

Patient decision aid

## Atrial fibrillation: medicines to help reduce your risk of a stroke – what are the options?

<http://guidance.nice.org.uk/CG180/PatientDecisionAid/pdf/English>

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Published: June 2014

### About this decision aid

This information is intended to help you reach a decision about whether to take an anticoagulant to reduce your risk of stroke, and which one to take if you decide to do so. Your decision depends on several things that this decision aid will help explain. Different people will feel that some of these things are more important to them than others, so it's important that you make a decision that is right for you personally.

You may have just been diagnosed with atrial fibrillation (AF for short) or may be considering changing anticoagulant treatment. This decision aid is designed for you to work through with the healthcare professional who is helping you make this decision. You might also find it helpful if you want to talk your decision over with your family or friends.

The information is based on the recommendations on anticoagulants in [NICE's guideline on atrial fibrillation](#). The guideline covers all the care and treatment that you can expect, and is explained in our [information for the public](#) about the guideline.

NICE guidelines give advice to healthcare professionals on the care and support that should be offered to people who use health and care services. You have the right to be involved in discussions and make informed decisions about your treatment and care with your healthcare team. You should be given relevant information that explains the options in a way you can understand. For more information see [About care in the NHS](#) on the NICE website.

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## What is atrial fibrillation?

Atrial fibrillation is a condition that affects the heart, causing it to beat irregularly and too fast. When this happens, blood does not flow properly through the heart and the rest of the body. This means that people with AF may be at increased risk of blood clots. Blood clots can block blood vessels. A stroke can happen if a blood vessel in the brain is blocked by a clot. This is the most common type of stroke, called an ischaemic stroke. Without a good blood supply, brain cells can be damaged or destroyed because they do not receive enough oxygen (which is carried by the blood). A stroke can affect many different body functions, depending on the part of the brain that is involved. The symptoms of stroke can include:

- numbness
- weakness or lack of movement on one side of the body
- slurred speech
- difficulty finding words or understanding speech
- problems with vision
- confusion.

Sometimes a stroke is so severe it can kill the person straight away. Blood clots that result from AF can also sometimes cause problems by blocking blood vessels in other parts of the body. Depending on where in the body that happens, different organs might be seriously damaged because they do not receive enough oxygen.

The organisations below can provide more information and support for people with AF. Please note that NICE is not responsible for the quality or accuracy of any information or advice provided by these organisations.

- AF Association, Helpline 01789 451 837 [www.atrialfibrillation.org.uk](http://www.atrialfibrillation.org.uk)
- Arrhythmia Alliance, Helpline 01789 450 787 [www.arrhythmiaalliance.org.uk](http://www.arrhythmiaalliance.org.uk)
- The Stroke Association, Stroke Helpline 0303 303 3100 [www.stroke.org.uk](http://www.stroke.org.uk)
- British Heart Foundation, Heart Information Line 0300 330 3311 [www.bhf.org.uk](http://www.bhf.org.uk)
- Northern Ireland Chest, Heart and Stroke Association, 028 9032 0184  
[www.nichsa.com](http://www.nichsa.com)
- Different Strokes, 0845 130 7172 [www.differentstrokes.co.uk](http://www.differentstrokes.co.uk)

You can also go to NHS Choices ([www.nhs.uk](http://www.nhs.uk)) for more information.

## Treatment options to reduce your risk of having a stroke

Many people with AF are asked to think about taking a medicine called an 'anticoagulant'. This is to reduce their risk of having an ischaemic stroke caused by their AF. Anticoagulants make the blood take longer to clot (sometimes called 'thinning the blood'). This reduces the risk of a blood vessel in the brain becoming blocked by a clot. Anticoagulants also reduce the risk of blood clots causing problems elsewhere in the body. Treatment with an anticoagulant is usually long term.

**You can choose whether to take an anticoagulant or not. If you decide to take one, you will then need to decide which one you want to use. This decision aid is intended to help you weigh up the options and come to a decision that is right for you.**

If you choose to take an anticoagulant, you can choose warfarin or one of the newer drugs such as apixaban, dabigatran or rivaroxaban. Warfarin has been used for many years to reduce the risk of stroke in people with AF. It belongs to a group of drugs called vitamin K antagonists. Apixaban, dabigatran and rivaroxaban have become available in the past few years and work in a different way from warfarin, so they are often called the non-vitamin K oral anticoagulants, or NOACs for short.

### ***Risk of major internal bleeding***

Making the blood take longer to clot reduces the risk of having an ischaemic stroke. But blood clots are also the body's way of stopping the bleeding if you have an injury. So, although anticoagulants can reduce your risk of ischaemic stroke, they also increase the risk of bleeding. This includes bleeding such as nose bleeds and bruising more easily, and also major (that is, serious, excessive) internal bleeding. Major bleeding is especially likely to happen after an injury or if someone is having an operation. The effects of major bleeding depend on where in the body the bleeding happens. Major bleeding is most dangerous if it happens in the brain. This can cause another type of stroke called a haemorrhagic stroke. Bleeding can also happen elsewhere in the body, such as in the gut. Major bleeding outside of the brain usually needs to be treated with a blood transfusion. Sometimes major bleeding can be fatal, especially if it happens inside the brain or if it is not treated straight away.

## **Aspirin**

In the past, some people with AF were offered aspirin to reduce their risk of having a stroke. Like anticoagulants, aspirin helps to prevent blood clots from forming and blocking blood vessels, but new evidence shows that it is much less effective at preventing ischaemic strokes in people with AF than was previously thought. It is also more likely to cause major bleeding than was previously thought. Therefore NICE no longer recommends that people with AF should take aspirin just to reduce their risk of stroke. If you have been taking aspirin for this reason, you may be considering changing anticoagulant treatment. You might also be taking aspirin for another reason (for example, because you have had a heart attack in the past). If either of these situations applies to you, you should discuss this with your health professional.

## **Using this decision aid to help you make your choice**

All the different anticoagulant reduce your risk of having an ischaemic stroke caused by your AF, but they also increase the risk that you will have major bleeding, which might even include a haemorrhagic stroke. Each treatment also has other advantages and disadvantages that different people feel differently about. This decision aid is intended to give you information about these advantages and disadvantages to help you and your health professional make the best choice for you.

Not all of the treatment options may be suitable or possible for you depending on your particular circumstances and other medical conditions you may have, for example if you have certain types of kidney problems. Your health professional will tell you if this applies to you.

There is a lot of information in this decision aid that you will need to think about before you decide whether to take an anticoagulant or not, and if so, which one you want to use. **If you have just been diagnosed with AF you will need to make a decision soon (preferably within a few days), but most people do not have to make a decision immediately.** You may want to talk your decision over with your health professional, your family or your friends.

Treatment with an anticoagulant is usually long term, so it is important that you are happy with your choice. Once you have made a choice, you can change your mind later if you wish or if your situation changes. Your risk of having a stroke and having major bleeding can also change over time, so your healthcare professional will review your risk once a year. If you decide not to take an anticoagulant now, you should think about this decision again then.

## What does NICE recommend?

NICE recommends that most people with AF should think about taking an anticoagulant, taking into account how likely it is that they might have an ischaemic stroke and how likely it is that they might have major bleeding. NICE recommends that your healthcare professional should use risk scores to estimate your risk of stroke (called the CHA<sub>2</sub>DS<sub>2</sub>-VASc) and risk of bleeding (called the HAS-BLED): see [Stroke and bleeding risk scoring systems](#) at the end of this decision aid. The risk scores are based on factors such as your age and whether you have other medical conditions. The higher the score, the more likely it is that you will have either a stroke or major bleeding. However, it is important to remember that:

- No one can tell what will happen to an individual person.
- Even if your scores on either system are low or zero, you might still have an ischaemic stroke or major bleeding.
- If your scores are high it does not mean that you will definitely have an ischaemic stroke or major bleeding.
- Taking an anticoagulant will save some people from having an ischaemic stroke caused by their AF, but some people will still have a stroke even though they take the anticoagulant.
- Although taking an anticoagulant increases the risk of major bleeding, this will not happen to many people taking this medicine; some people will have major bleeding even if they don't take an anticoagulant.

**My CHA<sub>2</sub>DS<sub>2</sub>-VASc score is \_\_\_\_\_**

**My HAS-BLED score is \_\_\_\_\_.**

## More information about treatment options to reduce your risk of having an ischaemic stroke

The information on the next pages considers the questions people with AF most often want to think about and discuss with their health professional when deciding on which option to choose. There are also graphics that show the benefits and risks of the different choices in a visual way that may help you decide. A [user guide](#), written primarily for healthcare professionals, is also available from the NICE website. It explains how this decision aid was produced and the sources of the information used.

Question	Not taking anything	Taking warfarin	Taking a NOAC (apixaban, dabigatran or rivaroxaban)
<p>1. <b>What does the option involve?</b></p>	<p>You will not take any anticoagulant treatment.</p>	<p>You will take 1 or more tablets once a day, usually in the evening. The dose will be adjusted depending on blood test results (see question 5) and you will have written instructions about how many tablets to take. Treatment with warfarin is normally long term.</p>	<p>You will take 1 apixaban tablet twice a day, or 1 dabigatran capsule twice a day, or 1 rivaroxaban tablet once a day. You will stay on the same dose all the time. Treatment with a NOAC is normally long term.</p>
<p>2. <b>Will it reduce my risk of having a stroke?</b></p>	<p>The <a href="#">graphics on pages 15–25</a> show the risk of having a stroke, depending on your CHA<sub>2</sub>DS<sub>2</sub>-VASc score, <b>over 1 year</b>. We have not been able to produce graphics to show the risk over longer periods of time because reliable numbers are not available from research.</p>	<p>Yes. The <a href="#">graphics on pages 15–25</a> show by how much anticoagulants reduce your risk, depending on your CHA<sub>2</sub>DS<sub>2</sub>-VASc score, <b>over 1 year</b>. We have not been able to produce graphics to show the effects over longer periods of time because reliable numbers are not available from research.</p>	<p>Yes. The <a href="#">graphics on pages 15–25</a> show by how much anticoagulants reduce your risk, depending on your CHA<sub>2</sub>DS<sub>2</sub>-VASc score, <b>over 1 year</b>. We have not been able to produce graphics to show the effects over longer periods of time because reliable numbers are not available from research.</p>

Question	Not taking anything	Taking warfarin	Taking a NOAC (apixaban, dabigatran or rivaroxaban)
<p><b>3. Will it increase my risk of having major bleeding?</b></p>	<p>The <a href="#">graphics on pages 26–35</a> show the risk of having major bleeding, depending on your HAS-BLED score, <b>over 1 year</b>. We have not been able to produce graphics to show the risk over longer periods of time because reliable numbers are not available from research.</p>	<p>Yes. The <a href="#">graphics on pages 26–35</a> show by how much anticoagulants increase your risk of having major bleeding, depending on your HAS-BLED score, <b>over 1 year</b>. We have not been able to produce graphics to show the effects over longer periods of time because reliable numbers are not available from research.</p>	<p>Yes. The <a href="#">graphics on pages 26–35</a> show by how much anticoagulants increase your risk of having major bleeding, depending on your HAS-BLED score, <b>over 1 year</b>. We have not been able to produce graphics to show the effects over longer periods of time because reliable numbers are not available from research.</p>
<p><b>4. What are the other main side effects?</b></p>	<p>This question does not apply to this option.</p>	<p>Warfarin can cause side effects but not everybody gets them. The most common side effect is bleeding, including bruising and nose bleeds. For more information about warfarin, see the manufacturers' patient information leaflets, such as the one available <a href="#">here</a>.</p>	<p>NOACs can cause side effects but not everybody gets them. The most common side effect of all NOACs is bleeding, including bruising and nose bleeds. For more information, see the manufacturer's patient information leaflets for <a href="#">apixaban</a>, <a href="#">dabigatran</a> and <a href="#">rivaroxaban</a>.</p>



