STUDY GUIDE: Chapter 23- Sonographers in the Clinical Setting

1. List and define the 4 principles of medical ethics.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the basis of informed consent.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the principle of commitment to protect patients from harm.
4. What is the most important goal of informed consent?
5. What information should be included in a patient’s informed consent?
6. Name 3 instances when should a healthcare provider question a patient’s ability to decide?
7. A patient may revoke consent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. What are the first two things a sonographer should do when meeting a patient?
9. What should a sonographer do if their patient is sedated?
10. True or False: A sonographer may give their diagnosis to a patient.
11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ make a patient vulnerable to loss of identity.
12. More than \_\_\_ out of \_\_\_ sonographers suffer from MSK injury. \_\_\_\_\_% end their careers because of these injuries.
13. Who has formed an alliance whose goals are to reduce and prevent work related MSK disorders?
14. What are the causes of MSK injuries in our field?
15. Name some ergonomic devises.
16. Describe some Best Practices for good ergonomics while scanning.
17. \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are a set of guidelines to minimize \_\_\_\_\_\_\_\_\_\_ and risk of health care workers when in contact with \_\_\_\_\_\_\_\_\_\_\_\_.
18. List the areas where standard precautions apply:
19. What are the minimal stand precautions?

STUDY GUIDE: Chapter 24- BIOEFFECTS

1. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of sound energy that enters the body \_\_\_\_\_\_\_\_\_\_\_\_ there.
2. Describe a hydrophone aka \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. What all does a hydrophone measure and where?
4. If a hydrophone is calibrated, it can provide information between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. When is a transducers output the lowest? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mid-range? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Highest? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is Feedback Microbalance?
2. Acousto-Optics are based on sound and light interaction. What shows us the shape of a sound beam in a medium?
3. List and describe the 3 types of transducers that measure the output of an ultrasound transducer by absorption?
4. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ measures the sound beam’s \_\_\_\_\_\_\_\_\_\_\_\_ at particular locations. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ measures the power of the entire \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. What is meant by Risk-Benefit relationship?
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ intensities damage \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tissues.
7. When are bioeffects beneficial?
8. Dosimetry is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Explain the difference in In vivo and In vitro research:
2. Why are In vitro studies important?
3. Paraphrase the AIUM statement concerning Bioeffects:
4. Define the Mechanistic Approach for studying bioeffects.
5. Define the Empirical Approach for studying bioeffects.
6. What are the strengths and weaknesses of the Mechanistic approach?
7. What are the strengths and weaknesses of the Empirical approach?
8. When are the strongest conclusions made in reference to studying bioeffects?
9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proposes that bioeffects result from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ elevation.
10. What is the Thermal Index?
11. What does TIS, TIB and TIC stand for?
12. Summarize the Empirical Findings concerning Thermal Mechanism.
13. Summarize the Mechanistic Data concerning Thermal Mechanism.
14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are nonthermal mechanisms that are also known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pertains to \_\_\_\_\_\_\_\_ levels where cells have the potential to undergo microstreaming and \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
16. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Cavitation can occur at \_\_\_\_\_\_\_\_\_\_\_\_ MI levels and is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
17. Transient cavitation is also known as:
18. The Mechanical Index is related to what two sound wave characteristics?
19. Cavitation bioeffects have a greater likelihood with a higher MI and two other characteristics:
20. What factors describe Lower MI?
21. Define epidemiology.
22. The smaller the effect (bioeffect), the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ it is to detect.
23. Why do many epidemiologic studies deal with in utero exposure to ultrasound?
24. What are the limitations of epidemiologic studies?
25. What are the best types of epidemiologic studies and briefly describe them?
26. Paraphrase the AIUM conclusions regarding epidemiology for obstetric ultrasound.
27. Paraphrase the AIUM statement regarding prudent use and clinical safety.
28. Paraphrase the AIUM statement regarding prudent use in obstetrics.
29. Paraphrase the AIUM statement regarding training and research.
30. What are a sonographer’s concerns when thinking about electrical safety?
31. What are a professional sonographer’s overall safety considerations?