
Standards for
Performance
of the

ULTRASOUND
EXAMINATION OF
THE PROSTATE (AND
SURROUNDING
STRUCTURES)

AMERICAN INSTITUTE OF ULTRASOUND IN MEDICINE



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FOREWORD

The American Institute of Ultrasound in Medicine is an educational, literary, and scientific society concerned with the advancement of the art and science of ultrasound in medicine and research. To promote these goals, AIUM is pleased to publish *Standards for Performance of the Ultrasound Examination of the Prostate (and Surrounding Structures)*. This important clinical standard has been developed in collaboration with experts in the field of prostate ultrasound, and the many dedicated individuals associated with the AIUM Education Committee and the Commission on Ultrasound of the American College of Radiology. We are indebted to the many volunteers who contributed their time, knowledge, and energy over the past couple of years bringing this important document to completion.

With over 11,000 members representing the entire range of clinical and basic science interests in medical diagnostic ultrasound and over 250 volunteers actively participating, AIUM has promoted the safe and effective utilization of ultrasound in clinical medicine for over 40 years. This document, and others like it, will continue to contribute to this record.

—*John C. Hobbins, M.D.*
AIUM President
1991–1993

STANDARDS FOR PERFORMANCE OF THE ULTRASOUND EXAMINATION OF THE PROSTATE (AND SURROUNDING STRUCTURES)

The following are proposed standards for the ultrasound evaluation of the prostate and surrounding structures. The document consists of two parts:

Part I: Equipment and Documentation

Part II: Ultrasound Examination of the Prostate and
 Surrounding Structures

These standards have been developed to provide assistance to practitioners performing an ultrasound study of the prostate. In some cases, an additional and/or specialized examination may be necessary. While it is not possible to detect every abnormality, adherence to the following will maximize the detection of most abnormalities.

Part I

EQUIPMENT AND DOCUMENTATION

EQUIPMENT

A prostate study should be conducted with a real-time transrectal (also termed endorectal) transducer using the highest clinically appropriate frequency, realizing that there is a trade-off between resolution and beam penetration. With modern equipment, these frequencies are usually 5 MHz or higher.

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 accompanied by measurements. Images are to be appropriately labeled with the examination date, patient identification, and image orientation. A report of the ultrasound findings should be included in the patient's medical record. Retention of the permanent record of the ultrasound examination should be consistent both with clinical need and with the relevant legal and local health care facility requirements.

CARE OF THE EQUIPMENT

Transrectal probes should be covered by a disposable sheath prior to insertion. Following the examination, the sheath should be disposed, and the probe soaked in an antimicrobial solution. The type of solution and amount of time for soaking depends on manufacturer and infectious disease recommendations. Following the examination, if there is a gross tear in the sheath, the fluid channels in the probe should be thoroughly flushed with the antimicrobial solution. Tubing and stop cocks should be disposed after each examination.

Part II

ULTRASOUND EXAMINATION OF THE PROSTATE AND SURROUNDING STRUCTURES

The following standards describe the examination to be performed for the prostate and surrounding structures.

PROSTATE

The prostate should be imaged in its entirety in at least two orthogonal planes, sagittal and axial or sagittal and coronal, from the apex to the base of the gland. In particular, the peripheral zone should be thoroughly imaged. The gland should be evaluated for size, echogenicity, symmetry, and continuity of margins. The periprostatic fat and vessels should be evaluated for asymmetry and disruption in echogenicity.

SEMINAL VESICLES AND VAS DEFERENS

The seminal vesicles should be examined in two planes from their insertion into the prostate via the ejaculatory ducts to their cranial and lateral extents. They should be evaluated for size, shape, position, symmetry, and echogenicity. Both vas deferens should be evaluated.

PERIRECTAL SPACE

Evaluation of the perirectal space, in particular the region that abuts on the prostate and perirectal tissues, should be performed. If rectal pathology is clinically suspected, the rectal wall and lumen should be studied.