

Anticoagulation Clinic



Self-
measurement
and self-dosing



Nutrition



Exercise



INFORMATION

FOR PEOPLE WHO USE **ANTICOAGULANTS**



INR



Pregnancy



Anticoagulation

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WHAT IS THE PURPOSE OF THIS BOOKLET?

You have received this booklet, because your doctor has prescribed anticoagulant medication for you. This medication thins the blood. It lowers your risk of developing unwanted blood clots in your blood vessels (thrombosis).

It is important that your treatment with anticoagulants takes place as safely as possible. The medicines have to work properly, but at the same time should cause as few side effects as possible, such as bleeding. Finding this balance between intended effect and side effects is a delicate process for anticoagulants. Therefore, it is important that you take the medicines exactly as prescribed, and that you understand what your treatment entails. This booklet will help you to understand this. This booklet contains advice that can help you to achieve a safe treatment. We will focus on the treatment with a certain type of anticoagulant medication, namely vitamin K antagonists. Examples of vitamin K antagonists are acenocoumarol and phenprocoumon. However, other anticoagulants are also discussed briefly in this booklet. Sometimes you will have to use different anticoagulants at the same time.

We recommend that you read this booklet thoroughly. Do you have any questions after reading this booklet? Please do not hesitate to ask these questions. You can always discuss these questions with your general practitioner, specialist, pharmacist, nurse, or – if applicable – your Anticoagulation Clinic.

This leaflet has been published by the Federation of Dutch Anticoagulation Clinics and the Thrombosis Foundation of the Netherlands. You can find information about both organisations at the end of this booklet.

Reading guide

This booklet contains some important advice. Please read it carefully. This will be followed by an explanation about why you are receiving anticoagulants and which types of anticoagulants are available. There are different types of anticoagulants. The type of medication that you will be prescribed depends mainly on the type of condition that you have. Each condition requires a different approach. Sometimes the choice for a certain anticoagulant also depends on other considerations. In certain situations, you may be able to decide for yourself among various different anticoagulants. Your doctor can advise you in this matter.

The next section of the booklet mainly discusses the vitamin K antagonists, such as acenocoumarol and phenprocoumon. The treatment with these medications will be monitored by the Anticoagulation Clinic. The booklet provides an explanation of this process.

Do you ever use **other medications (that you have purchased)?** Never do so at your own initiative! This applies particularly to painkillers with an anti-inflammatory effect, such as aspirin, ibuprofen and diclofenac. If you use acenocoumarol or phenprocoumon, you must never use cough mixtures, laxatives and vitamin or herbal supplements at your own initiative. Always ask your Anticoagulation Clinic which products are safe for you to use.

You have an increased **risk of bleeding.** This is a side effect of your treatment. Are you worried or do you have any questions? Call your general practitioner or specialist. Are you taking acenocoumarol or phenprocoumon? Then you can also call or e-mail your Anticoagulation Clinic with your questions.

At each visit to a **general practitioner, dentist or specialist,** tell them which anticoagulants you are using.

Always take your anticoagulants **as prescribed.**

Always be sure to carry **proof of identification** with you.

Mark your **calendar** as soon as you have taken your anticoagulants. This avoids any mistakes.

Has your **urine** turned red or have your **stools** turned black? Do not hesitate and call your general practitioner immediately! Are you taking acenocoumarol or phenprocoumon? Then you should contact your Anticoagulation Clinic as well as your general practitioner.

Do you have a **fever or pain?** And would you like to take something for this? Take **only** paracetamol. Or consult your treating physician.

Has your doctor or another healthcare practitioner prescribed **new medicines** for you? Tell him or her that you are also taking anticoagulants.

Have you been admitted to the **hospital?** Always tell your doctors and nurses which anticoagulants you are using.

Take your anticoagulants at a **set time.**

If there are any **doubts, if anything is unclear or if you have any other questions** about your treatment with anticoagulants, please contact your treating physician, your general practitioner or your Anticoagulation Clinic.

Warn your general practitioner or specialist in the event of any **accidents, bleeding and large bruises.** Also inform your Anticoagulation Clinic if you are using acenocoumarol or phenprocoumon.



Specific advice if you are using acenocoumarol or phenprocoumon

- Contact your Anticoagulation Clinic immediately if:
 - you have forgotten to take your medicines
 - you are ill (flu, fever or diarrhoea)
 - you need to undergo any (outpatient) procedure or surgery
 - you start or stop taking other medicines
 - you are going to be admitted to the hospital in the near future. Bring your dose calendar with you to the hospital
 - you are unable to attend a follow-up appointment at your Anticoagulation Clinic. This also applies to checks of your self-measurement device
 - you start using fluid nutrition, tube-feeding or vitamin supplements
 - you have holiday plans
- Have you been admitted to the hospital unexpectedly? Tell your doctors and nurses about your anticoagulation treatment. Tell them that you are being monitored by an Anticoagulation Clinic.
- Show the hospital staff your dose calendar, if possible.
- Eat a varied diet and limit your alcohol consumption to a maximum of one or two glasses of alcohol per day.
- Do you want to use homeopathic or over-the-counter medicines (from the chemist)? Discuss this with your Anticoagulation Clinic before you start using these products.
- Are you on a diet to lose weight? Tell your Anticoagulation Clinic about this.



WHY ARE YOU RECEIVING ANTICOAGULANTS?

Why is a treatment with anticoagulants necessary?

Your specialist or general practitioner has prescribed a treatment with anticoagulants. This will prevent blood clots – thrombosis – from developing in your body (also read pages 35-37). Have you already experienced a form of thrombosis? Then you will be prescribed anticoagulants to prevent the clot from expanding or returning. During the treatment, your body will have the chance to break down or “encapsulate” the clot.

Various conditions or situations may give you an increased risk of thrombosis.

Examples of an increased risk of thrombosis

- the heart rhythm abnormality called atrial fibrillation
- following a DVT (deep vein thrombosis) or pulmonary embolism
- following an infarction in the heart or brain
- placement of an artificial heart valve

Can you choose between different medicines?

There are different types of anticoagulants. As described on page 4, in certain situations, you may be able to decide for yourself among various different anticoagulants. Your doctor can advise you in this matter.

Which anticoagulants are available?

Anticoagulants come in many different types and sizes. You may use anticoagulant medication that you take in a set daily dose and that does not require regular blood tests, whilst your neighbour may be using a product that does require regular monitoring by the Anticoagulation Clinic. This is because these products work in different ways. It is not indicative of the quality of your treatment.

We can distinguish four main groups of anticoagulants

- Platelet inhibitors
- Vitamin K antagonists
- DOACs
- Injections or low molecular weight heparins (LMWHs)

New guideline on anticoagulant treatment

The Guideline on Antithrombotic Policy was revised in 2016. All healthcare providers who are involved in the care of patients with an anticoagulant treatment follow this guideline. The biggest change in the guideline is that DOACs are now the first choice of treatment when prescribing anticoagulants for a number of indications. A second important change is the fact that general practitioners are now also allowed to prescribe DOACs.

This information leaflet focuses primarily on anticoagulant treatment using vitamin K antagonists.



Anticoagulants

Platelet inhibitors

For example:

- acetylsalicylic acid (aspirin protect)
- asasantin
- carbasalate calcium (ascal)
- clopidogrel (iscover, plavix, grepid)
- dipyridamole (persantin)
- duoplavin
- prasugrel (efient)
- ticagrelor (briique)

Vitamin K antagonists

For example:

- acenocoumarol (sintrom)
- phenprocoumon (marcoumar)

DOACs/NOACs

For example:

- apixaban (eliquis)
- dabigatran (pradaxa)
- rivaroxaban (xarelto)
- edoxaban (lixiana)

Injections/LMWHs

For example:

- dalteparin (fragmin)
- enoxaparin (clexane)
- nadroparin (fraxiparin, fraxodi)
- tinzaparin (innohep)
- danaparoid (organan)
- fondaparinux (arixtra)

Platelet inhibitors

Platelet inhibitors are medicines that are available in tablet or powder form. They ensure that your blood clots less quickly by making your blood platelets less sticky. Blood platelets are cells in your blood that stick to the blood vessel wall and each other as soon as the blood vessel wall is damaged.

