

INTEGRIS Anticoagulation Clinics

**Warfarin
(Coumadin[®])
Education
Booklet**

INTEGRIS Anticoagulation Clinics

Clinic Mission

- To provide high quality anticoagulation management.
- To maximize benefits and minimize risks associated with anticoagulation therapy.

Clinic Physician Oversight

- Each clinic is overseen by a medical director
- The physician who has ordered your care in the clinic will also provide oversight and will be consulted if any serious medical problems arise.

Contacting Us

- Baptist Anticoagulation Clinic:
 - Phone: 405-951-8369
 - Clinic Hours: M-F 8:20-11:20AM & 1PM-5PM
- Southwest Anticoagulation Clinic:
 - Phone: 405-644-5128
 - Clinic Hours:
M, W, F 8AM-11:20AM & 1-5PM
Tu,Th 7 AM-11:20AM & 1-5PM

One Last Word

You've learned a lot, which may seem overwhelming. Yes, safe and effective warfarin therapy involves a lot of "dos and don'ts." But it can be helpful to think of these less in terms of what you're trying to avoid, and more as what you're working to achieve with warfarin: the right balance between clotting and bleeding that will keep you in the zone of good health for many years to come.

This booklet has been adapted from A Patient's Guide to Using Coumadin; Your Guide to Jantoven; Facts you should know now that you're taking Warfarin Sodium Tablets, USP; and the USDA National Nutrient Database for Standard Reference

NOTIFY THE CLINIC OF THE FOLLOWING:

- Signs of bleeding (nose, gums, urine, stool, etc.)
- Signs and/or symptoms of clot formation associated with:
 - DVT “blood clot in leg or arm”: Pain, discomfort, swelling, tenderness, and/or redness (usually only in one extremity)
 - PE “blood clot in lung”: Short of breath, rapid breathing, chest pain, rapid heart rate, cough, sweating
 - TIA “mini-stroke”/Stroke: Sudden numbness or weakness especially on one side of the body, confusion, trouble speaking, trouble understanding, trouble walking, dizziness, loss of balance or coordination, trouble seeing in one or both eyes, or severe headache with no known cause
- Warfarin is to be interrupted for a procedure or surgery
- Starting, stopping, or changing a medication including prescription (especially antibiotics), over-the-counter, herbals, vitamins, and pain-relieving creams
- Significant change in diet with vitamin K or overall intake
- Health status changes (such as persistent diarrhea, vomiting, or fever)
- Miss a dose of warfarin
- Manufacturer of warfarin tablet has changed (look for changes in color, size and shape)
- Any serious fall or trauma to the head
- Extended or prolonged travel plans
- Pregnancy is suspected

These changes can potentially affect your warfarin dose needs and INR results and possibly increase your risks of bleeding or forming blood clots.

The Clinic Team

MEDICAL DIRECTOR

Johnny McMinn, M.D.

CLINICAL PHARMACIST PROVIDERS

- Becky Armor, Pharm.D., BCACP
- Susan Conway, Pharm.D., BCPS, FASHP
- Kendall Powers, Pharm.D., BCACP, CACP
- Danielle Smith, Pharm.D.
- Erica Smith, Pharm.D., BCACP, CACP
- Jason Thompson, Pharm.D., CACP

ADMINISTRATIVE ASSISTANTS

- Alysha Chambers
- Shirley Whittington

For more information, check out our website at www.integrisanticoag.com

Warfarin

What is warfarin?

Warfarin is an anticoagulant. *Anti* means *against*, and *coagulant* refers to blood clotting. Anticoagulant medications help reduce clots from forming in the blood.

Warfarin is also available by the brand name of Coumadin and Jantoven.

Why do I need warfarin?

Your physician wants you to take warfarin because your body may make clots that you don't need. Clotting is a normal body function, but if your blood clots too quickly, serious medical problems may occur. A clot can move to another part of the body. For example, a clot can move from your heart to your brain and cause a stroke to happen.

