoxin can be taken one hour before or one hour before or four hours after a meal containing wheat bran.
- Instruct patients monitor their heart rate on digoxin therapy.

Fliers around doctor offices and pharmacies that teach patients how to count their pulse would be helpful for this population

Know your pulse



Find your pulse



Count your heartbeat
for 30 seconds



Double it

It can tell you a lot about your heart

Learn more: heartfoundation.org.nz/pulse

Heart
Foundation

Ciprofloxacin & Dairy

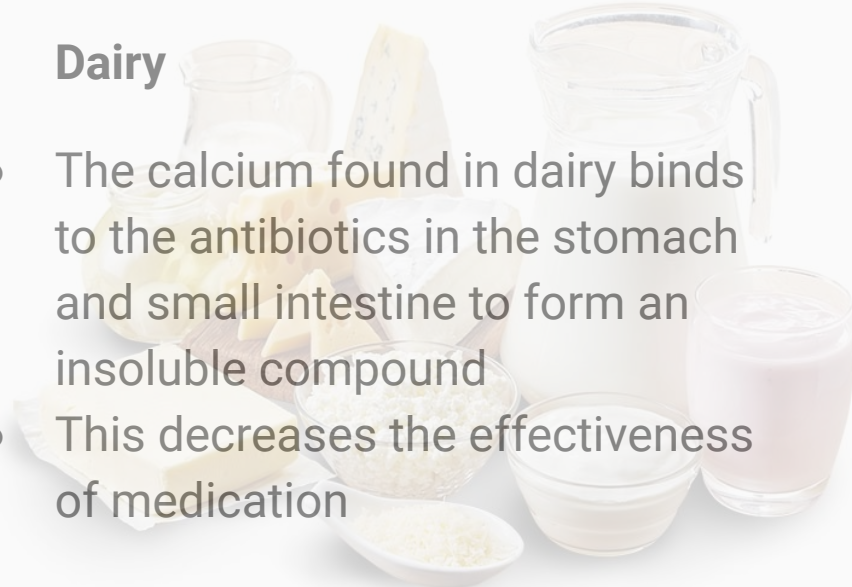
Ciprofloxacin

Therapeutic Class: Fluoroquinolone Antibiotic

Signs & Symptoms: slow healing, worsened infection (elevated WBCs, fever, swelling, redness)

Dairy

- The calcium found in dairy binds to the antibiotics in the stomach and small intestine to form an insoluble compound
- This decreases the effectiveness of medication



Patient Experience










An 85 year old female patient lives alone and has been recently diagnosed with a UTI. She is admitted to the medical-surgical unit and becomes aggravated when her breakfast tray arrives without her daily glass of milk! Her CNA brings her a milk carton right after the nurse administers ciprofloxacin. The nurse comes in to check on the patient and sees the empty milk jug on her bedside table. She takes this opportunity to educate the patient about how dairy can reduce the effectiveness of her medication and prolong her recovery time.

Implementation/Community Resource

- Do not take ciprofloxacin with milk, yogurt, or calcium-fortified juices.
- Instruct patient to take antibiotic one hour before or two hours after a meal containing dairy.
- Continue antibiotics for full prescribed course

Avoid taking ciprofloxacin with juices or smoothies that contain the following fruits:



MYFOODDATA Top 10 Fruits Highest in Calcium <small>1300mg of Calcium = 100% of the Daily Value (%DV)</small>	
1 Fortified Orange Juice  27% DV (349mg) per cup 117 calories	2 Prickly Pears  6% DV (83mg) per cup 61 calories
3 Tangerines  6% DV (72mg) per cup 103 calories	4 Oranges  6% DV (72mg) per cup 85 calories
5 Kiwifruit  5% DV (61mg) per cup 110 calories	6 Mulberries  4% DV (55mg) per cup 60 calories
7 Blackberries  3% DV (42mg) per cup 62 calories	8 Guavas  2% DV (30mg) per cup 112 calories
9 Papaya  2% DV (29mg) per cup 62 calories	10 Passion-Fruit (Granadilla)  2% DV (28mg) per cup 229 calories

References

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