

# AIUM Practice Parameter for the Performance of a Focused Ultrasound Examination in Reproductive Endocrinology and Female Infertility

## I. Introduction

The clinical aspects of this parameter were developed collaboratively among the AIUM and other organizations whose members use ultrasound for performing focused female pelvic examinations in the practice of reproductive medicine and infertility (see “Acknowledgments”). Recommendations for practitioner requirements, the written request for the examination, procedure documentation, and quality control vary among the organizations and are addressed by each separately.

In some cases, additional and/or specialized examinations may be necessary. While it is not possible to detect every abnormality, adherence to the following will maximize the probability of detecting most of the abnormalities that occur.

## II. Indications

Indications for an ultrasound examination for a focused reproductive endocrinology and infertility scan include, but are not limited to, monitoring of ovulation induction and controlled ovarian stimulation and assessment of the endometrium during fertility treatment.

## III. Qualifications and Responsibilities of Personnel

See [www.aium.org](http://www.aium.org) for AIUM Official Statements, including *Standards and Guidelines for the Accreditation of Ultrasound Practices* and relevant 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. A request for an ultrasound examination must be originated by a physician or other

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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.

When an ultrasound examination is performed within a practice as part of established patient care, the indication for the examination should be documented, but a formal request is not needed.

## V. Specifications of the Examination

The following parameter describes the examination to be performed for each organ and anatomic region in the female pelvis. Whenever possible, all relevant structures should be identified by the vaginal approach. When a transvaginal scan fails to image all areas needed for diagnosis or when a transvaginal scan is not tolerated by the patient, a transabdominal scan should be performed. In some cases, both transabdominal and transvaginal scans may be needed.

### **General Pelvic Preparation**

For a transvaginal sonogram, the urinary bladder is preferably empty. The patient, the sonographer, or the practitioner may introduce the transvaginal transducer, preferably under real-time monitoring. A transvaginal ultrasound examination is a specialized form of a pelvic examination. Therefore, policies applied locally regarding chaperone or patient privacy issues during a pelvic examination should also be applied during a transvaginal ultrasound examination.

For a pelvic ultrasound examination performed transabdominally, the patient's urinary bladder should, in general, be distended adequately to displace the small bowel and its contained gas from the field of view and provide an acoustic window. Occasionally, overdistension of the bladder may compromise evaluation. When this occurs, imaging may be repeated after the patient partially empties her bladder or completely empties and refills her bladder to a lesser degree.

### **Focused Reproductive Endocrinology and Infertility Examination**

A focused pelvic ultrasound examination is appropriate when monitoring ovarian stimulation and/or

evaluating the endometrium.<sup>1</sup> A comprehensive pelvic ultrasound examination is recommended within the preceding 6 months to evaluate for gynecologic pathology and should be documented in the patient's chart. The focused reproductive endocrinology and infertility examination can be restricted to the organ or measurements of interest.

A baseline study in the early follicular phase should include the number of follicles (the antral follicle count) in each ovary of less than 10 mm and the measured follicles of 10 mm or greater.<sup>2</sup> In the mid and late follicular phases, a minimum of the 3 largest follicles in each ovary should be measured in at least 2 perpendicular dimensions and the mean recorded. In addition, the total number of follicles larger than 10 mm in each ovary should be recorded.

In each ultrasound examination, the uterine endometrium should be imaged in the sagittal plane (or longitudinal plane). The measurement of the thickest portion of the endometrium should be done with calipers perpendicular to the uterus in the anteroposterior diameter from echogenic to echogenic border (outer edge to outer edge of the endometrium).<sup>3,4</sup> The adjacent hypoechoic myometrium and fluid in the cavity should be excluded. The appearance of the endometrium may be described. Permanent recorded representative images should be obtained and stored in accordance with local, state, and federal regulations. Pertinent clinical information should be recorded in the patient record.<sup>5</sup>

## VI. Documentation

Adequate documentation is essential for high-quality patient care and should be in accordance with the *AIUM Practice Parameter for Documentation of an Ultrasound Examination*.

## VII. Equipment Specifications

### **Equipment**

An ultrasound examination of the female pelvis should be conducted with a real-time scanner, with the appropriate transabdominal and transvaginal transducers. The transducer or scanner should be adjusted to operate at the highest clinically appropriate frequency, realizing that there is a trade-off between resolution and

beam penetration. With modern equipment, studies performed from the anterior abdominal wall can usually use frequencies of 3.5 MHz or higher, whereas scans performed from the vagina should use frequencies of 5 MHz or higher.

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

Policies and procedures related to quality control, patient education, infection control, and safety, including equipment control monitoring, should be developed and implemented 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 guideline was revised by the AIUM in collaboration with the American College of Nurse-Midwives (ACNM), the American College of Obstetricians and Gynecologists (ACOG), the American College of Obstetric and Gynecologists (ACOGG), the American College of Radiology (ACR), the American Society for Reproductive Medicine–Society for Reproductive Endocrinology and Infertility (ASRM-SREI), the Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN), and the Society of Radiologists in Ultrasound (SRU).

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