Platelet inhibitors that are commonly prescribed in the Netherlands include acetylsalicylic acid (aspirin), carbasalate calcium (ascal), clopidogrel (plavix), dipyridamole and prasugrel. Sometimes you will be prescribed another anticoagulant in addition to the platelet inhibitor. The Anticoagulation Clinic does not need to monitor your blood if you are using platelet inhibitors.

Vitamin K antagonists

Vitamin K antagonists ensure that your blood clots less quickly. They inhibit the effect of vitamin K. Vitamin K is important in a number of steps in the blood clotting process. If you are using vitamin K antagonists, then the INR in your blood must be checked regularly. The INR is a measure of how quickly your blood clots. This says something about your risk of thrombosis. Your Anticoagulation Clinic can check your INR, but sometimes it is also possible to check this value yourself using a self-measurement device. The INR value will determine how many tablets you need to take over the next period. The number of tablets that you need to take can vary per day. The number of times that your INR needs to be determined may also vary.

Vitamin K antagonists that are frequently prescribed in the Netherlands are acenocoumarol and phenprocoumon. These medicines differ in their duration of action. Acenocoumarol has a shorter duration of action than phenprocoumon (i.e. acenocoumarol is excreted from your body more quickly). This booklet mainly discusses the treatment with vitamin K antagonists.

Are you being treated with anticoagulants (such as acenocoumarol or phenprocoumon) and do you need to undergo a procedure performed by your general practitioner, dentist or specialist? Depending on the procedure, your doctor may ask you to stop taking your anticoagulants a few days before the procedure. This may increase your risk of thrombosis to an unacceptable level, in which case your doctor will prescribe anticoagulants that are metabolised quickly during the period before and after your procedure, so-called LMWH injections. These LMWH injections will bridge the period in which you are not taking vitamin K antagonists. This bridging period usually starts several days before the operation or procedure. Following the procedure, you will be prescribed the LMWH injections together with your normal anticoagulants for a short period. Your Anticoagulation Clinic will then monitor your INR. As soon as your INR is stable again, your Anticoagulation Clinic will inform you that you may stop using the LMWH injections. ***Never stop the treatment with the injections at your own initiative!***

Direct Oral Anti-Coagulants (DOACs or NOACs)

DOACs are anticoagulants that inhibit a specific step in your blood clotting. These are fairly new medicines. DOACs are also called NOACs; these are the same types of anticoagulants. They slow down/block the effect of a single clotting factor. As a result, the anticoagulant effect of DOACs is easily predictable and monitoring of your blood is not necessary. Therefore, you no longer need to visit the Anticoagulation Clinic. The DOACs have fewer interactions with other medicines. There are no interactions with food. DOACs are available as tablets or capsules. You take a set number of tablets or capsules per day. You no longer need to visit

the Anticoagulation Clinic. This means that you are responsible for ensuring that you take the correct amount of medicines at the correct time. If you do not take the medicines or take them incorrectly, then the medicine will not work. This will increase the risk of a clot or bleeding. Your pharmacist or treating general practitioner/specialist can give you tips to help you to take your treatment properly. If you are using DOACs, your kidney function needs to be checked once a year. The kidneys play an important role in the processing of the DOACs in the body.

DOACs used in the Netherlands are apixaban, dabigatran, edoxaban and rivaroxaban. There are small differences between the four products, for example dose frequency (once or twice per day), interactions with other medicines and when a dose adjustment would be required. Consult your treating physician if you want to know more, or visit the websites of the Thrombosis Foundation of the Netherlands (www.trombosestichting.nl) or the Federation of Dutch Anticoagulation Clinics (www.fnt.nl).

Injections or: low molecular weight heparins (LMWHs)

Low molecular weight heparins (LMWHs) are anticoagulants in the form of injections. You or your carer can administer these injections under your skin. Examples of LMWH injections include nadroparin (fraxiparin and fraxodi) and tinzaparin (innohep). Your doctor will determine the amount of LMWH that you need to receive based on your weight and the indication for your anticoagulant treatment. The anticoagulant in the LMWH injections starts working immediately. The effect lasts for a shorter period compared to vitamin K antagonists. This can offer a benefit in certain situations, particularly when trying to reduce your risk of thrombosis during a shorter period.

For example, this may be the case if

- you need to have orthopaedic surgery (such as a hip or knee operation)
- you need to be on bed rest for a while
- you are pregnant and have thrombosis
- you are pregnant and have an increased risk of developing thrombosis
- you have recently suffered a thrombosis or embolism and are not yet stable on your dose of vitamin K antagonist (see below)
- you are already using anticoagulants and need to undergo an operation or procedure; the treatment will *bridge the gap*

Sometimes you will be prescribed the injections for a longer period, for example if you have cancer. People with cancer sometimes struggle to achieve a stable dose of anticoagulants. In that case, treatment with LMWH injections is a better alternative to reduce your risk of thrombosis as far as possible. This treatment will always take place on the advice of your treating specialist.

Have you recently suffered a DVT (deep vein thrombosis) or pulmonary embolism? Then your doctor will prescribe LMWH injections in combination with a vitamin K antagonist (see page 08). In that case, the injections will provide immediate protection against further growth of the clot. The vitamin K antagonists will also offer this protection, but their effect will not start immediately. It often takes a while before the optimum dose of vitamin K inhibitors has been set. As soon as you are set on a stable dose of vitamin K antagonist, the Anticoagulation Clinic will tell you that you may stop using the LMWH injections. ***Never stop the treatment with the injections at your own initiative!***

Your treatment and bleeding

Anticoagulants ensure that your blood clots less quickly. This reduces your risk of all forms of thrombosis. At the same time, this slower blood clotting also causes you to bleed more easily.

Therefore, it is important that you take the medicines exactly as prescribed, and – if you are using vitamin K antagonists – that you follow the advice from your Anticoagulation Clinic closely. This will prevent any serious damage as a result of bleeding. (also read “Warning signs of bleeding”).

! Warning signs of bleeding

Are you using anticoagulants? Then you will bleed more quickly, for longer and more heavily than someone who is not taking these medicines. This is a side effect of your treatment. However, there are situations where you need to seek help immediately. For example, always contact your general practitioner (and your Anticoagulation Clinic, if applicable) immediately if:

- your urine turns red
- your stools turn black
- you experience loss of function (for example, if you are no longer able to move your arm or leg properly or if your speech is slurred)
- you experience sudden, severe pain (for example in your abdomen)
- you have a bruise that is larger than the size of a beer mat
- you suddenly develop more than five bruises
- you suffer a prolonged nosebleed (longer than about half an hour)
- you cough or vomit up blood
- you notice that you have bleeding anywhere else

YOU HAVE BEEN PRESCRIBED ANTICOAGULANTS. WHAT NOW?

Duration of the treatment

Your doctor has prescribed anticoagulants for you. Your doctor has also considered how long you will need to use this anticoagulant. In other words, he or she decides about the duration of your treatment, not the Anticoagulation Clinic. The duration of your anticoagulant treatment depends on your condition and/or medical situation. Some conditions require life-long treatment with anticoagulants.

You will receive life-long treatment with anticoagulants if you

- have the heart rhythm abnormality called atrial fibrillation
- have a mechanical artificial heart valve
- have suffered more than one instance of DVT or pulmonary embolism with an unknown cause, or for which the cause cannot be removed

Some conditions require only temporary use of anticoagulants. In that case, your treatment usually lasts less than three months. After this period, your treating doctor will make a new assessment. Your treatment with anticoagulants will only stop once your risk of thrombosis has become small or has disappeared altogether. Sometimes your treatment will also stop if your risk of bleeding has become very high.

