Unit Specification

USP197 – Planning and delivering safe and effective dry needling techniques

Unit reference number: M/650/4323

Level: 4
Guided Learning (GL) hours: 16

Overview

The aim of this unit is to develop the knowledge, understanding and practical skills required to deliver safe and effective dry needling techniques. Learners explore the safety considerations and precautions surrounding the application of dry needling techniques, understand how to plan and provide dry needling techniques and be able to apply these to a range of muscle groups.

Learning outcomes

On completion of this unit, learners will:

LO1 Know the contra-indications, safety considerations and precautions when providing dry needling techniques

LO2 Know how to provide dry needling techniques

LO3 Be able to plan and prepare for dry needling techniques

LO4 Be able to administer dry needling techniques to common muscle groups

Unit content

LO1 Know the contra-indications, safety considerations and precautions when providing dry needling techniques

Safety considerations and precautions when providing dry needling techniques
Taught content

• Anatomical damage
  - Greatest risk pneumothorax. Considerations may be given to use of shorter needles in areas of higer risk of pneumothorax as well as consideration of puncture angle
  - Avoid dry needling to the thoracic region (C7 to abdomen) including the anatomical areas bounded by the ribs, the sternum, the spinal vertebra, and the diaphragm
• Cardiac tamponade – do not needle sternum periosteally
• Also consider abdominal organs, spinal cord and peripheral nerves
• Forgotten needles especially with patients with long hair
• Allergic reactions (nickel, chromium or zinc) shouldn't be treated (reactions rare)
• Low risk of bacterial infection especially if sterile disposable needles are used
• Viral infections – again risk reduced using disposable needles. Greatest risk is Hepatitis B. Therapist to be immunised
• Patients taking anti-coagulants or anti-platelets at greater risk. Superficial techniques, in this case (subcutaneous only), is probably safe. Deep intramuscular or periosteal needling to be avoided
• Miscarriage
  - Evidence suggest no contra-indication, however there is association with acupuncture and dry needling and miscarriage which may well be causal connection so considered a contra-indication unless a very strong reason exists to perform it
• Drowsiness
  - Consider risk of driving or operating machinery
• Needlestick injury
  - Adhere to correct use and disposal of needles

Contra-indications for dry needling techniques
Taught content

• There are very few strict contra-indications to dry needling
• Contra-indications should also be considered along with other treatment modalities being used for treatment
• Absolute contra-indications
  - Lack of written informed consent
  - Needle phobia
  - In cases when informed consent cannot be obtained due to difficulties regarding communication and comprehension or related to the age of the subject (underage)
• Relative contra-indications
  - Safety guidelines exist for patients with bleeding disorders, patients taking warfarin, patients taking aspirin
  - Safety guidelines exist for acupuncture/dry needling and pregnancy. Evidence suggest no contra-indication, however there is association with acupuncture/dry needling and miscarriage which may well be causal connection so considered a contra-indication unless a very strong reason exists to perform it
  - Diabetes is not a contra-indication, however there is an increased risk of infection so acupuncture should not be performed in areas where the skin looks fragile
  - Skin infection at needling site
  - Eczema or psoriasis at site
  - Gross oedema
  - Metal allergy, especially nickel

Complications, accidents and adverse reactions
Taught content
• Classed as mild, significant or severe - Mild (minor) – reversible, short-lived and do not seriously inconvenience the patient - Significant – requiring medical attention or interfering with the patient's normal activity - Serious (major) – requiring hospital admission (or prolongation of current hospital stay) and resulting in persistent or significant disability/incapacity or death • Pain - During insertion probably incorrect technique or highly sensitive patient - Post insertion. Silence should be sought - any feeling of pain should disappear. If pain persists needle should be removed and re-inserted - After needle withdrawal – pain can persist post treatment. Application of cold and compression and patient education; the recovery position, lay them on their injured side to allow the lung on the uninjured side to work to its full capacity • Bleeding - Frequent adverse reaction and usually insignificant. Use sterile dressing to stem bleeding • Bruising - Ensure this is clearly stated as a possible adverse reaction in the consent form • Fainting - Withdraw the needles immediately and place the patient in a horizontal position with the head lowered and the legs raised. Apply first aid principles • Stuck needle - After insertion and manipulation, the needle may become stuck to muscle spasm or becoming interwoven with tissue fibres. Allow the patient to relax and withdraw needle • Broken needle - More likely non certified needles were used. When needling, do not insert fully to the handle. Advise the patient to keep calm. If visible remove with sterile tweezers. If not visible transport safety to medical department for surgical removal

