THE SOCIETY FOR
VASCULAR TECHNOLOGY OF
GREAT BRITAIN AND IRELAND

SVT Introduction to Vascular Ultrasound

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Pre Course Learning

- Completed
  - Basic ultrasound physics
  - Doppler, probe selection and manipulation and common artefacts
- Course handouts
  - List of further e-learning modules and additional reading material

elfh
elearning for healthcare

Introduction to Vascular Ultrasound

Timetable

11:00-11:30	Welcome introduction by session chairs
11:30–13:00	Practical sessions
13:00-14:00	Lunch in the exhibition hall
14:00 - 16:30	Practical sessions
16:30 – 17:00	Working with your vascular scientists

Introduction to Vascular Ultrasound

Aims

- To provide a basic background and theory for those performing vascular ultrasound
- To provide a hands-on practical demonstration and experience
- Tips, tricks and pitfalls
- Not designed to be a sign off or competency assessment

Introduction to Vascular Ultrasound

Station 1 - TBPI and Doppler Waveforms

- Set up and equipment
- Patient positioning
- Toe pressures and calculating TBPI
- Obtaining doppler waveforms
- Determining phasicity

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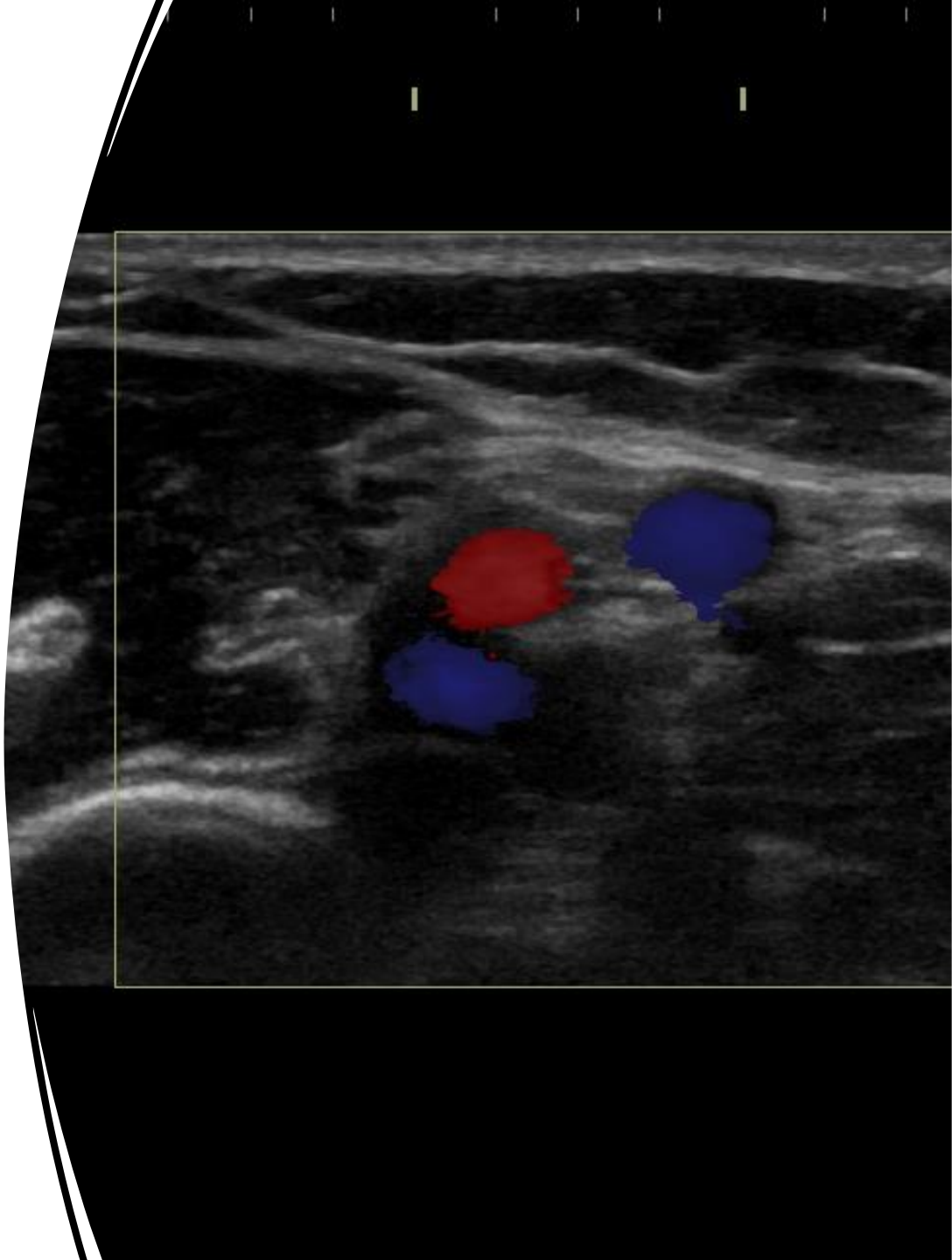
Station 2 – AVF Mapping