Question	Not taking anything	Taking warfarin	Taking a NOAC (apixaban, dabigatran or rivaroxaban)
<p><b>5. Will I need any regular blood tests?</b></p>	<p>This question does not apply to this option.</p>	<p>Yes. For the first few weeks or months, you will need frequent blood tests. After that, most people need to have these tests every 1–2 months. Some people will need blood tests more or less often than this, and some people are able to test their blood themselves.</p>	<p>Yes. You will need a blood test before you start treatment to check how well your liver and kidneys are working, and then usually once every year, but not more often than that unless you have certain other medical conditions such as liver or kidney problems.</p>
<p><b>6. What happens if I forget to take a dose?</b></p>	<p>This question does not apply to this option.</p>	<p>You should take warfarin as prescribed at the same time of day, every day. If you think you may have missed a dose or have taken an extra dose by mistake you should follow the instructions in the information booklet you will be given, or contact the health professional who monitors your warfarin for advice.</p>	<p>It is important to take the NOAC as prescribed – once a day (rivaroxaban) or twice a day (apixaban or dabigatran). The protective effect of the NOAC on the risk of stroke may fade 12–24 hours after you take a dose. If you think you may have missed a dose or have taken an extra dose by mistake you should follow the instructions in the information leaflet you will be given or contact your health professional for advice.</p>

Question	Not taking anything	Taking warfarin	Taking a NOAC (apixaban, dabigatran or rivaroxaban)
<p><b>7. Will I have to change what I eat or drink?</b></p>	<p>This question does not apply to this option.</p>	<p>It is important to eat a well balanced diet. You should ask your health professional's advice before making any major changes to what you eat, especially if you eat a lot of foods rich in vitamin K (such as green leafy vegetables and some other foods). This is because major changes in what you eat may affect how your body responds to warfarin. You will be given written information about this. You should avoid drinking cranberry juice. If you drink alcohol you should follow national guidelines on how much is safe to drink, and never binge drink.</p>	<p>No, there is no need to change what you eat or drink.</p>

Question	Not taking anything	Taking warfarin	Taking a NOAC (apixaban, dabigatran or rivaroxaban)
<p><b>8. Will the medicine interact with other medicines I take?</b></p>	<p>This question does not apply to this option.</p>	<p>Warfarin can interact with several medicines, including medicines bought over the counter and herbal medicines. It is very important to ask the advice of your health professional before starting or stopping any medicines.</p>	<p>NOACs can interact with several medicines, including medicines bought over the counter and herbal medicines. It is very important to ask the advice of your health professional before starting or stopping any medicines.</p>
<p><b>9. What happens if I need non-urgent surgery, including dental surgery?</b></p>	<p>This question does not apply to this option.</p>	<p>It is important to tell anyone treating you, including your dentist, that you are taking warfarin. You should tell them well before your appointment and show them the alert card that you will be given. You would usually stop taking warfarin about 5 days before planned surgery, and start taking it again straight away afterwards. You would not usually need to stop taking warfarin before dental surgery, but your blood clotting would be tested to help decide.</p>	<p>It is important to tell anyone treating you, including your dentist, that you are taking a NOAC. You should tell them well before your appointment and show them the alert card that you will be given. You would usually stop taking the NOAC for up to 48 hours before planned surgery or dental treatment, and start taking the NOAC again straight away after the surgery.</p>

Question	Not taking anything	Taking warfarin	Taking a NOAC (apixaban, dabigatran or rivaroxaban)
<p><b>10. What happens if the effects need to be reversed in an emergency (for example, after an injury or before emergency surgery)?</b></p>	<p>This question does not apply to this option.</p>	<p>You should carry the alert card that you will be given to tell anyone who treats you that you are taking warfarin. If you have a serious injury or need urgent surgery, you are more likely to have major bleeding because you take warfarin.</p> <p>It may be necessary to try to reverse the effects of warfarin on blood clotting. The best ways to do this are well established, and it is easy for medical staff to check what effect the warfarin is having on your blood's ability to clot. However, it is not always possible to reverse the effects of warfarin on clotting quickly or easily.</p>	<p>You should carry the alert card that you will be given to tell anyone who treats you that you are taking a NOAC. If you have a serious injury or need urgent surgery you are more likely to have major bleeding because you take a NOAC.</p> <p>It may be necessary to try to reverse the effects of the NOAC on blood clotting. The best ways to do this are not so well established, and it is difficult for medical staff to measure what effect the NOAC is having on your blood's ability to clot. It may not be possible to reverse the effects of the NOAC on clotting quickly or easily.</p>

## How you feel about the options

You can use the table to help you think about how important the issues are to you.

Issue	How important is this to me?			
	Very important	Important	Unimportant	Very unimportant
What tablets or capsules I'd have to take, and how often				
The effect on my risk of having an AF-related ischaemic stroke				
The effect on my risk of having major bleeding				
Other main side effects				
The need for regular blood tests				
What would happen if I forget to take a dose				
The need to change what I eat or drink				
Whether the medicine will interact with other medicines I take				
What would happen if I need non-urgent surgery, including dental surgery				
What would happen if the effects need to be reversed in an emergency				

**Other questions or issues that I want to talk to my healthcare professional about**

## Risk of AF-related ischaemic stroke – benefits of anticoagulants

The graphics on the next pages show the risk of AF-related ischaemic stroke over 1 year in groups of 1000 people with atrial fibrillation, depending on their CHA<sub>2</sub>DS<sub>2</sub>-VASc score, and the effects of anticoagulants on that risk. They show the effects of anticoagulants as a group compared with no treatment. For each CHA<sub>2</sub>DS<sub>2</sub>-VASc score, the same information is shown in 2 different ways, because some people prefer one format to the other. You only need to look at the graphics that apply to people with your CHA<sub>2</sub>DS<sub>2</sub>-VASc score.

- [CHA<sub>2</sub>DS<sub>2</sub>-VASc score 1](#)
- [CHA<sub>2</sub>DS<sub>2</sub>-VASc score 2](#)
- [CHA<sub>2</sub>DS<sub>2</sub>-VASc score 3](#)
- [CHA<sub>2</sub>DS<sub>2</sub>-VASc score 4](#)
- [CHA<sub>2</sub>DS<sub>2</sub>-VASc score 5](#)

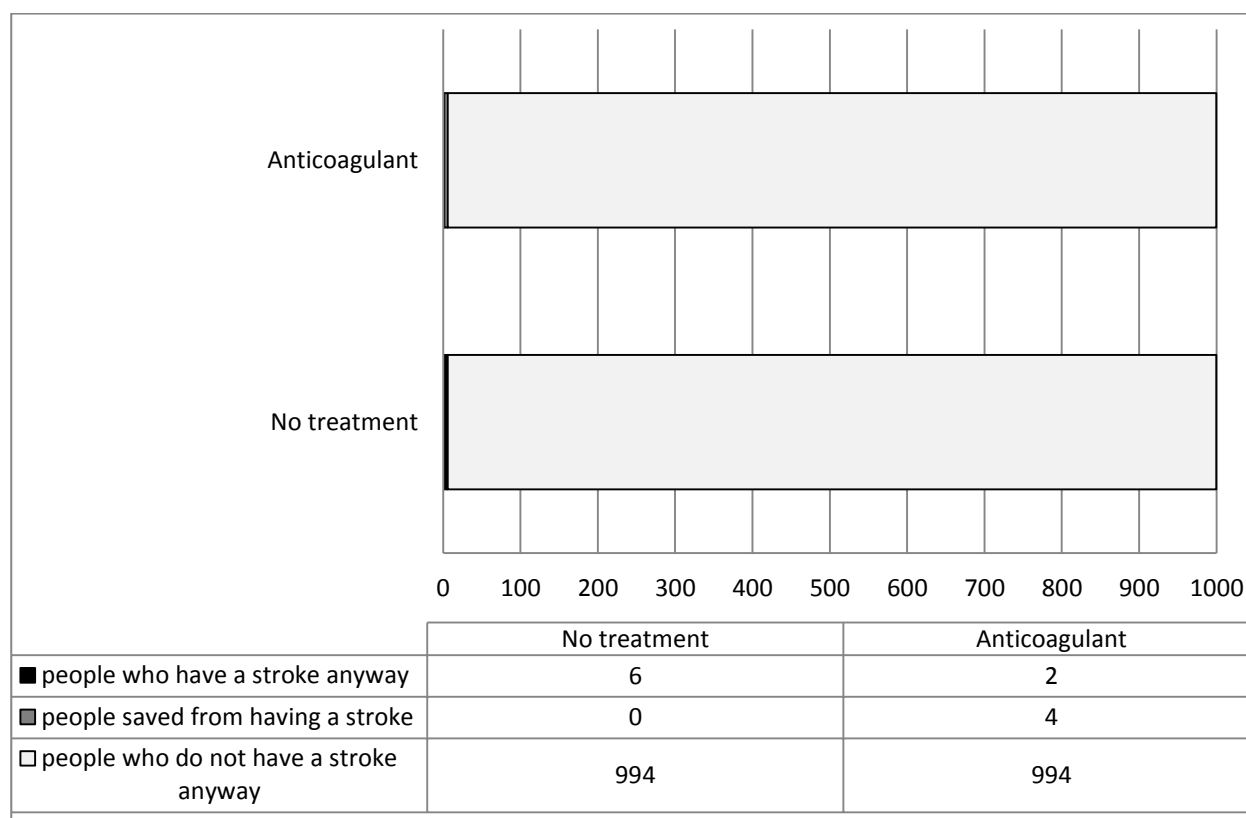
**Note:** the graphics show the risk over 1 year only. We have not been able to produce graphics to show the risk over longer periods of time because reliable numbers are not available from research. But remember that most people take the drugs long term.

### CHA<sub>2</sub>DS<sub>2</sub>-VASc score 1

These graphics are 2 different ways of showing the risk of AF-related ischaemic stroke **over 1 year** in a group of 1000 people with atrial fibrillation and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1. If none of those people takes an anticoagulant, over the course of 1 year 6 people would have an AF-related stroke and 994 people would not. **If all 1000 people take an anticoagulant**, over the course of 1 year on average:

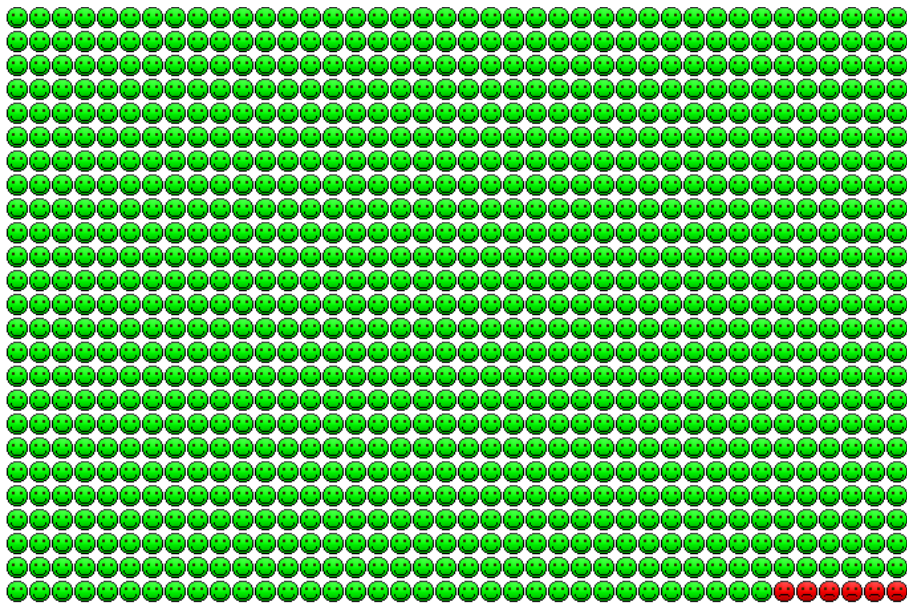
- 4 people will be saved from having an AF-related stroke
- 994 people will not have an AF-related stroke, but would not have done anyway
- 2 people will still have an AF-related stroke.