Registering with the Anticoagulation Clinic

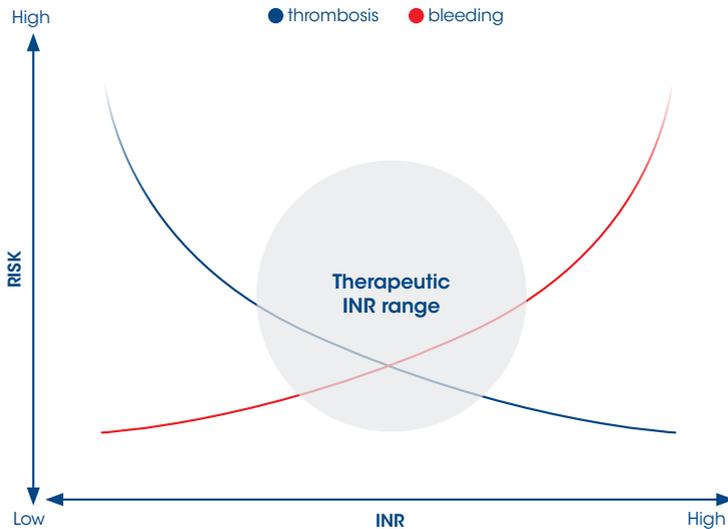
As soon as you are prescribed acenocoumarol or phenprocoumon, your doctor will register you with the Anticoagulation Clinic. Your doctor will tell the Anticoagulation Clinic which medication you are using, the reason why you have been prescribed an anticoagulant and how long you require treatment. Your doctor will also tell the Anticoagulation Clinic how many tablets you should take during the first few days. The Anticoagulation Clinic will then schedule an appointment for your first blood sample collection and an intake meeting. This happens automatically. After this first appointment, you can discuss with your Anticoagulation Clinic whether you would be eligible for self-measurement and possibly self-dosing.

Your check-ups by the Anticoagulation Clinic will be performed at a blood collection facility, unless medical reasons necessitate home visits by your Anticoagulation Clinic. You can read more about this on page 13.

INR

The term "INR" will be mentioned during your first visit to the Anticoagulation Clinic. INR is an abbreviation of the term International Normalized Ratio. The INR is a measure of how quickly your blood clots. It is important to have your INR measured regularly. This allows doctors to monitor the effect of your treatment. If the effect of the medication is too weak or too strong, then this can be adjusted by prescribing more or fewer tablets. You will have to provide a small blood sample in order to measure your INR.

Your INR will normally have a value around 1. When you start taking vitamin K antagonists, your INR will be higher. This means that your blood will clot more slowly, which reduces your risk of thrombosis. This is what your treatment is supposed to do. However, your INR should not become too high, as this increases your risk of bleeding. Your INR should preferably fall within a certain margin, within which your risk of thrombosis and your risk of bleeding are both as low as possible. We call this the therapeutic range. Your treating doctor will determine this range. The therapeutic range depends on the reasons why you are using anticoagulants.



Your INR can fluctuate. There can be many reasons for these fluctuations (see page 16). As there are so many factors that can influence your INR, regular monitoring of this value is necessary. How often your INR needs to be checked varies from person to person. Usually, your INR will need to be checked more often at the start of your treatment than later on in your treatment.

The frequency of checks of your INR is not indicative of how healthy you are. It is indicative, however, of the effect of your anticoagulant treatment. There is no point in measuring the INR when receiving treatment with another type of anticoagulants – the DOACs – as this value is not affected by the use of DOACs. LMWHs and platelet inhibitors also do not affect the INR, meaning that measurement is pointless.

Self-measurement or monitoring by the Anticoagulation Clinic?

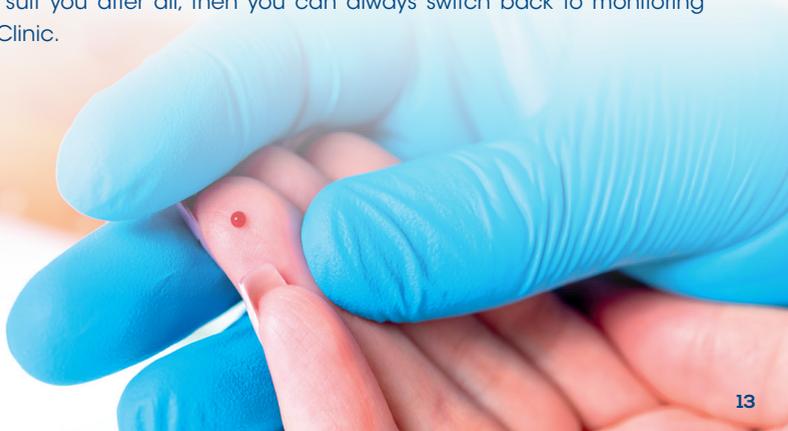
It is important to check your INR yourself or have your INR checked regularly. This allows for monitoring of the effect of your anticoagulant treatment and adjustment where necessary by changing the number of tablets that you need to take (the dose). In the Netherlands, these checks are performed by the Anticoagulation Clinic. You can have your blood tested by your Anticoagulation Clinic, but you can also indicate that you wish to monitor your INR yourself using a self-measurement device, under the supervision of the Anticoagulation Clinic (also see box on "Self-measurement and self-dosing"). Have you decided to have your blood monitored by your Anticoagulation Clinic? Then an employee from the Anticoagulation Clinic will collect your blood sample. You will receive a notification every time you are due to go to the outpatients' clinic or blood collection facility of your Anticoagulation Clinic. Your blood samples can also be collected at home, if there are valid medical reasons for this.

Would you prefer to monitor your INR yourself? Ask your Anticoagulation Clinic about the options. There are a number of medical reasons for which it is not possible to self-measure. Your Anticoagulation Clinic can give you information about this. Self-measurement is done using a self-measurement device that you receive on loan from your Anticoagulation Clinic. You prick your finger with a special needle pen and place a drop of blood on a test strip, which you then insert in the self-measurement device. After a few seconds, the result of the measurement will appear on the screen of the device. You then pass the result on to your Anticoagulation Clinic. In general, you should have access to a computer with an internet connection if you want to self-measure. However, this is not always a pre-condition for self-measurement. You should always inform your Anticoagulation Clinic that you are interested in self-measurement, even if you do not have a computer with internet connection.

The benefits of self-measuring and self-dosing are

- you can determine your INR at home or while you are on holiday
- the finger prick forms less of a burden
- greater freedom and independence
- no waiting times

Your Anticoagulation Clinic can give you information about this. If you find that self-measuring or self-dosing does not suit you after all, then you can always switch back to monitoring by the Anticoagulation Clinic.



When should you (immediately) contact your Anticoagulation Clinic?

It is important for you to realise that good communication between yourself and your Anticoagulation Clinic is an absolute requirement for safe anticoagulant treatment. This applies if self-measure, but also if your blood samples are collected by your Anticoagulation Clinic.

Why is communication so important?

Your Anticoagulation Clinic takes your health situation into consideration when determining the dose of your tablets. Sometimes your situation might make it necessary to change (temporarily) the number of pills that you need to take. The aim is to keep your INR within your INR range. This keeps your risk of thrombosis and bleeding as low as possible. It is therefore very important that you tell the staff member at the Anticoagulation Clinic about any changes to your health.

For example, if

- you have become ill during your anticoagulant treatment (includes fever, diarrhoea, vomiting)
- you need to undergo an operation or procedure, or need to have an injection in a muscle
- there are changes to your use of medication
- you have suffered more bruises recently, or for example bleeding in the eyes

The staff member at the Anticoagulation Clinic will record this information and pass it on to the doctor at your Anticoagulation Clinic. He or she will take this information into consideration when giving or approving a dose advice. Do changes occur in the time between check-ups? Please contact your Anticoagulation Clinic (by telephone). Also mention any problems with or questions about the treatment. If necessary, the Anticoagulation Clinic will perform an extra check-up or advise you to perform an extra check-up with your self-measurement device. In certain situations, you will have to contact both your general practitioner and – if possible – your Anticoagulation Clinic immediately. Please read the box “Warning signs of bleeding” on page 10.