- Probe selection
- Patient positioning
- Probe handling and manipulation
- Anatomy and vessel identification
- Measurements
- Image optimisation



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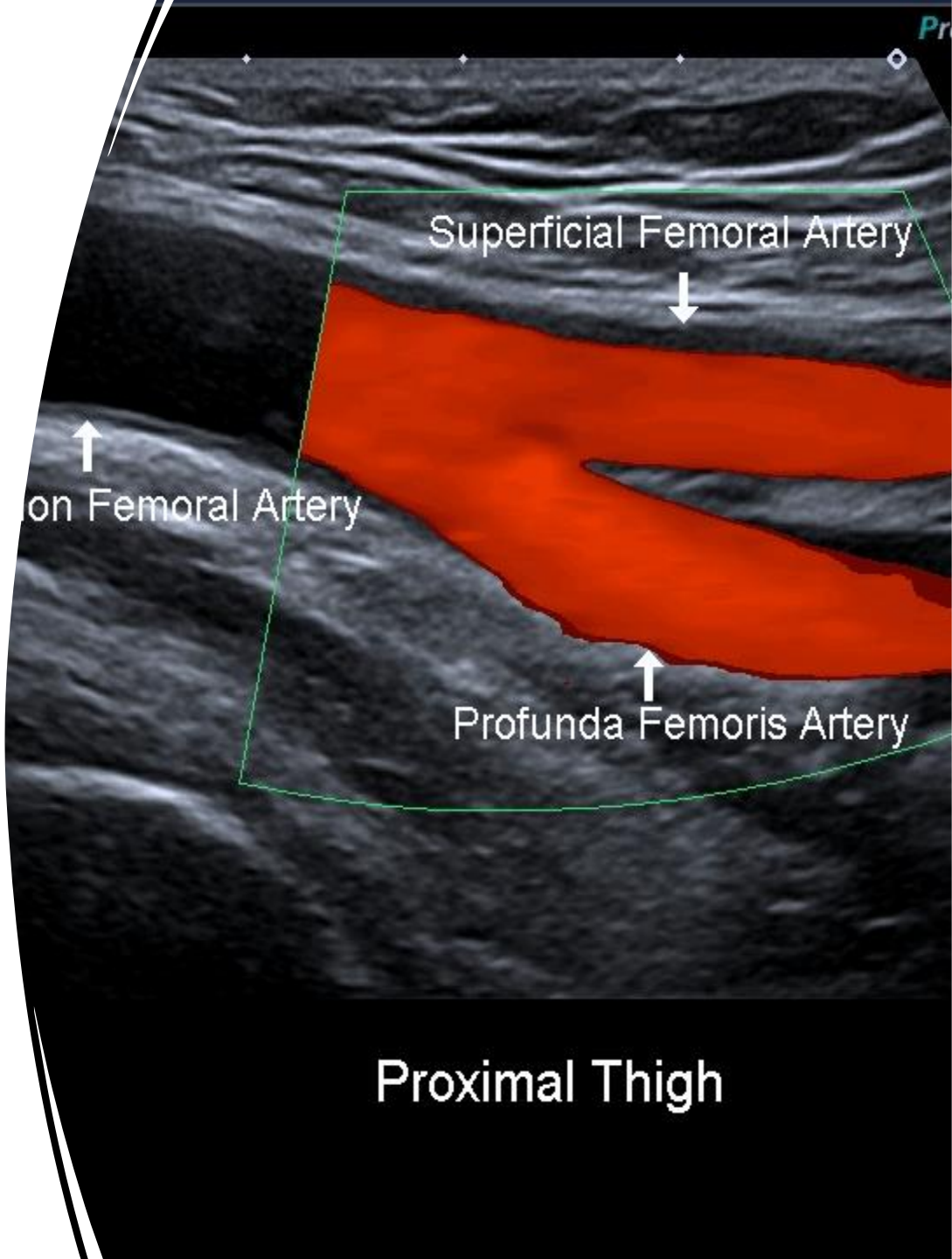
Station 3 - CFA scanning

- Probe handling
- Identification of landmarks
- Colour flow and patency
- Spectral doppler and waveforms
- Calcification
- Image optimisation



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Station 4 - Aorta screening measurement

- Anatomy and landmarks
- Iliac bifurcation
- ITI vs OTO
- Taking reliable measurements
- Limitations and pitfalls
- Image optimisation

