



Guidelines for the interpretation and reporting of diagnostic ultrasound scanning in soft-tissue masses

**Produced by the British Medical Ultrasound Society with help and support
from the BMUS Musculoskeletal Ultrasound Special Interest Group**

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September 2024

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Introduction

Soft tissue masses are a common indication for patients presenting to their general practitioner and a diagnosis is reached by combining relevant history and clinical examination, with or without the addition of diagnostic imaging.

Most soft-tissue masses are benign, outnumbering malignant lesions by approximately 150:1 (1) but there is a broad range of pathologies that may cause these masses therefore making a specific diagnosis can be difficult due to overlapping clinical and imaging features.

The imaging of soft tissue masses (STM) may involve one or more modalities – ultrasound, x-ray, computed tomography (CT) or magnetic resonance imaging (MRI) – depending on the specific presentation, or sometimes, the modalities available to the referrer.

Imaging modalities have different strengths and limitations depending on the nature of the mass i.e. superficial, deep or osseous involvement and appropriate selection of modality imaging management requires informed consideration of these factors.

These guidelines focus on the use of ultrasound for the identification of STM, and in particular, the interpretation and reporting of ultrasound findings by registered healthcare professionals working within an imaging department or community-based service. Practitioners using point-of-care ultrasound who are working independently of imaging departments must ensure local patient management protocols are in place when STMs are identified.

The authors have drawn on several recent publications whilst developing these guidelines, concentrating on guidance produced by national groups - the British Sarcoma Group (BSG), National Institute for Health and Care Excellence (NICE) and the Royal College of Radiologists (RCR). These documents are referenced at the end of these guidelines, and it is strongly recommended that ultrasound practitioners scanning STMs, familiarise themselves with these texts.

The use of ultrasound to identify STMs.

Ultrasound is an excellent tool for determining the size, location, consistency and vascularity of palpable STMs and is now commonly regarded as the initial imaging modality of choice for the investigation of suspected soft tissue masses (2). Ultrasound can also, in many cases, determine specific benign diagnoses, which can then be easily managed without the need for further imaging.

NICE guidelines for General practitioners suggest the use of ultrasound for the following (3):

- Consider an urgent direct access ultrasound scan, to be performed within 2 weeks, to assess for soft tissue sarcoma in adults¹ with an unexplained lump that is increasing in size (new NICE recommendation for 2015).
- Consider a suspected cancer pathway referral, for an appointment within 2 weeks, for adults¹ if they have ultrasound scan findings that are suggestive of soft tissue sarcoma OR if ultrasound findings are uncertain and clinical concern persists (new NICE recommendation for 2015)

In addition to recognising potentially malignant appearances, there are some cases when imaging findings are not typical of a specific benign pathology and in these cases, it is vital that the

ultrasound practitioner has the skills and knowledge to interpret and report the scan in a way that ensures patient safety, without causing unnecessary pressure on specialist referral centres.

It is the role of the ultrasound practitioner to attempt to classify any STM seen into the following:

- Benign
- Indeterminate
- Suspicious for malignancy

Whilst it would seem helpful to give a definitive diagnosis in all cases, it is often not possible as no single imaging investigation alone can reliably distinguish between a benign and malignant lesion. It is a combination of clinical history and examination combined with imaging findings that will help the referrer to reach a diagnosis in each case.

Whilst it is clearly not beneficial for ultrasound practitioners to write defensive reports that offer limited additional benefit over clinical examination, it is also unhelpful to give false assurances of a benign lesion if the ultrasound appearances do not fit a specific benign pathology.

Referrals

Clinical history/assessment

Once a referral for the imaging of a STM has been received by the provider, it is assumed that certain criteria have already been met.

National guidelines for clinicians written by the BSG state (4) that when a patient presents with symptoms of a STM, a clinical history should identify details regarding the suspected mass duration, any potential cause (e.g. trauma, injury or suspected foreign body), associated symptoms or recent growth.

The results of relevant previous imaging and biochemistry results should be noted together with any past history of diseases such as cancer or inflammatory arthropathy.

A clinical examination should assess the site of any mass, the approximate size and depth, the degree of firmness and mobility and colour or temperature changes of the overlying skin.

This information should be provided as part of the clinical indication for any subsequent imaging requested, as this would not commonly be available to the ultrasound practitioner prior to the scan.