Stopping the treatment

Your treating doctor will tell your Anticoagulation Clinic when you may stop taking your anticoagulants. Sometimes your doctor will inform your Anticoagulation Clinic about this stop date at the start of your treatment. Your Anticoagulation Clinic will inform you when the end date of your anticoagulant treatment is approaching. Never stop taking your anticoagulants at your own initiative!

It may sound strange, but you do not have to reduce (taper) the use of anticoagulants. You can stop taking the treatment at any moment without any problems after your Anticoagulation Clinic has told you to do this. However, it is important to contact your general practitioner or specialist immediately if you notice symptoms after stopping treatment that could point to a new thrombosis. Some people seem to be very susceptible to (repeat) formation of a thrombosis. A more lengthy treatment with anticoagulants may be necessary in that case.

HOW SHOULD YOU USE ANTICOAGULANTS?

Monitoring and dosage

Usually, your INR will need to be checked more often at the start of your treatment with acenocoumarol or phenprocoumon, sometimes several times per week. This is done to ensure that you reach a stable INR as soon as possible. Your Anticoagulation Clinic can tell you when you are stable. Once this is the case, the Anticoagulation Clinic will tell you that you can use a dose schedule for a longer period. This schedule will be sent to you, or you will create your own schedule under the supervision of your Anticoagulation Clinic. You will receive a dose calendar on the same day as (by e-mail) or the day after (by post) blood sample collection. This calendar states exactly how many tablets you need to take every day during the upcoming period.

This dose calendar is personal. Your dose may differ from the dose received by other patients at the Anticoagulation Clinic. The number of tablets that you need to take per day is not indicative of how healthy you are. The dose calendar also states the date of the next check-up. If you perform self-measurement and self-dosing, then your Anticoagulation Clinic will check whether you are monitoring your INR at the correct times and whether you are using the correct dose. These checks are usually performed via the computer, with the Anticoagulation Clinic being able to view the data that you have entered. If adjustments are required, a staff member from the Anticoagulation Clinic will let you know as soon as possible.

What exactly does self-management entail? When we use the term self-management, we are referring to self-measurement and self-dosing. Self-measurement means that you monitor your INR yourself using a self-measurement device. Self-dosing goes one step further. In that case, you set up your own dose schedule based on your INR. This does always take place under the supervision of your Anticoagulation Clinic. Most Anticoagulation Clinics offer you the choice of only self-measuring or teaching you a combination of self-measurement and self-dosing. If you opt for self-measurement, your Anticoagulation Clinic will set your dose schedule based on the INR that you measure.

Do you want to learn how to self-measure and/or self-dose? Please register for an (online) course offered by your Anticoagulation Clinic's training centre. You will learn how to collect a blood sample by means of a finger prick and you will receive instructions about measuring your INR. You will also receive detailed information about the background to your anticoagulant treatment. Would you like to self-dose? Then the extra training will also discuss the correct dosing of the tablets. The courses that you follow for self-management usually last half a day to a full day.

Once you have completed the training session(s) successfully, the training centre will continue to supervise you for a set period. After this period, the Anticoagulation Clinic will call you in regularly to check your self-measurement device and your needle technique. The Anticoagulation Clinic staff member will also discuss your self-measurement results with you and (if you are self-dosing) the dose schedules that you have created. **Ask your Anticoagulation Clinic for information about how you can register for self-management training.**

Taking the medication

It is important that you always take the anticoagulant tablets as agreed with your Anticoagulation Clinic or as stated on your dose calendar. You have to take the number of tablets set for a specific day in one go. Place a cross on the dose calendar immediately after taking the tablets, or clearly strike through the dose. This avoids any mistakes. We recommend that you take the tablets at a set time, with your evening meal.

More or fewer tablets

After checking your INR, it may be necessary to change the number of tablets. The blood test will have shown that the anticoagulant effect of the medicines in your blood is too high or too low at that moment. It does not mean that your condition has become better or worse! The effect of the anticoagulant tablets can vary over time. Sometimes there is a logical explanation for this, sometimes it happens "spontaneously".

Fluctuations in INR

Your INR can fluctuate. There can be many reasons for these fluctuations.

For example

- Diet
- Effect of other medicines
- Failing to take your medicines as instructed
- Conditions such as diarrhoea, fever, vomiting and dehydration
- Other diseases, such as liver or thyroid diseases, cancer or kidney conditions
- Stress
- Large variations in exercise
- Large changes in weight, some weight-loss programmes
- Changes in living conditions
- Alcohol
- Holiday
- Hereditary predisposition

Do one or more of the circumstances listed above apply to you? And/or does your INR fluctuate a lot? Please always contact your Anticoagulation Clinic. Together, you may be able to find the cause of these fluctuations and act accordingly. Unfortunately, it is not always possible to find a good explanation for a strongly fluctuating INR.

Effect of other medicines

Many medicines can influence the effect of anticoagulant tablets. They can strengthen or reduce the effect. The effect that a medicine has on anticoagulant tablets can vary from one person to the next. Therefore, it is very important that you always tell your Anticoagulation Clinic and your pharmacist about any other medicines – from the chemist and pharmacy – that you are using. The same applies if you stop taking these medicines.

Have you bought over-the-counter medicines or naturopathic medicines (such as herbal or vitamin preparations)? Always check with the Anticoagulation Clinic whether you can use these products in combination with your anticoagulant tablets. Also read the package leaflet of these products thoroughly. For a safe treatment, it is very important that you discuss the use of any other medicines with your Anticoagulation Clinic and your pharmacist. The pharmacist will inform the Anticoagulation Clinic about the start – and if applicable the end – of the use of medicines that could affect the anticoagulant treatment.

Side effects

The most important side effect of anticoagulants is directly related to the aim of these medicines. As blood clotting is inhibited, you have a higher risk of bleeding. Even with correct adjustment of the treatment, your wounds will bleed for longer than normal. Another unpleasant side effect of certain anticoagulants is hair loss and/or itching. This affects a small number of patients. In that case, please contact your general practitioner for advice.

Are you suffering from side effects? There is a central organisation in the Netherlands that registers both the effects of medicines and the interactions of medicines with each other. This Dutch Pharmacovigilance Centre is called Lareb. As all reports are collected at a central point, Lareb can monitor the safety of medicines in the Netherlands. To do this, it is important that as many people as possible report side effects. You can also report a side effect to Lareb yourself, via the website www.meldpuntbijwerkingen.nl. You can enter any side effect that you think is worth reporting. Of course Lareb will treat any information that you submit in the strictest confidence.

bijwerkingen centrumlareb

For more information, visit: www.meldpuntbijwerkingen.nl



SPECIFIC SITUATIONS DURING YOUR TREATMENT WITH ANTICOAGULANTS

Operations or procedures

Are you due to undergo an operation or procedure in the near future? Sometimes you will have to stop taking your anticoagulants temporarily, because this would pose too great a risk of severe bleeding during the procedure. And sometimes your anticoagulant treatment needs to be “bridged” temporarily with another anticoagulant, namely LMWH injections (see also page 09). This will happen if you have to stop taking your anticoagulant treatment in the time before and after your operation and the resulting risk of thrombosis is deemed too high. Your treating doctor will decide what the best choice is in your situation. This means it is very important that you always tell your doctor and the Anticoagulation Clinic if you need to undergo an operation or procedure. It is also important that you pass on the instructions from the doctor who is going to perform the procedure to the Anticoagulation Clinic. Minor procedures, such as the removal of one tooth or molar, usually do not require your treatment to be stopped or bridged. However, your INR will always need to be monitored, as it must not be too high. Therefore, even if you only need to undergo a minor procedure, you must always consult before the procedure your Anticoagulation Clinic and the doctor who is going to perform the procedure (e.g. the dentist, maxillofacial surgeon, dermatologist or other treating doctor).

Holiday

Are you going on holiday? Please ensure that arrangements are made to continue your anticoagulant treatment during your holiday. Always consult your Anticoagulation Clinic in sufficient time before your departure.