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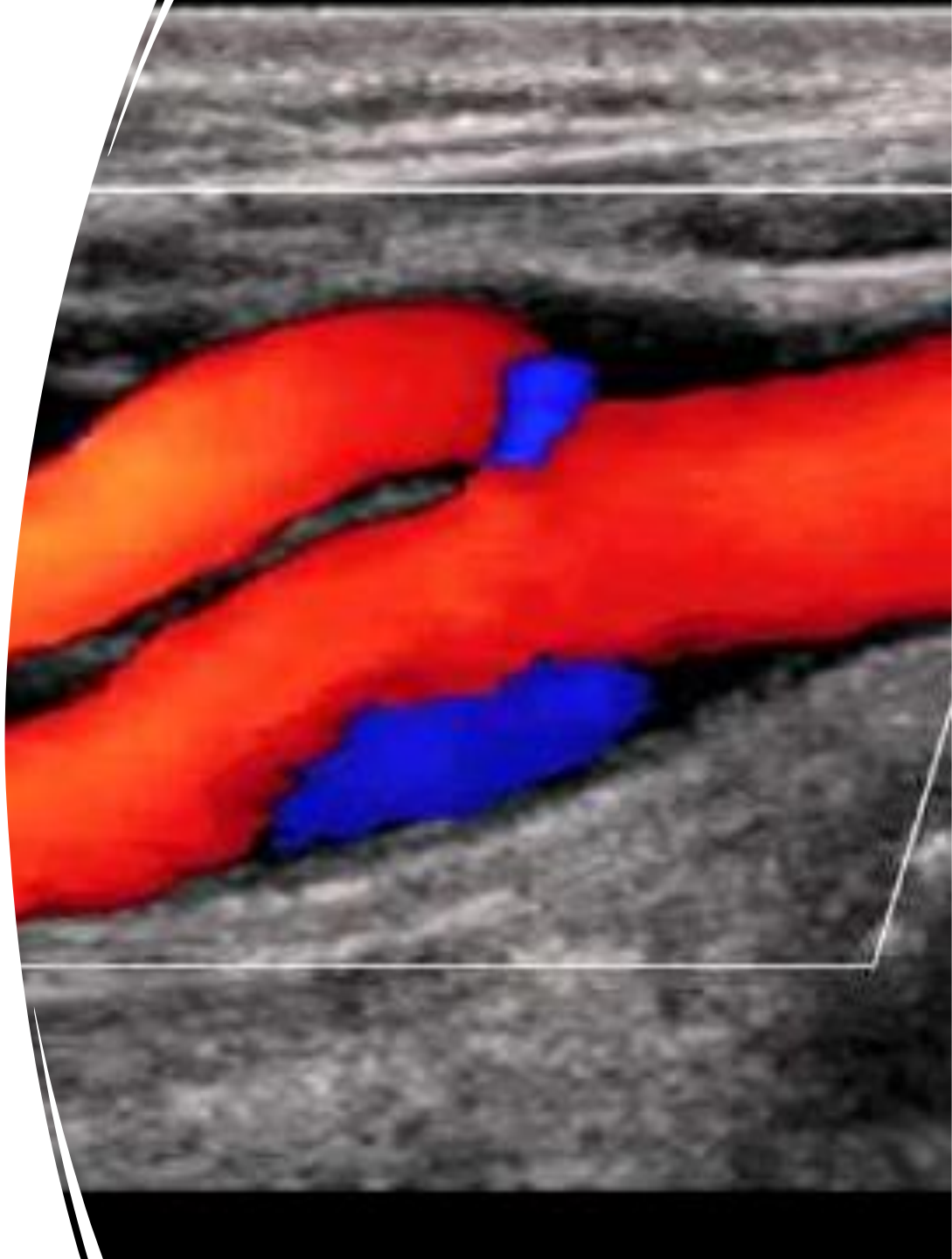
Station 5 – Carotids

- Probe handling and selection
- Identification of bifurcation
- ICA vs ECA
- Colour box
- Spectral waveforms
- Velocity measurement
- Image optimisation



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Station 6 – Venous scanning

- Probe handling and manipulation
- LSV identification
- Patency checking
- Depth and calibre measurements
- Image optimisation

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Any questions from the pre course-learning