LO2 Know how to provide dry needling techniques

Description of standard puncture needles
Taught content
• Standard needle - Handle – the handle is a long element around which the needle is held and manipulated. Made from different materials dependent on type of application required. Standard dry needling handles are plastic and coloured dependent on diameter of the needle shaft - Root – junction of handle and needle body and is a possible weak point, hence dictates insertion depth - Shaft – typically stainless steel. Dimensions describe the diameter and length of the needle expressed in millimetres. The diameter 0.25 x length 13mm. The most common dimeter is 0.25 and 0.30. Length of needle is dependent on depth of penetration required - Guide tube – is a tube designed to minimize discomfort during needle insertion. The needle is often secured to the guide via a plastic stopper

Application of standard puncture needles
Taught content
• Application without guide tube - Hold the needle with the tips of the thumb and index finger of the hand that is performing the puncture. The tip of the middle finger can be used to guide it - The practitioner can choose flat palpation or pincer palpation with the other hand to stabilise the puncture area and guide the needle • Application with guide tube - A puncture using a guide tube can be employed. Contact the guide tube against the site where the needle is to be inserted - The needle should protrude above the guide tube - Apply a blunt tap with the index finger to the top of the needle - Support the area with other hand as above • Mobilisation techniques - Insertion – needle introduced to desired depth and then withdrawn - Lifting and thrusting – an upward lifting and then downwards thrust at different amplitudes and frequencies - Sparrow pecking – a thrusting and rotatation of the needle rapidly. Often used for periosteal application - Rotation – rotation of the needle once introduced (uni or multidirectional). Often the most commonly used technique - Scraping – scraping of the needle handle with the nail of the index finger while the needle is inserted - Swaying – swaying of the needle from left to right - Flicking – flicking the needle handle or tail with the index finger

- Depth of puncture – dependent on a number of factors such as depth of structure and morphology of patient. Most common needles are 30mm and 50mm. However, in areas close to the chest wall practitioners may wish to choose 25mm needles
- Direction of puncture – dependent on the topographic characteristics of the selected point and its target structures
- Oblique puncture – needles can be introduced at an angle of 30°-50° in relation to the skin surface. Appropriate where there is scarce soft tissue and for safety such as the thorax
- Transverse or horizontal puncture – needles can be introduced at an angle of 5°-15° angle in relation to the skin surface. Used at areas located below a very thin layer of soft tissue
- Number of needles – therapists may choose to introduce more than one needle for greater stimulus to the system. The choice will be dependent on the patient presentation

LO3 Be able to plan and prepare for dry needling techniques

Planning and preparing for dry needling techniques

Taught content

- Equipment and facility considerations
    - Clean, well prepared premises which adhere to health and safety requirements
    - Suitable hand washing facility
    - Anti-bacterial sprays/wipes for avoidance of possible cross-infection of treatment surfaces
    - Single-use, pre-sterilised, disposable solid puncture needles
    - Antiseptic swabs (optional)
    - Access to a compliant disposable sharps box
    - First aid kit
    - Couch/couch roll
- There is no golden rule for incorporating dry needling into the treatment plan
- Patients will respond differently to dry needling and consideration must be given to whether the patient is new to dry needling or not
- The general guideline is that less is more with new patients and these patients are not overstimulated
- There is considerable debate about treatment times from inserting the needles and removing instantly or longer duration of application with 2 minutes being the most commonly accepted maximum but some practitioners leave the needles in for up to 30 minutes
- Acute conditions may respond to shorter treatment times and chronic conditions longer treatment times
- The application within the treatment plan is also up to the therapists discretion whether acupuncture is applied before or after other therapeutic modalities
- The overriding safety aspect is the cleanliness of the skin and reduction of risk of infection
- Registration with local authority maybe necessary to be licensed. If a private home is used, the treatment room(s) must not be used for any ordinary domestic purposes
- The practitioner should:
    - Conduct a thorough patient assessment medical history, general health and a physical examination
        - Subjective assessment and objective assessments where required
        - Apply clinical reasoning for the use of dry needling techniques for myofascial pain syndrome
        - Analyse findings
        - Devise a treatment plan
        - Obtain informed consent
        - Complete client record foms as appropriate

