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The European Federation of
Societies for Ultrasound in
Medicine and Biology
(EFSUMB): EFSUMB Position
Statement on Live Ultra-
sound Scanning (update
2026)



Ultraschall in der
Medizin - European
Journal of Ultrasound

2026

10.1055/a-2818-8609

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ISSN 0172-4614



The European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB): EFSUMB Position Statement on Live Ultrasound Scanning (update 2026)

The European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB): EFSUMB Grundsatzerklärung zu Live-Ultraschall-Demonstrationen (update 2026)




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Keywords

position statement, live scanning, safety, Education, Training, Quality Assurance

received 18.6.2025

accepted after revision 20.2.2026

published online 2026

Bibliography

Ultraschall in Med

DOI 10.1055/a-2818-8609

ISSN 0172-4614

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 Supplementary Material is available at <https://doi.org/10.1055/a-2818-8609>.

ABSTRACT

This document was initiated by the Safety Committee (ECMUS) of the European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB) and prepared together with the Executive Board. It gives directions as to how to perform live ultrasound demonstrations at courses, meetings, and conferences with respect to the patients and models including informed consent.

ZUSAMMENFASSUNG

Dieses Dokument wurde vom Sicherheitskomitee (ECMUS) der European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB) initiiert und gemeinsam mit dem Vor-

stand erstellt. Es enthält Anweisungen für die Durchführung von Live-Ultraschall-Demonstrationen bei Kursen, Tagungen

und Konferenzen im Hinblick auf Patienten und Modelle, einschließlich der Einwilligung nach Aufklärung.

Scope and Definitions

Live ultrasound scanning events including hands-on training in small groups, live demonstrations to the participants of ultrasound courses and congresses are considered invaluable in ultrasound training. Therefore, EFSUMB supports ultrasound courses, schools, congresses and other educational events that include live demonstrations, if prepared and conducted in accordance with a clear focus on learning objectives. Live ultrasound examinations for educational purposes can be performed on apparently healthy volunteers (models) and also on volunteer patients.

This EFSUMB Position Statement aims to provide a framework of recommendations for organizers, lecturers, tutors and participants of live ultrasound scanning events.

Introduction

One of the objectives of the European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB) is to improve the quality of diagnostic and therapeutic ultrasound to make medical ultrasound (US) a reliable, professional service based on common and uniform quality and safety standards [1]. Teaching ultrasound combines theoretical knowledge and practical skills. Hands-on training and live demonstrations on healthy volunteers (models) and patients are therefore an essential part of ultrasound training outside clinical environments – for instance at courses, workshops, national and international congresses. Some of these live ultrasound examinations and procedures are performed in a clinical environment and streamed online at large congresses. Ensuring the personal integrity and safety of the individuals (models and patients) must have priority and should always follow national and international law including the General Data Protection Regulation (GDPR). This EFSUMB document serves as an adjunct to these laws and requirements and should be followed when live scanning models and patients for educational purposes.

If planning live scanning at ultrasound courses and national congresses/educational events of EFSUMB and other societies, where professional training and advanced education is provided, we suggest that several recommendations are followed. Scanning of pregnant women and children, eye scanning, performing endocavitary/endoscopic ultrasound and ultrasound-guided interventions as well as the use of contrast agents are subject to specific requirements for those responsible. Scanning should be performed or directly supervised by ultrasound practitioners¹ involved in these events. These ultrasound practitioners should have a level of expertise and experience defined by at least EFSUMB level II (or analogous level certified or endorsed by national ultrasound societies) according to the training recommendations of EFSUMB [2].

Corporate employees may help to perform scans at these events, but their help should be limited to demonstrating the optimal setup of the ultrasound equipment and supporting the ultrasound practitioner.

Requirements

1. Informed consent

Patients and models shall be informed well in advance orally and in written form on a planned inclusion as a case in a live demonstration and on the circumstances of this live demonstration, e. g.:

- supervised hands-on training in a small group
- live demonstration in a training group or in front of an audience
- live transmission and/or video recording (with the presence of non-medical personnel for technical support)
- which expert(s) will perform the examination or supervise hands-on training (including external faculty)
- where the live demonstration will take place, if planned.

Information about the possibility of incidental findings and misinterpretations shall also be provided to models and patients. Models and patients should always have at least 48 hours to weigh advantages and disadvantages of the invitation to be included in a live demonstration. Consent should be in writing and adhere to GDPR. The patients and models can withdraw their consent to participate at any time. The withdrawal of consent or rejection of the invitation must not lead to disadvantages for the person concerned.

