

The logo for the British Medical Ultrasound Society (BMUS) is displayed in a white rectangular box. It consists of the letters "BMUS" in a blue serif font, followed by a stylized blue icon of two curved lines representing sound waves.

BMUS 

Guidelines for Professional Diagnostic Ultrasound Practice in Medical Aesthetics

Produced by the British Medical Ultrasound Society



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Table of contents

| | |
|---|----|
| Acknowledgements | 3 |
| Foreword | 3 |
| Rationale | 3 |
| Definitions | 4 |
| Standard | 4 |
| Guideline | 4 |
| Protocol | 4 |
| Patient | 4 |
| Department | 5 |
| Sonographer | 5 |
| Ultrasound Practitioner / Ultrasound User | 5 |
| Medical Aesthetic Practitioner | 5 |
| 1. Introduction | 6 |
| 2. Governance and Safety | 7 |
| 2.1. Professional Code of Conduct | 7 |
| 2.2. Professional Indemnity Insurance | 8 |
| 2.3. Safety of Medical Ultrasound | 8 |
| 2.4. Training Programmes | 9 |
| 2.5. Medico-legal Issues | 9 |
| 2.6. Duty of Candour | 10 |
| 2.7. Patient Records – Images and Reports | 10 |
| 2.8. Clinical Governance | 11 |
| 2.9. Core Standards | 12 |
| 2.10. Audit | 12 |
| 2.11. Continuing Professional Development (CPD) | 13 |
| 2.12. Transducer and Equipment Cleaning and Disinfection | 14 |
| 2.13. Equipment Quality Control and Quality Assurance | 15 |
| 3. The Diagnostic Ultrasound Examination | 16 |
| 3.1. Overview of Diagnostic Ultrasound Examination Procedures | 16 |
| 4. Conclusion | 17 |
| 5. Further reading | 17 |
| 6. Links to national organisations | 18 |

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Foreword

The role and importance of the use of ultrasound in medicine is widely acknowledged (<https://www.bmus.org/>) and the training, professional accountability and assessment of competence of its users should ideally be closely monitored.

The British Medical Ultrasound Society has already well-established and respected professional practice guidelines for specific user groups and we are grateful for their support with the development of these guidelines specific to use of diagnostic ultrasound in aesthetics.

The **Guidelines for Professional Diagnostic Ultrasound Practice in Aesthetics** aims to raise the standards of education, training and application of diagnostic ultrasound in Aesthetic practice, thereby protecting patients and ultrasound users across the specialty. The format and structure of these guidelines adhere to those used for medical diagnostic ultrasound and are designed to underpin good practice rather than be prescriptive.

Rationale

Aesthetics is a fast-growing area of healthcare in both the UK and beyond. Injectable procedures have been performed since the early 1980s and in 2017, there were over 3 million injectable cosmetic procedures performed in the UK, up from just over 1 million in 2007 (ISAPS Global Aesthetic Trends 2017).

There is increasing evidence that the accuracy and outcome of many aesthetic procedures are greatly improved when performed under ultrasound guidance (See section 5). As a consequence, more professionals involved with this care are seeking to access, or are using already, ultrasound devices.

Currently, to our knowledge, there are no known standards written primarily to support professionals using diagnostic ultrasound in aesthetics. Therefore, this document has been produced to provide evidence-based guidelines and benchmark the standards for aesthetic practitioners who wish to use ultrasound scanning for imaging purposes within their scope of practice.

It is not our intent to encourage any aesthetic practitioner to work outside their scope of practice. Instead, these guidelines are intended for aesthetic practitioners using ultrasound only in relation to diagnostic processes for the prevention and management of medical aesthetic complications i.e., the identification and avoidance of arteries when injecting and for assessing post-procedural complications such as oedema and abscess formation.

As there are no nationally or internationally agreed protocols or standards of practice for use of ultrasound examinations in aesthetics at this time (that the authors are aware of), it is anticipated these guidelines will act as a basis for service and training providers when creating assessment and examination frameworks.

Hyperlinks are used within the text to provide access to the relevant documents already published on a wide range of topics by organisations other than the BMUS.

