1. **Describe the causes of pain experienced by people with multiple sclerosis.**

   Pain experienced by people with MS can be either neuropathic (arising directly from nervous system dysfunction) or may be musculoskeletal, arising from muscle spasm, changes in posture or body use due to the spasticity of muscles that often accompanies MS, and disability. Lhermitte’s sign is a painful electric sensation that shoots down the body when the neck is flexed.

2. **Name and describe the four patterns of disease progression in MS.**

   a. Relapsing-remitting: symptoms may disappear completely for a time after an episode
   b. Primary progressive: symptoms begin to increase after the first onset, may worsen over time and may not be punctuated by remissions.
   c. Secondary progressive: Distinct episodes of exacerbation are followed by a gradual increase in the severity of symptoms over time.
   d. Progressive-relapsing: Symptoms increase steadily over time, punctuated by episodes of aggravated symptoms.

3. **Describe Lhermitte’s sign and how massage should be adjusted for it.**

   Lhermitte’s sign is an electric sensation that shoots down the body if the neck is flexed.

   The massage session should be structured in a way to avoid any movements or positioning of the neck that could cause or aggravate this sensation. Limit joint movement at neck, and avoid neck flexion.

4. **How is temperature control important in individuals with MS? How is this considered a factor in massage therapy? In spa treatments?**

   MS Flare-ups can be triggered or exacerbated by a rise in core body temperature due to weather, saunas, hot baths, etc.

   It may be necessary during a massage session to adjust the ambient temperature for comfort. In a spa setting, follow the Core Temperature Principle (avoid treatments that raise the client’s core temperature if their cardiovascular system, respiratory system, skin or other tissues or systems are sensitive to heat or if there are other relevant medical restrictions) to avoid aggravating symptoms. Also avoid treatments such as hot packs or hot stones for clients who may be sensitive to local applications of heat.

5. **Describe the four major features of Parkinson disease.**

   a. Tremor: involuntary shaking movements in one or more limbs at rest.
   b. Increased Muscle Tone: stiffness or rigidity of the trunk or limbs, even with passive movement.
   d. Poor Balance
6. **How and why might you adjust positioning for a client with Parkinson disease?**

Extra supports may be needed for the comfort of clients with PD, such as a chest pillow for the prone position or a head support in the supine position.

Side-lying position may be best for someone with a stooped posture or working with the client at a slight incline may be best for someone who experiences difficulty swallowing.

If it is too difficult for the client to access the massage table, an MT may work with a client in the seated position instead, by having the client lean his or her upper body forward onto the table, supported by a few pillows.

7. **Describe three other conditions to be alert for in Parkinson disease, as general health declines.**

- osteoporosis
- cardiovascular conditions (including DVT)
- pressure sores
- weight loss

8. **Describe the classic stroke symptoms and how the mnemonic FAST is relevant.**

The classic stroke symptoms are:
- confusion
- slurred speech or difficulty speaking
- changes in vision, such as blurred, double vision or decreased vision in one or both eyes.
- dizziness, or loss of balance
- loss of coordination or difficulty walking
- severe headache without cause
- numbness or weakness in a limb or on the face (often on one side)

FAST stands for:
Face: sudden weakness, vision changes: double, compromised vision.
Arm: sudden weakness or numbness in one or both arms
Speech: slurred, garbled or impeded speech
Time: Rapid emergency response is critical to limit damage to brain tissue.

9. **Describe the three common categories of stroke and the differences between them.**

- Thrombotic stroke (or cerebral thrombosis) is a form of ischemic stroke and is attributed to plaque that forms in a cerebral artery at the trouble site. This can lead to the formation of a clot at the site which narrows the artery and blocks blood flow to a region of brain tissue.
-Embolic stroke (or cerebral embolism) is also a form of ischemic stroke, but it involves a clot which originates elsewhere in another artery, breaks loose, travels in the bloodstream before lodging in a smaller cerebral artery and also blocking blood flow to brain tissue.

-Hemorrhagic stroke, often called a “bleed” is responsible for about 20% of all strokes. It involves a cerebral vessel wall which weakens and ruptures and then sends its contents into the brain tissue, causing swelling.

10. What kinds of pain occur after a stroke? How does each affect the massage plan?

Following a stroke one may experience central pain syndrome, characterized by steady background pain which is deep, burning, aching or cutting pain that may be punctuated by sudden bursts of intense pain.

Weakness in the shoulder and hand accompanied by strong pain is called shoulder-hand syndrome (SHS).

For any type of pain it is important to understand if there are positional considerations for the massage session so as not to aggravate symptoms.

Central Pain Syndrome indicates cautious use of pressure and movement with careful monitoring of results so the approach can be adjusted according to the client’s tolerance. With odd skin sensations such as burning, crawling or pain, even light touch may exacerbate symptoms.

Clients with shoulder-hand syndrome can receive massage at the site of pain but pressure and movement should be conservative and results monitored over time. If pressure or joint movement aggravate symptoms, simply holding the area may be tolerated and may be helpful.

11. Describe the differences between major depression and dysthymic disorder.

Major depression is characterized by continuous depression lasting more than 2 weeks with elements of sadness, grief, absence of pleasure and possible feelings of guilt or worthlessness and impacts on sleep, energy level and concentration. The median age of onset is 32. In the US, 14.5 million adults are affected.