In some instances, particularly since the COVID-19 pandemic, patients are referred for imaging following virtual consultations with their health care professionals. Some departments have made a decision not to accept such referrals but if they are accepted, it is imperative that ultrasound practitioners scanning these lesions have the clinical experience required to clinically assess the lesion and take a clear clinical history from the patient.

Clinical 'red flags' would include (5)

- Mass > 5 cm.
- Mass rapidly increasing in size.
- Deep lying mass.
- Painful mass
- Recurrence of a previously resected mass.
- A mass that is firmer than surrounding tissues.

The more of these concerning clinical features that are present, the greater the risk of malignancy with increase in size stated as the best indicator (6) and National UK guidelines state that a lump with these features should be treated as malignant until proven otherwise (7).

If there is sufficient concern, clinicians may refer patients direct to a sarcoma unit or for an MRI scan on an urgent basis if they feel that ultrasound would not give sufficient information.

Guidelines also state that if, on clinical examination, lesions are superficial, small, stable in size, smooth, with no pain or recent growth, the patient can be reassured by their clinician without imaging and asked to return if these specifics change (4).

It is only when the clinical criteria for a benign lesion are not met or if there is still clinical uncertainty, that ultrasound should be used to provide information to aid the referrer in decision making about patients who may require onward referral or provide reassurance to the patient for a variety of benign lesions. This, in many instances can save patients distress and unnecessary referral to cancer services.

Appropriate clinical Indications for ultrasound imaging (4):

- Soft tissue lump in the superficial soft tissues
- Generally, size smaller than 5-6cm (except purely superficial lumps which can be assessed with caution)
- Change in size or texture of a known lump
- Superficial lump with pain

Not routinely indicated for ultrasound imaging alone:

- Large lumps (over 7cms) – MRI may be indicated as first-line imaging although if the lump appears superficial, ultrasound can be used on the first instance with caution
- Deep lumps in inaccessible areas e.g. thigh – MRI indicated as first line
- Diffuse pain without palpable abnormality – ultrasound sensitivity is low in these cases

Ultrasound scanning of STMs.

Training and competency

Due to the variability in presentation and appearances of STM, it is important for ultrasound practitioners to acquire a significant amount of exposure to them during their supervised training sessions. This brings familiarity when encountering similar lesions unsupervised and will enable them to draw on previous experience when deciding on best management of the patient.

It is also important that all practitioners scanning soft tissue masses have access to more experienced colleagues and/or colleagues who can advise and action any necessary further investigations.

With this in mind, some departments have developed a specified and limited group of ultrasound practitioners who have received additional in-house training to scan STM with an experienced individual acting as lead.

Whilst this kind of service may be more difficult to achieve outside Radiology, for example practitioners working in community settings or single practice, it is vital that there are still robust protocols and close links with services that can progress patients with suspicious-looking lesions.

Whilst the patient remains the clinical responsibility of the referrer, it is important for imaging services to work together in the interest of patient safety.

One example of a STM ultrasound service is as follows:

Lead – Radiologist or senior/consultant sonographer with extensive experience in STM/Musculoskeletal (MSK) ultrasound

Able to:

- Write protocols
- Provide governance
- Act as triage for referrals
- Act as mentor for ultrasound practitioners in training
- Act as second opinion for less experienced ultrasound practitioners
- Arrange follow up
- Lead audit/case reports

Within radiology departments, the lead should also be able to

- Liaise with radiologists/orthopaedics, attend multidisciplinary team (MDT) meetings
- Liaise with sarcoma team
- Arrange/advise further imaging
- Liaise with referrers

The remainder of the team may consist of practitioners all with MSK ultrasound experience, and/or experienced general sonographers who have constant access to their MSK colleagues for training, advice and audit.

If there is a local advice and guidance service, then liaison with this facility and Sarcoma network should be enabled.

The Ultrasound Scan

The following is a set of criteria that can be employed to ensure a thorough and robust method for evaluation of STM with ultrasound.

Clinical History and Examination

Sometimes, the clinical details provided with the referral do not match the clinical history given by the patient on the day of the scan or can entirely exclude relevant details that can have a significant impact on the reporting and management of soft tissue lesions.

It is the responsibility of the ultrasound practitioner to acquire the relevant history from the patient prior to the scan and this should be included in the report if it diverges from that provided by the referrer in the request.

