

Vascular surgery

Vascular surgeons are trained in the diagnosis and management of conditions affecting the circulation, including disease of the arteries, veins and lymphatic vessels. They treat all parts of the vascular system excluding the heart and the brain.

This page provides useful information on the nature of the work, the common procedures/interventions, sub-specialties and other roles that may interest you.



Nature of the work

Vascular surgery became a surgical specialty in its own right in 2012, having previously been a subspecialty of general surgery. The first trainee vascular surgeons started training in 2013.

Vascular surgeons are trained to assess, diagnose and treat vascular conditions. Many vascular conditions can be treated without surgery, radiology or invasive procedures. The vascular surgeon often has a preventative role and may advise the patient to adopt a healthy lifestyle including a suitable diet and regular exercise. This, in combination with appropriate medication, will often minimise future risk of heart attack and stroke [1].

Where surgery is required, endovascular [2] surgery is often performed utilising minimally invasive techniques. Vascular surgeons or interventional radiologists both provide these treatments such as angioplasty (widening narrowed or obstructed arteries) and inserting stents. For example, during angioplasty an empty and collapsed tiny balloon is inserted into narrowed areas of the vessel and inflated using water pressure to improve blood flow. A stent (a tiny metal cylinder) may also be inserted to ensure the vessel remains open. The aim of these techniques is to restore normal blood flow.

Endovascular [2] surgery has some advantages over open surgery including shorter recovery periods both in and outside the hospital, less pain and scarring and lower mortality rates. Endovascular [2] techniques may however be less durable when applied to more extensive disease, so a careful decision is required before treatment. Multidisciplinary working with interventional radiology is very important.

Open surgery is used to remove blockages from blood vessels or to bypass a blocked vessel.

Vascular surgeons treat a wide variety of conditions including:

- carotid artery disease – a waxy substance called plaque builds up inside the carotid arteries that carry blood to the neck and head and can cause a stroke [1]
- aneurysms [3] – dilation of a blood vessel, which can lead to rupture and death
- critical limb ischemia – severe blockage in the arteries of the lower extremities which seriously reduces blood flow and in serious cases may result in limb amputation
- venous disease – where veins become abnormal or diseased, including the treatment of varicose veins
- lymphoedema – swelling caused by accumulation of fluid in the body's tissues

Diabetes can affect vascular health adversely and may result in foot problems due to peripheral arterial disease. Vascular surgeons often provide the care for diabetics with foot problems.

Vascular surgeons also treat renal vascular disease – conditions that affect the circulation of the arteries and veins affecting the kidneys, such as renal artery aneurysms [3] and thrombosis [4] (a blood clot in the renal artery which may lead to kidney failure).

Vascular surgery is very varied and most operations have to be tailored to the individual patient. Some vascular surgeons develop experience of treating paediatric vascular conditions and vascular malformations, whilst others provide vascular input into trauma centres. Because this surgical specialty is new, there are no defined sub-specialties as yet.

Vascular surgeons work particularly closely with other specialist medical colleagues, for example in the control of vascular bleeding. They also work alongside vascular interventional radiologists and often carry out procedures jointly. Cardiac and vascular surgeons increasingly work together, particularly for complex aneurysms [3]. Vascular surgeons also work closely with cardiologists to assess patients with cardiovascular [5] disease.

About 40% of vascular patients present to hospitals as emergency cases. Urgent intervention is required for conditions such as ruptured aortic aneurysms [3] and vascular trauma following road accidents, assaults and other accidents.

“I love working in vascular surgery as the outcomes are clearly related to the work you have done”. Marcus Brooks, Consultant Vascular Surgeon, North Bristol NHS Trust.

Read Marcus's story [6]

Common procedures

Procedures performed by vascular surgeons include:

- open and endovascular [2] repair of aortic aneurysms [3]
- carotid artery surgery to prevent stroke [1] – to remove the build-up of plaque
- lower limb revascularisation – restoration of blood flow to the legs and feet of patients with clogged arteries due to peripheral vascular disease
- limb amputation – as a last resort when other treatments have failed
- treatment of varicose veins – usually using minimally invasive procedures

Varicose veins surgery has been transformed in recent years following the introduction of endovenous vein treatment – minimally invasive surgery where the veins are repaired without major incisions in the leg. An ultrasound [7] machine enables the surgeon to see the damaged vein under the skin. Tiny incisions are made and instruments are placed into the vein to perform the repair, under local rather than general anaesthetic. In the past this was a much bigger operation, where the veins had to be stripped from the leg and recovery times were much longer.

What to learn more?