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Performing a Basic QA

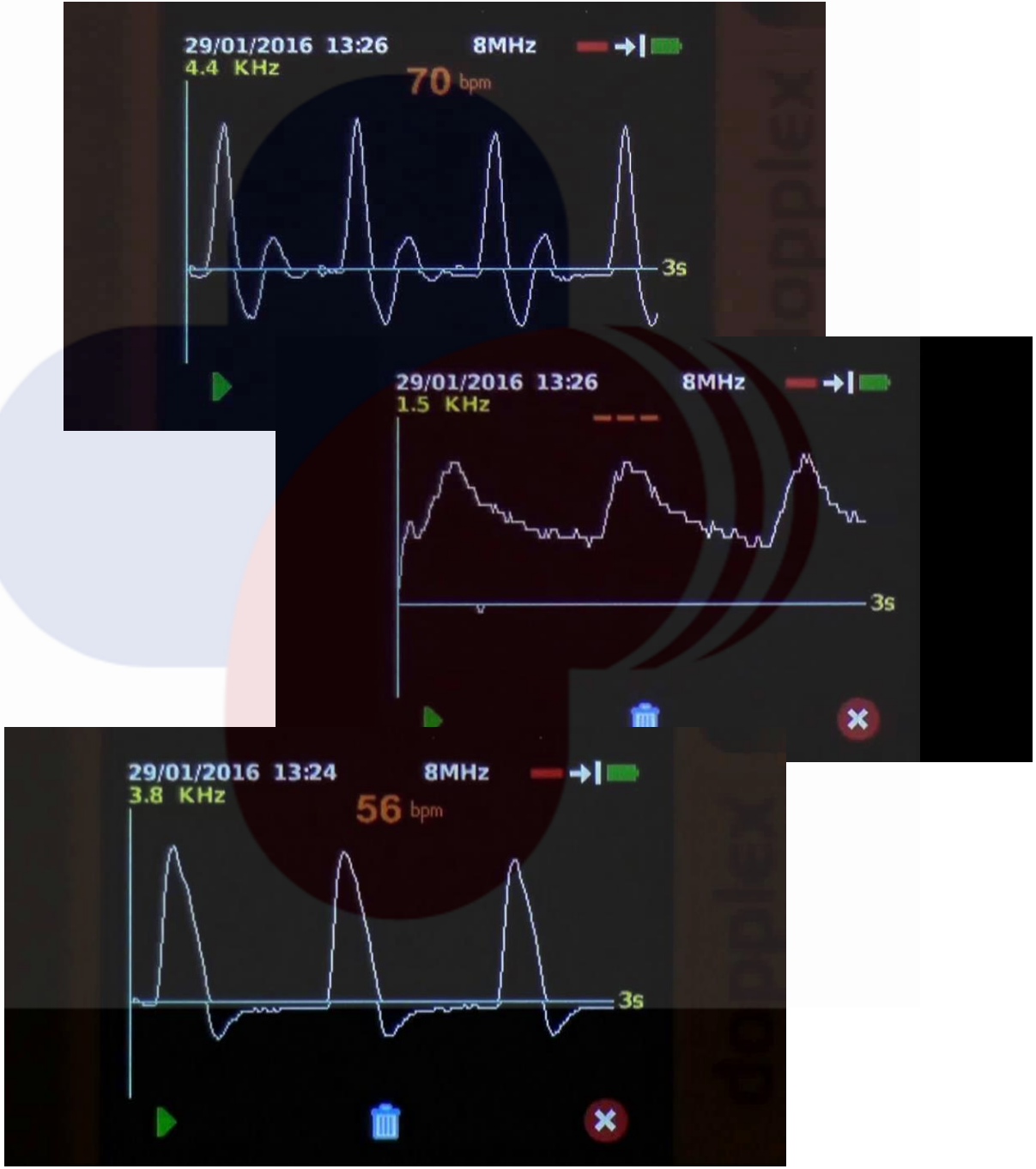
- All ultrasound machines are normally on a regular extensive QA schedule coordinated by the hospital medical physics team but you should perform these basic checks before beginning any ultrasound investigation to ensure yours and the patients safety.

- Check all power cables are in tact with no exposed wires or cable trapped inside cart wheels.

- Check all transducer cables are in tact by running your hand along the cable from the transducer to the connection point.

- Run your finger gently across the transducer probe head to ensure there are no scratches or cuts to the lens face or cracks in the transducer casing.

Determining Doppler Waveforms



Doppler waveforms taken from Arjo Huntleigh Vascular Academy Masterclass

Key controls

Choose the correct preset!

B mode/Grayscale

- FOCUS
- TGC
- OVERALL GAIN
- DEPTH

Colour Doppler

- PRF/SCALE
- COLOUR GAIN
- BOX POSITION/STEER

PW Doppler

- BEAM STEER
- ANGLE CORRECT
- SCALE
- PW GAIN

Which probe is best?