It is not possible to tell what will happen to an individual person.





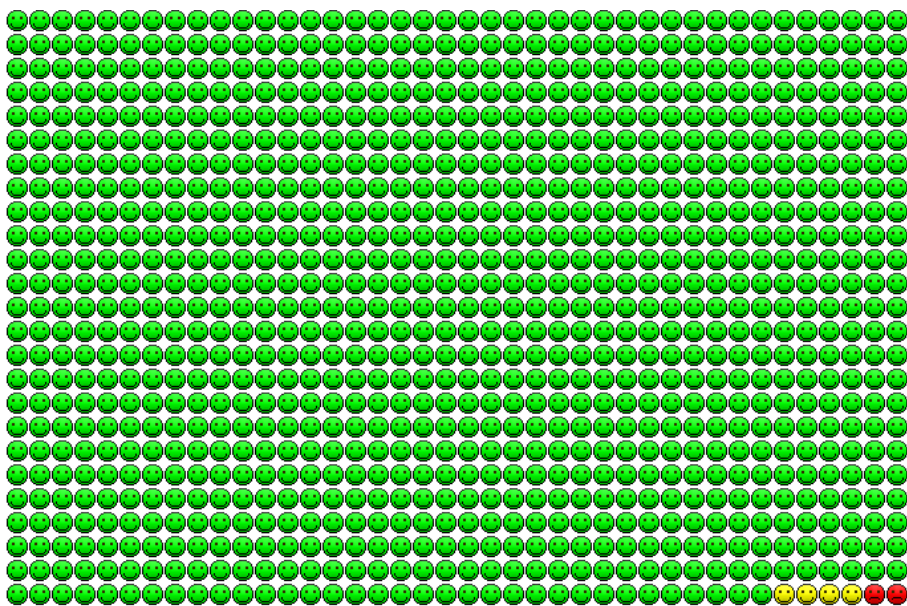
### No treatment: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 1



If 1000 people with AF and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1 take no anticoagulant, over 1 year on average:

- 994 people will not have an AF-related stroke (the green faces)
- 6 people will have an AF-related stroke (the red faces).

### Anticoagulant: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 1



If all 1000 people take an anticoagulant, over 1 year on average:

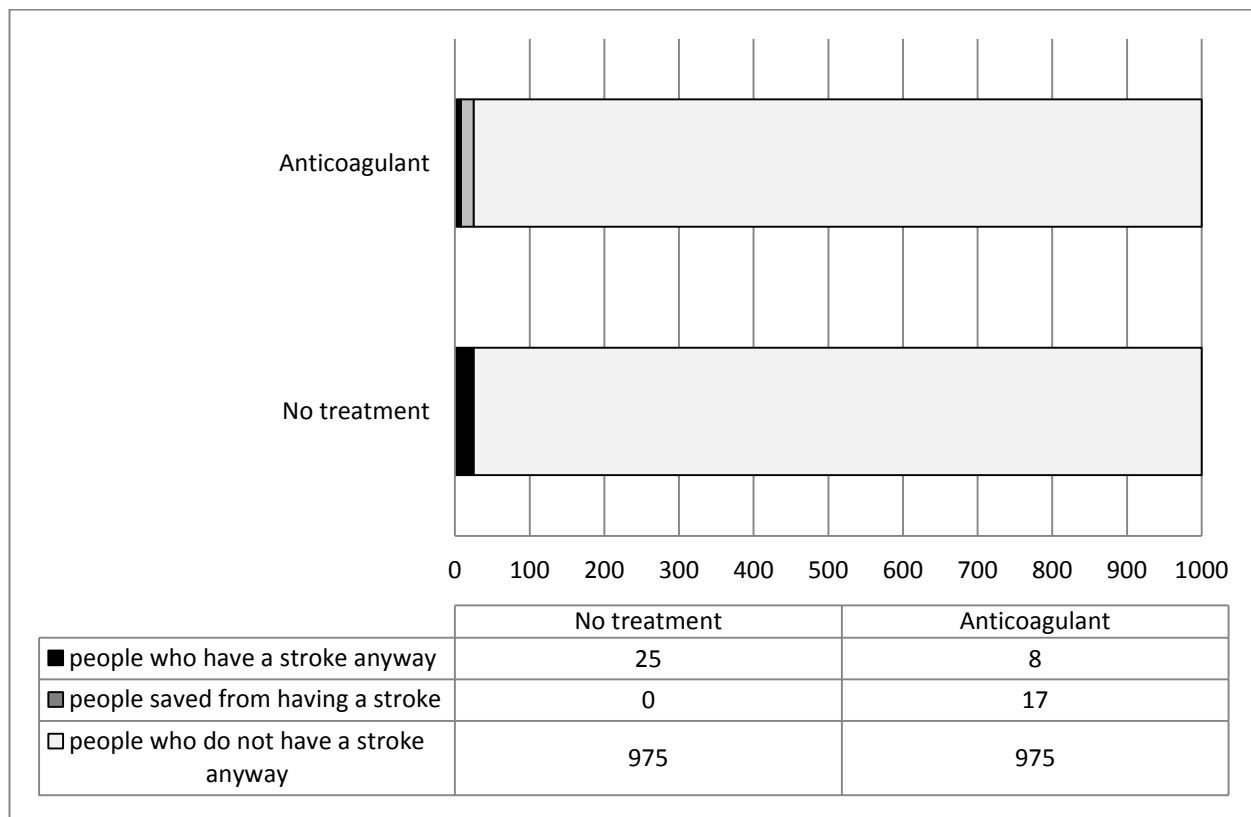
- 994 people will not have an AF-related stroke (the green faces), but would not have done anyway
- 4 people will be saved from having an AF-related stroke (the yellow faces)
- 2 people will still have an AF-related stroke (the red faces).

### CHA<sub>2</sub>DS<sub>2</sub>-VASc score 2

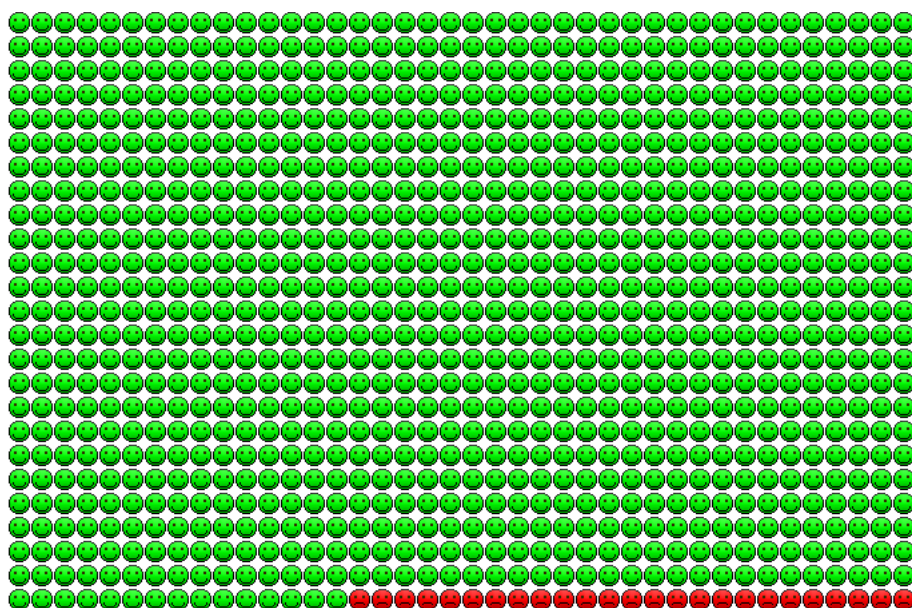
These graphics are 2 different ways of showing the risk of AF-related ischaemic stroke **over 1 year** in a group of 1000 people with atrial fibrillation and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 2. If none of those people take an anticoagulant, over the course of 1 year 25 people would have an AF-related stroke and 975 people would not. **If all 1000 people take an anticoagulant**, over the course of 1 year on average:

- 17 people will be saved from having an AF-related stroke
- 975 people will not have an AF-related stroke, but would not have done anyway
- 8 people will still have an AF-related stroke.

It is not possible to tell what will happen to an individual person.



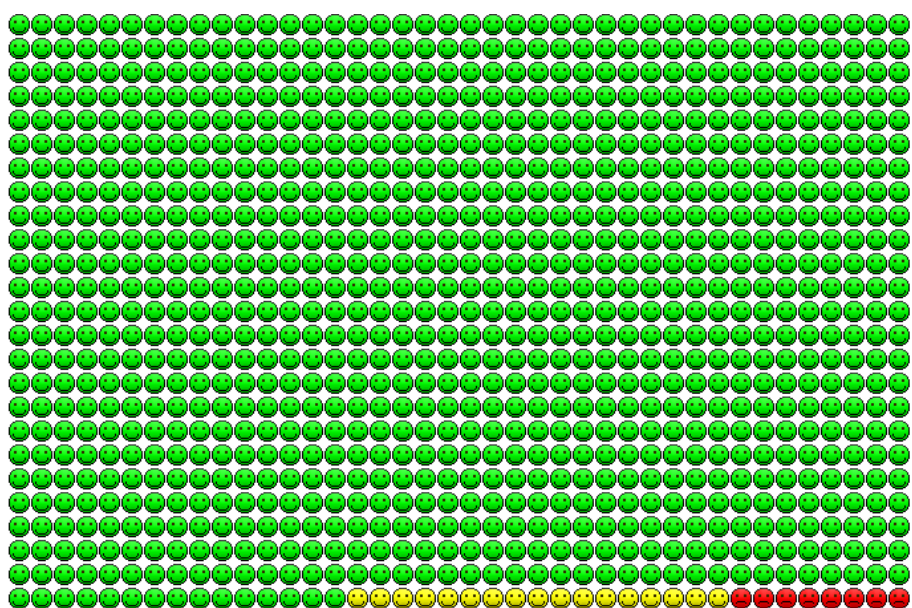
### No treatment: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 2



If 1000 people with AF and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 2 take no anticoagulant, over 1 year on average:

- 975 people will not have an AF-related stroke (the green faces)
- 25 people will have an AF-related stroke (the red faces).

