

Name: _____

Key

CHAPTER 15 WORKSHEET THERAPEUTIC MODALITIES

MATCHING – Match the following terms with the appropriate response.

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|-------------------------------|---|
| <u>E.</u> 1. Conduction | A. Increased circulation and buoyancy of water allows mild exercise |
| <u>G.</u> 2. Moist heat packs | B. Mild heating qualities with a general relaxation of spasmed muscles |
| <u>I.</u> 3. Conversion | C. Produces profuse perspiration, resulting in high fluid loss |
| <u>H.</u> 4. Ischemia | D. Provides a means of bringing sustained heat to angular body parts |
| <u>J.</u> 5. Whirlpool bath | E. Heating by direct contact |
| <u>F.</u> 6. Convection | F. Heating indirectly through water or air |
| <u>D.</u> 7. Paraffin bath | G. General relaxation and reduction of pain-spasm-pain cycle |
| <u>B.</u> 8. Moist heat | H. Lack of blood supply to the area |
| <u>A.</u> 9. Hot water soaks | I. Heating by other forms of energy |
| <u>K.</u> 10. Analgesic balm | J. Local circulation is increased by water agitation and heat transmission |
| | K. Feeling of warmth results from skin capillary dilation and increase in local circulation |

SHORT ANSWER – Answer the following questions with a brief response.

11. What is *fluidotherapy* and what can it be used to treat?

① Uses dry air + forced convection through a suspended air stream @ ↓ pn, ↑ ROM, ↓ mm guarding, ↓ swelling, ↑ elasticity, ↑ blood flow

12. Explain what the *piezoelectrical effect* is as seen in ultrasound. The expansion + contraction of a crystal in the sound head, producing pressure waves (electrical eng. → mechanical!)

13. What is the *hunting response* as it relates to cold application? The intermittent dilation (4-6') of blood vessels during cold application to ↓ tissue damage from the cold.

14. What are some of the *physiological effects of cold* application? vasoconstriction, ↓ metabolic rate, ↓ mm guarding, ↓ pn by ↓ pn nerve excitability

15. Define *contraindication*. A cond. in which a particular tx should not be used as it could cause harm

16. What are some examples of *mechanical modalities* other than massage? Traction, intermittent compression, continuous PROM, biofeedback

17. *Fluoro-methane* is the *vapocoolant* used in cryostretching?

18. What are some modalities that would not likely be used in a high school athletic training room? Why would these modalities not be practical in this setting?

Iontophoresis, laser therapy, short-wave diathermy, infrared light; due to cost, risk to pt, some require Rx, state law may prohibit use by ATs or altogether.

19. What *type of massage stroke* could be used for treating tendonitis? Friction

20. *Vibration* is a type of what modality? massage

21. What is the purpose of *traction*? To ↑ ROM, alleviate press. on nerves by sep. artic. surfaces

LISTING

List three therapeutic effects of *massage*.

- 22. ↑ circulation
- 23. ↓ nerve ending sensitivity
- 24. ↓ swelling/edema

Identify three conditions for which *superficial heat* may be used.

- 25. mm spasm
- 26. jt stiffness/contractures
- 27. chronic pn

List four conditions/areas in which *ultrasound* should not be used.

- 28. ischemic areas
- 29. genitals, eyes, heart or skull
- 30. cancerous tumor

Name three *contraindications* to *cold therapy/application*.

- 31. Raynaud's Phenomenon
- 32. Anesthetic skin ; uncovered wounds
- 33. Diabetes ; lupus

For each of the four *types of energy transfer* provide a modality(ies) that utilize(s) that type of energy transfer.

- 34. Conduction - hot packs, paraffin bath, cold packs (all 4 types), ice massage
- 35. Convection - whirlpools, Fluidotherapy
- 36. Radiation - short-wave diathermy, infrared lamps, UV therapy
- 37. Conversion - ultrasound

Define the five *classifications of therapeutic modalities* listed below and provide an example for each.

- 38. Thermal Modalities - transfer ^(heat) energy to or from tissues ; ice pack
- 39. Electrical Modalities - use of current to stimulate excitable tissues ; IFC
- 40. Electromagnetic Modalities - use of polarity in currents to deliver med. ; iontophoresis
- 41. Sound Modalities - causes cells to vibrate, producing heat ; US
- 42. Mechanical Modalities - manip. of tissues to ↑ elasticity & relaxation ; massage

ESSAY

43. Discuss the differences between *pulsed ultrasound* and *continuous ultrasound* in terms of purpose, physiological effects, safety concerns, injuries treated, methods of application, etc.

<u>Pulsed</u>	<u>Continuous</u>
• ↓ edema (acute sprains) ^{e.g.}	• chronic inflammation (e.g. tendonitis)
• ↑ tissue repair	• ↓ mm spasm
• non-thermal	• subacute-chronic injuries = thermal effects
• few safety concerns other than use over fx sites	• contraindications ; should not be used on acute conditions or any that should not be heated
• phonophoresis	