



Helicon Learning

CPD for healthcare professionals: Anticoagulation management and stroke prevention

Innovative e-learning for doctors, nurses or
pharmacists caring for those on oral
anticoagulation


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Helicon Learning at a glance

- **E-learning** for anticoagulation and stroke prevention
- **Relevant** – end users engaged throughout development to ensure content will meet their needs
- **Established** – built on over a decade's educating and accrediting anticoagulation practitioners
- **Supported** by experts
- **Evidence-based** content
- **Accreditation** built into course
- **Flexible** – learn when and where convenient
- **Social** – can build communities of users
- **Attractive**, easy to use interface

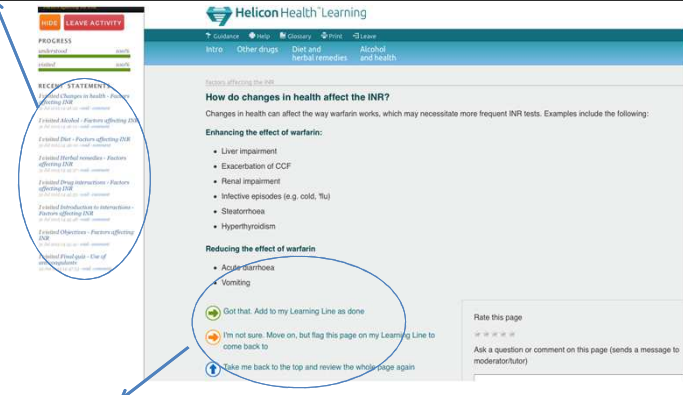
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Course comprised of 13 bite-sized topics

- Indicative learning time for each topic 30 – 120 minutes.
- Total learning time 10 - 15 hours
- More experienced users may not need to access all material

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- The Learning Line allows users to:
 - track their progress through course
 - easily identify areas for review
- It also functions as a forum to allow people to share views and experiences, and build a supportive community

Friendly, well-designed interface

Easy navigability, aided by the Learning Line buttons

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Helicon Health™


Each topic structured around a clearly defined aim and learning objectives

The screenshot shows the Helicon Health Learning interface for the topic 'Anticoagulants'. The page title is 'The effect of anticoagulants on blood clotting'. A section titled 'What should I learn from this Activity?' states the aim: 'The aim of this Activity is to give you an understanding of how blood clots, and of how warfarin (and other vitamin K antagonists), aspirin and heparin prevent blood from clotting.' Below this, it lists learning objectives: 'By the end of this Activity you should be able to: Describe the components of blood, Summarise how blood clots i.e. the clotting cascade, Describe the ways in which drugs can affect blood clotting, Describe the action of warfarin on the clotting cascade, Describe the action of aspirin on blood clotting, Describe the action of heparin on the clotting cascade'. A 'The Learning Line buttons' box contains three navigation icons (back, forward, search) and text: 'At the bottom of each page you'll see three buttons. These help you progress through the material in each Activity. Find out more'. A footer link reads: 'For more information, go to www.heliconhealth.co.uk / email: info@heliconhealth.co.uk'.

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- Quizzes to check understanding and identify learning needs at start of topic
- Instant generation of results

The screenshot shows a 'Check your understanding' quiz section. It contains three true/false questions: 1. 'True or false: Blood is made up of red cells, white cells, platelets and plasma.' (False), 2. 'True or false: The functions of red blood cells are: the carrying of oxygen and carbon dioxide together with phagocytosis of foreign cells and viruses.' (False), 3. 'True or false: At the point of blood vessel or tissue damage, or exposure of blood to air, platelets circulating in the blood, become sticky and adhere together.' (True). Below the quiz, there is a 'FINISH TEST' button. A second box on the right contains: 'Repeated at end of topic to demonstrate understanding gained', 'Checks learning objectives have been met', and 'Forms part of assessment of competency'. A footer link reads: 'For more information, go to www.heliconhealth.co.uk / email: info@heliconhealth.co.uk'.



Learning material based on best available evidence

An introduction to patient self-monitoring of oral anticoagulation

Is patient self-monitoring of oral anticoagulation safe?

When considering the safety of self-monitoring, researchers have tried to answer two main questions:

1) Will self-monitoring result in INR control that is at least as good as that achieved by the person attending a conventional anticoagulant clinic?