### Anticoagulant: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 2



If all 1000 people take an anticoagulant, over 1 year on average:

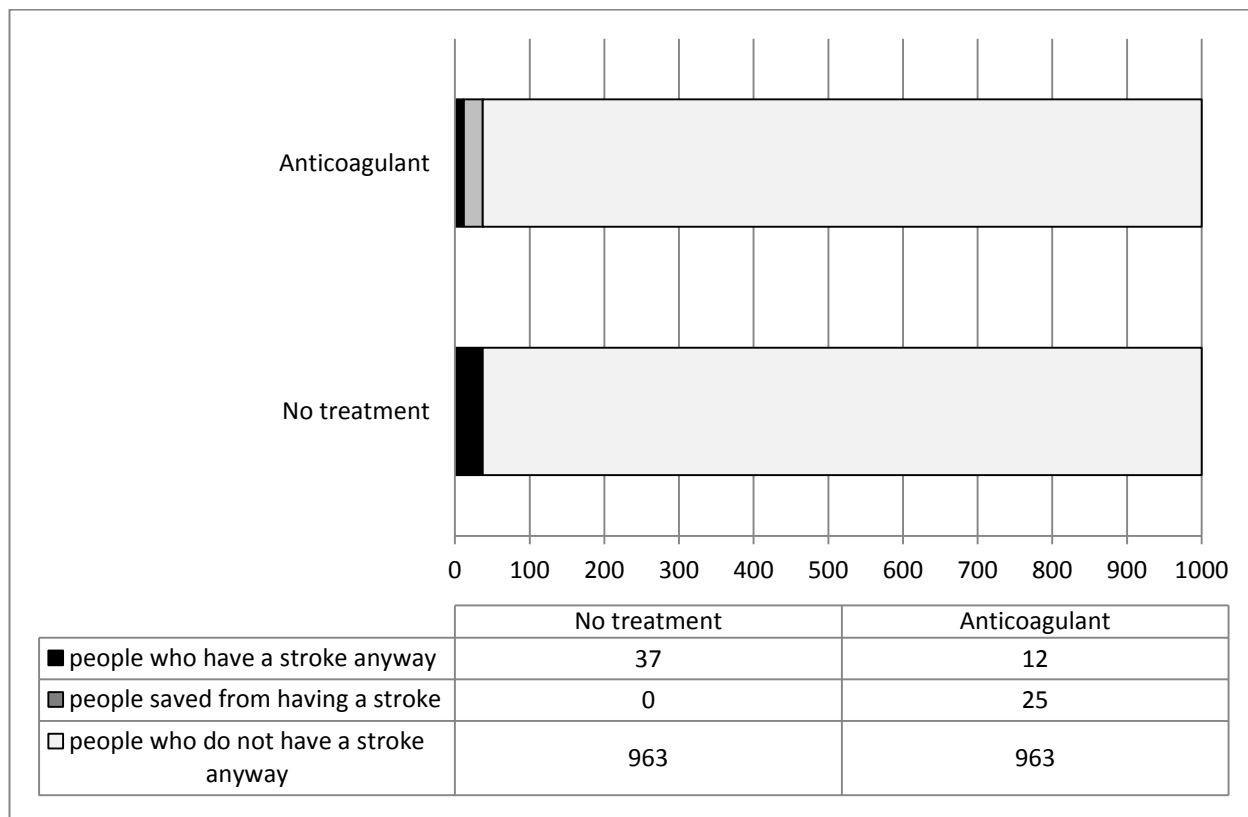
- 975 people will not have an AF-related stroke (the green faces), but would not have done anyway
- 17 people will be saved from having an AF-related stroke (the yellow faces)
- 8 people will still have an AF-related stroke (the red faces).

### CHA<sub>2</sub>DS<sub>2</sub>-VASc score 3

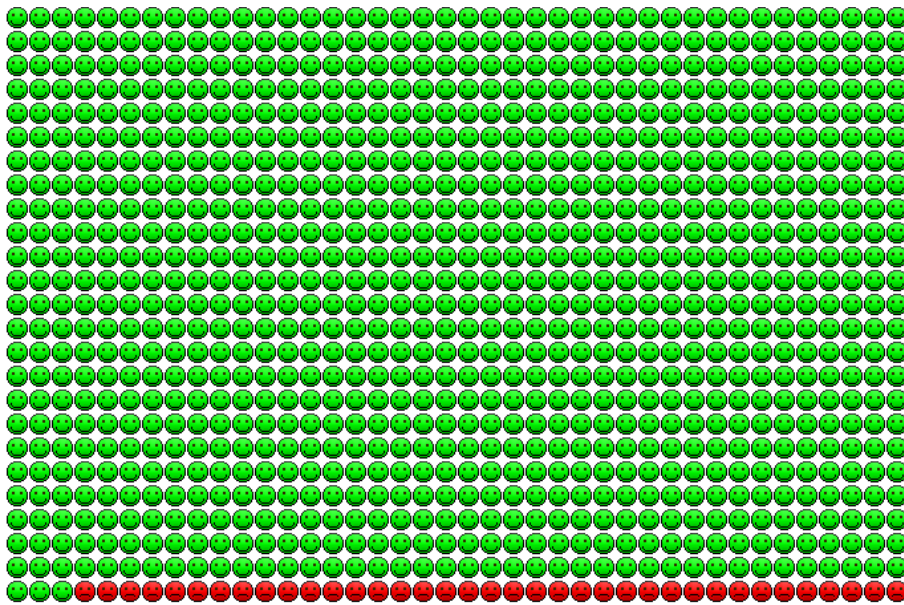
These graphics are 2 different ways of showing the risk of AF-related ischaemic stroke **over 1 year** in a group of 1000 people with atrial fibrillation and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 3. If none of those people takes an anticoagulant, over the course of 1 year 37 people would have an AF-related stroke and 963 people would not. **If all 1000 people take an anticoagulant**, over the course of 1 year on average:

- 25 people will be saved from having an AF-related stroke
- 963 people will not have an AF-related stroke, but would not have done anyway
- 12 people will still have an AF-related stroke.

It is not possible to tell what will happen to an individual person.



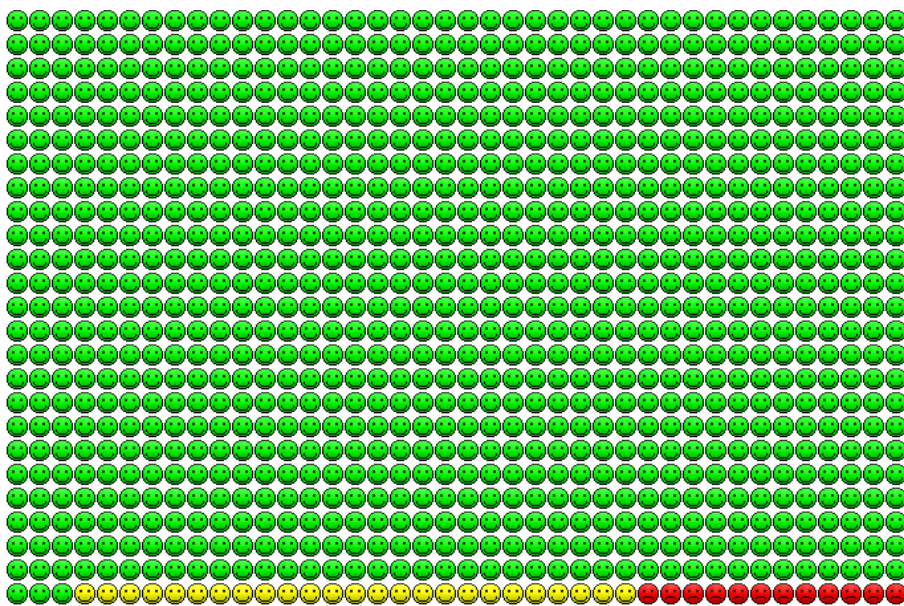
### No treatment: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 3



If 1000 people with AF and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 3 take no anticoagulant, over 1 year on average:

- 963 people will not have an AF-related stroke (the green faces)
- 37 people will have an AF-related stroke (the red faces).

### Anticoagulant: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 3



If all 1000 people take an anticoagulant, over 1 year on average:

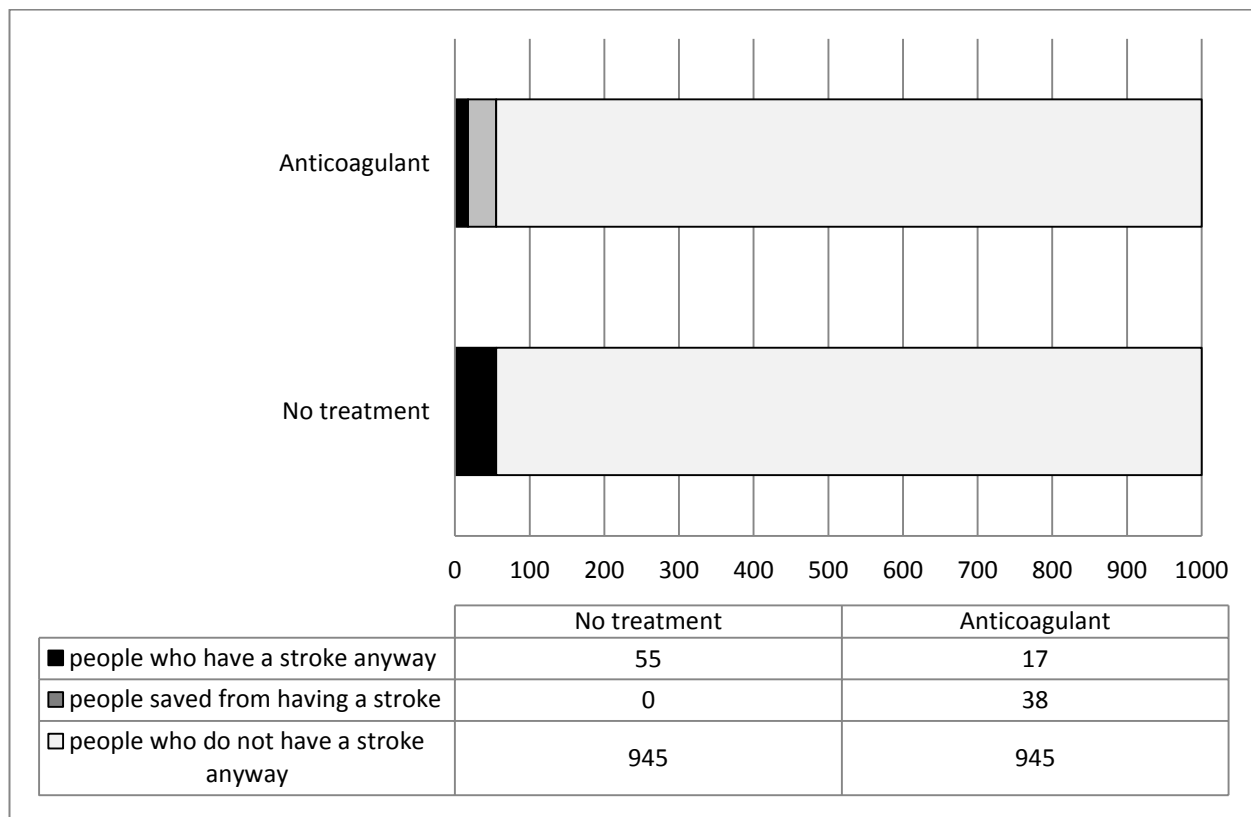
- 963 people will not have an AF-related stroke (the green faces), but would not have done anyway
- 25 people will be saved from having an AF-related stroke (the yellow faces)
- 12 people will still have an AF-related stroke (the red faces).

### CHA<sub>2</sub>DS<sub>2</sub>-VASc score 4

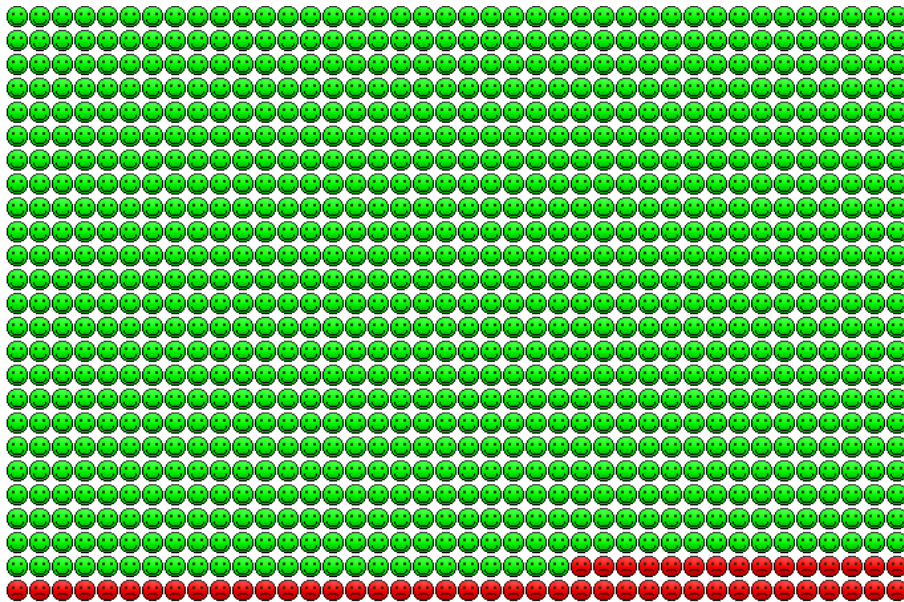
These graphics are 2 different ways of showing the risk of AF-related (ischaemic) stroke in a group of 1000 people with atrial fibrillation and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 4 **over 1 year**. If none of those people takes an anticoagulant, over the course of 1 year 55 people would have an AF-related stroke and 945 people would not. **If all 1000 people take an anticoagulant**, over the course of 1 year on average:

- 38 people will be saved from having an AF-related stroke
- 945 people will not have an AF-related stroke, but would not have done anyway
- 17 people will still have an AF-related stroke.