It is also important that they palpate the lesion prior to scanning and include textural and visual changes which may not have been included in the referral, as they may support an imaging diagnosis.

The practitioner must also take into account any previous relevant imaging and make reference to this in their report.

The inclusion of this full clinical history and any visual/textural findings will help to justify the report findings and any management suggestions stated in the report.

Clinical examination by the ultrasound practitioner should assess:

Site

Approximate depth

Consistency

Mobility

Skin changes – erythema, bruising, any punctum

Presence of previous incision scars

Questions to ask prior to the start of the scan.

Is the lesion painful?

How long has it been there?

Is it growing?

Does it discharge?

Is it reducible?

Has there been an injury or any other relevant past medical history?

Is there any likelihood of foreign body?

Is the patient taking anticoagulation that would make haematoma likely?

Ultrasound Technique

Ultrasound imaging should be performed using plenty of gel as a stand-off and the highest frequency linear transducer possible, to allow detailed visualisation of the palpated lesion and surrounding soft tissues. However, it is also important to ensure there is no extension or any other masses deep to the visible one which may necessitate an increase in depth control and decrease in frequency in order to penetrate deeper structures. Where relevant, it is good practice to increase the depth to visualise the surface of any underlying bone.

For those lesions that are clearly palpable but cannot be demonstrated within the superficial tissues, a lower frequency/curvilinear transducer should be employed to enable visualisation of any deep or intramuscular lesions.

Use of a curvilinear transducer may also be utilised for patients with a higher body mass index or for larger lesions, where lower transducer frequency will enable better penetration and a wider field of view.

The standard MSK probe hold (i.e. held between thumb and forefinger with little finger resting on the patient) should be used to examine the lump thoroughly in two planes. Excess pressure must be avoided as this can obscure subtle vascularity within the lesion when using colour or power Doppler.

The entire area as indicated by the referrer and the patient, should be scanned as patients should not be left in any doubt that the area that concerns them has been fully covered by the scan and if this necessitates scanning outside the requested area, it should be referenced on the report.

Ultrasound appearances

Any diagnosis is a combination of clinical and imaging findings and some imaging findings taken in isolation, can be misleading. In the case of STMs, some appearances are seen in both benign and malignant lesions and ultrasound practitioners must use their experience and ultrasound interpretation skills in order to produce an actionable report (8).

An important discriminator is a lack of similarity with the known ultrasound appearances of a benign STM which highlights the need for the ultrasound practitioner to be familiar with those benign appearances.

Ultrasound findings that may suggest that a soft tissue mass is benign are (9)

- small size
- superficial location
- homogeneous echotexture
- hypovascularity

However, similar appearances may also be seen in some malignant tumours, making interpretation difficult (10)

Once identified, the entire lesion should be interrogated so that the following questions can be answered.

Location

- The exact anatomical site can sometimes help with diagnosis for typical lesions
- Is it within the superficial or deep tissues?
- What is its relationship to fascia – is it separate from, abutting, indenting/invading, or within the fascia
- Is it intramuscular? – if so, most protocols suggest subsequent MRI as routine (2)
- Is it arising from/adjacent to nerves or vessels?
- Is it attached to a tendon sheath or joint?

Grey scale appearances

The internal echotexture of the lesion should be evaluated to determine if it is cystic, solid, or mixed. The presence of posterior acoustic enhancement would suggest that the lesion has a high fluid content, but it is important to remember that an oedematous solid lesion or one which is highly vascular may show some level of posterior acoustic enhancement. The application of colour or power Doppler may help in these cases as is discussed below.

The strength of the echoes in comparison with the surrounding tissues may also be helpful in classifying the lesion.

- Is it homogeneous or heterogeneous in echotexture?
- Is it hyperechoic, hypoechoic, isoechoic or anechoic?
- Does it have the appearances of a cystic lesion?
- Does it have the appearances of a solid lesion?
- Does it have mixed solid and cystic appearances?

Margins

Most benign STMs have smooth well-defined margins, therefore irregular, poorly defined margins can raise suspicions. However, some benign conditions such as fibromatosis, endometriosis, inflammatory masses or fatty necrosis may have irregular margins and some early malignant lesions may be relatively well defined so this feature should be treated with caution.