Therefore, warfarin is used to treat and prevent many types of blood clots including:

- Deep vein thrombosis (DVT), a blood clot generally within the leg or arm
- Pulmonary embolism (PE), a blood clot in the lung
- Stroke associated with an irregular, rapid heartbeat called atrial fibrillation (A.fib.)
- Stroke associated with heart valve replacement

How long will I have to take warfarin?

Your physician will determine how long you need to take this medication. Some conditions require patients to take warfarin lifelong. Some conditions may require only a short duration (i.e. 3 to 12 months).

What ifs

What if warfarin therapy is stopped?

If your healthcare provider stops your warfarin, the anti-coagulant effects may last for about 2 to 5 days. If you are scheduled for an invasive procedure or surgery, your physician may ask you to stop warfarin for 3-5 days prior to the procedure to reverse the effects of warfarin. If you are scheduled for a procedure that requires you to go off your warfarin, it is important to let the clinic know so that we can coordinate your anticoagulation therapy and follow-up.

What if I want to travel while I take warfarin?

You can travel, but tell your anticoagulation clinic provider before you go. You may need to take an INR test before you leave, or we may arrange for you to have one while on your trip. Remember to keep your eating habits and activity level as close to your everyday routine as possible. Also, make sure to take enough warfarin with you.

What if I want to exercise or participate in a sport?

Regular exercise is beneficial to your health, but your healthcare provider may want you to avoid contact sports or activities which may result in a serious fall or other injury. Ask your healthcare provider before you start or change any exercise program or activity.

What if I become ill?

Many changes in your health status can impact your warfarin therapy. Illnesses such as fever, diarrhea, and vomiting can affect your INR. Notify your anticoagulation clinic provider if you develop any new illnesses.

What if I fall?

Call your physician or go to the hospital immediately if you have had a bad fall or a hard bump, even if you are not bleeding. You can be bleeding but not see any blood. For example, if you fall and hit your head, bleeding can occur inside your skull.

Dos & Don'ts

What should I do?

- Do keep eating habits and activities similar every week.
- Do tell your anticoagulation clinic provider when you get sick, get hurt, or get a cut that won't stop bleeding.
- Do look for signs of bleeding. Tell your anticoagulation clinic provider and physician immediately if you have bleeding.
- Do tell anyone giving you medical or dental care that you are taking warfarin.
- Do carry identification stating that warfarin is being taken. Do consider wearing a medical alert bracelet or necklace.

What should I not do?

- Do not take an extra tablet to catch up. If you forget to take a tablet, tell your healthcare provider immediately. Take the missed dose as soon as possible on the same day, but DO NOT take a double dose of warfarin the next day to make up for the missed dose.
- **Do not take warfarin if you are pregnant or plan on becoming pregnant.** This is very important because warfarin should not be taken during pregnancy. Tell your clinic provider and physician if you are or plan on becoming pregnant.
- Do not switch manufacturers of warfarin. If your prescription has changed and the tablet looks different in color or shape, notify your anticoagulation clinic provider.

What should I avoid?

- Avoid drastic changes in your dietary habits
- Avoid alcohol consumption. If you choose to drink alcoholic beverages, limit consumption to no more than 1-2 servings per day.
- Avoid activities/sports that may result in traumatic injury.

How It Works and How To Take It

How does warfarin work?

- Warfarin blocks the formation of vitamin K-dependent clotting factors in your liver. Vitamin K is needed to make clotting factors that the blood needs to clot and prevent bleeding. Vitamin K is found naturally in some foods, such as green leafy vegetables.
- Warfarin reduces the body's ability to make blood clots. It may help stop harmful clots from forming and keep existing clots from getting larger. Warfarin does not break up existing blood clots.
- Warfarin generally begins to reduce blood clotting within 24 hours after taking the medication. It may take 2 to 5 days to see the full effect of a warfarin dose.