It is not possible to tell what will happen to an individual person.



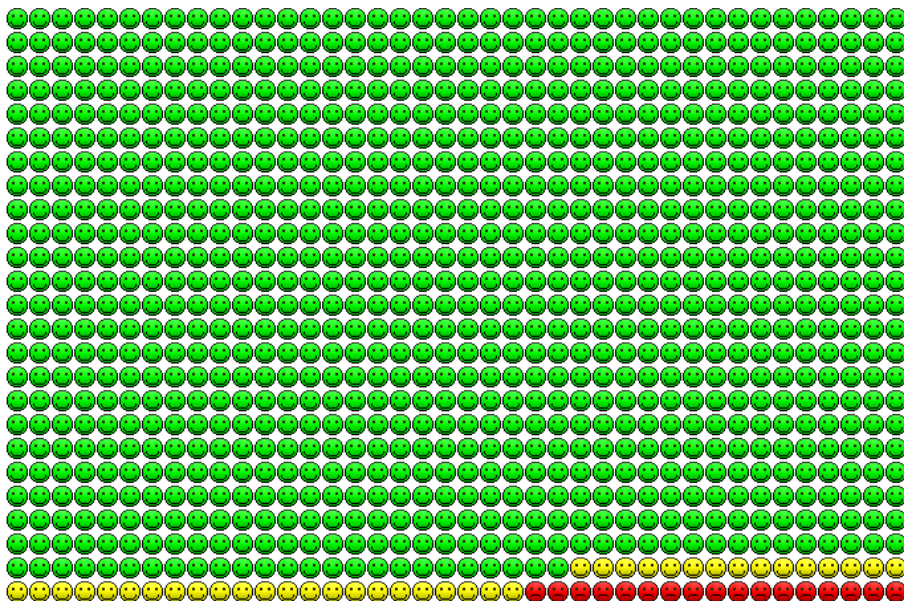
### No treatment: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 4



If 1000 people with AF and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 4 take no anticoagulant, over 1 year on average:

- 945 people will not have an AF-related stroke (the green faces)
- 55 people will have an AF-related stroke (the red faces).

### Anticoagulant: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 4



If all 1000 people take an anticoagulant, over 1 year on average:

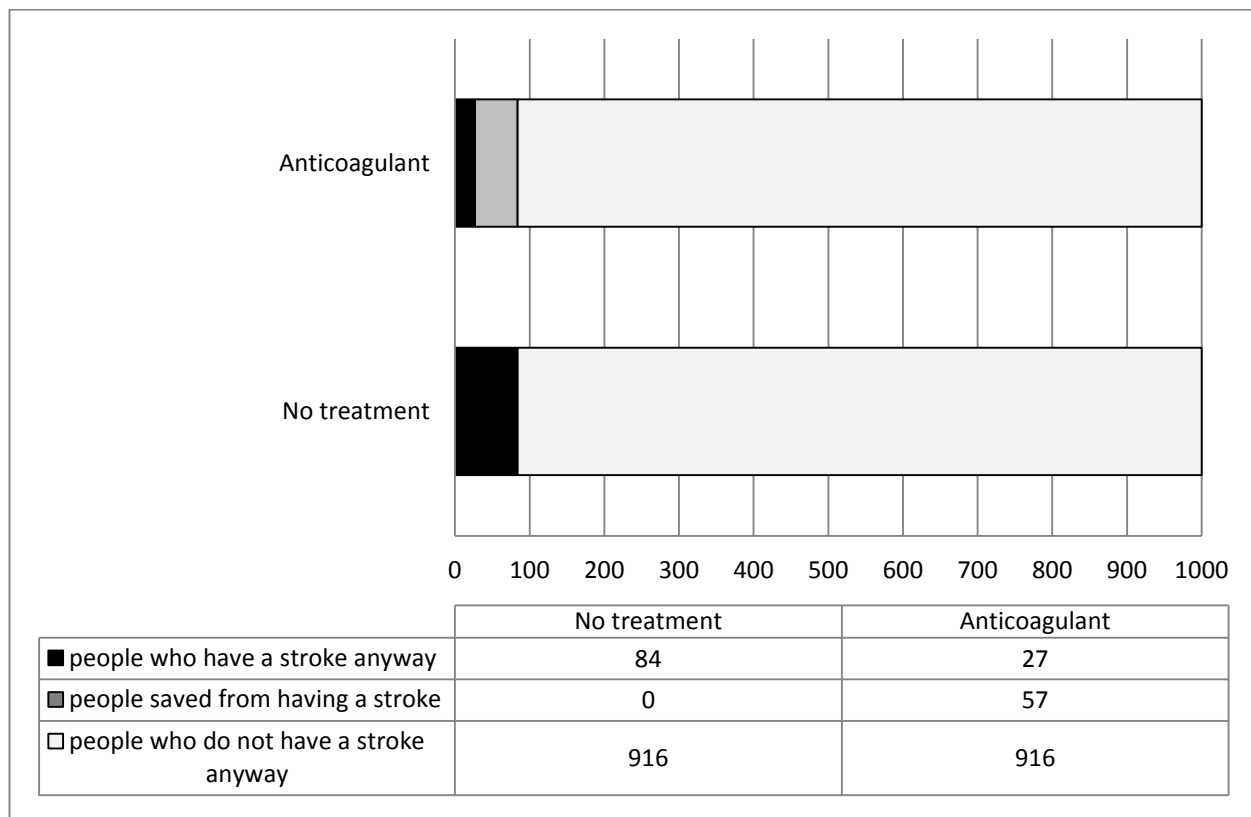
- 945 people will not have an AF-related stroke (the green faces), but would not have done anyway
- 38 people will be saved from having an AF-related stroke (the yellow faces)
- 17 people will still have an AF-related stroke (the red faces).

### CHA<sub>2</sub>DS<sub>2</sub>-VASc score 5

These graphics are 2 different ways of showing the risk of AF-related (ischaemic) stroke in a group of 1000 people with atrial fibrillation and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 5 **over 1 year**. If none of those people takes an anticoagulant, over the course of 1 year 84 people would have an AF-related stroke and 916 people would not. **If all 1000 people take an anticoagulant**, over the course of 1 year on average:

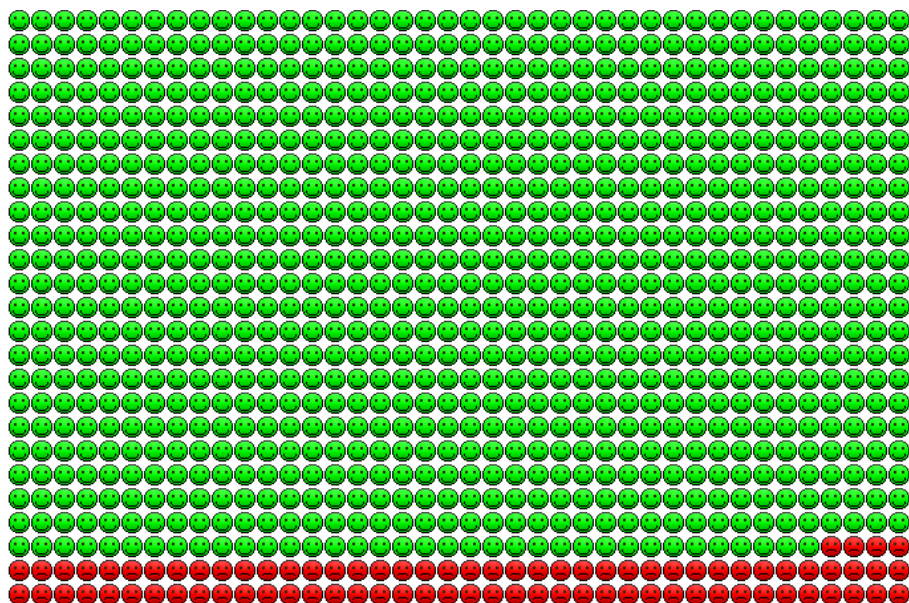
- 57 people will be saved from having an AF-related stroke
- 916 people will not have an AF-related stroke, but would not have done anyway
- 27 people will still have an AF-related stroke.

It is not possible to tell what will happen to an individual person.





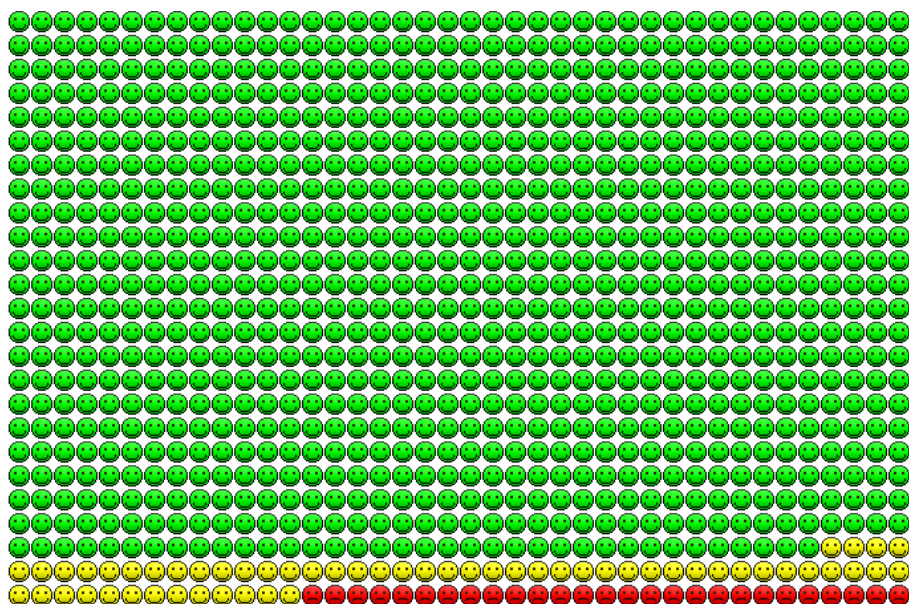
### No treatment: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 5



If 1000 people with AF and a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 5 take no anticoagulant, over 1 year on average:

- 916 people will not have an AF-related stroke (the green faces)
- 84 people will have an AF-related stroke (the red faces).

### Anticoagulant: CHA<sub>2</sub>DS<sub>2</sub>-VASc score 5



If all 1000 people take an anticoagulant, over 1 year on average:

- 916 people will not have an AF-related stroke (the green faces), but would not have done anyway
- 57 people will be saved from having an AF-related stroke (the yellow faces)
- 27 people will still have an AF-related stroke (the red faces).