Calcification

Calcification can be seen in a variety of benign and malignant lesions and calcification within muscle should be viewed with caution. Soft tissue lesions within the extremities containing calcification require x ray to assess the pattern and origin of calcification and to assess areas of the lesion obscured by acoustic shadowing. If the ultrasound practitioner is unable to request x ray themselves, there should be a process by which this can be arranged in any ultrasound setting.

Vascularity - Colour/Power Doppler

Vascularity within lesions is an important finding since the detection of flow within a lesion indicates that it is solid. Peripheral vascularity is also a helpful sign in the detection of inflammatory/infective responses around lesions and in the presence of non-specific collections within soft tissues.

However, some soft tissue sarcomas can have little demonstrable blood flow or may be necrotic centrally and some benign lesions, such as schwannomas can be highly vascular. Malignant lesions can demonstrate disorganised, branching, internal vascularity but this can be difficult to classify and may be misleading so again, correlation with imaging findings and the clinical picture is vital when reporting.

In order to detect the relatively slow blood flow often seen in solid lesions, it is important to ensure that the colour/power Doppler set up will capture low flow by using appropriate pulse repetition frequency (PRF) and colour gain and by reducing the colour frequency if lesion is deep

- using the narrowest box possible but cover the area
- using light pressure or a gel 'stand-off' to avoid compressing any vessels

Dynamic evaluation

The dynamic nature of ultrasound can be very useful to aid the differentiation of solid from soft/cystic lesions by using compression techniques. It is also often helpful to move a tendon, ligament, muscle or bone to decide if the lesion is part of those structures or is adherent or separate from them.

The use of Valsalva manoeuvre or other breathing techniques or adjusting the tension of muscles can be used to aid in differentiating herniae from STMs.

Images

When compiling a set of images to accompany an ultrasound report it is important that they are stored in a systematic way and that they match the report.

For example, if the report states that there is no deep extension of a mass, it is important to include an image showing that deep structures are clear of the mass.

If the lesion is well defined, all images should show good definition.

Images stored should only include what is identified or excluded in the report – spurious images that are not referred to in the report should not be stored as they can be misleading to anyone viewing those images in the future.

Hints and tips for safe imaging of STMs:

- Be systematic in your scanning and show it in your imaging, demonstrating adjacent anatomical structures/landmarks where appropriate.
- Always annotate images – writing on the image can be helpful – e.g. medial/lateral/left/right and if necessary, use arrows or drawing tools to highlight a lesion that is difficult to visualise.
- Using the body markers may more easily demonstrate the site of the lesion, particularly if there is a repeat scan in the future.
- Be as accurate as you can with your measurements in case of serial scanning in the future.
- Ensure there are representative images to demonstrate any pathology and extension of the examination to other body areas as required.
- Ensure that as a minimum, there are images of the lump in two orthogonal planes, measurements in three dimensions and a representative image of the lesion with power Doppler applied to show any internal or peripheral low blood flow
- If the examination is normal, then representative images of the area in two planes, both superficially and deep, should be stored to document the examination.
- Split-screen comparison with the contralateral side can demonstrate similarities or difference with the symptomatic area or the differences in appearances with and without compression or Valsalva.
- The use of panoramic imaging can be very helpful in assessing, measuring and imaging lesions.

Interpretation and reporting

There are many resources available to ultrasound practitioners to help categorise soft tissue lesions and in some cases to give definitive diagnoses There are also resources which suggest management strategies (11,12,13,14), for example by suggesting or requesting further imaging or referral and these may vary between geographical areas or service pathways.

In view of these variations, it is not within the remit of this document to be specific about diagnoses or management strategies and it is therefore expected that each STM ultrasound service collaborates with local stakeholders to agree robust protocols for scanning, reporting and making onward recommendations.

The ultrasound reporting of STMs will vary due to local training and practice but should include the structures examined and any pathology described in detail and should also include:

- the clinical history – from the referrer and patient
- previous relevant imaging
- any visible/textural findings from palpation of the lump
- the location of the lesion in the body – specifying side (right or left)
- the location of the lesion in the tissues – skin, adipose, muscle, superficial, deep
- the size of the lesion in 3 planes
- the echogenicity with explanation – cystic, solid, mixed
- the composition, involved structures, margins, vascularity and any other findings such as calcification.

