INR 2.0-3.0

Instruction Booklet for Use of the Anticoagulant Drug

COUMADIN

1 mg

2 mg

2.5 mg

5 mg

Hadassah Center for Clinical Quality & Safety
מרכז הדסה לבקיאות ובשיקום
The purpose of this booklet is to provide information which will enable you to take the coumadin drug safely and have it work effectively. Coumadin is a drug that requires close monitoring and balancing.

Studies show that patients who participate in monitoring and balancing their coumadin dosage succeed in improving their health better than patients who do not.

This booklet contains information on coumadin: which blood tests you need to take; which foods and drugs interact with coumadin; and when you should contact your physician. It is important that you understand this information before being released from the hospital.

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**What is coumadin?**

Coumadin is an anticoagulant drug. It helps prevent blood clots in the blood vessels and is classified as a “blood-thinning drug”.

**Why do I need coumadin?**

Coumadin is used to prevent blood clots from forming or growing larger. It is often prescribed for patients with certain types of irregular heartbeat; after a clot in the legs or lungs; after heart valve replacement or vascular surgery; and for some coagulation (clotting) disorders.

**How does coumadin work?**

Coumadin blocks the activity of vitamin K (a vitamin that is found in green vegetables and certain vegetable oils). Blocking vitamin K reduces blood clotting.
What are the possible side effects of treatment with coumadin?

The main side effect of treatment with coumadin is bleeding. Slight bleeding is a common condition during treatment. Life-endangering bleeding is rare.

Additional side effects that sometimes appear: slight nausea that passes with time, skin rash and slight hair loss. Treatment given in the first trimester of pregnancy may harm the fetus.

How to identify bleeding and what to do?

It is recommended that you call your physician if any of the following occurs:

- Bruising (“black and blue marks”) or painful swelling that appears without suffering an injury
- Bleeding from the mouth or nose, coughing up bloody phlegm or vomiting blood
- Profuse bleeding from a small cut
- More bleeding than usual during your menstrual period
- Blood in your stool or black stool
- Blood in urine
- Headache, severe and prolonged backache or stomach ache
- Visual impairment
- After falling or receiving a blow to the head

How do I know how much coumadin to take?

Response to treatment with coumadin varies from one person to another. Therefore, the precise amount that is appropriate for you must be determined. In order to know if you are receiving the proper amount (dosage) of coumadin, you have to take blood tests. A dose of coumadin that is too large could cause bleeding. On the other hand, a dose of coumadin that is too small will not prevent blood clots. Therefore, it is necessary to adjust the coumadin dosage by monitoring the blood test results until the correct balance is achieved.
What is the blood test?

The blood test is called a PT (short for Prothrombin Time) test, and it measures blood clotting time.

The result is given as an INR, short for International Normalized Ratio.

The INR shows how fast your blood clots. Without treatment with coumadin, the INR result is 1. With treatment, the INR rises above 1.

The goal is to reach an INR result between 2.0 - 3.0. This is the target range. An effort should be made to reach an INR result that is higher than 2.0 and lower than 3.0.

If the result is within the target range, continue the same dosage of coumadin that you have been taking. If the value is not within the target range, it means you need to change your dosage.

If the INR is lower than 2.0, your dosage of coumadin needs to be raised. If the INR is higher than 3.0, your dosage needs to be lowered.

As a rule, it is recommended that a change of approximately 10-20% be made in the dosage you have been currently taking.

To summarize:
If the INR is lower than 2.0, raise your current dosage by 10-20%.

If the INR is higher than 3.0, lower your current dosage by 10-20%.

It is difficult to make such a small change in the daily dosage. Therefore, it is currently recommended that an overall change of about 10-20% be made in the total weekly dosage, and that the daily dosage be changed accordingly.
When should a blood test be taken?

At the beginning of coumadin use, you should take a blood test two or three times a week. If the INR is within the target range for three consecutive weeks, you need test the INR only once every two weeks.

The blood test should be taken at a fixed time. First take the test, and according to the results, take your coumadin pill.

When the INR is far from the target range, you should retest in order to verify that the result is correct.

When changing the dosage of the drug, you should check the INR more often, in order to verify that you are taking the proper dosage.

When the INR is above 4, and certainly above 5, you must consult your physician before taking coumadin.

When the INR is over 6, you should stop taking coumadin immediately. Contact your physician and with him consider taking a vitamin K pill on a one-time basis, in order to counteract the coumadin. The recommended dosage of vitamin K in such a situation is 1 mg. You should repeat the INR test a day later, and renew treatment with coumadin according to the result, taking a lower dose than you have been taking so far.
How do I decide how much coumadin to take?