## Risk of major bleeding – effects of anticoagulants

The graphics on the next pages show the risk of major bleeding over 1 year in groups of 1000 people with atrial fibrillation, depending on their HAS-BLED score, and the effects of anticoagulants on that risk. They show the effects of anticoagulants as a group compared with no treatment. For each HAS-BLED score, the same information is shown in 2 different ways, because some people prefer one format to the other. You only need to look at the graphics that apply to people with your HAS-BLED score.

- [HAS-BLED score 0](#)
- [HAS-BLED score 1](#)
- [HAS-BLED score 2](#)
- [HAS-BLED score 3](#)
- [HAS-BLED score 4](#)

**Note:** the graphics show the risk over 1 year only. We have not been able to produce graphics to show the risk over longer periods of time because reliable numbers are not available from research. But remember that most people take the drugs long term.

### ***HAS-BLED score 0***

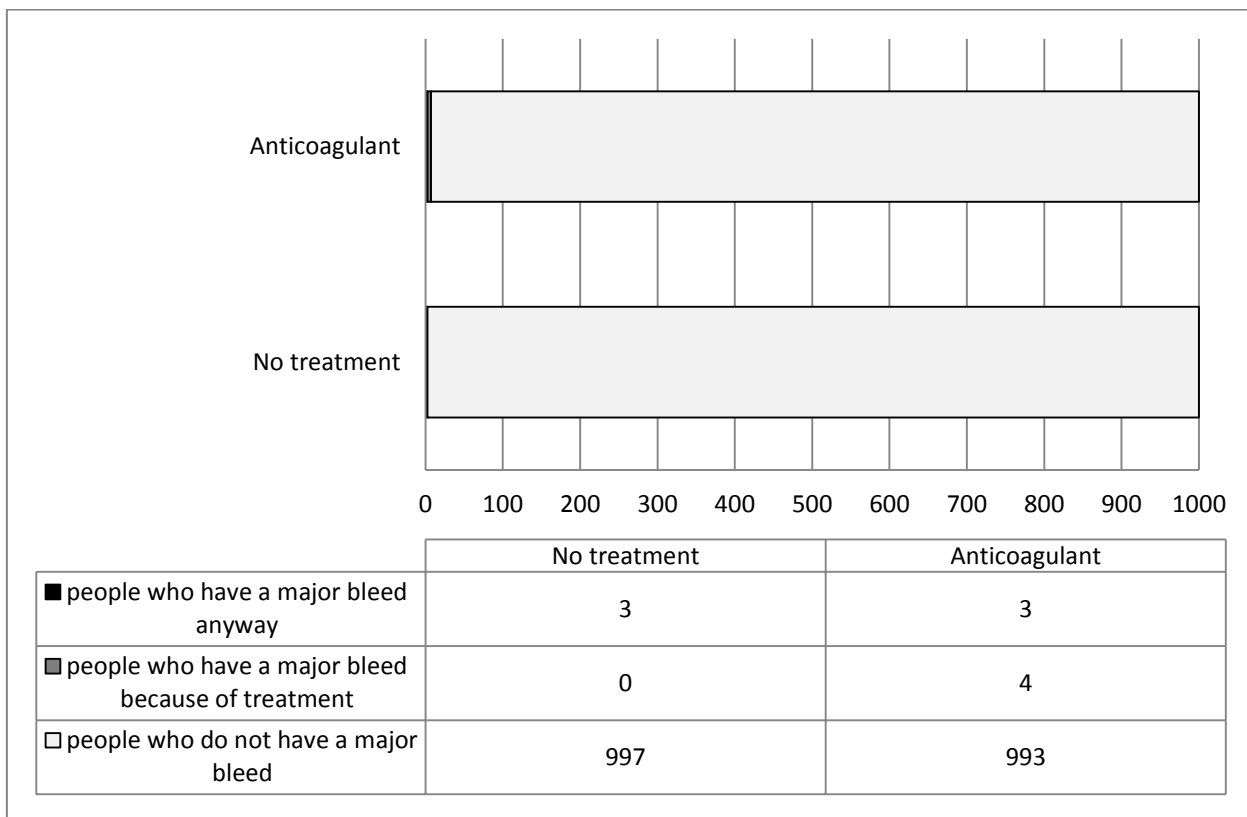
There is very little good information on the risk of major bleeding in people with atrial fibrillation and a HAS-BLED score of 0. The risk is likely to be low, whether the person takes an anticoagulant or not. However, we have not been able to produce graphics to show this because reliable numbers are not available from research.

### HAS-BLED score 1

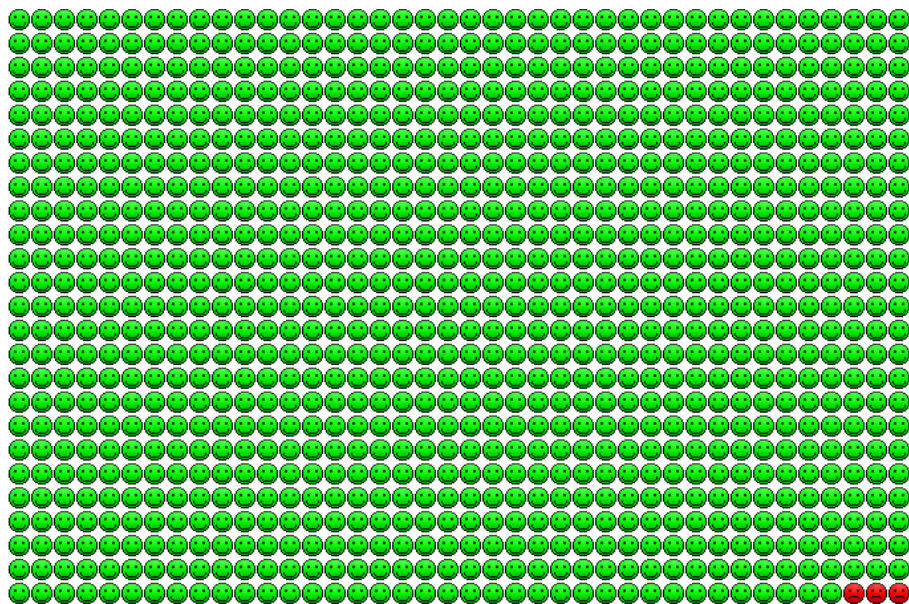
These graphics are 2 different ways of showing the risk of major bleeding **over 1 year** in a group of 1000 people with atrial fibrillation and a HAS-BLED score of 1. If none of those people takes an anticoagulant, over the course of 1 year, 3 people would have major bleeding and 997 people would not. **If all 1000 people take an anticoagulant**, over the course of 1 year on average:

- an extra 4 people will have major bleeding
- 993 people will not have major bleeding
- 3 people will have major bleeding, just as they would have done anyway.

It is not possible to tell what will happen to an individual person.



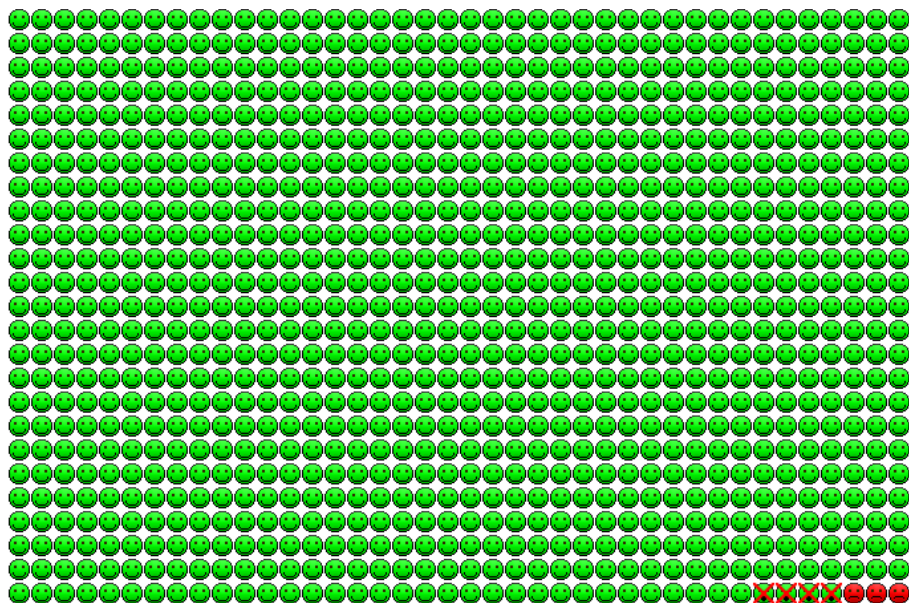
### No treatment: HAS-BLED score 1



If 1000 people with AF and a HAS-BLED score of 1 take no anticoagulant, over 1 year on average:

- 997 people will not have a major bleed (the green faces)
- 3 people will have a major bleed (the red faces).

### Anticoagulant: HAS-BLED score 1



If all 1000 people take an anticoagulant, over 1 year on average:

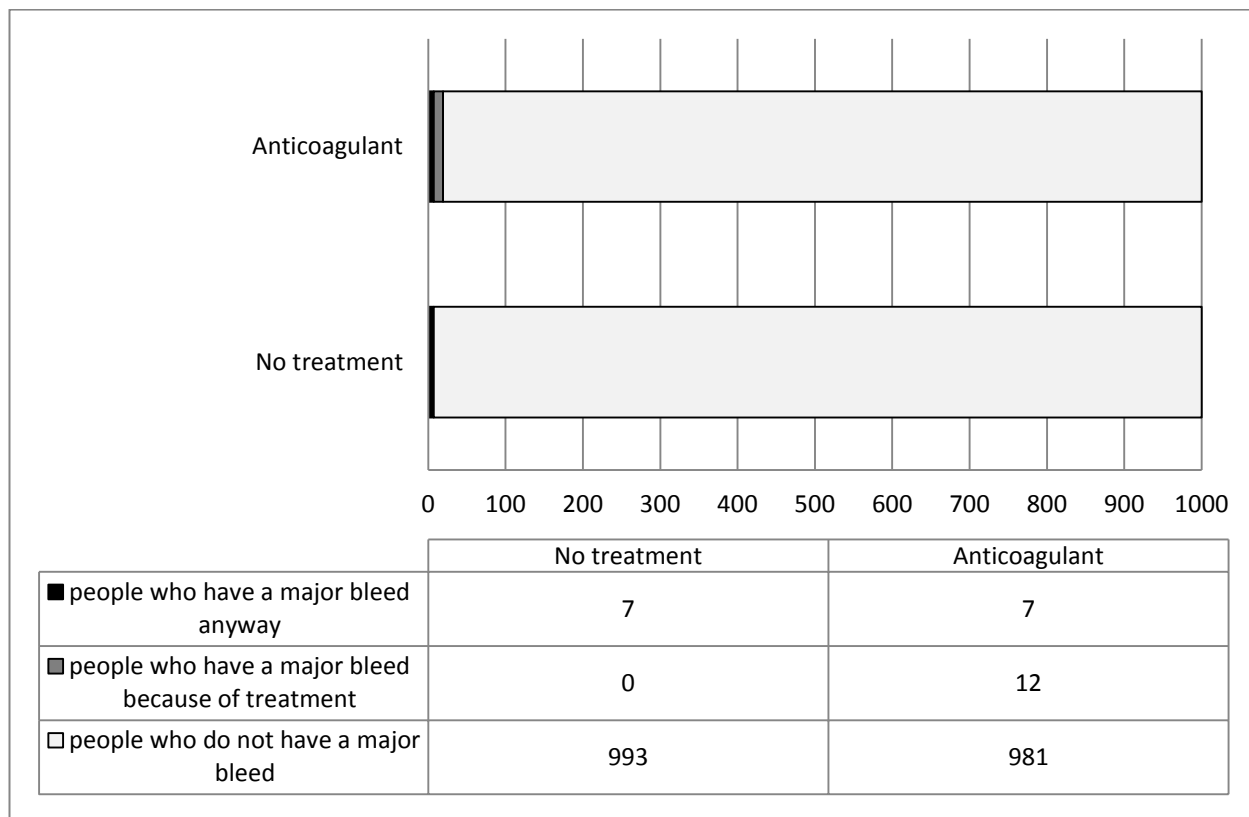
- 993 people will not have a major bleed (the green faces)
- 3 people will have a major bleed (the red faces), just as they would have done anyway
- An extra 4 people will have a major bleed (the green faces with the red cross).