Ultrasound features normally fall into one of three categories:

1. Features strongly suggestive of benign characteristics and can be discharged back to the referring clinician for clinical management
2. Indeterminate. Ultrasound features require further assessment/ imaging for diagnosis.
3. Positive features of malignancy. Direct urgent referral – usually to a sarcoma MDT

For benign pathologies that are known to have specific ultrasound appearances, it is important that those appearances are identified during the scan, clearly imaged and included in the report.

For example, a simple lipoma may be described as

‘Solid, hyperechoic, elliptical, well defined, superficial, no discernible vascularity’

A simple ganglion may be described as:

‘Thin walled, well defined, cystic lesion (showing through transmission of sound causing posterior acoustic enhancement) with no evidence of internal or peripheral vascularity on Doppler.’

There are a number of ultrasound features that may suggest additional imaging. Each on its own is not indicative of malignancy but should alert the examiner to the possibility. These features can be seen in benign conditions but may either need confirmation with other imaging modalities or excision/biopsy in an appropriate tertiary centre (11).

These include:

Solid non-lipomatous mass

Heterogeneous internal architecture

Invasive margins

Disorganised vascular flow

Intramuscular or deep lesions are difficult to reliably assess with ultrasound and MRI is indicated even if the ultrasound appearances are those of a simple lipoma as the entire lesion cannot be seen with clarity.

Lesions approximately 1cm in size are difficult to characterise with other imaging and may simply need appropriate excision biopsy.

Lesions >1cm will allow soft tissue characterisation on MRI, but it is poor for mineralisation, calcification and/or ossification. Therefore, if calcification is seen then x-ray is the appropriate next investigation.

A summary indicating features of benign / indeterminate and malignant lesions in clear, unambiguous language is vital for patient management, however it may not be possible to be specific when using ultrasound alone.

Further investigations may be required but the specifics of recommendations will vary between imaging services and may depend on the underlying profession of the ultrasound practitioner. It is therefore vital that departments produce protocols that are specific to the scope of practice of their ultrasound practitioners.

Some radiographers/sonographers may not be in a position to directly recommend or arrange further imaging such as MRI or x-ray but if it is vital for further clarification, there should be systems in place to allow this to happen in a timely manner.

The ultrasound practitioner must be aware of and adhere to local protocols for flagging urgent referrals. This will vary between departments.

Sample reports.

The sample reports below have been written by experienced MSK sonographers from BMUS MSK special interest group and are simply a guide to reporting. It is understood that the style and content of reports will differ between departments, but these examples may be useful as a guide.

Normal

1. Normal appearances of the soft tissues at the site of clinical concern which are similar to the asymptomatic side. No mass identified.
2. Whilst the 'swelling' identified by the patient on the medial aspect of the right forearm can be appreciated, the underlying soft tissues appear normal in architecture. In comparison to the asymptomatic side, the subcutaneous adipose tissue appears a little deeper on the symptomatic right side, but no discrete solid or cystic lesions seen.

No mass identified but suspicious

1. Normal appearances of the soft tissues at the site of clinical concern which are similar to the asymptomatic side. Despite extensive scanning over the area indicated by the referrer and the patient, no solid or cystic soft tissue mass/focal lesion was identified. However, ultrasound cannot exclude a deep mass or intraarticular pathology and if there is ongoing clinical concern, further imaging is suggested, the degree of urgency being dependent on the level of your clinical concern.
or

However, ultrasound cannot exclude a deep mass or intraarticular pathology and an MRI scan has been arranged by us to clarify.

Benign lesions

1. The area identified by the patient as a swelling over the left lateral thigh corresponds to a solid, elliptical, well defined, hyperechoic lesion with the internal texture of fatty tissue lying in the superficial soft tissues. It measures 34 x 23 x 16mm and does not show any increased internal or peripheral vascularity on Doppler or any deep extension. Ultrasound appearances are consistent with a lipoma. Should it rapidly increase in size and/or become painful, a rescan is advised.
2. The lump corresponds to a cystic non-complex mass of 27 x 20 x 26mm. No internal vascularity. It demonstrates a 'tail-like' communication with the radio-carpal joint. Appearances are in keeping with a ganglion. No sinister features. Should this rapidly increase in size, a rescan is advised.
3. The patient describes a hard lump to the right of the thoracic spine that has been present for 8 months. It has recently increased in size but is non tender. It is not discoloured. The lump corresponds to a well circumscribed mass within the subcutaneous fat that communicates with the dermal layer via a small punctum. Post cystic enhancement is noted. No internal vascularity. Appearances are in keeping with an epidermoid cyst. No sinister features.