LO4 Be able to administer dry needling techniques to common muscle groups

General considerations for dry nedling techniques

Taught content

- Ensure the part of the body being treated is clean and free of any cuts or wounds
- Each treatment is on its own merits dependent on patient. Equipment ready to hand
- Patient in a comfortable position
- Skin is clean, clear and free of oils
- Locate and palpate the point of pain within the muscle, identification of any risk factors or neurovascular structures, utilise correct grip of tissues
- Choose correct needle insertion technique
- Considerations may be given to use of shorter needles in areas of higer risk of pneumothorax as well as consideration of puncture angle
- Correct handling and insertion of the needle
- Check patient comfort and choose treatment duration
- Once treatment has been completed, remove all needles (count them in and count them out) and place in sharps bin
- Check for any bleeding and give appropriate aftercare advice
- Note treatment reactions

Application of dry needling techniques to common muscle groups

Taught content

The following represents a guide to the application of dry needling to common muscle groups, that are associated with myofascial pain and trigger points.

- Supraspinatus
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone
        - Seated or side lying allows tissues to be desired stretch
    - Needling technique
        - The needle should be inserted near the supraspinatus fossa towards the bulk of the muscle with the direction in a longitudinal plane, aiming towards the greater tubercle of the humerus
    - Needle length
        - 25mm to 40mm
    - Clinical implications:
        - Risk of passing into the intercostal space and towards the pleural cavity
        - The lung in a thin person lies 0.5-1 inch under the skin and there is the danger of pneumothorax if the needle is inserted too deeply. It is advised to use perpendicular needling techniques for areas close to the lungs, and in some cases it is also advised to grasp the muscle and pick it up to reduce the risks further
        - Perisoteal needling of scapula - small risk of pneumothorax so not recommended

- Infraspinatus
  - Palpation of structure informed by anatomical knowledge
  - Patient position
    - Prone or side lying
  - Needling technique
    - Palpate the infraspinatus and highlight any areas of pain. The needle will be placed directly into that point within the muscle belly in a perpendicular direction towards the scapula
  - Needle length
    - 25mm to 40mm
  - Clinical implications
    - Perisoteal needling of scapula - small risk of pneumothorax so not recommended
- Deltoid
  - Palpation of structure informed by anatomical knowledge
  - Patient position
    - Due to the anatomical structure of the deltoid, positioning the patient in a seated position allows access to all 3 heads without having to move the patient
  - Needling technique
    - Due to location and muscle bulk, needling can be performed into any areas of pain identified
  - Needle length: Dependent on muscularity of patient but generally 25mm to 40mm
  - Clinical implications. NA
- Quadriceps
  - Palpation of structure informed by anatomical knowledge
  - Patient position
    - Supine
  - Needling technique
    - a perpendicular angle into the bulk of the muscle, or into specific spots of pain within the muscle itself
  - Needle length
    - Dependent on muscularity and morphology of patient
  - Clinical implications
    - Femoral artery lies very deep to the rectus femoris so caution if using 50mm or longer needles
    - Biceps brachii
  - Palpation of structure informed by anatomical knowledge
  - Patient position
    - Supine
  - Needling technique
    - Grip the muscle and lift slightly, palpate areas of pain, insert the needle laterally thus avoiding the neurovascular bundle on the medial aspect
  - Needle length
    - 25mm to 40mm
  - Clinical implications
    - Application of the needle laterally reduces any risk of compromising the radial nerve or affecting the neurovascular bundle. Avoid the brachial artery

- Upper trapezius
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone or side lying
    - Needling technique
        - Perpendicular needling into the bulk of the muscle. The handle should never point towards the pelvis
    - Needle length
        - 25mm to 40mm
    - Clinical implications
        - The lung in a thin person lies 0.5-1 inch under the skin and there is the danger of pneumothorax if the needle is inserted too deeply. It is advised to use shallow needling techniques for areas close to the lungs, and in some cases it is also advised to grasp the muscle and pick it up to reduce the risks further
- Triceps
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone or side lying
    - Needling technique
        - Needle directly into trigger points
    - Needle length
        - 25mm to 40mm
    - Clinical implications
        - N/A
- Levator scapula
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone or side lying
    - Needling technique
        - A perpendicular angle of needle insertion into the muscle belly
    - Needle length
        - Dependent on muscularity and morphology of patient
    - Clinical implications
        - Use a perpendicular angle into the muscle bulk, to reduce the risk of directing the needle towards the pleura of the lung. Do not angle the needle inferiorly towards the rib cage
- Cervical erector spinae (not below C7)
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone, side lying or seated
    - Needling technique
        - In prone and/or side lying grasp the muscle distracting it away from the bone. Insert the needle into the muscle at a lateral angle. If seated flex head away from side being palpated
    - Needle length
        - 30mm
    - Clinical implications
        - Ensure the depth of the needle is kept shallow to avoid inserting into the cervical spine