## HAS-BLED score 2

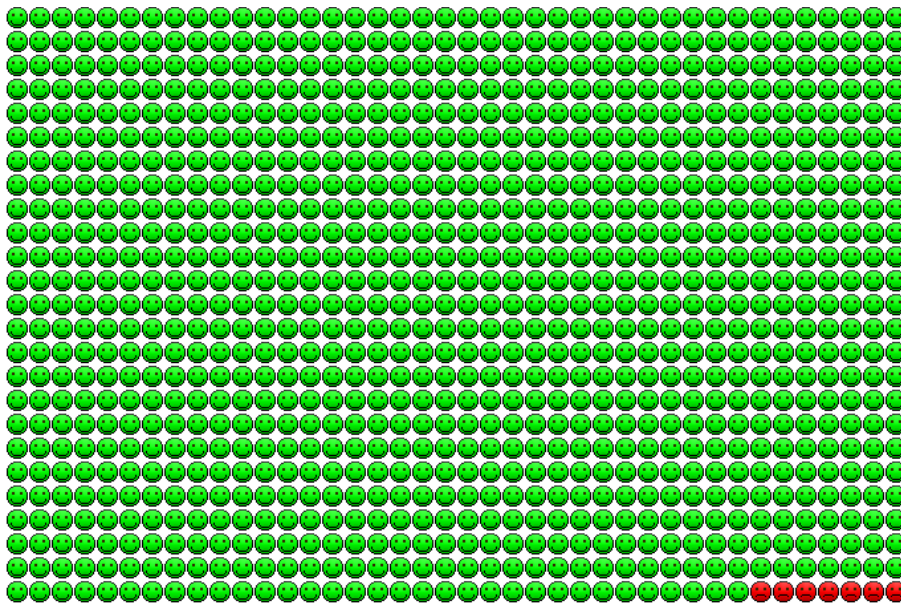
These graphics are 2 different ways of showing the risk of major bleeding **over 1 year** in a group of 1000 people with atrial fibrillation and a HAS-BLED score of 2. If none of those people takes an anticoagulant, over the course of 1 year, 7 people would have major bleeding and 993 people would not. **If all 1000 people take an anticoagulant**, over the course of 1 year on average:

- an extra 12 people will have major bleeding
- 981 people will not have major bleeding
- 7 people will have major bleeding, just as they would have done anyway.

It is not possible to tell what will happen to an individual person.



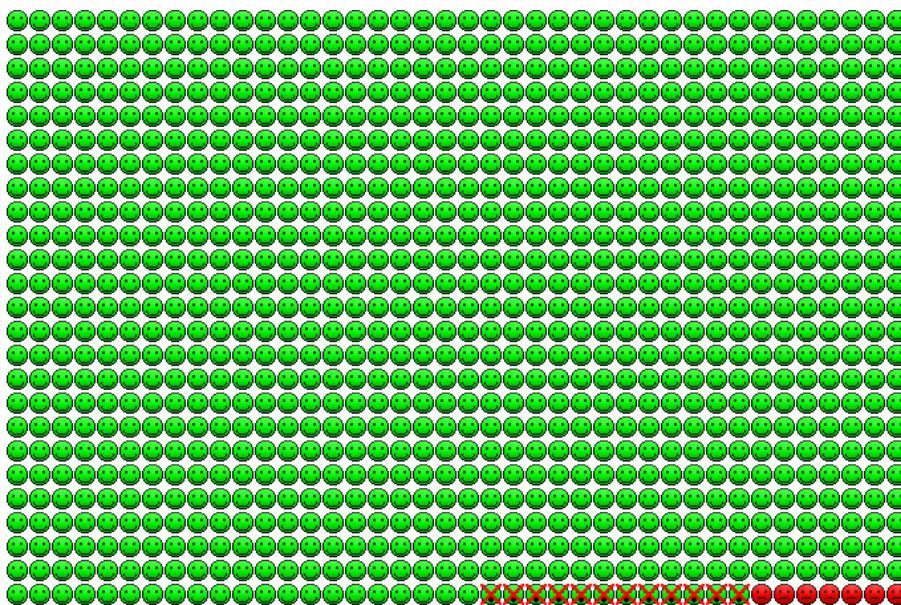
### No treatment: HAS-BLED score 2



If 1000 people with AF and a HAS-BLED score of 2 take no anticoagulant, over 1 year on average:

- 993 people will not have a major bleed (the green faces)
- 7 people will have a major bleed (the red faces).

### Anticoagulant: HAS-BLED score 2



If all 1000 people take an anticoagulant, over 1 year on average:

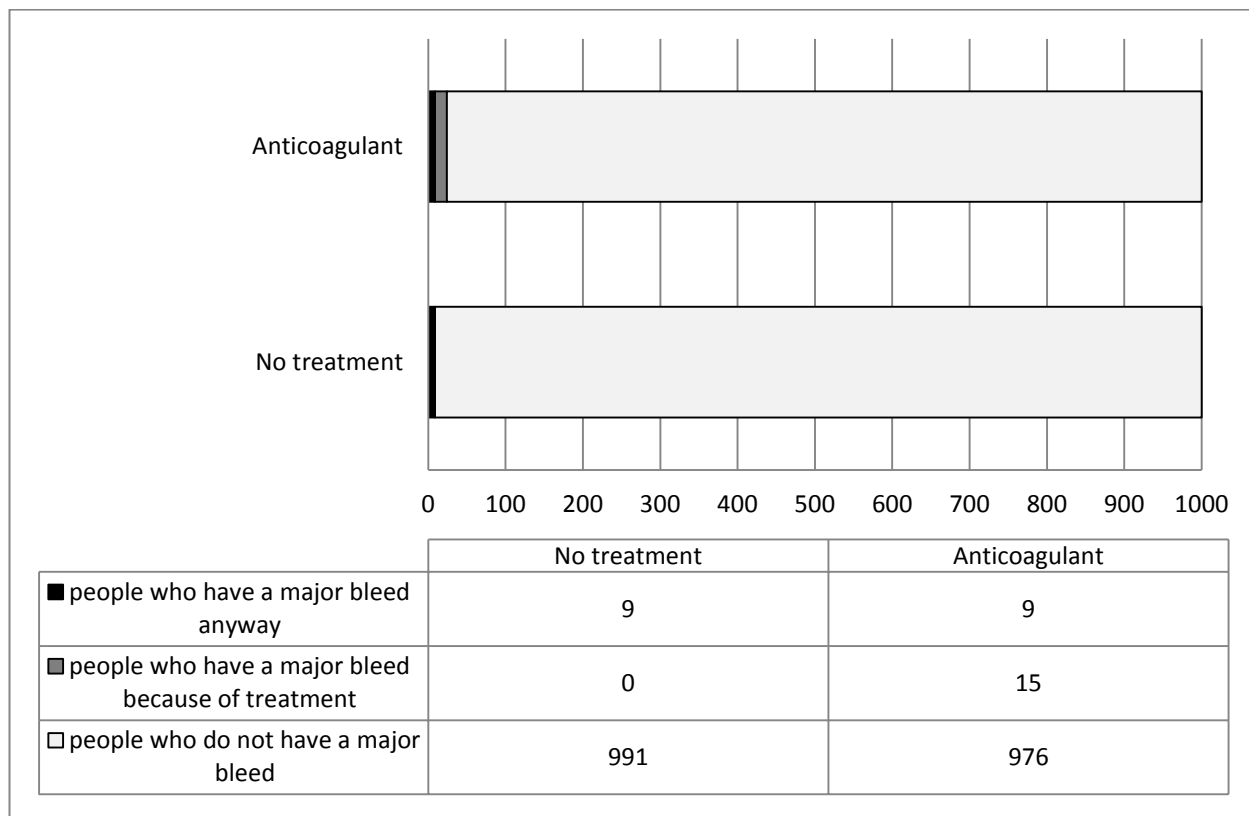
- 981 people will not have a major bleed (the green faces)
- 7 people will have a major bleed (the red faces), just as they would have done anyway
- An extra 12 people will have a major bleed (the green faces with the red cross).

### HAS-BLED score 3

These graphics are 2 different ways of showing the risk of major bleeding **over 1 year** in a group of 1000 people with atrial fibrillation and a HAS-BLED score of 3. If none of those people takes an anticoagulant, over the course of 1 year, 9 people would have major bleeding and 991 people would not. **If all 1000 people take an anticoagulant**, over the course of 1 year on average:

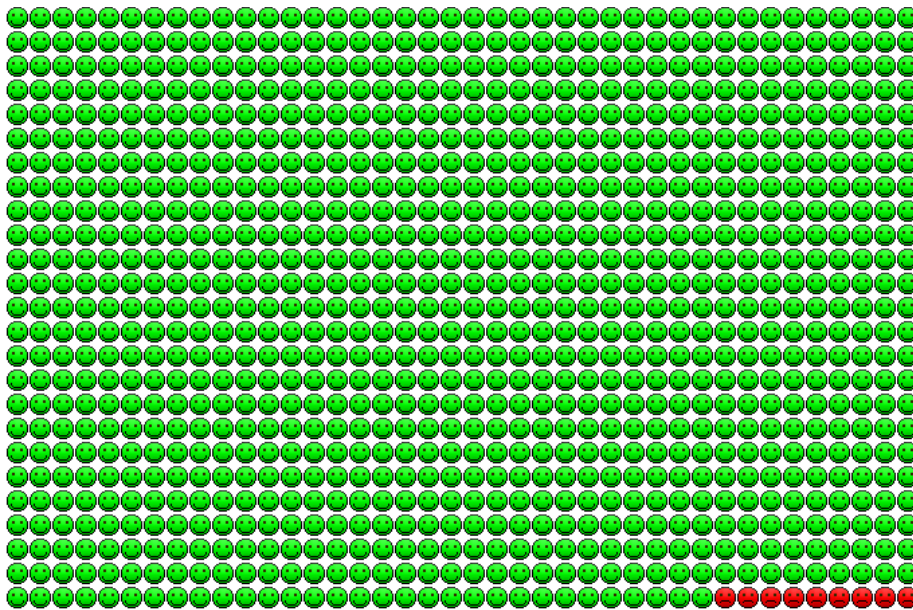
- an extra 15 people will have major bleeding
- 976 people will not have major bleeding
- 9 people will have major bleeding, just as they would have done anyway.

It is not possible to tell what will happen to an individual person.