4. The patient describes direct trauma to the anterior shin 4 months ago after which there was a widespread bruising to the skin, which eventually subsided, leaving the hard lump present today. It is not increasing in size. The lump corresponds to echogenic changes within the subcutaneous fat with some internal cystic areas demonstrated. It is slightly tender on examination. No internal vascularity. Normal outline to the underlying bony cortex. Conclusion: Appearances and history are in keeping with fat necrosis- no sinister features. However, should this area increase in size, a rescan is advised.

Indeterminate lesions.

1. There is a 3 x 3 x 2cm solid hypoechoic lesion in the subcutaneous tissues of the right arm. The lesion is well-defined but has increased internal vascularity and does not appear to extend from any particular adjacent structure. There is no evidence of an obvious punctum. These appearances are indeterminate on ultrasound alone and require further categorisation and in view of this, further investigations are suggested. The urgency of these investigations would be dependent on the level of your clinical concern.
2. There is a well-defined solid lesion within the biceps muscle measuring 7 x 4 x 3cm. This has slightly increased vascularity on Doppler and the ultrasound features are indeterminate. MRI has been arranged for further evaluation.
3. There is a small lump in the subcutaneous fat of the left lateral ankle. The patient describes it has been present for 6 months It is not increasing in size. This is well circumscribed and heterogeneous in echotexture. It measures 6 x 4 x 4 mm. There is a trace of internal vascularity. This is intensely painful on probe pressure and causes pain to radiate up and down the lateral calf. There is the suggestion of an afferent and efferent vessel. Conclusion: Ultrasound appearances and clinical presentation suggest a peripheral nerve sheath tumour. You are advised to refer this patient for an MRI scan in the first instance for clarification of ultrasound appearances and if confirmed then referral to the plastic surgeons for further management.

An alternative conclusion that could be used if the practitioner cannot recommend this level of referral and there is a Radiology 'Advice and Guidance' service in place is:

Ultrasound appearances and clinical presentation suggest a peripheral nerve sheath tumour. This requires further imaging to corroborate ultrasound appearances- you are advised to discuss this case with Radiology A&G for further imaging advice.

Malignant appearing lesion.

1. There is a solid, hypoechoic lesion measuring 2 x 2 x 2cm in the superficial tissues of the right forearm with irregular margins and marked increased vascularity on Doppler. This lesion crosses the fascial plane, and the appearances are strongly suggestive of a malignant lesion. Urgent referral to the sarcoma unit is recommended. **use appropriate local protocols to ensure that this report is read**

Audit

Audit is a quality improvement process designed to improve patient outcomes by reviewing services. Audits assess individuals or services against established standards and guidelines in order to ensure safe and effective care for patients.

Whilst most audit is developed on a local level, there are several examples below of audit for the ultrasound evaluation of soft tissue masses and ultrasound service provision that have been produced by BMUS and the Royal College of Radiologists:

<https://www.bmus.org/policies-statements-guidelines/professional-guidance/guidance-pages/bmus-recommended-audit-tool/>

<https://www.rcr.ac.uk/career-development/audit-quality-improvement/auditlive-radiology/audit-of-ultrasound-technique-for-the-evaluation-of-soft-tissue-lumps/>

<https://www.rcr.ac.uk/career-development/audit-quality-improvement/auditlive-radiology/audit-on-structured-reporting-of-superficial-soft-tissue-masses-on-ultrasonography-in-relation-to-guiding-clinical-management/>

<https://www.rcr.ac.uk/career-development/audit-quality-improvement/auditlive-radiology/audit-on-ultrasound-performance-in-soft-tissue-tumor-assessment/>

<https://www.rcr.ac.uk/our-services/all-our-publications/clinical-radiology-publications/standards-for-the-provision-of-an-ultrasound-service/>

<https://www.rcr.ac.uk/our-services/all-our-publications/clinical-radiology-publications/recommendations-for-specialists-practising-ultrasound-independently-of-radiology-departments-safety-governance-and-education/>

<https://www.rcr.ac.uk/our-services/all-our-publications/clinical-radiology-publications/standards-for-interpretation-and-reporting-of-imaging-investigations-second-edition>

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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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