For live demonstrations involving endoscopic or endocavitary ultrasound examinations, ultrasound-guided interventions and contrast-enhanced ultrasound, relevant information about these procedures including potential risks should also be given and consented.

It is recommended to do a pre-scan prior to the workshop and live demonstration so that the anatomy and potential incidental findings are known to the examiner.

2. Confidentiality and privacy issues

The organizers of live demonstrations must ensure that the personal rights of models and patients are protected. This applies to the anonymization of the patient or model data on the ultrasound screens as well as the omission of images of the examined individual's face during online or live-streamed examinations. As the options for anonymization are limited in the case of live demonstrations in small groups, this lack of anonymization must be highlighted in the information provided in advance and in the patient's consent. If other individuals (e. g. technicians and filming crew involved with the live streaming or recording; personnel from ultrasound vendors) have access to the patient's individual data and medical records, safeguarding of these confidential

1 e. g., medical specialists and other non-physician medical professionals with a formal training in ultrasound.

data should be ensured by a business associate agreement or non-disclosure agreement.

After a live scanning event, the course director must ensure that stored images and video recordings are deleted from the ultrasound device. Recordings of live scanning events and the anonymized use of ultrasound images and video sequences stored during the live examination for scientific, publication or teaching purposes require the written consent of the models or patients.

All scanning should be performed by an ultrasound practitioner with sufficient skills and in a manner respectful to the subject. Appropriate draping to protect modesty and privacy of models and patients should be used. Restrictions requested by models and patients regarding the body regions/organs examined (e.g. internal genitals) must be respected. Communication when interpreting and discussing images in the training situation shall be respectful and avoid negative comments.

3. Limitations/restrictions

- If live ultrasound scanning is performed in patients, it must be guaranteed that the examination or procedure meets all applicable medical and safety standards, is adequately documented and is concluded with an examination report.
- Live demonstrations of endoscopic, intracavitary and intravascular examinations and also ultrasound-guided interventions should not be performed on healthy volunteers (models). An appropriate medical environment and a well-established medical indication for the examination or procedure are required. For live demonstration of endoscopic ultrasound examinations and interventions we refer to the position paper of the European Society for Gastrointestinal Endoscopy (ESGE) and recommend compliance with the ESGE recommendations [3].
- The use of ultrasound contrast agents is not recommended on healthy volunteers (models). If performed in patients, scanning must be performed in a medical environment or alternatively in an educational setting guaranteeing adherence to the hygienic standards for the application of peripheral venous access and adequate preparation for the treatment of a pseudo-allergic (CARPA) reaction, including any necessary resuscitation measures.
- Scanning of children and scanning of the eyes is only recommended if performed by an ultrasound practitioner who is highly experienced in this particular ultrasound application and aware and adheres to the EFSUMB clinical safety statement with respect to thermal index (TI) and mechanical index (MI) values to be used [4]. The scans should only be performed in a clinical or educational setting and not within or part of a commercial exhibition. Live scanning of children should be restricted to anatomical structures, physiological and pathological findings which cannot adequately be demonstrated in adolescent or adult patients or models and only by ultrasound practitioners experienced in scanning children. Documented parental or guardian consent is mandatory.
- Live examinations of pregnant women should only be performed as part of gynecological and obstetric ultrasound courses/events if the demonstration and training objectives cannot be achieved using simulators or phantoms.

Prior to the live scan, an examination by a highly experienced expert in gynaecological and obstetric ultrasound (EFSUMB level III or equivalent) is mandatory in order to minimize the risk of unexpected detection of abnormalities or findings of unclear clinical relevance during the live demonstration. The thermal and mechanical indices should be closely monitored by a second experienced faculty member, and any risk of exceeding the limits should be communicated immediately to the examining ultrasound practitioner [4, 5]. Informed consent should include the risk of false-positive and false-negative findings, as well as findings of unclear clinical significance.

A short survey of these application-specific requirements can be found in ► **Table 1**.