Take the following measures before your departure

- Always tell your Anticoagulation Clinic about your holiday plans in your own country or abroad (preferably as soon as possible)
- Ask your Anticoagulation Clinic for a “holiday letter”. This letter describes (in another commonly spoken language, if necessary) which anticoagulants you are using, what your last INR value was and which dose schedule you have been following recently
- Speak to your Anticoagulation Clinic about how you will contact them from your destination if necessary (do not forget to write down telephone and fax numbers and e-mail addresses!) Also discuss how you will deal with any time differences
- Discuss with your Anticoagulation Clinic whether it is possible to schedule the doses of your medicines “around” your holiday period. If this is not possible, you will have to have your INR checked at your holiday address
- Do you need to have your INR checked at your holiday address? Foreign countries do not always have Anticoagulation Clinics like we do here in the Netherlands. However, almost all hospitals in foreign countries will be able to determine your INR. Therefore, check before your departure which hospitals are located near your holiday address. The laboratory in these hospitals can determine your INR and

then you can inform your Anticoagulation Clinic about the measured INR. Your own Anticoagulation Clinic will then advise you about the dose schedule. Discuss this procedure with your Anticoagulation Clinic before departure and make clear arrangements about this

- Are you using a self-measurement device? Take a letter with you in English explaining what the device is used for. Ask your Anticoagulation Clinic for such a letter
- It is sensible to take out travel insurance that also covers additional medical costs (the medical costs that are not covered by your healthcare insurance company)
- If you need any vaccinations, discuss this with the doctor from your Anticoagulation Clinic first. If you require injections in the muscle (intramuscular), then your anticoagulant treatment can be adjusted temporarily if you have a high risk of (severe) bleeding in the muscle. Most injections can be administered subcutaneously
- Have your INR checked several days before departure
- If applicable, tell your travel guide about your medical situation
- Take your dose calendar with you (if travelling by air: in your carry-on luggage)
- Are you travelling to a foreign country? The anticoagulant tablets that you receive in the Netherlands may not be available in other countries. Therefore, take double the amount of anticoagulant tablets with you for that period. This ensures that you will have enough tablets with you if you need to extend your stay (for example, due to strikes, or in case of illness of you or your travel companion)
- Are you staying in the Netherlands for your holiday? You can have your blood checked at any Anticoagulation Clinic in the Netherlands. Look up the address and telephone number of the Anticoagulation Clinic near your holiday address before you travel there. You can find these details on the website of the Federation of Dutch Anticoagulation Clinics (www.fnt.nl)
- Are you travelling by air?
 - If you use a self-measurement device, pack it in your carry-on luggage
 - Also pack some of your medication in your carry-on luggage. Divide the remaining medication over different pieces of luggage, in case a piece of luggage goes missing
 - Take extra medication with you in case your return flight is delayed
 - Follow the advice for flights lasting four hours or more (see box "Tips for air travel" on page 21)
- Ask the Thrombosis Foundation of the Netherlands to give you a free Anticoagulation Pass (see page 31-33). This is a pass the size of a credit card, which describes in Dutch and in English which anticoagulant medication you are using and who to contact if something happens to you (family and Anticoagulation Clinic or general practitioner)
- Also consider buying a European Medical Passport from your general practitioner or pharmacy. This contains information about your use of medication, illness and conditions. You can ask your general practitioner to complete this passport

! Tips for during your holiday

- Take possible time differences into consideration. If you are only spending a short period in a country with a different time zone, it is best to continue taking your anticoagulant tablets at your usual "Dutch time". Always discuss this with your Anticoagulation Clinic. If you are spending a longer period in a country with a different time zone, then it is better to take your tablets at your usual time, converted to the local time zone. Keeping to your daily habit will reduce the risk of you forgetting to take your tablets. Before you leave, ask your Anticoagulation Clinic how to switch your usual time for taking your medication to a different time zone.
- Try not to deviate too much from your normal eating pattern. Also do not consume large or varying quantities of alcohol
- Do you want to travel to a region that is more than 2,500 metres above sea level? We strongly discourage this! The risk of both bleeding and thrombosis increases at high altitude. Your INR can also become disrupted. It is often difficult to have your INR checked in such locations, and the measurements performed with your self-measurement device are not reliable at such altitudes. Discuss this with your Anticoagulation Clinic before you leave
- Do you take part in mountaineering? Be aware of the dangers of accidents. You have an increased risk of (major) bleeding. Do not take unnecessary risks
- The temperature in warm countries can have an extra effect on your INR. It may be necessary to check your INR more often. Discuss this with your Anticoagulation Clinic
- The reason for your anticoagulant treatment may prevent you from sunbathing for long periods. Discuss this with your specialist
- Intestinal infections with severe diarrhoea can affect your INR. You need to have your INR checked if you suffer diarrhoea for more than two days
- Have your INR checked immediately if you suffer bruising, nosebleeds or unexpected bleeding



Have you recently suffered a thrombosis? Discuss your holiday plans with your doctor. You may require more intense monitoring by your Anticoagulation Clinic and additional checks may need to take place at your holiday address. Your doctor and Anticoagulation Clinic can advise you about this.

! Tips for air travel

People who take anticoagulants sometimes worry about travelling by air. However, in many cases there is no need for concern. Of course, it is important to ask your specialist for permission to travel. Discuss your travel plans with him or her and with your Anticoagulation Clinic. Always follow the instructions given by your Anticoagulation Clinic and your specialist closely. If your INR is stable, you can usually travel without major problems, provided that you feel well, of course.

In addition, the following advice applies:

- keep your calf muscles moving
- take a walk up and down the aisle at least every two hours
- do not drink alcohol or coffee
- do not wear tight clothing
- consider taking your shoes off
- drink plenty of water without being excessive
- do not use sleeping pills
(as you relax during sleep, your blood flow decreases)
- consider wearing compression stockings on both legs
- check your INR just before you leave

Are you no longer using anticoagulants, but have you been treated for thrombosis in the past? A long period of air travel (more than four hours) may result in reduced blood flow. This increases your risk of thrombosis. This also applies to long journeys by car or by bus. Therefore, always follow the advice provided above. In addition, check with your general practitioner or specialist whether any other precautions are required, such as wearing compression stockings and/or using LMWH injections.

Nutrition

Did you know that what you eat and drink can have an effect on acenocoumarol and phenprocoumon? This is due to the fact that all our food contains vitamin K. Vitamin K is a very useful vitamin, but it can also cause your anticoagulant tablets to be less effective. Acenocoumarol and phenprocoumon inhibit the effect of vitamin K in your body (the INR increases), whilst the vitamin K in your diet can counteract this effect (the INR goes down). Are you no longer allowed to consume any vitamin K? No, that is definitely not the case; it is even very unwise to consume very little vitamin K. This can actually cause major fluctuations in your INR.

What is the best dietary advice? The general rule is: if you eat a normal and varied diet, then the food you eat usually will not affect your anticoagulant treatment. You definitely do not have to follow a strict diet. However, it is sensible for you to know a little bit more about vitamin K in your diet, so that you understand what effect your diet can have on your INR.

Certain foods contain a lot of vitamin K. For example, green vegetables (spinach, endive or lettuce) and cruciferous vegetables (kale, Brussels sprouts and broccoli). You can continue to eat these products without any problems, but it is advisable to vary them with other foods. For example: if you eat a vegetable rich in vitamin K, such as kale, on one day, then the next day try to eat a vegetable that does not contain as much vitamin K, such as tomatoes. This limits the effect on your INR and therefore on your anticoagulant treatment.

It is also important to continue eating a varied diet whilst on holiday. Try not to deviate too much from your normal eating pattern. Sometimes this is difficult, because different cuisines have different amounts of vitamin K. For example, the oriental cuisine contains relatively low levels of vitamin K. This could have an effect on the stability of your anticoagulant treatment. Discuss this with your Anticoagulation Clinic before you travel.

Are you dieting to lose weight? This can directly affect your INR. Therefore, always discuss a potential diet with your specialist or general practitioner and your Anticoagulation Clinic first.