Definitions

Confusion can arise between the terms 'Standards', 'Guidelines' and 'Protocols' and in this document the definitions are the same as those given in the 2014 Royal College of Radiologists (RCR) and Society and College of Radiographers (SCoR) [Standards for the provision of an ultrasound service | The Royal College of Radiologists \(rcr.ac.uk\)](https://www.rcr.ac.uk/standards-for-the-provision-of-an-ultrasound-service) as set out below:

Standard:

'A required or agreed level of quality or attainment. A standard is a way of ensuring optimum levels of care or service delivery. Standards promote the likelihood of an ultrasound examination being delivered safely and effectively, are clear about what needs to be done to comply, are informed by an evidence base and are effectively measurable'.

Guideline:

'A general rule, principle, or piece of advice. Guidelines provide recommendations on how ultrasound examinations should be performed and are based on best available evidence. They help ultrasound practitioners in their work, but they do not replace their knowledge and skills'.

Protocol:

'An agreement, preferably based on research, between practitioners to ensure the delivery of high-quality standardised ultrasound examinations.'

Patient:

The person undergoing care.

Department:

The clinical establishment where care is given.

Sonographer:

Sonographer is currently not a protected title and therefore anyone may call themselves a sonographer. However, a commonly accepted definition produced by the Society of Radiographers and supported by BMUS is:
A healthcare professional who undertakes and reports diagnostic, screening or interventional ultrasound examinations. They will hold qualifications equivalent to a Postgraduate Certificate or Diploma in Medical Ultrasound, BSc (Hons) clinical ultrasound or an honours degree apprenticeship that has been accredited by the Consortium for the Accreditation of Sonographic Education (CASE) or equivalent. They are either not medically qualified or hold medical qualifications but are not statutorily registered with the General Medical Council.

These health professionals are sometimes called 'career sonographers' as the majority of their time is spent performing, interpreting and reporting ultrasound examinations. It is anticipated that some career sonographers may support aesthetic practitioners as services continue to develop.

Ultrasound practitioner/ultrasound user:

These terms may be applied to all other users of ultrasound who may or may not have gained a formal qualification in medical ultrasound. They refer to professionals who use diagnostic ultrasound at point-of-care and as an adjunct to their practice. Examples include emergency physicians, rheumatologists, physiotherapists, podiatrists and aesthetic practitioners.

Throughout these guidelines there will be reference only to sonographers and ultrasound users/practitioners.

Medical aesthetic practitioner:

A person trained to provide aesthetic medical care. In the UK a medical aesthetic practitioner would have a degree in Medicine, Dentistry or Nursing and be regulated by their respective registration body (GMC / GDC / NMC). For the purposes of this document will be referred to as "Practitioner".

It is the nature of any document whether published in hard or soft copy that it can very quickly become out of date. It is the intention of BMUS that this document will be regularly updated but it is the responsibility of the aesthetic practitioner to ensure that they research and apply the most up to date evidence in association with the contents of this document.

Comments and feedback are also very welcome and will assist us in the further development of these guidelines. Please contact us at www.bmus.org

1. Introduction

These guidelines have been written to support aesthetic practitioners with a medical background; to make them safe and familiar with using diagnostic ultrasound in aesthetics. These guidelines may also be useful to plastics surgeons wishing to use diagnostic ultrasound as an adjunct to their practice.

The use of diagnostic ultrasound in aesthetic practice is gaining popularity, with most practitioners using hand-held ultrasound devices. Aesthetic practitioners are qualified healthcare professionals (with an appropriate post-graduate qualification); who with appropriate training, education and practice in the use of diagnostic ultrasound in aesthetics, are able to provide the best possible, evidence-based care to their patients. While sonographers working in general medicine may not be familiar with scanning features and issues specific to aesthetic practice, their knowledge and ability to 'operate' ultrasound devices means that they can work in collaboration with aesthetic practitioners after further additional training.

The authors are aware that certain aesthetic procedures now require the use of ultrasound guided treatments and these have been specifically highlighted by professional bodies e.g., Brazilian Buttock Lift (BBL). In these cases, we would recommend that practitioners are aware of these generic guidelines and undertake specific training with ultrasound imaging for these procedures.

Guidelines and standards are important for ensuring the safe and appropriate use of ultrasound in medicine and transferring tried and tested principles to medical aesthetic practice will improve the standards of ultrasound service provision.

