Lesson 10:
Ultrasound Quality Assurance

This lesson contains 6 slides plus 2 multiple-choice questions.

Accompanying text for the slides in this lesson can be found on pages 51 and 52 in the textbook:
Quality assurance is necessary to ensure that equipment parameters do not vary over time. The user of the equipment is responsible for ensuring that periodic quality control inspections are performed.
Tissue-Mimicking Phantom
A = DEAD ZONE

B = AXIAL RESOLUTION

C = LATERAL RESOLUTION

D = VERTICAL DISTANCE ACCURACY

E = HORIZONTAL DISTANCE ACCURACY

Line Targets
Resolution Targets

AXIAL RESOLUTION 1mm

LATERAL RESOLUTION 2mm
Phantom Images

3.5 MHz

5 MHz
Doppler Quality Control
Answers to the following TWO practice questions were derived from material in the textbook:
Which one of the following sets of properties of a test object or phantom is MOST relevant when assessing depth calibration accuracy?

- reflector spacing and speed of sound in the medium
- reflector spacing and reflector reflection coefficient
- attenuation in the medium and speed of sound in the medium
- reflector spacing and ultrasonic attenuation in the medium
Question 1

Which one of the following sets of properties of a test object or phantom is MOST relevant when assessing depth calibration accuracy?

- reflector spacing and speed of sound in the medium
- reflector spacing and reflector reflection coefficient
- attenuation in the medium and speed of sound in the medium
- reflector spacing and ultrasonic attenuation in the medium
The images of scans of a tissue equivalent test object demonstrate differences in echo distribution. What is the difference between image A and image B?

- The dynamic range was lower on image B
- The reject control was improperly adjusted on image B
- Image B was obtained with a higher frequency transducer
- The NEAR GAIN was higher on image A
The images of scans of a tissue equivalent test object demonstrate differences in echo distribution. What is the difference between image A and image B?

- The dynamic range was lower on image B
- The reject control was improperly adjusted on image B
- Image B was obtained with a higher frequency transducer
- The NEAR GAIN was higher on image A
END OF LESSON 10

For information on the accompanying textbook, visit the Website:

www.Sonicorinc.com