IM ADULT REHABILITATION BEST PRACTICES: MOTOR SKILLS
POST-TEST

1. The possible mechanisms for plasticity are?
    a. Uncovering or unmasking pre-existing connections
    b. Activity-dependent synaptic plasticity and long term potentiation
    c. Neuron transfer
    d. A and B

2. The functional MRI study showed that one following areas of the brain is activated during IM training:
    a. The corpus callosum
    b. The basal ganglia
    c. The Pituitary Gland
    d. The Frontal Lobe

3. True or False. By addressing the motor deficits of the affected side, the therapist has the potential to improve the patient's cognitive abilities and memory working on the unaffected side.

4. By identifying motor control strengths in the affected side:
    a. The therapist can improve awareness of the affected side
    b. The therapist is able facilitate an open-loop motor control program with greater ease.
    c. The therapist is able to understand the patient better
    d. The therapist will make the patient stronger

5. When starting the patient on the IM program, the therapist should:
    a. Have the patient listen to the bell for ten minutes
    b. Have the client use the affected side
    c. Use shoulder shrugs
    d. Introduce the IM to the unaffected side only.

6. During phase five of IM training the patient should be doing
    a. Finger tapping on the affected side
    b. Choose their own exercises
    c. Perform at least 1000 repetitions of IM training during sessions
    d. Complete the entire long for assessment

7. Distal nerves regenerate at a rate of:
    a. 3 mm a day
    b. 10 mm a week
    c. 1.5 mm a day
    d. 1 mm a per month

8. When working with lower motor neuron injuries care should be taken not to:
    a. Increase muscle strength
    b. Select activities that will increase inflammation
    c. Use visual cues first
    d. Have the patient sitting on a ball

9. True or False: IM is a great tool for reinforcing postural control and core strengthening activities for sciatic pain.

10. IM for radial nerve damage focuses on facilitating which movement?
    a. Wrist Extension
    b. Wrist Flexion
    c. Radial Deviation
    d. Ulnar Deviation

11. Why is it important to assess the patient's unaffected side in the Long Form Assessment
    a. It provides a comparison for affected side performance
    b. Assists the clinician in determining factors affecting performance such as timing tendency, cognition and motor planning ability
    c. It uses up more assessment time
    d. Both A and B

12. The tempo can be adjusted with the lower motor neuron patient so that
    a. The patient will progress from a closed-loop motor pattern first and then to an open-loop motor pattern.
    b. The tempo will make it more difficult for the patient
    c. The patient will perform the activities over a longer period of time
    d. The patient will be able to tolerate the visual and auditory cues at the same time.

13. When working with Workers' Compensation patients, the therapist should be aware of one of the following contraindications
    a. Edema: Swelling is indicative of inflammation and may facilitate nerve damage.
    b. Aggressive behavior
    c. Cognitive fatigue
    d. Poor motivation affecting performance

14. Which IM activities are best suited to improve physical endurance?
    a. Activities performed in a wheelchair
    b. Activities involving multiple joints
    c. Lower extremity IM activities such as both toes or both heel activities
    d. Both hand IM activities over moderate periods of time

15. True or False: We perform the IM long form assessment during phase 3 of IM training

16. In phase six of IM treatment?
    a. The therapist needs to leave the patient to perform the IM training without assistance
    b. The therapist increases the tempo
    c. The therapist incorporates work conditioning and hardening activities
    d. The therapist starts working on the affected extremity for challenge

17. The patient is discharged from the IM treatment program when they have
    a. Achieved all their functional goals
    b. The patient is no longer making progress
    c. The patient is able to perform simulated work activities at production speed
    d. All of the above

18. True or False: The lumbrical muscles in the hand are special because they have no bony origin.

19. The ulnar nerve does NOT innervate the following muscle in the hand?
    a. Digiti minimi,
    b. Opponens digiti minimi
    c. Flexor digiti minimi
    d. opponens pollicis
    e. Palmaris brevis

20. The Interactive Metronome improves hand dexterity and motor planning through:
    a. large amounts of feedback based repetitions
    b. manual exercises
    c. resisted activities
    d. increasing range of motion of the hand joints

21. If the patient's hand starts swelling due to IM activity, the clinician should:
    a. Put their hand in a bucket of ice
    b. Stop the IM activity immediately
    c. Continue with the IM session despite the swelling
    d. Test for poor sensation

22. With nerve conditions of the hand, Interactive Metronome can be used to:
    a. Combat muscle atrophy through repetitious activity
    b. Facilitate muscle balance as the nerves heal
    c. Increase blood flow to the nerve through nerve stretching
    d. Both A and B