Studies published over the last 24 years have looked at the safety of patient self-monitoring of oral anticoagulation (PST or PSM). Most studies did this by following two groups of people – one group who were self-monitoring and another group who were attending an anticoagulant clinic – over a period of time and then compared how often people in these two groups were at the correct INR.

These studies found that the INR control of those who were self-monitoring was at least as good as, if not better than, the INRs of those attending an anticoagulant clinic.

2) Is the person less likely to experience a blood clot or have a bleed if they are self-monitoring?

This type of evidence is important as it measures actual clinical events.

Three large reviews that have collected together between 14 and 22 oral anticoagulation self-monitoring trials. These reviews included trials where people were self-managing and also trials where they were self-testing. The results of these trials were then combined to identify if self-monitoring causes less bleeding or clotting than conventional care. These reviews found that those who were self-monitoring their INR were less likely to have a blood clot, and also less likely to suffer from a minor bleed.


If you would like to explore the evidence for self-monitoring in more depth, please take a look at some key published papers that are freely available.

Individual studies

- Fitzmaurice DA, Murray ET, McCahon D, Holder R, Raftery JP, Hussain S et al. **Self management of oral anticoagulation: randomised trial.** BMJ 2005;331:1057.

Links to freely available published evidence for those who would like to know a little bit more.

For more information, go to www.heliconhealth.co.uk / email: info@heliconhealth.co.uk



- Creative course content to fully engage people in the learning experience and make this as enjoyable as possible.
- Multimedia used where appropriate

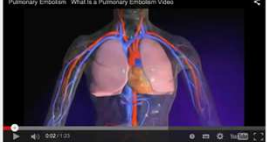
Other indications for oral anticoagulation

Pulmonary embolism (PE)

Pulmonary embolism (PE) can occur without warning or as a complication of a confirmed DVT. A large embolus lodged in a major pulmonary artery may result in a major pulmonary embolus which can present as a sudden collapse or in unconsciousness, and the patient may die of acute circulatory failure unless rapidly treated.

Now take a look at this 2-minute animation that describes how a DVT can lead to a PE.

Pulmonary Embolism - What is a Pulmonary Embolism Video



How does atrial fibrillation increase the risk of stroke?


Atrial fibrillation is continuous, rapid activation of the atria. Although the atria respond electrically at this rate, there is very little mechanical action. Consequently, the atria do not beat in an organised way and pump less efficiently. Some of these rapid impulses travel to the ventricles via the AV nodes, resulting in an irregular ventricular response.

The true prevalence of atrial fibrillation is difficult to determine due to under-diagnosis. It is more common as people get older and in the over-65 age group it affects around 5% of people rising to over 10% of people over the age of 75.


AF increases the risk of stroke five-fold. In AF the atria are fibrillating and therefore not beating in a coordinated way. Blood in the atria can pool and form clots. These clots can then break off and travel elsewhere in the body, including to the brain and cause a stroke.

Now watch this short (1 minute) video which describes how AF causes stroke.

AF and how AF causes stroke



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Reflective thinking encouraged throughout course

Operating an anticoagulation and stroke prevention service

I have heard that some hospital clinics do not see every patient face-to-face. How does that work?

To relieve congestion and to reduce waiting times for patients, many clinics that use venous INR sampling offer a telephone or mailing service. After blood sampling, the patient does not need to wait to see an anticoagulant practitioner in clinic. Instead, they can leave the hospital and will receive their INR result and warfarin dose by post. If the INR is out of range, or if there are any other issues that need resolving, the practitioner telephones the patient at home.


POINTS TO PONDER

What do you think are the risks of operating a mailing / telephone service?
 Are there ways of mitigating these risks?
 Are there alternative ways of relieving clinic congestion?

Join the discussion! If you want to discuss the content on this page and the Points to Ponder with fellow professionals or your tutor, don't forget you can add messages on the Learning Line. Just click 'comment' under any statement.

Users encouraged to share their thoughts and experiences with other participants via their Learning Line

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- Accommodates diversity of learning needs.
- Optional additional content available to learners who wish to explore a topic in more depth

Operating an anticoagulation and stroke prevention service

Is patient self-monitoring of oral anticoagulation safe?