Are you on a liquid diet or enteral nutrition? Tell your Anticoagulation Clinic when you start using these products. These products contain vitamin K. Your INR may decrease as a result and the dose of your anticoagulant may need to be adjusted. You should not stop using this liquid diet or enteral nutrition for this reason; your doctor or dietician has prescribed it because it is important for your health. There is also a national arrangement for pharmacists and dieticians to inform the Anticoagulation Clinic when you are prescribed a liquid diet or enteral nutrition.

Exercise

Are you being treated with anticoagulants? And/or have you suffered a DVT? Usually it is quite possible to (continue) play(ing) sports and to exercise. In fact: sports and exercise are often beneficial. It reduces your risk of (another) thrombosis and provides many other health benefits, such as lowering your blood pressure and reducing your risk of osteoporosis (brittle bones).

How do you choose a good sport or form of exercise? The most important thing is to choose a form of exercise that suits you and your daily life. Walking and cycling are good examples. Try to find alternatives that appeal to you as well, for example for when it is cold or raining. It is also important to be extra cautious if the sports that you want to take part in increase your risk of injuries. Contact sports such as boxing and judo are strongly discouraged. Caution is advised with other contact sports, such as (indoor) football. Your anticoagulant treatment means that you have an increased risk of bleeding and any injuries can result in severe bleeding. This can result in permanent damage. Do not take unnecessary risks. Please always contact your general practitioner and your Anticoagulation Clinic if you do get injured (particularly if you have a head injury). Once you have chosen a form of exercise, please also ensure that you move around at least once every two hours during the day. This means, for example, that walking to the shops is a good way of getting some daily exercise. Your general practitioner or physiotherapist can help you with making a choice.



Have you suffered a thrombosis or pulmonary embolism? You can usually start playing sports or exercising again as soon as you start taking anticoagulants. Sometimes you can start very quickly, for example after two weeks. Always discuss this with your specialist first; sometimes there may be other reasons why you should not start playing sports or exercising yet. Once you have started exercising again, it is important that you only go as far as your pain allows. If you experience any pain, slow down a bit or even stop. You will notice the pain gradually decreasing.

Stress

It is difficult to determine whether stress has an effect on your anticoagulant treatment. In practice, we see that the INR of people who are using vitamin K antagonists often increases in stressful situations. Stress hormones may cause disruption in the functioning of the liver and/or intestines. This can have an effect on your anticoagulant treatment.

Becoming pregnant, pregnancy and breastfeeding

Do you want to become pregnant and are you using anticoagulants? An anticoagulant treatment does not have to pose a problem for a pregnancy. However, it is very important that you determine the best "course of action" together with your treating doctors:



- ① Has your doctor prescribed anticoagulant tablets for a short, defined period? Then it would be better not to become pregnant during this period. Be sure to use reliable contraception. Your doctor can advise you in this matter.
- ② Do you want to become pregnant whilst receiving anticoagulant treatment (also read point 1)? Please contact your general practitioner or your treating specialist first and the doctor at your Anticoagulation Clinic. Together you can discuss the best course of action.

- 3 Do you think that you might be pregnant at the start of or during your anticoagulant treatment? Inform your general practitioner or treating specialist and your Anticoagulation Clinic immediately (the same day). If you are pregnant, your anticoagulant tablets (acenocoumarol, phenprocoumon or DOACs) will be stopped immediately and will generally be replaced by a LMWH. Vitamin K antagonists can cause birth defects. This is true particularly during the first three months of the pregnancy. The risk becomes much smaller after this period. There is no information about the safety of DOACs during pregnancy, so these products may not be taken at any time during the pregnancy. In general, an LMWH (also refer to page 09) is recommended for use during pregnancy. These products do not cross the placenta and can be used during pregnancy. It is important that you discuss all of this thoroughly with your doctor or treating specialist.
- 4 Have you developed thrombosis during your pregnancy? You will then be prescribed anticoagulants. The starting points as described under point 3 will apply.
- 5 Are you going to start taking vitamin K antagonists such as acenocoumarol or phenprocoumon again after giving birth and are you breastfeeding? The active ingredient in these products is not or hardly excreted in your breast milk. In addition, any baby who is breastfed will receive drops of vitamin K regularly to prevent bleeding. Therefore, you can breastfeed safely during your treatment with vitamin K antagonists.

! Avoid getting pregnant if you are using anticoagulants. Always consult your doctor or treating specialist about contraception or your desire to become pregnant.

Children

Anticoagulants are usually prescribed to elderly people. However, children might need to use these products too. Their treatment is the same as that for adults. In general, the anticoagulants will not cause any extra side effects or negative consequences in children. However, it is advisable to stop your child from playing sports in which he/she is likely to become injured, due to the increased risk of bleeding as a result of the treatment. It is also important to be wary of any injuries and hard falls or bumps, particularly if these are associated with a head injury! In these cases and/or if bleeding occurs, always contact your child's general practitioner and the Anticoagulation Clinic immediately.

DO YOU HAVE ANY OTHER QUESTIONS? YOU MIGHT FIND THE ANSWER HERE!

Can I lie in the sun and for how long?

The reason why you have been prescribed an anticoagulant treatment may prevent you from sunbathing for long periods. Discuss this with your specialist.

Can I go to the sauna?

We do not recommend visiting a sauna during the first two months after the start of your anticoagulant treatment and/or thrombosis. After this period, there are no known harmful effects of visiting a sauna. If your specialist gives you permission, you can then visit a sauna.

Can I go diving?

No. Diving and deep sea diving are not permitted if you are using anticoagulants. You are at risk of bleeding in your eyes and ears from a depth of 5 metres. The blood that is released can severely obstruct your vision and your ability to communicate. You may snorkel at the surface, to a depth of no more than 3 metres.

What should I do if I suffer an intestinal infection (diarrhoea)?

Ask your doctor for advice as soon as possible. Intestinal infections can cause severe diarrhoea, and your INR can become severely disrupted if you have diarrhoea. It is therefore very important to treat the diarrhoea. The medicines that are prescribed to treat severe diarrhoea can also affect your INR. Always seek a doctor's advice as soon as possible and tell him/her that you are taking anticoagulants. Extra monitoring of your INR is essential.

Can I get a tattoo whilst taking anticoagulants?

Getting a tattoo should not pose any problems. Just remember that your INR should not be too high when getting the tattoo. Therefore, you must ask your Anticoagulation Clinic to adjust the amount of anticoagulant tablets first. If you have a high risk of thrombosis, then the procedure may need to be bridged with LMWH injections (see page 09). If you have recently suffered thrombosis, it is best to wait before getting a tattoo. Ask your Anticoagulation Clinic for advice about this.

I have another question. Who can I speak to?

Do you have questions that are not listed here and are you unable to find any answers in this booklet? Ask your doctor, nurse or Anticoagulation Clinic for advice.

WHAT WILL YOUR TREATMENT COST (YOU)?

! Do you have any questions about your invoice?
Please consult your Anticoagulation Clinic's website or ask them for an explanation.

Treatment with anticoagulants and any monitoring thereof (by the Anticoagulation Clinic or using self-management) is covered by your basic healthcare insurance. This means that your insurance covers all the costs of your treatment. Do remember that your health care insurance has a "deductible excess". This is the amount that you need to pay yourself, before your healthcare insurance provider will reimburse your healthcare costs. The government determines the obligatory deductible excess on an annual basis. In addition, you can opt to have a voluntary deductible excess. You can determine the level of this voluntary deductible excess yourself.

When you start using vitamin K antagonists, if you have not yet incurred any other healthcare costs, then you will first have to pay from your compulsory and voluntary deductible excesses. You pay this amount "out of your own pocket". All costs of the treatment after making this deductible excess will be covered by your healthcare insurance provider.

If you are living in a care facility where you are also receiving treatment, then the costs fall under the Long-term Care Act.

The cost of your anticoagulant treatment may differ from that of another family member with a different healthcare insurance provider. This is due to the fact that the Anticoagulation Clinic negotiates contracts with all the healthcare insurance providers. However, there is a national maximum rate for your anticoagulant treatment.