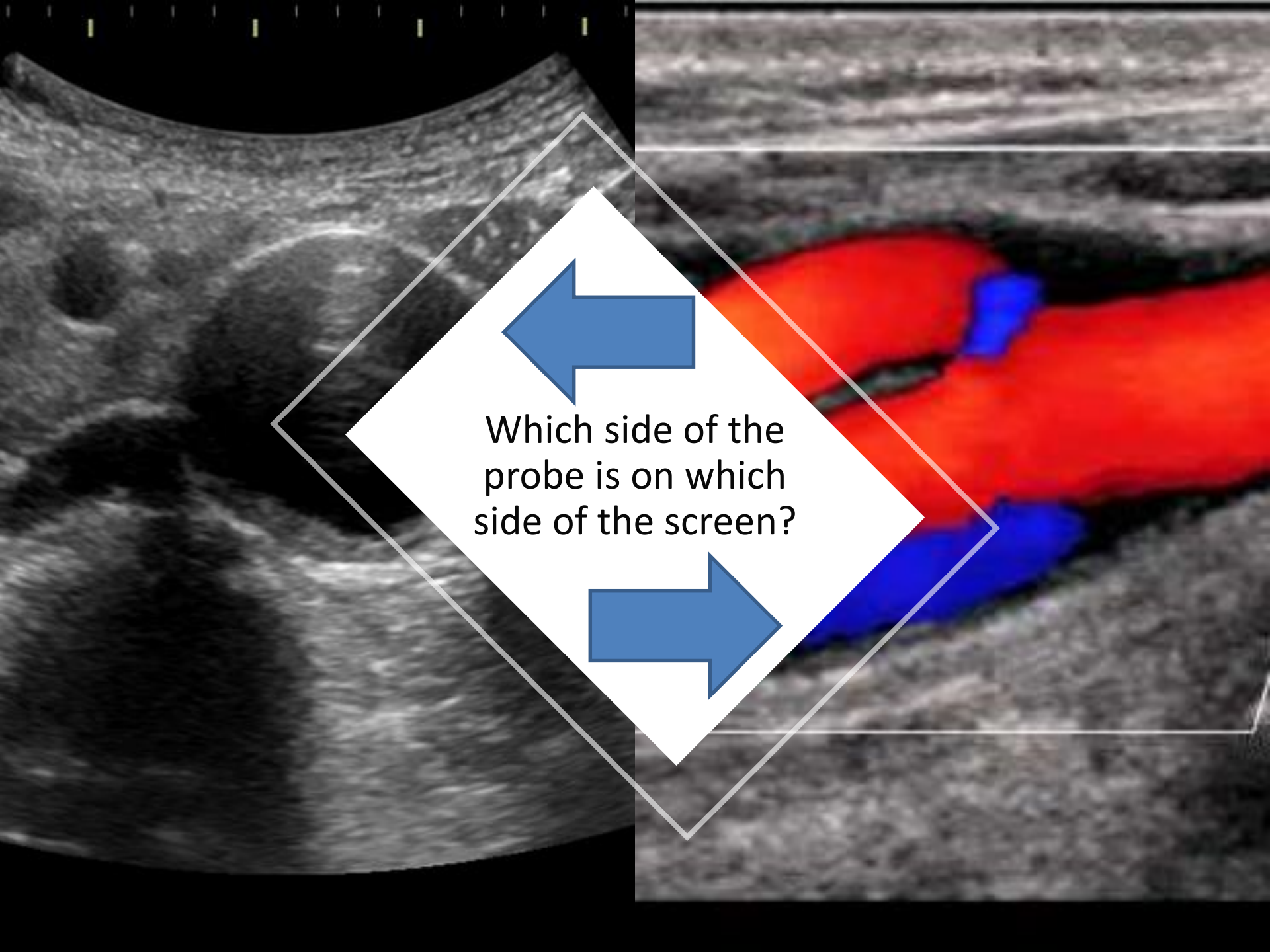
Superficial structures

Higher resolution – better for intricate/detailed work

Wide sector width for wider viewing angle

Lower frequency meaning greater penetration with less scattering/absorption resulting in better image quality at depth.

Deeper structures and abdominal work /High BMI


Which side of the probe is on which side of the screen?

Get Yourself Comfy

Adjust the chair or choose to stand

Adjust the patient and/or the couch

Familiarise yourself with the probe in your hand. Ensure cable is supported

Find the KEY controls

Introduction to Vascular Ultrasound

- Health and safety
  - Follow usual infection control procedures
  - Please wear appropriate PPE
  - Hand hygiene
  - Apply gel to the probe not the patient
  - Clean probe, cable and console after every use
  - Clean couches and replace couch roll

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Working With Your Clinical Vascular Scientists

Hannah Lines
Chair of SVT Education Committee

Felicity Woodgate
Clinical Vascular Scientist RUH Bath

Who are we, how did we get here and where might you find us?