4. General Terms

- Each organizer must have a written policy on how to deal with incidental findings and to comply with GDPR as stated previously.
- It is strongly recommended that all participants in the ultrasound training classes are informed by the course instructor before the course about the respectful treatment of the examined model or patient, the behavior in case of detection of (alleged) pathological or unexpected findings and the duty of confidentiality in connection with such findings. The best option is to integrate these rules into the consent form and if available in the non-disclosure agreement (NDA). Incidental findings should be managed according to the recommendations in the position paper of the World Federation for Ultrasound in Medicine and Biology (WFUMB) [6].
- In case of unexpected findings in models, a written report should be provided after the session in accordance with the WFUMB position paper. In particular, clinically relevant incidental or unexpected findings should be communicated to the models/patients/parents (if the model/patient is a child) by an ultrasound practitioner (faculty member, e.g. course director) in a timely manner; before or after the live demonstration and not during it [6].
- Female subjects must confirm that they are not pregnant. If a previously unknown pregnancy is detected during a scan, the scanning session must be ended, and the female (who participated in a non-obstetrical ultrasound live scanning event) should be informed where to seek professional advice.
- All those who perform live scanning must understand the significance of the on-screen display of thermal index (TI) and mechanical index (MI) values. They should also know about ultrasound safety and potential ultrasound bioeffects and importantly know how to reduce TI and MI as required.
- The lowest acoustic output and suitable application program compatible with adequate imaging should be maintained and should be consistent with the ALARA principle and the EFSUMB Safety Statement.
- For reasons of subject comfort, individual scanning sessions should be as short as possible and not exceed 45 minutes including sufficient breaks (e.g. for drinking). However, subjects may participate in several scanning sessions on the same day.
- A reimbursement of expenses related to participation in live scanning events should be offered.

► **Table 1** Application-specific risks and restrictions for live ultrasound scanning.

Particular applications	Description of potential risks	Recommended restrictions
Contrast-enhanced ultrasound (CEUS)	Preparation of the ultrasound contrast agent and necessary intravenous access Low risk of pseudo-allergic reaction (CARPA), a potentially life-threatening situation	Perform only on patients with an indication for CEUS in a medical environment or alternatively in an educational setting guaranteeing adherence to hygienic standards for intravenous applications and adequate preparation for the treatment of a CARPA reaction. Informed consent for CEUS
Intracavitary and endoscopic ultrasound Ultrasound-guided interventions	Invasive procedures with a risk of perforation, bleeding, infection, and other rare complications Application under strict hygienic/aseptic conditions and cleaning/disinfection of probes Deep sedation may be necessary with a need for intravenous access, injection of anesthetics and sedatives, monitoring, and oxygen supply, equipment, and medications for complication management	Perform only on patients with an indication for intracavitary ultrasound in a medical environment with adequate preparation for deep sedation, monitoring, and complication management/resuscitation, and antiseptic/aseptic handling of probes Informed consent for the particular procedure including sedation if necessary
Ocular ultrasound	Potential risk of thermal injury (especially with Doppler imaging and elastography) and subsequent elevated risk of cataract	Should only be performed with dedicated ophthalmic ultrasound systems or ocular presets designated by the manufacturer that comply with the maximum recommended acoustic output levels for ophthalmic applications (FDA, WFUMB) by ultrasound practitioners with ocular ultrasound experience
Ultrasound in children	Psychological burden Potential limitation of cooperation in young children	Restriction to anatomical structures and physiological and pathological findings that cannot be adequately demonstrated in adolescent or adult patients or models in a protective and reassuring environment (e.g., presence of the parents) Performed by ultrasound practitioners with pediatric ultrasound experience Parental/guardian informed consent
Ultrasound in pregnant women	Psychological burden Risk of unexpected pathological findings, false-positive findings, and findings of unknown clinical significance Not clearly defined risk of thermal injury to the fetus/embryo if the safety limits for thermal and mechanical indices are exceeded	Restricted to obstetrical ultrasound training, unless replaceable by simulation Mandatory pre-scanning by a highly experienced examiner Monitoring of thermal and mechanical indices by a second experienced faculty member

An example of information and consent form for patients and models participating in an educational event involving ultrasound can be downloaded as supplementary file.

Contributors' Statement

Christian Kollmann: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Writing - original draft, Writing - review & editing.
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Caroline Ewertsen: Conceptualization, Data curation, Investigation, Methodology, Project administration,

Resources, Supervision, Validation, Writing - original draft, Writing - review & editing.

Conflict of Interest

EFSUMB and one or more authors (JC, EC, MC, KC) have received financial and/or material support (provision of ultrasound systems and/or ultrasound contrast agents) for the organization and holding of ultrasound congresses and other education events with live ultrasound scanning (e.g., EUROSOM Schools, Ultrasound Learning Centers, endorsed courses) from vendors of ultrasound systems and related products (e.g., Bracco, Fujifilm, GE HealthCare, Fujifilm, Mindray, Siemens Healthineers, Lanthan Medical Imaging).

