



Promoting Excellence In Ultrasound

Policies and Statements

A7

Safety Statement On Ultrasound Contrast Agents

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Safety Statement On Ultrasound Contrast Agents

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The imaging capabilities of ultrasound equipment can be substantially increased by the use of contrast agents containing microscopic gas bodies, which provide echogenic interfaces when introduced into the sound beam.

It has been shown experimentally that cavitation-related effects of diagnostic ultrasound can damage mammalian tissues containing tissue/gas interfaces, such as lungs and intestines. Organs that do not contain gas are unaffected and these cavitation effects have not been reported in the fetus.

Studies with laboratory animals have shown that the probability of acoustic cavitation occurring in the body is increased when gas bubbles, in the form of contrast agents, are introduced into the body.

The peak pressure amplitude in the acoustic pulse is important in initiating cavitation effects. The maximum values for peak pressure amplitude in Doppler and B-mode equipment are similar.

Ultrasound equipment that provides an output display of a mechanical index (MI) does not include information about the enhanced risk of cavitation from contrast agents.

The presence of contrast agents should be taken into account when considering the benefit/risk ratio of an ultrasound examination.

RECOMMENDATION

When performing ultrasound examinations using echo-contrast agents, particular care should be taken to use the minimum transmit power necessary and to apply the ALARA Principle.



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