23. In phase 4 of IM training of the hand after surgery, the Clinician should:
    a. Introduce the guide sounds
    b. Start addressing challenges in the affected hand
    c. Perform simulated work type activities
    d. Start resisted activity to build hand strength

24. The elbow is made of the following joints?
    a. Humeroulnar joint
    b. Humeroradial joint
    c. Proximal radioulnar joint
    d. All of the above

25. True or False: The nervous system calculates or otherwise computes precisely the sole set of muscle forces necessary to achieve the required net torque

26. Interactive Metronome can be used to facilitate ____ in patients affected by elbow dislocation
    a. Strength
    b. Range of motion
    c. Neuro-muscular balance
    d. All of the above

27. Interactive Metronome can improve over-use injuries by:
    a. Facilitating other job skills
    b. Correcting neuromuscular imbalance that can cause overuse injuries
    c. Strengthening the muscles of the elbow
    d. Improving sensation

28. In phase 5 of working with patient's affected by elbow injuries the clinician should?
    a. Perform at least 1000 reps of IM activity on the affected side
    b. Perform only both hand activities
    c. Slow down the tempo
    d. Focus on strengthening the biceps muscle

29. Which of the following muscles does NOT form part of the rotator cuff muscle group?
    a. Supraspinatus
    b. Infraspinatus
    c. Teres minor
    d. Subscapularis
    e. All of the Above

30. The concept of muscle balance in the shoulder is to state that the summation of all the muscle actions around the joint must provide?
    a. Joint Stability and Torque
    b. The shoulder with neutral alignment
    c. Flexibility
    d. Muscle endurance

31. True or False: The scapulothoracic rhythm is described as the total arc of elevation of the shoulder joint to contain two degrees of glenohumeral motion for every degree of scapulothoracic motion.

32. IM treatment for shoulder dislocation involves increasing the activity and muscle control
    a. Of the deltoid muscle
    b. Of the rhomboid muscles
    c. Of the shoulder stabilizers
    d. During reaching activities

33. IM provides an ideal opportunity to expose the patient t activities and exercises they may avoid due to pain or fear for which diagnosis?
    a. Rotator cuff tear
    b. The Frozen Shoulder
    c. Shoulder Dislocation
    d. Shoulder Fractures

34. When progressing to phase 4 of IM training for the shoulder after surgery, the patient should:
    a. Demonstrate the ability to slow down and speed up effectively with the unaffected shoulder
    b. Be clapping for 1000 repetitions
    c. Demonstrate the ability to slow down and speed up with the affected shoulder
    d. Be pain free in the affected shoulder

35. True or False: Practitioners are increasingly adding IM to their treatment repertoire to expedite progress towards functional goals.

36. IM may be implemented with the neurological population in the following positions, as medically indicated:
    a. Side-lying
    b. Supine/prone
    c. Seated/standing
    d. All of the above

37. IM may be introduced into treatment programs at the following levels, as medically indicated:
    a. Acute care
    b. Sub-acute care
    c. Home health/outpatient care
    d. All of the above

38. True or False: A wrist weight may not be applied distally to the ataxic upper extremity and does not provide increased proprioceptive input or facilitate inhibition of hyper-active muscle tone.

39. True or False: A patient can have increased success with motor sequencing by using increased tempo (for example: 65) to maximize momentum force and enhance fluid range of motion control to upper extremity movements.

40. A neuro patient could be set up to use his stronger side to aid in a specific IM tasks using of his weaker limb. This approach provides for:
    a. Motor-sensory input to the affected side
    b. Weight-bearing through the affected limb
    c. Functional use for compensatory associated reactions elicited from the stronger side
    d. a and c

41. Treatment outcomes for ataxic patients following Interactive Metronome have been observed as follows:
    a. Increased fluidity/smoothness in movement patterns
    b. Increased precision in placement and graded force pressure skills
    c. Improved functional sequencing of multi-step tasks
    d. Increased independent engagement in functional tasks (safety)
    e. All of the above

42. True or False: An IM exercise can be applied to functional movements for patients with apraxia/dyspraxia (i.e., tap trigger with writing tool to gain precision in hand placement and grip for written tasks; put hand into a pants pocket to tap trigger).

43. True or False: Visual mode can provide too much stimulus for many neurologically impaired patients, creating confusion and a delay in attainment of automaticity of the desired movement sequence. As a patient makes gains, visual shape screen can be introduced, but in many cases, IM training can be continued successfully with auditory mode only.