When do I take it?

- Take your warfarin at the same time every day.
- Never skip or double doses unless directed to do so by your anticoagulation clinic provider
- On appointment days, we prefer that you wait to take your dose until after your appointment. If you want to bring your pill with you to your appointment, then you can take your dose following the blood test.

How much do I take?

- Your anticoagulation clinic provider determines how much warfarin you need to take (your dosage) by performing a blood test. Your dosage may change based on your blood test results. It is common for a person's dose needs to change over time especially when factors change. It is important to take your dose daily as prescribed by your anticoagulation clinic provider to ensure optimal benefits of the medication.

Blood Tests

Why do I need blood tests?

To help establish the dosage of warfarin you need, your anticoagulation clinic provider will take a fingerstick blood sample to test your INR. INR tests are very important to help your anticoagulation clinic provider determine how fast your blood is clotting and whether your dosage of warfarin should change. The INR stands for International Normalized Ratio and it is a standardized method for reporting blood coagulation with warfarin. The INR is normally around 1 in someone not on anticoagulation.

Your INR Goal is _____

If your INR is above goal, you have too much warfarin effect and have a higher risk of bleeding. If your INR is below goal, you have too little warfarin effects and have a higher risk of clotting.

When will I have to take an INR test?

When you start taking warfarin, you will generally have INR tests 2-3 times per week, then perhaps once every week. This will help your anticoagulation clinic provider give you the dosage of warfarin that is right for you.

INR tests will be needed at periodic intervals throughout your course of therapy to help keep your INR in the best range for your medical condition. INR results should be tested at least monthly. When the dose is changed, the INR will generally be checked within 1-2 weeks. It is important to follow the recommended monitoring schedule.

What things will change my INR test?

Several factors, such as sickness, diet changes, other medicines, or physical activities, may affect your INR. Tell your anticoagulation clinic provider about changes in your health, medicines, or lifestyle.

Vitamin K and Diet Considerations

Vitamin K in Select Foods

Low (<40 mcg)

Food	
Beans	Fruits including tomatoes
Butters, mayonnaise, and oils	Iceberg lettuce
Candies and cookies	Meats including fish
Cereals and breads	Pickles
Coffee and colas	Rice and pastas
Dairy Products	Other vegetables not listed on the high and medium lists (such as artichokes, cauliflower, celery, carrots corn , peeled cucumbers,

In general, these foods will not impact your warfarin therapy.

Additional dietary interaction

Large consumption of cranberry products (~0.5-2 liters of juice, 30-120 g sauce, or 1000mg capsules per day) may result in an increase in the INR for patients on warfarin. No interaction has been observed with cranberries or moderate consumption of cranberry juice (i.e. 8-16 oz glass once daily). No other juices have been documented to interact with warfarin.

Nutritional drinks such as Slim Fast and Ensure generally contain small amounts of vitamin K (e.g. 40 mcg) per serving. A single serving of a nutritional drink will not impact warfarin therapy. However, a diet including more than 1 serving of a nutritional drink may decrease the INR.

Vitamin K and Diet Considerations

Vitamin K Content of Select Foods

Medium (40-150 mcg)

Food	Portion	Vitamin K (mcg)
Asparagus	1 cup	144
Avocado	1 small	40
Black-eyed peas	1 cup	63
Broccoli—raw	1 cup	89
Coleslaw	1 cup	93
Cucumber with peel	1 large	49
Green beans	1 cup	53
Green onion	1/2 cup	104
Lettuce, romaine	1 cup	57
Lettuce, green leaf	1 cup	71
Okra	1 cup	88
Peas	1 cup	63
Plums	1 cup	65
Rhubarb	1 cup	51
Spinach—raw	1 cup	145
Watercress	1 cup	83

In general, these foods will only impact your warfarin therapy if you eat multiple servings within a short time period or have large quantities in excess of the portion sizes listed above. These foods should not impact your warfarin therapy with moderate consumption.