The risk of complications may be reduced with appropriate imaging, thereby increasing patient safety.

While ultrasound is considered a 'safe' imaging technique, compared with ionising radiation, it is highly operator-dependent and therefore should be performed only by persons that:

- Know how to identify and select ultrasound system settings to optimise images, recognise artefacts, and adjust equipment parameters and operator techniques to mitigate the risk of misdiagnosis
- Have sufficient education and training to recognise normal anatomical structures and differentiate between the appearance of normal and abnormal ultrasound images
- Understand the limitations of diagnostic ultrasound and comprehend its role in the aesthetic patient's care pathway
- Implement treatment protocols and equipment manufacturers' guidance to ensure the information obtained from the ultrasound scan is accurate and reproducible
- Understand the audit and accountability of working practices and ultrasound procedures
- Work within their scope of practice and know how and when to seek further advice and support when necessary
- Hold current and appropriate professional liability and indemnity insurance
- Should be involved in regular audit and provide evidence of relevant and verifiable CPD/CME

2. Governance and Safety

Diagnosis of pathological conditions should be made only by a medical practitioner or imaging specialist. Medical aesthetic practitioners will use diagnostic ultrasound scans to inform them in more detail of their clinical practice, e.g., to determine the depth of structures they may need to inject, avoidance of vessels and ensure accurate placement of products following the procedure.

2.1 Professional Code of Conduct

Medical aesthetic practitioners must abide by the medical Code of Conduct of their respective regulatory body and this Code will make clear the responsibility of the professional to the patient, (and the wider public), the profession and their colleagues. As they are statutorily registered, they must be aware of and follow their Code of Professional Responsibilities across all aspects of their service provision.

The BMUS guidelines on which this document is based lists 10 requirements to which those performing diagnostic medical ultrasound in the UK must adhere. All are essential components, but the following relate equally to ultrasound provision in aesthetics.

Note that where the BMUS document uses the term *operator*, this has been changed to practitioner for the medical aesthetic sector.

- Practitioners must be committed to the provision of a quality ultrasound service having due regard for the legislation and established codes of practice related to healthcare provision to minimise risk to patients and other professionals
- Practitioners must identify limitations in their practice and request training and support to meet their perceived needs
- Practitioners will take all reasonable opportunity to maintain and improve their knowledge and professional competency and support that of their peers and students. This is in keeping with the code of conduct of healthcare professionals
- Practitioners have a duty of care to work collaboratively and in cooperation with the multidisciplinary healthcare team in the interests of their patients
- Practitioners must always act in such a manner as to justify public trust and confidence, to uphold and enhance the reputation of their profession and to serve the public interest
- Practitioners must ensure that unethical conduct and any circumstances where patients and others are at risk are reported to the appropriate authority
- Practitioners who are held accountable in another area of healthcare must relate this code to others that govern their practice

2.2 Professional Indemnity Insurance

All those using diagnostic ultrasound must ensure that their professional activities are covered by professional indemnity insurance or equivalent (ideally by holding both organisational and personal indemnity). Those who are self-employed should ensure they have adequate cover to protect both the public and themselves. The medical indemnity providers will be able to offer specific advice on appropriate professional medical cover.

2.3 Safety of Medical Ultrasound

The safe use of ultrasound relates to the competency of the practitioner and also to ultrasound devices; users must be mindful of the potential hazards of ultrasound as an imaging modality. Current full safety guidelines can be found here: [BMUS Safety Guidelines 2009 revision Feb 2010.doc](#)

When using diagnostic ultrasound to guide facial procedures, in view of the proximity of tissue to bone, it is recommended that thermal index safety values for the cranial setting are used (TIC) when bone is less than 1cm from the transducer. In addition, due to unique risk factors associated with ophthalmic imaging, practitioners should avoid deliberately insonating the eye and should ensure the eye is not within the path of the ultrasound beam. Cavitation as a consequence of injecting materials during aesthetic procedures may also pose a potential risk.