Dysthymia is a longer-lasting but milder form of depression that typically persists for two years or more. The median age of onset is 31. In the US, 3.3 million adults are affected.

12. Describe four common side effects of antidepressants and corresponding massage adjustments a massage therapist might need to make.

-decreased sexual function
No massage adjustment

-nausea: Position for comfort, gentle session overall; pressure to tolerance, slow speeds; no uneven rhythms or strong joint movement
-**headache:** Position for comfort, especially when prone in face cradle. An inclined table or prop to raise the head and upper body may relieve some pressure. Gentle pressure overall, to tolerance. Slow speed and even rhythm.

Avoid headache triggers such as cold, deep pressure, etc. General circulatory massage may aggravate and gentle work may be better.

-**insomnia/sleep disturbance:** follow the Activity and Energy Principle from Chapter 3 (adjusting the strength of massage to match client’s general activity and energy level), proceeding with gentler treatment to begin if symptoms are acute. When appropriate, use sedative intent at end of day, activating/stimulating intent at beginning

-**jitteriness**
Use even rhythms, firm moderate pressure, position for comfort; adapt to need to move, shift, change positions

-**dizziness**
Make a medical referral if unreported; reposition gently, use slow speed and even rhythm, slow rise from table, gentle transition at end of session

-**orthostatic hypotension:** requires a slow transition at the end of the massage, allowing client to rise slowly from the table and gently acclimate to leaving the session. Reposition gently.

-**hypertensive crisis (MAOIs)**
If client reports severe, throbbing headache (possible spike in BP), emergency medical referral. Check in about signs of hypertensive crisis and refer for emergency medical attention if necessary

-**drowsiness/sleepiness:**
Requires a slow transition at the end of the massage, allowing client to rise slowly from the table and gently acclimate to leaving the session. Reposition gently.

-**anxiety**
(from Conditions in Brief)
Adjust massage and environment to avoid known triggers (including temperature, drape, face cradle, client position, therapist position, music). Consider modifying a spa wrap to be less confining. Follow the Previous Massage Principle.

Approach client with clear communication, clear expectations, compassion and nonjudgment. Begin course of treatment with slow speeds, even rhythms, predictable routines, gentle pressure and joint movement. Increase pressure to tolerance after monitoring client’s responses over time. Approach areas of muscle tension, including jaw, with respect and sensitivity; do not try to eliminate tension all at once.
-GI issues (constipation, diarrhea):
    Constipation
    Gentle abdominal massage (2 max) indicated unless abdominal tenderness present, or client hasn’t had a bowel movement in 72 hrs.; medical referral if constipation persists.
    Diarrhea
    Easy bathroom access; position for comfort; gentle session overall; pressure to tolerance; slow speeds; no uneven rhythms or strong joint movement.

-urinary difficulties
No massage adjustments

-dry mouth
Have drinking water available during and after massage

-blurred vision
Medical referral if unreported; no massage adjustments

-weight gain
No massage adjustments

13. **What guidelines do you follow if a client discloses suicidal thoughts?**

Get help for yourself. Seek help from a mental health professional or crisis center if you have a concern about your client’s risk for suicide. The burden of someone else’s potential suicide is too large to bear alone.

Assessing someone’s suicide risk is outside your scope as a massage therapist, so avoid asking the client about a suicide plan, a history of suicide attempts or thoughts, and other questions designed to assess the risk. Instead, focus your energy and conversation on making a thoughtful referral for your client, and helping them to get help. You can ask your client whether they have told anyone about their feelings, what kind of support or guidance they have, and who they would feel comfortable talking to about their feelings.

Although it is outside of your scope to assess someone’s suicidality, it may be necessary to determine whether or not it is safe for them to be left alone. In this case, you can strongly encourage your client to seek help from a mental health crisis professional or trusted friend and stay with them while they make this call from your office. Have some local helpline phone numbers available.

14. **What are three common causes of peripheral neuropathy? Where do signs and symptoms of this condition often occur?**

Peripheral neuropathy describes a disease or injury to peripheral nerves, causing sensory or motor nerves. It typically involves a problem in function in a spinal nerve supplying the skin and muscle, most often in the hands, feet, or both. In some cases it can involve a larger area of the
Peripheral neuropathy can occur as a complication of another disease such as HIV or diabetes or can be caused by strong medical treatments like chemotherapy or drugs used to manage AIDS. Other causes of damage to the peripheral nerves could be excessive alcohol use, toxicity, or various inflammatory conditions and diseases. Some people inherit a predisposition to neuropathy.

15. **Explain the two principles that are important to apply in massage with people with peripheral neuropathy.**

The Sensation Principle should be followed, using caution with pressure and joint movement for any area of impaired sensation since your client may not be able to give accurate feedback about pain. However, bear in mind that pressures that are *too* light can be unpleasant in areas of sensation loss, so take care to work at a level that is not too gentle, nor too deep, incrementally increasing pressure if appropriate only to a level that is likely not to cause tissue damage.

Also follow the Sensation Loss, Injury Principle to be sure that areas with sensation loss are not injured before beginning the massage. Inspect the tissues for open skin before making contact with them, and look for foreign material embedded in the tissues. If you notice anything, bring it to your client’s attention.