Side Effects

What are some possible side effects of warfarin?

The most common side effect of warfarin is bleeding in any tissue or organ. To minimize the risk of bleeding, your INR should be kept within a target range that is right for you. Please contact your anticoagulation clinic right away if you experience signs or symptoms of bleeding, such as:

- Bleeding, from shaving or other cuts, that does not stop
- Nosebleeds
- Bleeding of gums when brushing your teeth
- Throwing up blood (may be coffee-ground appearance)
- Red or dark brown urine
- Red or black, tarry stools
- More bleeding than usual when you get your menstrual period or unexpected bleeding from the vagina
- Unusual pain or swelling
- Sudden severe headache, dizziness, or weakness
- Unusual bruising (black-and-blue marks on your skin) for unknown reasons

Serious, but extremely rare, side effects of warfarin include skin necrosis (death of skin tissue) and "purple toe syndrome," either of which may require removal of unhealthy tissue and/or amputation of the affected area. These typically occur within the first 2 months of taking warfarin. Notify your anticoagulation clinic provider and physician immediately if you have these side effects.

Drug Interactions

What should you know about drug interactions?

Warfarin interacts with many drugs, including prescription and nonprescription (over-the-counter) medications. **For this reason, it is important for you to notify your clinic provider before starting, changing, or stopping any medication.**

Some of the nonprescription drugs that may interact with warfarin include:

- Acetaminophen (Tylenol®) only when used in high doses (> 2000 mg/day or > 4 Extra Strength tablets/day)
- Aspirin and other salicylates: such as various Alka-Seltzer® products, Anacin®, Bayer®, Bufferin®, Ecotrin®, Excedrin®, Kaopectate®, Maalox Total Relief®, Pamprin®, Pepto-Bismol®
- Aspirin-containing skin creams: such as Aspercream®, Bengay®, Flexall®, Super Blue Stuff®
- Aspirin-like products (also called NSAIDs): ibuprofen (Motrin®, Advil®), naproxen (Aleve®)
- Some stomach acid-reduction medications: omeprazole (Prilosec®), lansoprazole (Prevacid®), esomeprazole (Nexium®), cimetidine (Tagamet®) or ranitidine (Zantac®) [Note: Famotidine (Pepcid®) and antacids do not interact with warfarin]
- Orlistat (Alli®) an OTC weight-loss medication
- Vitamin supplements containing vitamin K. We recommended that you select a multivitamin with no vitamin K or a low dose of vitamin K (i.e. 10-25 mcg/tablet). Viactiv® calcium chews also include significant amounts of vitamin K.

Vitamin K and Diet Considerations

Vitamin K Content of Select Foods

High (> 150 mcg)

Food	Portion	Vitamin K (mcg)
Beet greens	1 cup	697
Broccoli—cooked	1 cup	220
Brussels sprouts	1 cup	300
Cabbage	1 cup	163
Collard greens	1 cup	1059
Green or black tea, dry tea leaves	1 cup	1428
Kale	1 cup	1147
Mustard greens	1 cup	419
Spinach—cooked	1 cup	1027
Swiss chard		800
Turnip greens	1 cup	851

In general, these foods can impact your warfarin therapy. We suggest that you eat a similar number of portions of these foods every week and this should be based on your dietary preference. For example, you may decide to eat 2 servings of high vitamin K foods per week. You do not have to avoid or limit these foods. It is most important that you maintain a consistent diet in regards to these foods.

Reference: <http://ndb.nal.usda.gov/ndb/nutrients/>

Vitamin K and Diet Considerations

What is vitamin K?

Vitamin K is a fat-soluble vitamin essential for making clotting factors that help the blood to clot and prevent bleeding.

How does it affect warfarin therapy?

If a patient eats excessive amounts of foods high in vitamin K content, the effect of warfarin could be antagonized (lower INR). Conversely, reduction of vitamin K intake could increase the effect of warfarin (increase INR).