The BMUS publication "[Statement on the safe use, and potential hazards of diagnostic ultrasound](#)" states that *'Ultrasound is now accepted as being of considerable diagnostic value. There is no evidence that diagnostic ultrasound has produced any harm to patients in the time it has been in regular use in medical practice. However, the acoustic output of modern equipment is generally much greater than that of the early equipment and, in view of the continuing progress in equipment design and applications, outputs may be expected to continue to be subject to change. Also, investigations into the possibility of subtle or transient effects are still at an early stage. Consequently, diagnostic ultrasound can only be considered safe if used prudently'*.¹

'Ultrasound examinations should only be performed by competent personnel who are trained and updated in safety matters. It is also important that ultrasound devices are appropriately maintained'.

It is the responsibility of the aesthetic practitioner in the UK to be aware of, and apply, the current safety standards and regulations with regard to bioeffects such as thermal and mechanical changes and appreciate the acoustic output of their equipment. This should be a component of training that the aesthetic practitioner should have undergone before using diagnostic ultrasound in their clinical practice. Practitioners should be mindful that, currently on mainland Europe, there are no regulatory limits on acoustic output from scanners, therefore a knowledge of safety issues is paramount.

Further helpful information regarding safety in ultrasound, as well as other areas of governance related to the use of ultrasound by non-imaging specialists, can be found in the joint BMUS/RCR document (2023); [Recommendations for specialists practising ultrasound independently of radiology departments: Safety, governance and education \(bmus.org\)](#)

¹ British Medical Ultrasound Society (2012). Statement on the safe use, and potential hazards of diagnostic ultrasound https://www.bmus.org/static/uploads/resources/STATEMENT_ON_THE_SAFE_USE_AND_POTENTIAL_HAZARDS_OF_DIAGNOSTIC_ULTRASOUND.pdf

2.4 Training Programmes

Where ultrasound training is undertaken on 'well' patients, teaching staff or attendees (referred to as the 'model'), written informed consent must be obtained from the 'model' who understands the processes put in place to support onward referral should an abnormality be detected or suspected during a training programme.

See **"Guidelines for the management of safety when using volunteers and patients for practical training and live demonstration in ultrasound scanning and consent"**. [Guidelines for the management of safety when training & demonstrating \(bmus.org\)](https://www.bmus.org/guidelines-for-the-management-of-safety-when-training-and-demonstrating)

Aesthetic practitioners must complete appropriate education and training programmes on the clinical use of ultrasound in aesthetic practice before introducing diagnostic ultrasound into their clinical practice.

2.5 Medico-Legal Issues

The following guidance should be adhered to:

- Practitioners should be aware that they are accountable for their professional actions
- A competent practitioner works within their scope of practice, to the standards defined by the guidelines of their place of work, the applicable Code of Conduct of their professional body and, when appropriate their regulatory body standards or guidance
- The standard of care provided by a competent practitioner is that which the majority of similar individuals would provide and/or which a significant body of similar individuals would provide in similar and contemporaneous circumstances
- When a patient undergoes an ultrasound examination, they have the right to expect it to be performed by a practitioner familiar with the use of ultrasound; and as part of the consent process, the patient should be made aware of the role of the person performing the ultrasound scan, to avoid any confusion
- Although it is the practitioner who will formulate and decide on the treatment of a patient, if it is essential that images/findings are recorded in the notes. This should be with the understanding that at some point, in some countries, a patient can request a copy of it as it (along with any images/video recordings) is part of the patient's care record. Accurate recording of images and findings also aid circumstances when follow-up is required
- Images that accompany an ultrasound examination should evidence the assumption that the necessary standard of care has been delivered
- All images must be capable of being attributed to the correct examination and should include the patient identifier(s) and examination date and time.