Healthcare Scientists

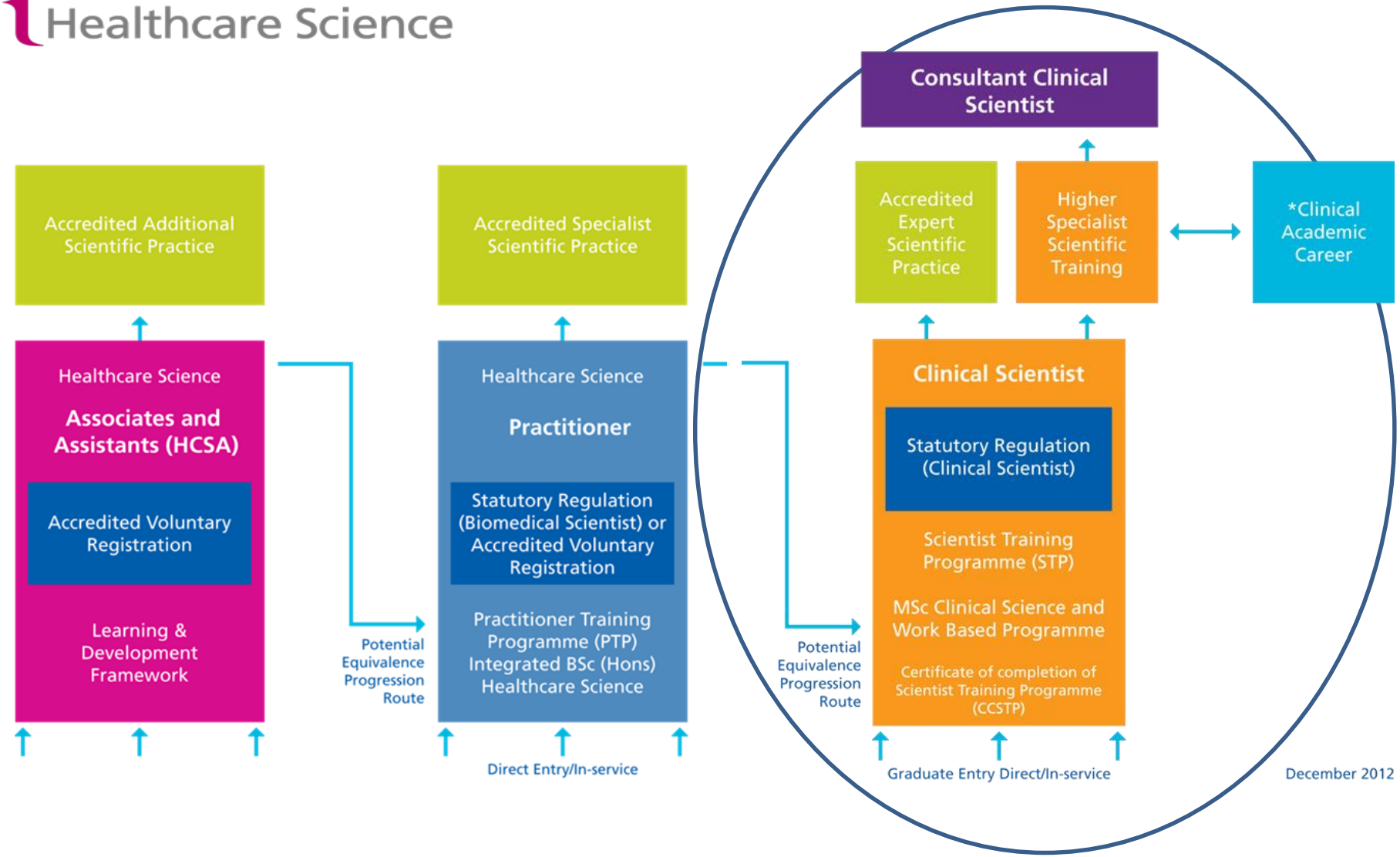
Life Sciences

Physiological Sciences

Physical Sciences

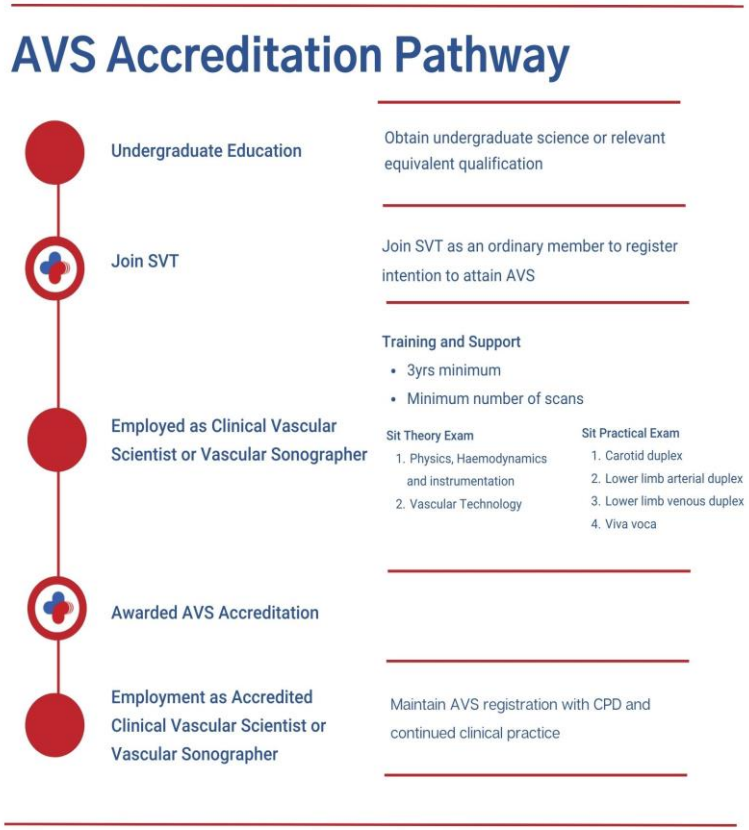
Bioinformatics

National School of Healthcare Science



The Healthcare Science Workforce

SVT Accredited Scientists



- Candidates must have an undergraduate scientific degree and majority postgraduate
- 2 x theory exams (physics and technology)