Find out more about:

- the working life [8] of a vascular surgeon
- the entry requirements [9] and training and development [10] needed

- | | |
|--------------------|-------------------|
| Pay and conditions | Expand / collapse |
|--------------------|-------------------|

This section provides useful information about the pay for junior doctors (doctors in training), SAS doctors (specialty doctors and associate specialists) and consultants.

Find out more about current pay scales for doctors [11], more information can be found on the BMA website [12].

NHS Employers [13] provides useful advice and guidance on all NHS pay, contracts terms and conditions.

Medical staff working in private sector hospitals, the armed services or abroad will be paid on different scales.

- | | |
|-------------------------|-------------------|
| Where the role can lead | Expand / collapse |
|-------------------------|-------------------|

Read about consultant and non-consultant roles in vascular surgery, flexible working and about wider opportunities.

Consultant roles

You can apply for consultant roles six months prior to achieving your Certificate of Completion of Training [14] (CCT [15]). You will receive your CCT [15] at the end of your vascular surgery training.

Managerial opportunities for consultants include:

- clinical lead - lead NHS consultant for the team
- clinical director - lead NHS consultant for the department
- medical director - lead NHS consultant for the Trust

Most NHS consultants will be involved with clinical and educational supervision of junior doctors.

Here are some examples of education and training opportunities:

- director of medical education - the NHS consultant appointed to the hospital board who is responsible for the postgraduate medical training in a hospital. They work with the postgraduate dean to make sure training meets GMC standards.
- training programme director - the NHS consultant overseeing the education of the local cohort of trainee doctors e.g. foundation training [16] programme director. This role will be working within the LETB/deanery
- associate dean - the NHS consultant responsible for management of the entirety of a training programme. This role will also be working within the LETB/deanery

SAS doctor roles

SAS surgeons (Staff, Associate Specialists and Specialty Doctors) work as career grade specialty doctors who are not in training or in consultant posts. You will need at least four postgraduate years training (two of those being in a relevant specialty) before you can apply for SAS roles.

The role of an SAS surgeon can vary greatly. Depending on your experience you might work on complex surgery or relatively minor diagnostic and outpatients work. SAS doctors will frequently participate in routine and elective [17] surgery rather than emergency work. They may also train other staff.

Some surgeons are attracted to the SAS role as the hours are more regular than those of the consultant, and you're paid for on-call work and overtime beyond 7am-7pm.

Further information on the SAS doctor role. [18]

Other non-training grade roles

These roles include:

- trust grade
- clinical fellows

Academic pathways

If you have trained on an academic vascular surgery pathway or are interested in research there are opportunities in academic medicine.

For those with a particular interest in research, you may wish to consider an academic career in vascular surgery. Whilst not essential, some doctors start their career with an Academic Foundation post [19]. This enables them to develop skills in research and teaching alongside the basic competences in the foundation curriculum.

Entry into an academic career would usually start with an Academic Clinical Fellowship (ACF) and may progress to a Clinical Lectureship (CL). Alternatively some trainees that begin with an ACF post then continue as an ST trainee on the clinical programme post-ST4.

Applications for entry into Academic Clinical Fellow posts are coordinated by the National Institute for Health Research Trainees Coordinating Centre (NIHRTCC). [20]

There are also numerous opportunities for trainees to undertake research outside of the ACF/CL route, as part of planned time out of their training programme. Find out more about academic medicine. [21]

The Clinical Research Network [22](CRN) actively encourages all doctors to take part in clinical research.

Other opportunities

There are good opportunities for teaching undergraduate and postgraduate medical students and colleagues. All surgical trainees are expected to develop research and teaching skills and these are reflected in the curriculum.

There are a large number of academic vascular surgeons and most major units have an academic lead. The opportunities for academic careers in vascular surgery are very good. This will include undertaking research, writing papers, presenting work at conferences and collaborating with national and international colleagues.

Vascular surgeons also undertake audit and committee work. With experience there are excellent opportunities to become involved in management and to actively participate in professional organisations.

There may also be opportunities to work in the private sector and overseas.

- | | |
|--------------------------|-------------------|
| Job market and vacancies | Expand / collapse |
|--------------------------|-------------------|

This section provides useful information about the availability of jobs, how to find vacancies and sources of further information.

Job market information

NHS Digital regularly publish workforce statistics which show the number of full time equivalent consultants and doctors in training for each specialty: NHS Digital workforce statistics [23].

Competition ratios for medical specialty training places are published on Health Education England's specialty training webpage [24].

For information regarding Scotland, Wales and Northern Ireland please click on the links below.