While undertaking any diagnostic ultrasound examination and working in accordance with locally agreed practice, all practitioners should consider the following adapted advice prior to undertaking each diagnostic ultrasound examination:

- Correctly identify the patient using the following information: the patient's name, address, and date of birth

Guidelines for professional diagnostic ultrasound practice in medical aesthetics 2023

- Be able to discuss the relative risks and benefits of the examination with the patient; explain the scanning procedure, patient preparation requirements and any technical limitations
- Obtain valid, informed consent from the patient being mindful of their capacity to understand
- Be aware of any individual patient's special needs such as injury, mobility or breathing issues prior to scanning in a specific patient position
- Ensure the proper care and maintenance of equipment and not use damaged equipment or equipment identified as not fit for purpose.
- Use appropriate ultrasound gel in keeping with the recommended guidance for invasive procedures. See UK HSA 2022 [Ultrasound gel: good infection prevention practice - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/ultrasound-gel-good-infection-prevention-practice)
- Be professional throughout the examination to ensure that the examination is carried out to an appropriate standard
- Interpret and communicate the findings appropriately and in a timely fashion to the patient
- Ensure appropriate arrangements have been made for further care before the conclusion of the examination

2.6 Duty of Candour

All healthcare professionals have a responsibility to act in an ethical, open, and transparent way, particularly when things go wrong. Practitioners should be aware of the requirements of their code of conduct and professional indemnity insurer if asked to make any statements regarding patient care, complaints, and claims; these requirements may differ from state to state and country to country.

Details of the expectations of practitioners can be found in the constitutions and codes of professional conduct of the various regulatory and professional bodies to which medical practitioners belong.

2.7 Patient Records – Images and Reports

BMUS recommends the archiving of optimised and correctly annotated images as part of the patient record as these are an extremely useful adjunct to ongoing treatment and are particularly valuable if a rescan is required whether for follow up comparison or to facilitate further procedures.

The practitioner should be registered with the appropriate regulatory body to maintain any specific patient database e.g. The Information Commissioners Office (ICO).

The data protection requirements will likely have the following expectations that information is:

- Used fairly, lawfully, and transparently
- Used for specified, explicit purposes
- Used in a way that is adequate, relevant, and limited to only what is necessary
- Accurate and, where necessary, kept up to date
- Kept for no longer than is necessary

Guidelines for professional diagnostic ultrasound practice in medical aesthetics 2023

- Handled in a way that ensures appropriate security, including protection against unlawful or unauthorised processing, access, loss, destruction, or damage

Ultrasound images should ideally be stored in DICOM (Digital Imaging and Communications in Medicine) format and in a secure manner on a local hard drive or a picture archiving and communication system (PACS). Reliance on the storage of images on an ultrasound system hard drive (particularly on portable ultrasound equipment), or mobile device should be avoided; as images can be lost if not archived regularly and the processing speed and functionality of the equipment may be affected if image storage capacity is reached. Where there were difficulties obtaining images, these should be noted within the patient's record.

It is recommended that consideration is given to the legal proviso whereby most civil claims have a limitation period of seven years so it would be sensible to retain records (including any diagnostic test results and images) for seven years as a minimum. However, professional indemnity providers may have specific requirements around retention of records (and related ultrasound images) so individuals should check with their provider and governing professional body and ensure they comply.

Patient records should be completed as close to the time of treatment or action as possible and be clear and factual. Anything relating to the patient's wellbeing during the examination should be documented. This may include adverse events or the site of injection and the name of the practitioner performing the procedure. The names and designation of anyone involved directly in the care of the patient during the examination / treatment should be documented.

Medical professionals are frequently required to give copies of clinical notes, (including copies of scan images) to a patient on request and in these circumstances, it is essential that there is no breach of personal data belonging to any other patient.

2.8 Clinical Governance

Clinical governance is at the heart of all areas of healthcare; medical aesthetics is no different. Ultrasound imaging is highly operator-dependent and there are some 'non-clinical' aspects of service provision that the practitioner may be unable to directly influence, e.g., management, working environment and infrastructure. The following points highlight some areas to be considered in ensuring optimum service delivery:

- Roles, responsibilities, and lines of accountability are clearly defined
- Training, policies, standards, and procedures are shared, and adherence to them is monitored through audit
- Equipment is fit for purpose and undergoes regular service/planned preventative maintenance, which includes a documented process of quality assurance (QA) parameters
- The room in which the diagnostic ultrasound scans are performed is suitable e.g., subdued lighting, adjustable examination tables and chairs and appropriate space to allow for safe working
- Images and reports can be uploaded onto the patient record and/or an appropriate secure data base
- Sharing of knowledge is encouraged

Guidelines for professional diagnostic ultrasound practice in medical aesthetics 2023

- Regular and frequent opportunities to learn from mistakes in a 'no-blame' culture
- Regular peer-review
- A recognised system in place to report errors/incidents

2.9 Core Standards

Within the UK to ensure that healthcare is delivered to meet the levels expected /required by the regulatory bodies, core standards would include specific modules for both clinical governance and diagnostic imaging.