PRIVACY

Every patient at the Anticoagulation Clinic has a right to privacy. There is a special law to promote the careful use of your personal data and that allows you to check this information yourself: the Personal Data Protection Act.

Medical information will be treated confidentially by the Anticoagulation Clinics. The Anticoagulation Clinic will only share information with the healthcare providers involved in your treatment (such as your dentist, nursing home, neighbourhood or home nursing services) if this is in the interest of your treatment and therefore your safety. All doctors and employees of the Anticoagulation Clinic are obliged to maintain confidentiality.

In the case of an emergency, for example if you suffer bleeding, your Anticoagulation Clinic will contact your general practitioner and/or specialist. This is necessary in order to determine whether the emergency is related to your anticoagulant treatment. If you object to this, please inform the doctor from your Anticoagulation Clinic about this in writing.

DO YOU HAVE ANY COMMENTS OR COMPLAINTS ABOUT YOUR TREATMENT?

Do you have any comments or complaints about your treatment at your Anticoagulation Clinic? Please inform your Anticoagulation Clinic! Every complaint gives your Anticoagulation Clinic the opportunity to improve. Ask your Anticoagulation Clinic how you can discuss a comment or complaint. This will often first be discussed with the employee(s) involved. If you are not satisfied after this discussion, then your Anticoagulation Clinic's supervisor will become involved in your comment or complaint.

Do you feel that a complaint still has not been dealt with successfully after these steps? Then you can contact an independent complaints committee or arbitration committee. Ask your Anticoagulation Clinic about the options.

FEDERATION OF DUTCH ANTICOAGULATION CLINICS

Treatment with anticoagulants is very well organised in the Netherlands. We have Anticoagulation Clinics that have been focused specifically on anticoagulant treatment for years. The Federation of Dutch Anticoagulation Clinics was founded in 1971. Their aim is to improve the quality of anticoagulant treatment, to stimulate scientific research in the field of thrombosis and to advocate on behalf of the Anticoagulation Clinics in the Netherlands. As of early 2017, there were 49 Anticoagulation Clinics associated with the Federation, as well as two clinics in Spain and one in Curaçao (Willemstad).

Each Anticoagulation Clinic has its own Client Advisory Board. You can find information about this on the website of your own Anticoagulation Clinic.



FEDERATIE VAN NEDERLANDSE
TROMBOSEDIENSTEN

For more information, visit: www.fnt.nl



THROMBOSIS FOUNDATION OF THE NETHERLANDS

Whether you are 18 or 80, active or not, anyone can suffer thrombosis. Thrombosis has a major impact on a person's quality of life. The Thrombosis Foundation of the Netherlands wants to minimise the suffering caused by thrombosis. Therefore, the Thrombosis Foundation has been funding scientific research into thrombosis since 1974. This research contributes to a greater understanding of the causes and prevention of thrombosis, improved diagnosis and/or safer, more effective treatment.

Would you like to help us? The Thrombosis Foundation does not receive any government funding and is entirely dependent on donations. Your donation to the Thrombosis Foundation not only supports scientific research into thrombosis, but also contributes to educational campaigns run by the Thrombosis Foundation. These campaigns aim to give people a better understanding of their anticoagulant treatment, and to inform the general public about thrombosis and how to recognise it.



How can you help? Make a donation to account number NL35 INGB 0000 3020 30, care of the "Trombosestichting Nederland". Any contribution, great or small, will help us!
For more information, visit: www.trombosestichting.nl



WHAT IS THE ANTICOAGULANT PASS?

If you use anticoagulants, it is a good idea to **carry an Anticoagulant Pass with you at all times!** Your Anticoagulant Pass contains all the details that are important with regard to your treatment using anticoagulants. This is very important. The anticoagulants cause your blood to clot less quickly. As a result, you are less likely to develop thrombosis, such as an infarction in the heart or brain or a pulmonary embolism. However, you can also bleed more heavily and for a longer period than without anticoagulants. The Anticoagulant Pass allows your treating doctors to adapt to this medical situation more easily, even in an emergency!

When should you use the Anticoagulant Pass?

For example, if you

- visit the general practitioner, specialist or dentist
- collect medicines from a pharmacy at home or abroad
- buy medicines from the chemist
- visit a chiroprapist, physiotherapist, dental hygienist, etc.
- visit the Municipal Health Service for a vaccination

The details on your Anticoagulant Pass are strictly confidential. They have also been translated into English, so that your Anticoagulant Pass can also be used in other countries. The Anticoagulant Pass is the size of a credit card. It fits easily in your wallet.

Your Anticoagulant Pass in an emergency

You can list a telephone number of your next of kin on your Anticoagulant Pass – for example, the number of a family member, friend or neighbour. Are you in an emergency? Then the first responder can always contact your next of kin using your Anticoagulant Pass.

When should you request an Anticoagulant Pass?

Are you using one or more of the following anticoagulants? Then apply for the Anticoagulant Pass as soon as possible!

- acenocoumarol (sintrom)
- acetylsalicylic acid (aspirin protect)
- apixaban (eliquis)
- asasantin
- carbasalate calcium (ascal)
- clopidogrel (iscover, plavix, grepid)
- dabigatran (pradaxa)
- dalteparine (fragmin)
- danaparoid (orgaran)
- dipyridamole (persantin)
- duoplavin
- edoxaban (lixiana)
- enoxaparin (clexane)
- phenprocoumon (marcoumar)
- fondaparinux (arixtra)
- acetylsalicylate lysine (cardegic)
- nadroparin (fraxiparin, fraxodi)
- prasugrel (efient)
- rivaroxaban (xarelto)
- ticagrelor (brilique)
- tinzaparin (innohep)

Is your anticoagulant not listed here? Ask your doctor whether the Anticoagulant Pass is also important for you.



Do you want to apply quickly? Visit our website!

The quickest way to receive the Anticoagulant Pass is through www.trombosestichting.nl!

Antistollingspas

kaarthouder / cardholder

Dhr. V. van Voorbeeldnaam

Geb.dat./DoB: 13-05-1980

ICE: +31 6 12345678



Are you unable to apply via www.trombosestichting.nl? Then complete the adjacent application form. Send the completed form in a sealed envelope to:

Thrombosis Foundation of the Netherlands

Antwoordnummer 10099

2250 VB Voorschoten

You may use a stamp, but it is not necessary. You will receive the Anticoagulant Pass within about two weeks.

The Thrombosis Foundation is not responsible for any inaccuracies in your details on the Anticoagulant Pass or incorrect use of the pass. Therefore, please check the details thoroughly and regularly. Does your pass state any incorrect details? Please inform us as soon as possible. We will then send you a new, corrected pass. Have your details changed? Please apply for a new Anticoagulant Pass. You will only receive an Anticoagulant Pass if you are using anticoagulants.



YES PLEASE SEND ME THE ANTICOAGULANT PASS ISSUED BY THE THROMBOSIS FOUNDATION OF THE NETHERLANDS

Please complete in block capitals

Mr Mrs/Ms Initial(s) _____

Surname _____

Street _____ House No. _____

Postal code _____

Town/City _____

Date of birth _____ - _____ - _____

Telephone number* _____

E-mail address* _____

Who can be contacted in the Netherlands in the event of an accident?

Emergency contact
telephone number 1 _____

Emergency contact
telephone number 2 _____

Your anticoagulant(s)

acetylsalicylic acid clopidogrel phenprocoumon

apixaban dabigatran rivaroxaban

acenocoumarol edoxaban carbasalate calcium

Other, namely: _____

Your treating doctor

Name of general practitioner _____

Telephone number
of general practitioner _____

Extra details*

Space for additional information. This text will also be printed on the Anticoagulant Pass. Maximum of 40 characters.

Would you like to receive the newsletter of the Thrombosis Foundation automatically? Yes No

Following delivery of the Anticoagulant Pass, the Thrombosis Foundation of the Netherlands will contact you about the use of the pass. Fields marked with an * are not compulsory.