NHS Scotland workforce information [25]

NHS Wales workforce information [26]

Northern Ireland workforce information [27]

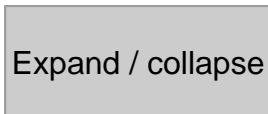
Where to look for vacancies

Applications for core surgery training are made via the Core Surgery National Recruitment Office [28].

London and the South East (LaSE) nationally coordinates the recruitment into Core Surgery Training round one (CT1) on behalf of England, Wales and Scotland. This training programme is open to those who may want to train flexibly on a less than full-time basis (LTFT) [29]. You can request and apply for this after you have been offered the job. Restrictions apply.

Registration and application for core surgery and specialist training is online via Oriel. Further details, person specifications and application deadlines are also available on the Oriel [30]site.

Northern Ireland has its own recruitment process. For further details please visit the Northern Ireland Medical and Dental Training Agency [31] website.

-  Further information

British Medical Association [32]

Joint Committee on Intercollegiate Examinations [33]

General Medical Council [34]

Royal College of Surgeons [35]

Royal College of Surgeons of Edinburgh [36]

Royal College of Physicians and Surgeons of Glasgow [37]

Vascular Society [38]

Other roles that may interest you

- Cardiology [39]
- Emergency medicine [40]
- General surgery [41]
- Cardiothoracic surgery [42]

Source URL: <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/surgery/vascular-surgery>

Links

[1] <https://www.healthcareers.nhs.uk/glossary#Stroke>

[2] <https://www.healthcareers.nhs.uk/glossary#Endovascular>

[3] <https://www.healthcareers.nhs.uk/glossary#Aneurysms>

[4] <https://www.healthcareers.nhs.uk/glossary#Thrombosis>

[5] <https://www.healthcareers.nhs.uk/glossary#Cardiovascular>

[6] <https://www.healthcareers.nhs.uk/explore-roles/surgery/vascular-surgery/real-life-story-mr-marcus-brooks>

[7] <https://www.healthcareers.nhs.uk/glossary#Ultrasound>

[8] <https://www.healthcareers.nhs.uk/explore-roles/surgery/vascular-surgery/working-life>

- [9] <https://www.healthcareers.nhs.uk/explore-roles/surgery/vascular-surgery/entry-requirements-skills-and-interests>
- [10] <https://www.healthcareers.nhs.uk/explore-roles/surgery/vascular-surgery/training-and-development>
- [11] <https://www.healthcareers.nhs.uk/about-us/careers-medicine/pay-doctors>
- [12] <http://bma.org.uk/practical-support-at-work/pay-fees-allowances/pay-scales>
- [13] <http://www.nhsemployers.org/your-workforce/pay-and-reward>
- [14] https://www.healthcareers.nhs.uk/glossary#Certificate_of_completion_of_training
- [15] <https://www.healthcareers.nhs.uk/glossary#CCT>
- [16] https://www.healthcareers.nhs.uk/glossary#Foundation_training
- [17] <https://www.healthcareers.nhs.uk/glossary#Elective>
- [18] <https://www.healthcareers.nhs.uk/i-am/currently-working-health/information-doctors/sas-doctors>
- [19] <http://www.foundationprogramme.nhs.uk/pages/academic-programmes>
- [20] <http://www.nihr.ac.uk/funding/integrated-academic-training-programme.htm>
- [21] <https://www.healthcareers.nhs.uk/i-am/currently-working-health/clinical-academic-careers/clinical-academic-medicine>
- [22] <http://www.crn.nihr.ac.uk/>
- [23] <https://digital.nhs.uk/data-and-information/publications/statistical/nhs-workforce-statistics>
- [24] <https://specialtytraining.hee.nhs.uk/Competition-Ratios>
- [25] <http://www.isdscotland.org/isd/5345.html>
- [26] <http://gov.wales/statistics-and-research/?lang=en>
- [27] <https://www.health-ni.gov.uk/articles/staff-numbers>
- [28] <http://www.lpmde.ac.uk/laserecruitment/specialties/core-surgery>
- [29] <https://www.healthcareers.nhs.uk/i-am/working-health/information-doctors/less-full-time-training-doctors>
- [30] <https://www.oriel.nhs.uk/Web/>
- [31] <http://www.nimda.gov.uk/>
- [32] <http://www.bma.org.uk>
- [33] <http://www.jcie.org.uk>
- [34] <http://www.gmc-uk.org/>
- [35] <http://www.rcseng.ac.uk/>
- [36] <http://www.rcsed.ac.uk>
- [37] <http://www.rcpsg.ac.uk>
- [38] <http://www.vascularsociety.org.uk/>
- [39] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/cardiology>
- [40] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/emergency-medicine>
- [41] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/surgery/general-surgery>
- [42] <https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/surgery/cardiothoracic-surgery>