Published evidence suggests that patient self-monitoring of oral anticoagulation is at least as safe as monitoring in an anticoagulant clinic ('conventional care'). The INR control of those who were self-monitoring was at least as good as, if not better than, the INRs of those attending an anticoagulant clinic. Those who were self-monitoring their INR were less likely to have a blood clot, and also less likely to suffer from a minor bleed.

Find out more

If you would like to know a little bit more about the studies that have looked at the safety of patient self-monitoring of oral anticoagulation, please take a look at this [brief review of recent studies](#).

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Operating an anticoagulation and stroke prevention service

Should someone who has not been adherent with anticoagulant treatment or INR testing be excluded from self-testing?

This is a contentious area. Some guidance considers previous non-adherence as a contraindication for patient self-testing. However, it is possible that self-testing may improve poor adherence with anticoagulant treatment or monitoring.

- Got that. Add to my Learning Line as done
- I'm not sure. Move on, but flag this page on my Learning Line to come back to
- Take me back to the top and review the whole page again

Rate this page

Ask a question or comment on this page (sends a message to moderator/tutor)

Send feedback

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LEARNING LINE PROFILE ACTIVITIES

Home Contact support

Send support message

Contact us for support for the myCoracle Learning Line by entering your message below.

Alternatively you can contact us by calling +44 (0)1223 422016

1 message(s) Support

send message

Course fully supported by moderators and local tutors

Rapid response to technical support queries

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Work through the following questions and when you are happy with your answers, press the 'FINISH TEST' button. Please note that you will not be able to change your answers after you have submitted them for marking. Your results will be recorded as a contribution towards your overall assessment.

True or false? The most common site of origin of a deep vein thrombosis is the deep vein is of the calf 1. (distal DVT).

True

False

previous next FINISH TEST

Assessment of knowledge and skills integrated into course

Identifying patients taking oral anticoagulants

Demonstrate my skill

Practise educating a patient

You should now take the opportunity to educate a patient who is starting to take oral anticoagulation. If you do not currently have access to such a patient, ask a friend or colleague to play the part of a patient.

If possible, and with the patient's permission, ask a colleague or your local mentor to sit in on this session. Then, after the session, ask your colleague or mentor for feedback structured around the reflective tool, which can be accessed as a [download here](#) (Word document).

Alternatively, use this tool for self-reflection.

The final assessment

Assessment scenarios

- Assessment 1
- Assessment 2
- Assessment 3
- Assessment 4

On the pages linked here, you will find the assessment questions. These count towards your final assessment.

You should only attempt these questions once you have followed the Activities available to you on your Activities page.

The process for answering is simple:

- Read through the scenarios and reflect on your answer
- Type your answer in the box provided below.
- Click the 'check' button to check that you're satisfied with what you have written
- If you want to correct your answer, click the option to return and make changes
- If you are satisfied with your answer, use the button to send it to the tutor

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Community building... the ability to create learning groups which can continue after formal course completion



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Other indications for oral anticoagulation

How is a DVT treated?

The aims of **initial treatment** are prevention of thrombosis extension and acute recurrence. As warfarin has a delayed onset of action, **heparin** is used for at least 5 days until warfarin can take its effect. In rare instances the initiation of warfarin, particularly with large loading doses, can paradoxically cause clot extension through rapid depletion of Protein C and Protein S. To prevent this from happening, heparin should be continued for at least two days after the INR is therapeutic.

In many places, the treatment of DVT is conducted through an **integrated care pathway (ICP)**, with many patients treated on an ambulatory care basis. The low molecular weight heparin and warfarin are started on day one. The first INR is taken on day three and the dose adjusted according to protocol.

Warfarin prevents extension and embolisation of the clot. It does not have a significant effect on existing clots.

In contrast to warfarin, a **NOAC can be used for acute treatment** of DVT. If heparin is used for acute treatment and then followed up by rivaroxaban, this should be started 0 to 2 hours before the time of the next scheduled administration of the low molecular weight heparin, or at the time of discontinuation of a continuous infusion of unfractionated heparin.

What happens near me?



Now please find out how DVTs are treated near you. (If you work in primary care, try to find out what happens at your nearest hospital). Is there a clinical guideline? Is there an integrated care pathway? Which heparin is used?

Learners encouraged to find out about local practice, and to share their findings with other learners,

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To find out more ...

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