Why do I need to pay attention to my diet?

Many foods you eat have vitamin K in them, and vitamin K helps your body make clots. These foods are also generally healthy foods and important to eat to maintain a nutritious, healthy diet.

Should I avoid foods with a lot of vitamin K?

No, just keep your diet consistent. Some foods that are important to a healthy diet are high in vitamin K, like leafy, green vegetables. Eat a normal balanced diet maintaining a consistent amount of vitamin K. All foods are acceptable; however, avoid drastic changes in dietary habits.

Eliminating all foods containing vitamin K from your diet is not necessary. **Remember, it is more important that you keep your diet consistent.** It is important to notify your anticoagulation clinic provider before making any major changes to your diet.

How much vitamin K intake is acceptable?

Any amount of vitamin K intake is acceptable as long as you maintain a consistent intake. Your warfarin dose will be adjusted to balance your anticoagulation (INR) level with your desired diet.

Drug Interactions - Herbal Products

What you should know about herbal products and warfarin?

Herbal and vitamin supplements may interact with warfarin. While herbals may be “natural” products, they still have the potential to cause side effects and have drug interactions. Some herbal products may have the potential to possibly increase or decrease the effects of warfarin.

In the U.S., herbal medications are not required to undergo testing for effectiveness or purity. Be aware that most herbal preparations are not standardized and potency may vary from one lot to another. Inform all of your healthcare providers if you intend to take herbal or natural products since you may need to be monitored more closely.

Do you need to tell your health care provider if you are taking or starting any herbal products?

Yes. It is very important to tell your anticoagulation clinic provider of any other products you may be taking while on warfarin. This includes herbal products, over-the-counter medications, and nutritional supplements.

Will you have to stop taking your herbal products?

Your anticoagulation clinic provider will be able to determine whether it will be safe for you to continue taking the herbal products along with warfarin. You may be able to continue taking the herbal products as long as your INR is being monitored closely.

If you are currently taking, or are thinking about taking any of the following herbal products, please mention this to your anticoagulation clinic provider.

Selected Herbal-Drug Interactions

Herbals that may DECREASE warfarin's effects (↓ INR)

Coenzyme Q10
 Ginseng
 Green tea extract
 St. John's wort
 Vitamin C (>500 mg daily)

Herbals that may INCREASE warfarin's effects (↑ INR)

Alfalfa	Dandelion	Prickly ash
Angelica root	Dong quai	Quassia
Aniseed angelica	Fenugreek	Quinine
Arnica flower	Horse chestnut	Red clover
Artemesia	Horseradish	Sweet clover
Asa foetida	Licorice root	Sweet woodruff
Bogbean	Meadowsweet	Tonka beans
Boldo	Nettle	Tumeric
Buchu	Papain	Vitamin E (>400 IU daily)
Capsicum	Parsley	Wild carrot
Cassia	Passion flower	Wild lettuce
Celery	Pau d'arco	
Chamomile		

Selected Herbal-Drug Interactions

Herbals with coagulant properties

Agrimony
 Amica
 Goldenseal
 Mistletoe

Herbals that may INCREASE the risk of bleeding in person's taking warfarin

Agrimony	Dandelion	Licorice root
Aloe gel	Danshen	Lovage root
Angelica root	Devil's claw	Meadowsweet
Aspen	Dong quai	Omega 3 fatty acids
Bilberry	Feverfew	Onion
Black cohosh	Fish oil	Policosanol
Black haw	Flaxseed	Poplar
Bladder wrack	Flaxseed oil	Reishi mushroom
Bogbean	Garlic	Rue
Borage seed oil	German sarsaparilla	Senega
Bromelain	Ginkgo biloba	Tamarind
Capsicum	Ginger	Vitamin E (>400 IU daily)
Cassia	Ginseng	Willow bark
Cayenne	Inositol nicotinate	Wintergreen
Chondroitin		
Clove		