There are four strengths of coumadin pills:

1 mg
2 mg
2.5 mg
5 mg

Each such pill contains a different amount of the active ingredient. The number of milligrams (mg) indicates how “strong” the pill is: a 2 mg pill contains twice as much coumadin as a 1 mg pill; half of a 5 mg pill contains 2.5 mg, and so on.

It is important to know the strength of the coumadin pills you are taking.

Make sure that you are taking the right dosage of coumadin in milligrams.

It is highly recommended that you record the daily dosage that you have taken, and total the weekly dosage every week. For your convenience, a dosage log is provided at the back of the booklet.

For example, if you take a 5 mg pill every day this week, the total weekly dosage will be 35 mg.

As previously noted, it is recommended that, if needed, you change your total weekly dose by about 10-20% overall, based on your INR result, and change your daily dose accordingly. Calculate treatment on a weekly basis. For convenience sake, start your calculation and measure your INR on the first day of the week.

The dosage calculation of coumadin is based on the INR result and the weekly dosage you have been taking up until now.
In the example given above, the total weekly dosage was 35 mg. If the INR result is 4 (slightly higher than the target range of 2.0-3.0), the weekly dosage should be lowered by 10% (by 3 mg). During this week, the total weekly dosage should be 32 mg: a 5 mg pill should be taken every day, except for one day, when half a pill (2.5 mg) should be taken.

In order to make the calculation easier, it is recommended that you use a dosage ruler (enclosed) or a simple computer program (which can be downloaded from our website).

The dosage ruler and the computer program both show you the recommended weekly and daily dosage, based on the INR results and the weekly dose you have taken so far.

Initially, consult with your family physician in order to verify that you have correctly calculated the desired dosage. With time, you will be able to balance your correct coumadin dosage independently. In all probability, you will be able to do this for yourself better than anyone else.

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**When should I take coumadin?**

Take the coumadin every day at a fixed time (before dinner, for instance). Swallow the pill with water.

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**What should I do if I forget to take coumadin?**

If you forget to take a dose of coumadin, take it immediately if no more than 12 hours have passed since you were supposed to take it. Continue to take the regular daily dosage on the following day. Do not take two doses together.
Where should I store the drug?

Coumadin should be stored in a dark, cool and dry location, out of the reach of children.

What affects the blood test?

The reaction to coumadin can be affected by food, drink, illnesses and other drugs.

What should I eat?

Vitamin K counteracts the effect of coumadin. Therefore, a significant change in your intake of foods that are high in vitamin K could affect the amount of coumadin that you need to take.

There is no need to change your usual diet.

It is recommended that you maintain a diet without extreme changes, especially with regard to foods that are high in vitamin K (see below). For example, don't stop eating green vegetables completely.

Foods With a High Vitamin K Content *

<table>
<thead>
<tr>
<th>Food</th>
<th>Vitamin K (µg/100g)</th>
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<tbody>
<tr>
<td>Parsley</td>
<td>540</td>
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<tr>
<td>Spinach</td>
<td>400</td>
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<tr>
<td>Broccoli</td>
<td>270</td>
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<tr>
<td>Lettuce</td>
<td>210</td>
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<tr>
<td>Soy oil</td>
<td>193</td>
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<tr>
<td>Brussel sprouts</td>
<td>177</td>
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<tr>
<td>Cabbage</td>
<td>145</td>
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<tr>
<td>Canola oil</td>
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<td>Mayonnaise</td>
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* micrograms/100 gram serving
Foods With a Moderate Vitamin K Content *

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<th>Food</th>
<th>Vitamin K (µg)</th>
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<td>Margarine</td>
<td>51</td>
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<tr>
<td>Olive oil</td>
<td>49</td>
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<tr>
<td>Snap beans</td>
<td>47</td>
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<td>Soybeans</td>
<td>47</td>
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<tr>
<td>Red cabbage</td>
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<td>Avocado</td>
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<td>Asparagus</td>
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<td>Peas</td>
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<td>Pickles</td>
<td>26</td>
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<td>Sauerkraut</td>
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</tbody>
</table>

* micrograms/100 gram serving

Food listings can be found at:

You may also want to consult a dietician.

INR is increased with alcohol consumption, primarily in individuals with liver disorders. It is recommended to avoid drinking wine, beer or alcoholic beverages. A small amount of wine for “kiddush” is permitted.

Drugs That Interact With Coumadin

- Certain drugs counteract the effect of coumadin. Taking these drugs could cause increased blood clotting.

- Certain drugs enhance the effect of coumadin. Taking these drugs could increase the risk of bleeding.