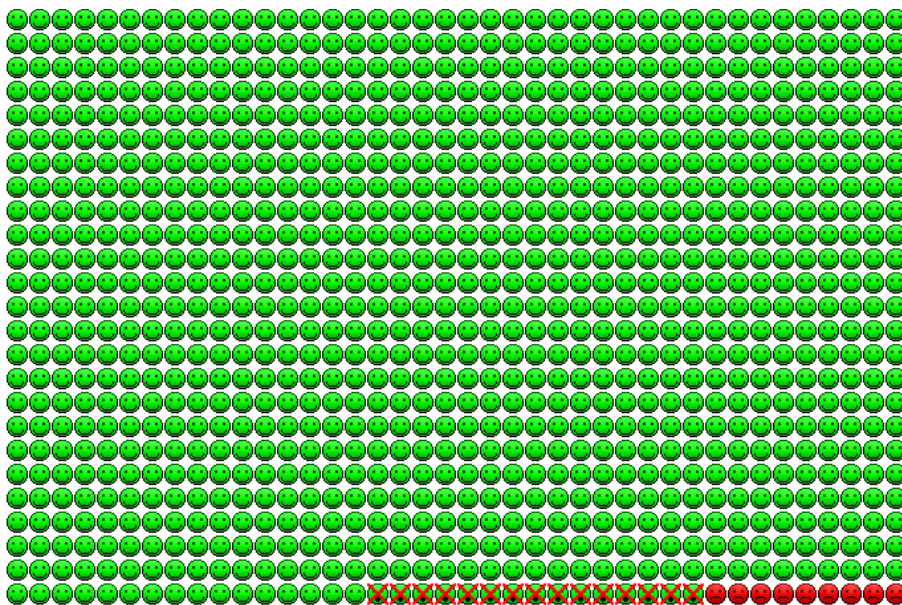
### No treatment: HAS-BLED score 3



If 1000 people with AF and a HAS-BLED score of 3 take no anticoagulant, over 1 year on average:

- 991 people will not have a major bleed (the green faces)
- 9 people will have a major bleed (the red faces).

### Anticoagulant: HAS-BLED score 3



If all 1000 people take an anticoagulant, over 1 year on average:

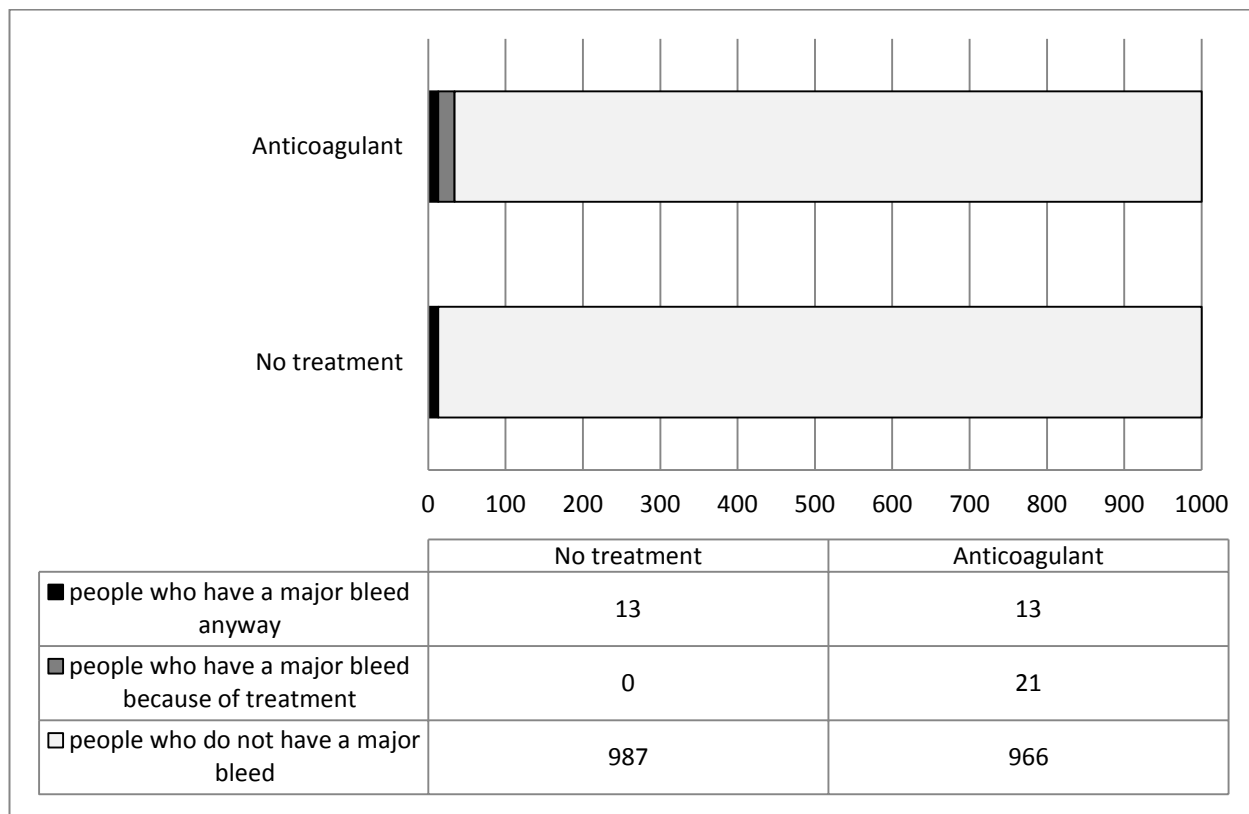
- 976 people will not have a major bleed (the green faces)
- 9 people will have a major bleed (the red faces), just as they would have done anyway
- An extra 15 people will have a major bleed (the green faces with the red cross).

### HAS-BLED score 4

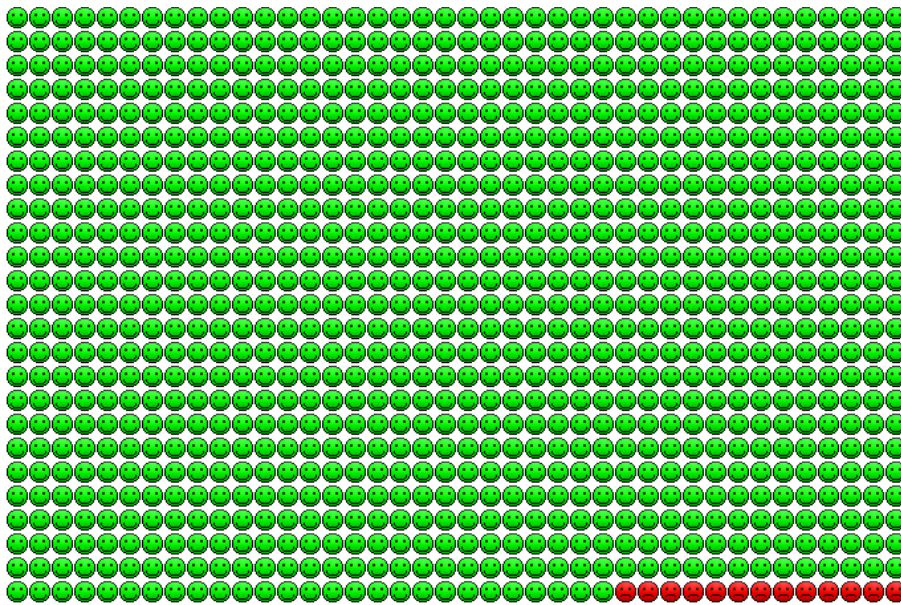
These graphics are 2 different ways of showing the risk of major bleeding **over 1 year** in a group of 1000 people with atrial fibrillation and a HAS-BLED score of 4. If none of those people takes an anticoagulant, over the course of 1 year, 13 people would have major bleeding and 987 people would not. **If all 1000 people take an anticoagulant**, over the course of 1 year on average:

- an extra 21 people will have major bleeding
- 966 people will not have major bleeding
- 13 people will have major bleeding, just as they would have done anyway.

It is not possible to tell what will happen to an individual person.



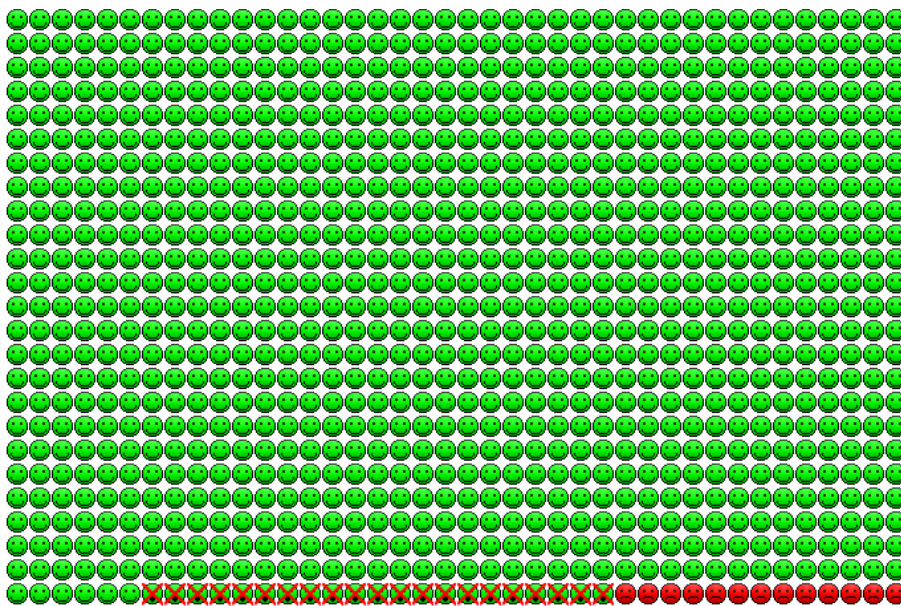
### No treatment: HAS-BLED score 4



If 1000 people with AF and a HAS-BLED score of 4 take no anticoagulant, over 1 year on average:

- 987 people will not have a major bleed (the green faces)
- 13 people will have a major bleed (the red faces).

### Anticoagulant: HAS-BLED score 4



If all 1000 people take an anticoagulant, over 1 year on average:

- 966 people will not have a major bleed (the green faces)
- 13 people will have a major bleed (the red faces), just as they would have done anyway
- An extra 21 people will have a major bleed (the green faces with the red cross)

## Stroke and bleeding risk scoring systems

<u>CHA<sub>2</sub>DS<sub>2</sub>-VASc score</u>			<u>HAS-BLED score</u>		
Risk factor	Score	Present?	Risk factor	Score	Present?
Congestive heart failure or left ventricular dysfunction	1		Hypertension (uncontrolled) <sup>a</sup>	1	
Hypertension	1		Abnormal liver function <sup>b</sup>	1	
Age 75 years or greater	2		Abnormal renal function <sup>c</sup>	1	
Age 65–74 years	1		Stroke	1	
Diabetes mellitus	1		Bleeding <sup>d</sup>	1	
Stroke, transient ischaemic attack or thromboembolism	2		Labile INR <sup>e</sup>	1	
Vascular disease <sup>f</sup>	1		Elderly <sup>g</sup>	1	
Sex category female	1		Drugs <sup>h</sup>	1	
			Alcohol <sup>i</sup>	1	
<b>Total</b>			<b>Total</b>		

Footnotes taken from [Corrigendum to: 'Guidelines: 2012 focused update of the ESC Guidelines for the management of atrial fibrillation: An update of the 2010 ESC Guidelines for the management of atrial fibrillation'](#) Eur Heart J (2013) doi: 10.1093/eurheartj/ehs291. First published online: 31 July 2013.

<sup>a</sup> Uncontrolled blood pressure, for example systolic blood pressure more than 160 mmHg.

<sup>b</sup> Chronic hepatic disease (for example, cirrhosis) or biochemical evidence of significant hepatic derangement (for example, bilirubin more than 2 times upper limit of normal, in association with aspartate/alanine aminotransferase or alkaline phosphatase more than 3 times upper limit of normal, etc.).

<sup>c</sup> The presence of chronic dialysis or renal transplantation or serum creatinine 200 micromol/L or more.

<sup>d</sup> Previous bleeding history and/or predisposition to bleeding, for example bleeding diathesis, anaemia, etc.

<sup>e</sup> Unstable/high international normalised ratios (INRs) or poor time in therapeutic range (for example, less than 60%).

<sup>f</sup> Prior myocardial infarction, peripheral artery disease, aortic plaque.

<sup>g</sup> For example, age over 65 years, frail condition.

<sup>h</sup> Concomitant use of drugs such as antiplatelet agents, non-steroidal anti-inflammatory drugs, etc.

<sup>i</sup> Alcohol abuse.