Do you want to apply quickly? www.trombosestichting.nl

FNT

Algemeen Nut
Beogende Instelling
ANBI





Send this completed form in a **sealed envelope** to

Thrombosis Foundation of the Netherlands
Antwoordnummer 10099
2250 VB Voorschoten

You may use a stamp, but it is not necessary.
You will receive the Anticoagulant Pass within about two weeks.

Do you want to apply quickly? Visit our website!
The quickest way to receive the Anticoagulant Pass is through www.trombosesichting.nl

WHAT IS THROMBOSIS?

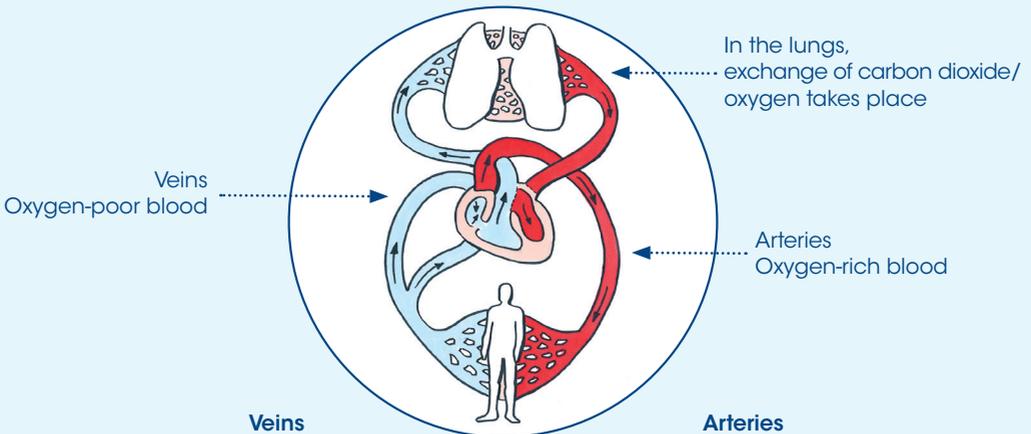
The fact that our blood is able to clot is normally very useful. If you lose blood from a wound, the blood clotting process causes the bleeding to stop. However, sometimes our blood clots for no reason, without any blood loss taking place. Doctors refer to this as thrombosis. Thrombosis is dangerous, because it can hinder blood flow. A clot can also detach from the blood vessel wall and move through the body via the circulatory system. A clot that has detached in this way is called an embolism and can completely or partially block a blood vessel further along in the circulation (see below). This can result in all sorts of serious problems, such as a pulmonary embolism or an infarction in the brain or heart.

Thrombosis develops when blood clotting takes place in your body at the wrong time and in the wrong place.

Circulatory system

Our heart pumps our blood through an extensive system of blood vessels: the arteries and veins. We call this the circulatory system. In order to understand which problems can be caused by thrombosis, it is useful to understand a little bit more about this system. In the circulatory system, the arteries transport oxygen-rich blood full of nutrients from the left ventricle of the heart to the rest of the body. The arteries branch off into smaller and smaller vessels and finally into capillaries. The blood flowing through these capillaries supplies the surrounding tissues with oxygen and nutrients. On the way back to the heart, the blood takes with it waste products and carbon dioxide. This blood is returned to the right ventricle of the heart via the veins. In order to take up more oxygen, the blood is pumped from the right ventricle to the lungs via the pulmonary artery. Once oxygen has been absorbed there, the oxygen-rich blood is pumped back to the left ventricle of the heart via the pulmonary vein. Then the process starts all over again.

How does the blood flow through our bodies?



In which blood vessels can thrombosis occur?

A thrombosis can occur in both arteries and veins. If a blood clot is located in the deeper veins, we call this a deep vein thrombosis. If the clot is located in the arteries, we call this an arterial thrombosis. Sometimes a clot or a part of a clot can detach, move along in the circulation and block an artery or vein further along. Doctors refer to this as an embolism.

Infarctions, deep vein thrombosis and embolism

A thrombosis can cause different diseases. A blood clot in the arteries (arterial thrombosis) results in the tissue or the organ beyond the clot not receiving (enough) oxygen. If this tissue receives oxygen-rich blood via other arteries, then the effects can be limited. If this is not the case and the clot does not dissolve in time, then the tissue beyond the thrombosis will die. This is because the tissue is no longer receiving oxygen. Doctors refer to this as an infarction. Examples of this include an infarction in the heart or the brain.

An infarction in the heart is caused by a blockage in one or more coronary arteries. These are the arteries that form a ring around the heart. Part of the heart muscle dies as a result. Once the area has healed, the heart muscle will be scarred.

An infarction in the brain occurs when a thrombosis blocks the supply of blood to the brain. Depending on the size of the clot and the position of the blockage, a person with an infarction of the brain can develop various symptoms, such as unconsciousness, paralysis and speech problems.

An example of a thrombosis in the veins is a deep vein thrombosis (DVT) in the leg. A pulmonary embolism can develop from such a DVT. This happens when a part of the blood clot in the leg detaches and is carried along in the circulation. This clot then becomes lodged in one of the blood vessels in the lungs. This is called a pulmonary embolism. As a result, a part of the lung is unable to absorb oxygen, the lung tissue can die and the heart can struggle to pump enough blood from the pulmonary artery to the left chamber of the heart. The severity of a pulmonary embolism depends on the size of the clot that has become lodged in the lung. Many people do not know that a pulmonary embolism can be life-threatening. Another misconception is that a clot in the lung vessels can reach the brain or the heart. This is not possible because of how the circulatory system works. A pulmonary embolism cannot result in an infarction of the heart or brain.

Risk factors for thrombosis (including use of the contraceptive pill)

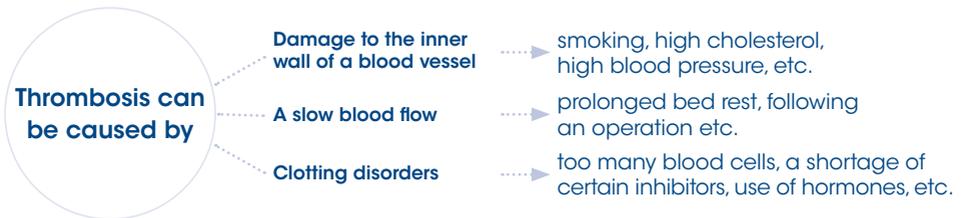
There are three main causes of thrombosis. These are

- Damage to the inner wall of your blood vessel
- A slower blood flow
- Clotting disorders

Damage to the blood vessel wall can occur, for example, if you smoke or have high blood pressure. Your blood flow can be reduced, for example, if you spend a lengthy period on bed rest or have your leg in a cast. Clotting disorders can be caused, for example, by having too many red blood cells, by the use of hormones or by a hereditary predisposition.

A well-known example of the use of hormones is the contraceptive pill. The so-called second-generation pill increases the risk of venous thrombosis and pulmonary embolism 4-fold or 5-fold. This risk is higher still for third-generation and fourth-generation pills. Of course, you always need to weigh this risk against the risk of developing venous thrombosis and pulmonary embolism without the pill. This risk is very low in young women, so most women are able to use the pill without any problems. However, you should always consult your general practitioner if you or your (grand)daughter want(s) to start using the pill, particularly if you have a family history of thrombosis and/or if you have or your (grand)daughter has other risk factors for thrombosis.

Often you will need to have several risk factors present before you will develop thrombosis.



! Summary of three important concepts



Thrombosis:

a blood clot in an artery or vein, resulting in (partial) blockage of these blood vessels.



Infarction:

a piece of tissue that no longer receives blood from an artery as a result of a blockage and dies as a result (infarction of the heart or brain).



Embolism:

(a piece of) a clot that detaches from the blood vessel wall, travels through the circulatory system and lodges in an artery or vein further along. The tissue behind the embolism no longer receives nutrients and oxygen from the blood and will die. An embolism can develop from a clot in an artery or vein.

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