The clinical governance standards require evidence of:

- Reflection on clinical effectiveness
- Continual improvement of professional practice
- Protocols
- Audit
- Significant event review processes

The diagnostic imaging standards require:

- Reports and quality diagnostic images to be archived in the patient record

2.10 Audit

Audit of clinical practice is at the centre of clinical governance and is an essential component of clinical practice and accountability. Practitioners may find it useful to audit their ultrasound usage.

The purpose of an audit is to measure patient care and outcomes against an agreed standard. The standard may be national or agreed locally. If the outcomes fall below the agreed standard, changes must be implemented and the service is audited again. Audit is a continuous ongoing cycle. Prior to starting the audit process, it is essential to engage with all grades of staff who are to be included.

An audit does not discriminate, and staff must understand that they will all be measured by the same criteria, irrespective of experience or profession.

Introducing an audit without first meeting with staff to explain the benefits, rationale and process could cause ill feeling or disquiet, particularly in those who have been scanning or practising for a long time.

All relevant staff must be made aware of the audit process and understand the reason for it:

- To measure patient care
- Identify noncompliance
- Determine any support/training needs

An audit programme does not need to be complicated to be effective, but it must:

Guidelines for professional diagnostic ultrasound practice in medical aesthetics 2023

- Be appropriate
- Be explicit in its objectives
- Be measurable through a suitable audit method
- Enable change

Using the criteria above, a simple ultrasound audit in general practice should be:

- **Appropriate**

All staff performing diagnostic ultrasound scans should do so only if they are appropriately trained and working within their scope of practice and understand what is required of them. Standardisation helps to reduce the likelihood of pathology not being detected, maintain quality, and engender confidence for both staff and clients

- **Explicit**

To make sure that the required images as detailed in a scan protocol have been taken and all have been archived in the appropriate patient's record

- **Be measurable**

Using these guidelines, a protocol can be written which details minimum images to be archived and the correct plane to be used during scanning

- **Enable change**

Where standards are not met, the learning points will be shared with the team anonymously and, where appropriate, further training and support offered to the individual(s)

Practitioners must understand how and when their audit results will be shared and why taking part in audit is beneficial to both their own professional development and improving standards and therefore care of the patient.

BMUS has devised a universal [PEER REVIEW AUDIT TOOL](#) that can be used to evaluate the referral, the image quality and report. Instructions for use are also available to download: [Peer Review Audit Tool - Explanatory Notes](#)

While this tool may not be suitable for all audit programmes, it can be used as a starting point from which in-house ultrasound audit tools can be developed to meet local needs. Audits can be used to inform practice and as part of CPD (see following section).

2.11 Continuing Professional Development (CPD)

CPD and life-long learning are essential for all healthcare professionals. The requirement to reflect on one's practice and seek to improve is mandatory across most professional bodies.

To remain on a professional register, there is a requirement to evidence the CPD undertaken, reflect on practice, determine training needs and act on them.

In the UK, aesthetic practitioners are required to undertake regular CPD which is relevant to their practice and must include a reflective component: [The Good medical practice framework for appraisal and revalidation \(gmc-uk.org\)](#)

Guidelines for professional diagnostic ultrasound practice in medical aesthetics 2023

Aesthetic practitioners are required to continually enhance their knowledge as part of their professional roles and a testament to this is the huge amount of CPD available online.

Although the level and type of CPD varies; in some it is only considered valid if it has formal accreditation but in others, it can simply be a case of watching a video. When undertaking CPD activities it is the impact of the activity on subsequent practice that should be considered.

The type of CPD activity, whether watching online videos or webinars or following people on social media, should be considered carefully as not everyone on these platforms will be properly trained and could well be sharing poor practice. For CPD to be worthwhile it must be accurate, relevant and provide value for money. As this is a new area in the use of ultrasound imaging in aesthetics, several new sites are under development.

