

AIUM Practice Parameter for the Performance of

Sonohysterography

*Parameter developed in collaboration with the American College of Radiology,
the American College of Obstetricians and Gynecologists,
and the Society of Radiologists in Ultrasound.*



The American Institute of Ultrasound in Medicine (AIUM) is a multidisciplinary association dedicated to advancing the safe and effective use of ultrasound in medicine through professional and public education, research, development of parameters, and accreditation. To promote this mission, the AIUM is pleased to publish, in conjunction with the American College of Radiology (ACR), the American College of Obstetricians and Gynecologists (ACOG), and the Society of Radiologists in Ultrasound (SRU), this *AIUM Practice Parameter for the Performance of Sonohysterography*. We are indebted to the many volunteers who contributed their time, knowledge, and energy to bringing this document to completion.

The AIUM represents the entire range of clinical and basic science interests in medical diagnostic ultrasound, and, with hundreds of volunteers, the AIUM has promoted the safe and effective use of ultrasound in clinical medicine for more than 50 years. This document and others like it will continue to advance this mission.

Practice parameters of the AIUM are intended to provide the medical ultrasound community with parameters for the performance and recording of high-quality ultrasound examinations. The parameters reflect what the AIUM considers the minimum criteria for a complete examination in each area but are not intended to establish a legal standard of care. AIUM-accredited practices are expected to generally follow the parameters with recognition that deviations from these parameters will be needed in some cases, depending on patient needs and available equipment. Practices are encouraged to go beyond the parameters to provide additional service and information as needed.



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I. Introduction

The clinical aspects contained in specific sections of this parameter (Introduction, Indications and Contraindications, Specifications for Individual Examinations, and Equipment Specifications) were developed collaboratively by the American Institute of Ultrasound in Medicine (AIUM), the American College of Radiology (ACR), the American College of Obstetricians and Gynecologists (ACOG), and the Society of Radiologists in Ultrasound (SRU). Recommendations for physician qualifications, written request for the examination, procedure documentation, and quality control may vary among the 4 organizations and are addressed by each separately.

This parameter has been developed to assist qualified physicians performing sonohysterography. Properly performed sonohysterography can provide information about the uterus, endometrium, and fallopian tubes. Additional studies may be necessary for complete diagnosis. Adherence to the following parameter will maximize the diagnostic benefit of sonohysterography.

Sonohysterography is the evaluation of the endometrial cavity using the transcervical injection of sterile fluid. Various terms such as saline infusion sonohysterography or hysterosonography have been used to describe this technique. The primary goal of sonohysterography is to visualize the endometrial cavity in more detail than is possible with routine endovaginal sonography.¹ Sonohysterography may also be used to assess tubal patency.² An increase in the amount of free pelvic fluid at the end of the procedure indicates that at least one tube is patent.

II. Indications and Contraindications

A. Indications¹⁻¹¹

Indications include but are not limited to evaluation of:

1. Abnormal uterine bleeding;
2. Uterine cavity, especially with regard to uterine myomas, polyps, and synechiae;
3. Abnormalities detected on endovaginal sonography, including focal or diffuse endometrial or intracavitary abnormalities;
4. Congenital or acquired abnormalities of the uterus;
5. Infertility;
6. Recurrent pregnancy loss; and
7. Suboptimal visualization of the endometrium on endovaginal ultrasound.

B. Contraindications

Sonohysterography should not be performed in a woman who is pregnant or who could be pregnant. This is usually avoided by scheduling the examination in the follicular phase of the menstrual cycle, after menstrual flow has essentially ceased but before the patient has ovulated. In a patient with regular cycles, sonohysterography should not in most cases be performed later than the 10th day of the menstrual cycle. Sonohysterography should not be performed in patients with a pelvic infection or unexplained pelvic tenderness, which could be due to pelvic inflammatory disease. Active vaginal bleeding is not a contraindication to the procedure but may make the interpretation more challenging.¹²

III. Qualifications and Responsibilities of the Physician

See www.aium.org for AIUM Official Statements including *Standards and Guidelines for the Accreditation of Ultrasound Practices* and relevant Physician Training Guidelines.

IV. Written Request for the Examination

The written or electronic request for an ultrasound examination should provide sufficient information to allow for the appropriate performance and interpretation of the examination.

The request for the examination must be originated by a physician or other appropriately licensed health care provider or under the provider's direction. The accompanying clinical information should be provided by a physician or other appropriate health care provider familiar with the patient's clinical situation and should be consistent with relevant legal and local health care facility requirements.

