CHAPTER 09

Knowledge Review

Q1:From the following list of acronyms, write down the full title of each treatment technique: NMT; PRT; SCS; FT; MET; PNF; PIR; RI; CRAC; INIT; ICT; ICCT.

A1:

- NMT: Neuromuscular technique
- PRT: Positional release technique
- SCS: Strain counter strain
- FT: Functional positional release technique
- MET: Muscle energy technique
- PNF: Proprioceptive neuromuscular facilitation
- PIR: Post isometric relaxation
- RI: Reciprocal inhibition
- CRAC: Contract relax antagonist contract
- INIT: Integrated neuromuscular inhibition technique
- ICT: Isolytic contraction technique
- ICCT: Isotonic concentric contraction technique

Q2: List the main indications for using the above techniques.

A2:

The indications for using these techniques include:

1. Excessively tense musculature
2. Restricted joint mobility
3. Muscle, postural and biomechanical imbalances

4. Superficial circulatory impairments
5. Trigger point pain referral
6. Soft-tissue adhesions [fibrosis]
7. Superficial hypersensitivity
8. Muscle flaccidity [reduced tone and weakness]
9. Organ malfunction

Q3: Describe the three ways in which NMT can be applied.

A3:

The three basic ways in which NMT can be applied are: i] using short, slow, searching and precise strokes, typically with thumb or finger tips, and applied both longitudinally and transversely over the irritated tissues; ii] using direct continuous or intermittent pressure, normally performed with the thumb or finger tips, it may be applied for between 5 and 60 seconds at a time, and may be repeated several times during a session; iii] using integrated neuromuscular inhibition technique [INIT], which combines direct NMT with PRT and MET.

Q4: Describe the difference between SCS and FT.

A4:

SCS is quite similar to FT. During SCS, it is the therapist's palpating hand on the identified tender point that monitors, through the reported experience of the client, any reductions [or increases] in perceived pain. Diminished pain signifies the position of ease. During FT, the therapist, during passive movement, palpates locally for reducing tension and also feels for an easing

of motion in all directions. The pain from a tender point, although relevant, is less of a guide to the modification of this technique. The therapist attempts to discover and hold a position of maximal ease.

Q5: How does PIR differ to RI?

A5:

PIR typically involves passively stretching a muscle that has been isometrically contracted, whereas RI is the relaxation of an affected [agonist] muscle during and following isometric contraction of its opposing [antagonist] muscle[s].

Q6: Describe how you might approach treating a tight quadriceps muscle group using a PIR strategy.

A6:

A basic approach to using the PIR method to relax and stretch tight quadriceps could involve the therapist having the client lie prone. The therapist should assess the range and quality of available movement, they should then stabilize the sacral/lower back region as they passively take the affected limb into a mid-range position of knee flexion. The client is then asked to push backwards against the therapists hold [into knee extension, but with a submaximal isometric contraction], for around 7-10 seconds, whilst breathing smoothly. After the contraction the client is encouraged to relax and then the limb is taken into a position of improved stretch. This process can be repeated several times.

Q7: Describe how you might approach treating a painful neck rotation situation using an RI strategy.

A7:

A basic approach to using the RI method to treat a painful neck rotation situation could involve the therapist having the client either seated upright or lying supine. The therapist should discuss the presenting situation [cause, history, severity, duration, etc.] and assess the region [palpation and observation of the range and quality of available movement]. If RI is considered appropriate, the therapist should ask the client, from a position short of their restriction barrier, to gently turn their head towards the left or right, depending upon which muscle groups are painful to contract [this technique should not cause any pain]. The therapists hands [holding the head comfortably] resist the clients isometric contraction of the unaffected antagonist muscles. This can be held for between 7-10 seconds, after which the affected muscle groups may have released some of their tightness and can then be taken to a new and comfortable restriction barrier. The process may be repeated several times. After contraction of the antagonist, relaxation of the agonist may be the only initial objective [reducing muscle spasm, for example], and it may not yet be appropriate to apply any developmental stretching. RI therefore, is often a useful early treatment technique, which should cause no irritation to an acute problem.

Q8: Which MET strategy can be used to improve the tone, strength and proprioception of muscles? Describe the basic protocol for this technique.

A8:

Isotonic concentric contraction technique [ICCT] is a muscle energy technique used to tone and strengthen, improve proprioception and rehabilitate muscles and joints. ICCT incorporates manual resistance to the muscular efforts of the client. Once the particular muscular weakness has been identified, whether related to injury or not, the client is positioned so that they can perform an isotonic [concentric] contraction against the lesser effort [resistance] of the therapist. The concentric [shortening] contraction is performed over about 2-4 seconds, through a comfortable range of movement, using a maximal effort that is achieved gradually, not suddenly. This exercise can be repeated in terms of repetitions [5-10 reps] and sets [1-3 sets, with rest periods in between], possibly including an isometric component, and the intensity of force can be adapted to suit the client's ability.