Documentation of learning activities, whether formal or informal, is essential and this documentation and/or reflection should, ideally be done as soon after the activity to reinforce the learning and be part of the practitioner's appraisal. The majority of the professional bodies will have online portals for recording CPD and many will be available as apps on mobile phones and tablets.

2.12 Transducer and Equipment Cleaning and Disinfection

Good infection prevention and control processes are essential to safe ultrasound examinations, and it is important to follow departmental protocols but also individual manufacturers' instructions when cleaning machines – in particular, transducers and built-in ultrasound system filters.

Although infection prevention and control (IPC) is the responsibility of all, it is often included as part of an aesthetic practitioner's role.

Ultrasound equipment providers should be able to supply their customers with a list of safe cleaning materials which will protect both patients and equipment. This information is often available online for each ultrasound system make and model.

Water-based gel or water-based sterile gel should be used as a coupling fluid (see recommendation below). The use of alcoholic spirit as an ultrasound coupling fluid can cause irreparable damage to the delicate rubberised transducer surfaces and may render associated equipment warranties invalid. Repeated use of alcoholic spirit on an unprotected transducer can lead to the rubber/plastic surface membrane perishing and potential electrical safety issues.

The use of ultrasound gel on aesthetic patients should follow the principles laid out by the UK Health Security Agency; <https://www.gov.uk/government/publications/ultrasound-gel-good-infection-prevention-practice>, particularly as many aesthetic patients will be undergoing invasive procedures immediately following an ultrasound scan. The recent introduction of non-alcohol based antiseptic gel may be considered.

Cleaning and disinfection processes will be different for different procedures, so it is essential that practitioners understand their role in infection prevention and control. Cleaning checklists provide a useful 'aide memoire' when sited adjacent to the ultrasound machine and, a room-specific, written 'cleaning log' (which includes patient ID)

Guidelines for professional diagnostic ultrasound practice in medical aesthetics 2023

completed is particularly useful when invasive procedures are performed under ultrasound control in the event a patient acquires an infection, and an event review is necessary.

A 'post patient', daily, weekly and monthly cleaning schedule is recommended.

Hand hygiene (soap and water or alcohol gel) and the use of appropriate personal protective equipment (PPE) should be demonstrated before and after any patient contact.

The examination table on which the patient lies during the scan should be protected prior to the patient arrival and cleaned immediately after and in accordance with clinic requirements.

It is recommended that:

'All ultrasound transducers should be cleaned immediately after a scan to remove all organic residues and body fluids. This involves removal of the used transducer cover (if used), wiping off the gel followed by thorough cleaning with transducer-compatible cleaning agents as per manufacturer's instructions.

Ultrasound transducers should then undergo appropriate disinfection or sterilisation. All critical transducers (transducers contacting sterile tissues or blood) should be preferably sterilised, but if sterilisation is not possible, they should be minimally high level disinfected and used with a sterile sheath/transducer cover. All semi-critical transducers (both semi-invasive transducers contacting mucous membranes and non-invasive transducers contacting nonintact/broken skin) should be high level disinfected either manually or with automated systems. High level disinfection is still required when using a transducer cover/sheath as these can have micro-perforations or can break. All non-critical transducers contacting only intact skin may be low level disinfected.

Only manufacturer recommended, and transducer compatible disinfection products should be used to avoid any damage to the transducer. After reprocessing, the transducers should be stored to prevent recontamination.'

Furthermore, helpful posters on decontamination procedures are available on the BMUS website for download:

[Ultrasound Transducer Decontamination | BMUS](#)

2.13 Equipment Quality Control and Quality Assurance

When an ultrasound machine is first installed, it is important that a clinical applications specialist from the relevant ultrasound company works with the aesthetic practitioner to ensure that 'pre-sets' based on the expected case mix are created and saved. These baseline pre-sets can then be adapted for each patient to maximise diagnostic potential and minimise bioeffects. The ALARA (as low as reasonably achievable) principle should be applied at all times and the clinical applications specialist should be asked not to programme the default setting at maximum power.

It is also important to ensure ongoing preventative maintenance cover when buying a machine and this should be part of regular quality assurance (QA) testing. Regular testing of the ultrasound transducer is recommended more frequently. Both BMUS and IPEM (Institute of Physics and Engineering in Medicine) guidelines recommend daily, weekly and monthly checking and testing. Transducer inspection is particularly important to identify transducer damage (needle damage) and subsequent electrical safety.