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**EFSUMB information and consent form for patients or models participating in an
education event involving ultrasound
(example)**

Dear Sir/Madam,

With this information letter we would like to ask you if you want to participate in a live ultrasound education event. Participation is voluntary and will have no consequences for you as a patient/model.

Here you can read about the event, ultrasound in general, and the potential advantages and disadvantages of your participation. Please read the information and decide if you want to participate. If you do wish to participate, please complete the consent form at the end of this document.

You can make your decision based on the information in this document as well as information provided by the person responsible for the event.

The ultrasound practitioner organizing the event will be happy to answer any questions that you may have, regardless of how complex or simple. Please also consider discussing your potential participation with your partner, family, or friends before deciding.

Ultrasound event

Ultrasound live scanning educational events are intended to help participants understand the diagnostic capabilities of medical ultrasound. Ultrasound allows real-time assessment of the organs, structures, and blood vessels of the human body and the detection of many diseases. By participating, you can support the training of medical students, doctors, and other healthcare professionals. In some events, the ultrasound images and possibly also the examination itself are projected to the audience in a lecture room (without revealing your face or personal data). In ultrasound courses, your examination will be demonstrated only to a small group and/or you will be examined by people who are just learning the method under direct supervision by experts.

Information about the event (provided by the responsible ultrasound practitioner/organizer)

Responsible ultrasound practitioner/course director:

Characteristics of the ultrasound live scanning event:

- ☐ *Small group demonstration on an ultrasound machine without projection or streaming*
- ☐ *Hands-on training included*
- ☐ *Live examination with projection or streaming to an audience*

It is estimated that the audience include around _____ people.

Event address: _____

Date and time of event: _____

Phone number: _____

You can contact this number if you need information or would like to withdraw your consent

Ultrasound scanning

Ultrasound scans utilize sound waves that are too high-pitched for humans to hear, in order to create images of the body. These sound waves pass through, scatter, and are reflected by the different tissues within the body, and an image is created from the returning echoes picked up via the probe on the skin surface. Unlike X-rays, medical ultrasound has no radiation exposure, and no harmful effects have been reported.

Advantages and disadvantages of participating

You will be able to see the moving ultrasound images from inside your body on the screen or in the projection. During the scan, the examiners may discover unexpected changes, called incidental findings. Most incidental findings are harmless. Occasionally, meaningful findings are discovered incidentally before they cause any symptoms. This can be beneficial for you but may also cause worry. If there is an incidental finding, you will receive information from the ultrasound practitioner performing or supervising the live scanning either before or after the event. We recommend that you are scanned before the event without an audience. Should the findings require further diagnostic tests or treatment, the examiner or a highly experienced faculty member will discuss this with you outside of the live demonstration and, if you wish, inform and advise your family doctor.

In order to obtain a good ultrasound image, ultrasound gel must be applied to your skin, you will feel light pressure from the ultrasound probe, and you may occasionally be given breathing instructions. Please tell the examiner if the pressure from the transducer is too hard or if you feel uncomfortable during the examination. We recommend that the scanning time does not exceed 45 minutes but may be repeated during the day.

What can you expect and how can you contribute?

It is necessary for you to cooperate during the examination, especially following breathing commands such as "please take a deep breath and hold your breath", "please turn to your left side", etc. During the examination, you do not need to fully undress, but exposure of the body part to be examined will be necessary. You should wear light clothing. We will try to make sure that no ultrasound gel gets on your clothes.

Are you participating in the event?

Consent means that you are also consenting to the collection and storage of your data, i.e. name, address, phone number, date of birth, email address, and phone number.

Signature of the course director/ultrasound examiner

Consent form (models/patient):

I have read and understood the information letter. I was able to ask questions. My questions have been answered to my satisfaction. I had enough time to decide whether or not to participate.

I know that participation is voluntary. I also know that I may decide at any time not to participate or to withdraw from the event and I do not need to give a reason for this decision. I give the organizer permission to store my data according to national and international law including the General Data Protection Regulation (GDPR).

My surname is (participant): _____

My full first name (as listed on ID card) is: _____

Date: ____/____/____ (dd/mm/yyyy) Signature _____

(to be completed by the ultrasound practitioner/organizer)

I have provided a verbal and written explanation of this ultrasound event. I declare that I am willing to answer any further questions about the event according to my ability. If information becomes known during the event that could influence the subject's consent, I will inform the participant in a timely fashion.

I will give a signed copy of the declaration of consent to the participant.

Name: _____

On behalf of [Insert Site Name]

Date: ____/____/____ (dd/mm/yyyy) Signature _____

Time: ____:____ (hr:min)