V. Specifications for Individual Examinations

A. Patient Preparation

Pelvic organ tenderness should be assessed during the preliminary endovaginal sonogram. If the patient's history or physical exam is concerning for active pelvic inflammatory disease, the examination should be deferred until an appropriate course of treatment has been completed. In the presence of nontender hydrosalpinges, consideration may be given to administering antibiotics at the time of the examination; in this case, it is prudent to discuss the antibiotic regimen with the referring physician. A pregnancy test is advised when clinically indicated. Patients should be questioned about a latex allergy or a reaction to betadine or other topical antiseptic before use of these products. A sonohysterogram should be performed in the early follicular phase, as close to the end of the menstrual period as possible.

B. Procedure

A previous endovaginal sonogram is useful for measurement of the endometrium and evaluation of the uterus, ovaries, and pelvic free fluid. A speculum is used to allow visualization of the cervix. The presence of unusual pain, lesions, or purulent vaginal or cervical discharge may require rescheduling the procedure pending further evaluation. Before insertion, the catheter should be flushed with sterile fluid to avoid introducing air during the study. After cleansing the external os, the cervical canal and/or uterine cavity should be catheterized using aseptic technique, and appropriate sterile fluid should be instilled slowly by means of manual injection under real-time sonographic imaging. Imaging should include real-time scanning of the endometrial and cervical canal.^{13–14} Imaging may include evaluation of fallopian tube patency if indicated.

C. Contrast Agent

Appropriate sterile fluid such as normal saline should be used for sonohysterography. If the requesting physician is interested in tubal patency, then a sonosalpingogram can be offered using agitated saline.^{15–16}

D. Images

Precatheterization images should be obtained and recorded, in at least 2 planes, to show normal and abnormal findings. These images should include the thickest bilayer endometrial measurement, which includes the anterior and posterior endometrial thicknesses, obtained in a sagittal view.

Once the uterine cavity is filled with fluid, a complete survey of the uterine cavity should be performed and representative images obtained to document normal and abnormal findings. If a balloon catheter filled with saline is used for the examination, images should be obtained at the end of the procedure with the balloon deflated to fully evaluate the endometrial cavity, particularly the cervical canal and lower portion of the endometrial cavity.

Color Doppler sonography may be helpful in evaluating the vascularity of an intrauterine abnormality and tubal patency.

Three-dimensional imaging, in particular reconstructed coronal plane imaging, is useful in the assessment of Mullerian duct anomalies and for preoperative mapping of myomas.^{17–18}

E. Postprocedure Care

The imaging or referring physician should discuss the sonohysterogram findings with the patient. The patient should be instructed to contact her physician if she develops fever, persistent pain, or unusual bleeding following the procedure. The patient should be told to expect leaking of fluid after the procedure that may be blood-tinged or may have a similar color as the cleaning solution.

VI. Documentation

Adequate documentation is essential for high-quality patient care. There should be a permanent record of the ultrasound examination and its interpretation. Images of all appropriate areas, both normal and abnormal, should be recorded. Variations from normal size should be accompanied by measurements. Images should be labeled with the patient identification, facility identification, examination date, and side (right or left) of the anatomic site imaged. An official interpretation (final report) of the ultrasound findings should be included in the patient's medical record. Retention of the ultrasound examination should be consistent both with clinical needs and with relevant legal and local health care facility requirements.

Reporting should be in accordance with the *AIUM Practice Parameter for Documentation of an Ultrasound Examination*.

VII. Equipment Specifications

Sonohysterography is usually conducted with a high-frequency endovaginal transducer. In cases of an enlarged uterus, additional transabdominal images during infusion may be required to fully evaluate the endometrium. The transducer should be adjusted to operate at the highest clinically appropriate frequency under the ALARA (as low as reasonably achievable) principle.

VIII. Quality Control and Improvement, Safety, Infection Control, and Patient Education

Policies and procedures related to quality control, patient education, infection control, and safety should be developed and implemented in accordance with the *AIUM Standards and Guidelines for the Accreditation of Ultrasound Practices*.

Equipment performance monitoring should be in accordance with the *AIUM Standards and Guidelines for the Accreditation of Ultrasound Practices*.

IX. ALARA Principle

The potential benefits and risks of each examination should be considered. The ALARA (as low as reasonably achievable) principle should be observed when adjusting controls that affect the acoustic output and by considering transducer dwell times. Further details on ALARA may be found in the AIUM publication *Medical Ultrasound Safety, Third Edition*.

Acknowledgments

This parameter was revised by the American Institute of Ultrasound in Medicine (AIUM) in collaboration with the American College of Obstetricians and Gynecologists (ACOG), the American College of Radiology (ACR), and the Society of Radiologists in Ultrasound (SRU) according to the process described in the AIUM Clinical Standards Committee Manual.

Collaborative Committee

Members represent their societies in the initial draft and final revision of this parameter.

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Renamed 2015

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