Manufacturers do not generally perform image quality testing and a third-party supplier is recommended for this.

Useful guidance is offered here: [BMUS guidelines for the regular quality assurance testing of ultrasound scanners by sonographers - Nick Dudley, Stephen Russell, Barry Ward, Peter Hoskins, BMUS QA Working Party, 2014 \(sagepub.com\)](#)

Ultrasound equipment is delicate and transducers are easily damaged. Cables must not be allowed to trail on the floor or left twisted and when an examination is completed, they should be put away, either on the ultrasound cart or in the box in which they are stored. Portable / handheld devices should be stored in appropriate storage containers.

As stated in 2.12, routine use of alcohol as a coupling solution is not recommended, although it may be used initially to degrease the skin prior to the application of water-soluble ultrasound gel. Alcohol may be required as a coupling fluid for sterile interventional procedures and critical care patients but only when a suitable transducer cover has been applied.

Alcohol solutions as coupling agents are flammable and electrical conductors and should be avoided for cases where defibrillation might be necessary.

All users must take responsibility for caring for and maintaining equipment and in reporting any perceived issues with image quality.

It is good practice to have a formalised method of reporting any issues so that both colleagues and engineers understand when and how often a problem has arisen. See: [Recommendations for specialists practising ultrasound independently of radiology departments: Safety, governance and education \(bmus.org\)](#)

3. The Diagnostic Ultrasound Examination

This section includes generic examination guidelines and clinical overviews.

These guidelines are not prescriptive but aim to support the standardisation of clinical ultrasound practice and help create and benchmark best practice principles.

The guidelines do not and cannot cover all elements of an ultrasound examination.

3.1 Overview of Diagnostic Ultrasound Examination Procedures

The ultrasound practitioner should be aware of locally agreed standards of practice and current guidelines of other professional bodies and organisations.

The following points should be considered for all ultrasound examinations:

- The patient is correctly identified by name and surname and a unique patient identification number
- The role of the diagnostic ultrasound examination is understood in the clinical context for the patient

Guidelines for professional diagnostic ultrasound practice in medical aesthetics 2023

- Case notes and results of any previous investigations are reviewed prior to examination (assuming they can be accessed)
- The patient is aware of the limitations and potential risks of the procedure
- The patient is aware of which member of staff will be undertaking the procedure
- The patient is suitably prepared for the examination prior to the scan
- A systematic scanning approach is used, including extra modifications if required
- Representative images are kept and archived in the patient record
- The required aftercare of the patient is available
- An appropriate report is recorded and the actions in the event that the examination is incomplete
- Appropriate national and local health and safety regulations, including infection control, are applied

The SoR/BMUS 'Pause and Check' poster offers a helpful check list for practitioners to follow:

[Pause Check 2016 \(bmus.org\)](https://www.bmus.org/2016/05/05/pause-check-2016/)

4. Conclusion

Aesthetics is a fast-developing practice accessed increasingly by patients/clients in the UK and beyond. Provision of many aesthetic services are improved greatly if performed under ultrasound guidance, therefore support for aesthetic practitioners acquiring appropriate ultrasound skills is essential. We anticipate these guidelines will go some way to directing staff towards best practice which in turn will support their service delivery, improve patient/client outcomes and improve patient safety.

5. Further reading

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Guidelines for professional diagnostic ultrasound practice in medical aesthetics 2023

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6. Links to national organisations

[General Medical Council](#)

[General Dental Council](#)

[The Health and Care Professions Council](#)

[Nursing and Midwifery Council](#)

Disclaimer

The British Medical Ultrasound Society produces recommendations and guidelines as an educational aid to inform safe practice. They offer models and pathways associated with established clinical imaging techniques and best professional practice, based on published evidence.

BMUS recommendations and guidelines are designed to inform local protocols issued by employers, but are not intended to be inflexible or prescriptive. Therefore, the choice of imaging examination and subsequent management of all patients is ultimately a local decision based on agreed schemes of work, the clinical information provided, and the ultrasound practitioner's professional judgement.

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