- Externally assessed practical exam and *viva voce*
- Completion of a **minimum 2000** scans
- Range of complex vascular modalities including aorto-iliac arteries, recurrent VVs etc.
- Currently approx. 270 AVS vascular scientists in the UK

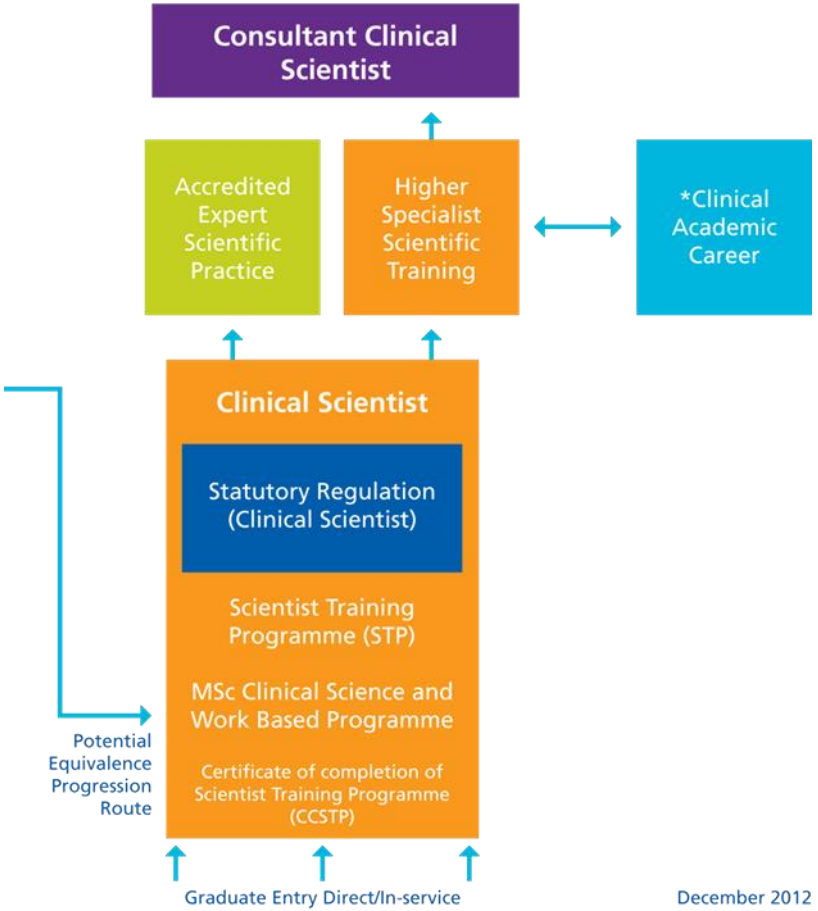
Clinical Vascular Scientists

Modernising Scientific Careers

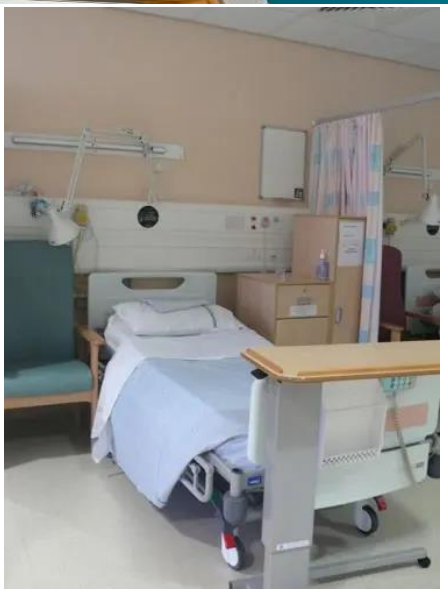
Scientist Training Programme (STP)