44. A treatment method that is commonly referred to as 'Whole Body Movement' (WBM) may consist of:
    a. Tapping a patient on the shoulders to the beat
    b. Clapping a patient's hands together to the beat
    c. Tapping a patient on the knees to the beat
    d. Giving 'high-fives' to the beat
    e. All of the above

45. True or False: A Whole Body Movement approach allows the IM provider to ‘feel’ the beat and concurrently engage in tapping the foot trigger with his right lower extremity.

46. True or False: Spasticity is not in itself a contra-indication for use of IM, however, should discomfort or increase in tone be noted to be progressive it may not be a good 'fit' or the right timing for that individual patient.

47. True or False: With a solid basis in neurological practice, a provider can apply Interactive Metronome (IM) to treatment programs at all levels of function, as indicated by medical stability.

48. IM may be considered as a component of a hemiplegia patient's treatment program to address:
    a. Symmetrical timing responses to right/left hemi-body; upper body/lower body; unilateral/bilateral coordination; respiration; ocular mobility; auditory tracking; anterior/posterior motor sequencing; rotational motor sequencing.
    b. Sensori-motor reception and modulation
    c. Attention and orientation
    d. All of the above

49. True or False: All IM practitioners may use taping techniques to promote joint stability or manage muscle tone during IM activities.

50. Examples of fine motor activities are grasping patterns including:
    a. Tripod
    b. Pinch
    c. Pad-to-pad
    d. All of the above

51. True or False: Coordination sequences that may be influenced by IM training include threading, utensil manipulation and fastener manipulation, without even working on the specific task.

52. True or False: Difficulty and tempo settings can be modified to accommodate delayed mental processing speed, fluctuating muscle tone or motor coordination needs.

53. True or False: IM may be combined with Bioness technologies.

54. True or False: Triggers can be placed on non-slip matting to provide traction during activation.

55. Motor control arises from the complex interaction among the following factors:
    a. Cognitive
    b. Perceptual
    c. Motor Systems
    d. All of the above

56. When applying the motor learning theory to the improving functional movement patters, benefits of using Interactive Metronome include:
    a. Clients perform high number of repetitions
    b. Clients receive a performance score
    c. Clients receive feedback during and after their performance
    d. Clients can perform hand and foot tasks
    e. Both A and C

57. True or False: Serial tasks, such as dressing or cooking, can be successfully practiced in parts.

58. Interactive Metronome provides knowledge of results and knowledge of performance. Research indicates that feedback:
    a. Increases the rate of improvement
    b. Does not enhances performance on tasks that are over learned
    c. Participants report tasks seem more fatiguing
    d. Participants report that tasks are boring
    e. Makes the client dependent on feedback to perform the task correctly

59. The addition of Interactive Metronome to the client's treatment plan provides therapists with a tool to:
    a. Provide knowledge of results
    b. Design learning situations
    c. Provide knowledge of performance
    d. Actively involve the client in the learning process
    e. All of the above

60. True or False: The effectiveness of IM is dependent on when IM sessions are scheduled in relation to the initial PD diagnosis.

61. True or False: IM is only beneficial during a single episode of care (several visits prior to discharge). After discharge, it is rare that an individual with PD would request a physician referral for additional therapy services using IM because the gains made remain.

62. True or False: There is little benefit of using IM with a PD patient who is unable to perform > 500 repetitions in a single session.

63. True or False: With a patient's approval, inviting caregivers to attend and participate in IM therapy sessions increases the chance of carryover of recommended strategies.

64. IM exercises can include the use of guide sounds:
    a. But is less effective without headphones
    b. Only while performing a seated functional task
    c. When tempos are > 60 for UE exercises and < 60 for LE exercises
    d. May not be tolerated by your patient—which would make IM an ineffective part of your therapy

65. True or False: Rhythm is primarily beneficial for PD patients to assist with LE movements.

66. True or False: In an attempt to assist, clinicians frequently find verbal cues beneficial to assist patients with initiating/inhibiting movements. One of the best cues is "hurry up".

67. True or False: Another reason to include caregivers in therapy sessions is because a PD patient will rarely "self cue" while trying to initiate movement.

68. When incorporating music in therapy sessions:
    a. It is important to try to match the tempo of music used (within 4 beats/min) to IM exercises performed.
    b. Use a variety of music to keep your sessions interesting
    c. Consider incorporating faster tempos—especially for patients with "start hesitations"
    d. All of the above
    e. None of the above

69. True or False: Handwriting legibility and general UE control can be enhanced using IM exercises and music tempos.