After starting or stopping a new drug, you should measure your INR again.

Consult your physician before taking or stopping any drug, including vitamins and “natural” medications.
There are different names for the same drug, so it is possible that you know the drug by a different name. When in doubt, please show your physician or pharmacist the following list of drugs.

### Drugs That Normally Can Be Taken With Coumadin and Do Not Require Special INR Measurements
- Acamol
- Optalgin
- Algolysin

### Significant Interactions With Coumadin by Drug Group
**Drugs that increase the effect of coumadin**

### Non-Steroidal Anti-inflammatory Drugs (NSAIDs)
- Abitren
- Acetylsalicylic Acid (Aspirin)*
- Advil
- Artofen
- Etopan
- Naxyn
- Nurofen
- Voltaren

* (The risk of bleeding with a low dose is small)

### Gastrointestinal
- Cimetidine
- Losec
- Sucralfate

### Anti-fungal
- Fluconazole
- Itraconazole
- Miconazole oral gel
- Miconazole vaginal suppositories
- Voriconazole
### Drugs that increase the effect of coumadin

- Doxazosin
- Hydrochlorothiazide

### Drugs that decrease the effect of coumadin

- Carbamazepine
- Ethinyl estradiol
- Phenobarbital

### Lipid Regulator

- Clofibrate
- Fenofibrate
- Fluvasatin
- Simvastatin

### Antibiotic

- Amoxicillin
- Augmentin
- Azithromycin
- Ciprofloxacin
- Clarithromycin
- Cotrimoxazole (Resprim)
- Erythromycin
- Flagyl
- Isoniazid
- Levofloxacin
- Metronidazole
- Rifampin
- Tetracycline

### Cardiovascular

- Amiodarone
- Diltiazem
- Propafenone
- Propranolol
- Sulfinpyrazone

### Central Nervous System for Epilepsy

- Barbiturates
- Phenytoin
- Tegretol
### Drugs that increase the effect of coumadin

**Central Nervous System for Parkinson**
- Comtan (Entacapone)
- Requip (Ropinirole)

### Drugs that decrease the effect of coumadin

### Other
- Anabolic steroids
- Azathioprine
- Fluorouracil
- Gemcitabine
- Detrusitol
- Influenza Vaccine
- Interferon
- Paclitaxel
- Raloxifene Hydrochloride (Evista)
- Tolterodine
- Tramadol
- Zileuton

### Herbal Supplements
- Boldo-fenugreek
- Ginseng
- Quillkingao
- Danshen
- Dong Quai
- Lycium Barbarum L
- PC-SPES

### Vitamins
- Fish oil
- Multivitamins
- Vitamin E
- Vitamin K
Drugs that increase the effect of coumadin

Drugs that decrease the effect of coumadin

Foods

High vitamin K content foods
- Grapefruit juice
- Mango


For every change in your diet or drug therapy, including complementary medicine and herbal remedies, it may be necessary to adjust the coumadin dosage by monitoring your blood test more frequently, until the correct balance is achieved.

For more information regarding drug interactions with coumadin, check the following:
- www.drugs.com/drug_interactions.html
- www.hsforum.com/stories/storyReader$1511

In conclusion, the following will help you use coumadin safely and effectively:

- Adjust your dose of coumadin based on the recommendations listed in this booklet. In other words, your dosage is based on the INR result and weekly dosage you have taken so far.

- Take INR blood tests regularly.

- Consult your physician before taking new drugs, including prescription drugs, non-prescription drugs, vitamins and herbal remedies.
• Notify your physician that you are taking coumadin before undergoing any surgical procedure.

• Notify your dentist that you are taking coumadin before undergoing any treatment.

• Notify your physician if there is a possibility that you are pregnant or planning a pregnancy.

Additional Reading Material

If you are interested in additional information on self-monitoring and the effects of coumadin, check the following sources:


A summary of studies showing that patient involvement in balancing the INR together with his physician is preferable to having the physician do it alone.


An article from the Journal of the American Academy of Family Physicians, which is the basis for the dosage decisions in the dosage rulers and computer program.
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<thead>
<tr>
<th>Day of the week</th>
<th>Date</th>
<th>Daily dosage</th>
<th>Cumulative weekly dosage</th>
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For further consultation, please contact:

Content: Dr. Hanan Goldberg, Prof. Mayer Brezis
Editing & Graphics: Ms. Lois Gordon

We welcome comments and suggestions for improving this booklet:

Hadassah Center for Clinical Quality and Safety
Tel: 02-6777110
Quality@hadassah.org.il

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