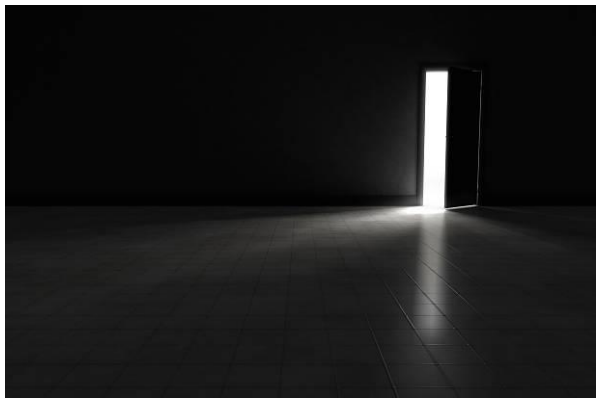
- Undergraduate scientific degree
- MSc Clinical Science (distance learning)
- Work based practical training over the three main imaging modalities
- Completion of a research project.
- Completion of a work based portfolio and OSCE style practical exam or reflective assessment.

State registration through HCPC as Clinical Scientist (equivalence for AVS)




Welcome to Vascular Studies Unit





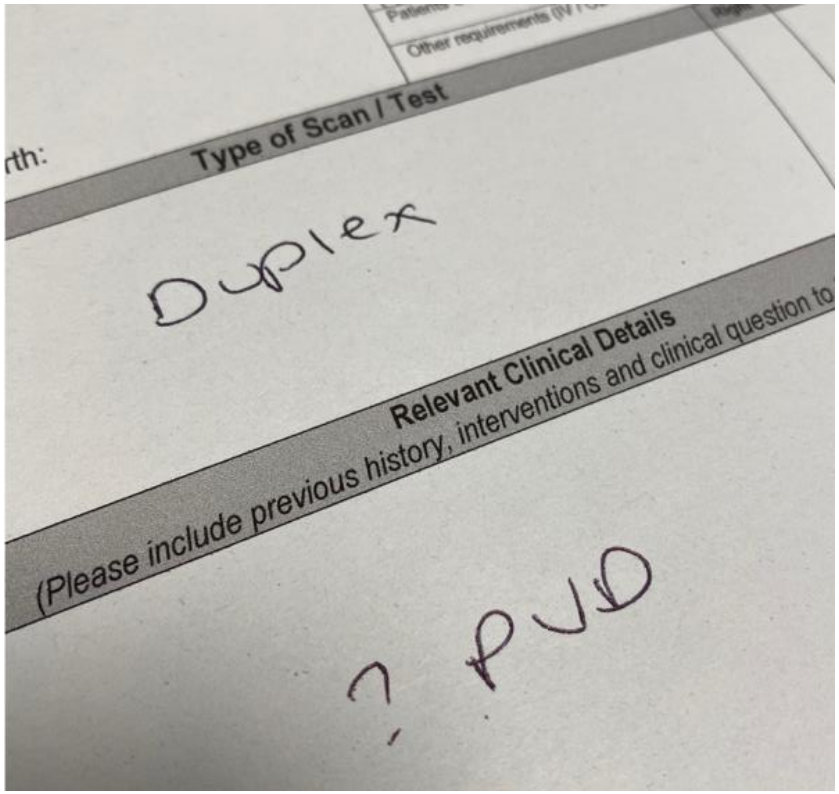
Working with your Vascular Scientists

- Scanning in a purpose built environment is **always preferable**
  - Reduces risk of injury
  - **>80%** of healthcare professionals using ultrasound equipment develop MSDs
  - Height adjustable couches, specialist scanning chairs, ergonomically designed machines, lighting control – **all make a big difference**

Working with your Vascular Scientists

Good requests = good results

- What exactly do you want to know?
- Focused scan of one area only?
  - i.e. groin for ?pseudo vs whole leg arterial
- Relevant symptoms, previous interventions, dressings, infection status, mobility…
- Discuss it with us
- No such thing as a “quick scan”



Working with your Vascular Scientists

Knowing your limitations

- Ultrasound is operator dependant
  - Hugely dependant on experience
- Settings make a massive difference
  - Is that graft occluded or is your PRF too high?
- A good duplex scan is the combination of B-mode, colour flow and spectral – a quick snapshot can be misleading
- Seeking a second opinion is normal!

Questions?

Introduction to Vascular Ultrasound

Information pack

- Slides
- FCRS curricula
- Additional e-learning links
- Basic Information Guides
- Recommended reading lists
- Reducing injury and MSD

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Feedback

Please can you complete the feedback forms online