        - Avoid angling the needle towards the vertebral artery
- Erector spinae (not thoracic region)
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone or side lying
    - Needling technique
        - Apply needle adjacent to the spinous process of the erefctor spinae. Angle the needle at 30 degrees to the skin and medially towards the vertebral lamina
    - Needle length
        - 30mm
    - Clinical implications
        - In the thoracic region, to reduce the risk of penetrating the pleural space, do not needle more than one finger width from the spinous process
- Quadratus Lumborum
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone or side lying
    - Needling technique
        - Needles placed between iliac crest and 12th rib
        - In prone the needle can be inserted perpendicular to the skin
        - In side lying the muscle can be put on stretch by patient abducting arm above head
        - The needle angle should aim towards the transverse process to achieve the correct depth and be angled towards the midline of the body or the umbilicus
    - Needle length
        - 30mm but dependent on patient morphology
    - Clinical implications
        - Care must be taken to avoid any risk of penetration of the kidney. Superior needles should be directed towards the contralateral PSIS and not above the 12th rib
- **Wrist flexors** – flexor carpi radialis, flexor carpi ulnaris, flexor digitorum superficialis, flexor digitorum profundus, flexor pollicis longus
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Supine in the anatomical position. Patient can be seated comfortably with forearms resting on couch and wrist extended
    - Needling technique
        - Perpendicular to the radius or ulnar dependant on which muscle is being treated
    - Needle length
        - Dependent on muscularity and morphology of patient
    - Clinical implications
        - Remove needle If patient experiences symptoms from peripheral nerves
- **Wrist extensors** – extensor carpi radialis longus, extensor carpi radialis brevis, extensor carpi ulnaris and extensor digitorum
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Supine in anatomical position shoulder abducted and internally rotated

        - Patient can be seated comfortably with forearms resting on couch and wrist flexed
    - Needling technique
        - Perpendicular to the radius or ulnar dependant on which muscle is being treated
    - Needle length
        - Dependent on muscularity and morphology of patient
    - Clinical implications
        - Remove needle if patient experiences symptoms from peripheral nerves
- Piriformis
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone or side lying
    - Needling technique
        - Needle perpendicular to the table
    - Needle length
        - Dependent on patient morphology
    - Clinical implications
        - Remove the needle, stop treatment if sciatic nerve is irritated
- Hamstrings
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone
    - Needling technique
        - Needles inserted perpendicular to the skin
    - Needle length
        - Dependent on patient morphology
    - Clinical implications
        - There is a very small risk of irritation of sciatic nerve. Remove needle, stop treatment if irritated
- Gastrocnemius and soleus
    - Palpation of structure informed by anatomical knowledge
    - Patient position
        - Prone or side lying
    - Needling technique
        - For gastrocnemius insert needle perpendicular to the muscle
        - For soleus insert the needle in the lateral or medial side of the calf towards the soleus
    - Needle length
        - Dependent on muscularity and morphology of patient
    - Clinical implications
        - Awareness of neuroanatomy. Remove the needle and reapply accordingly if nerve irritation occurs

Assessment requirements

Learners are required to complete **all** assessment requirements related to this unit:

1. Portfolio
2. Practical Examination
3. Case studies

1. Knowledge outcomes

Learners must complete all the assessment requirements related to this unit. The knowledge content in LO1-LO2 should be evidenced in a **portfolio of evidence** which contains assessed evidence covering all the assessment criteria in this unit.

Evidence in the portfolio may take the following forms:

- Observed work
- Witness statements
- Audio-visual media
- Written questions
- Oral questions
- Assignments
- Case studies

The pass criteria relate to the proficient demonstration of skills and knowledge.

Learning Outcome	**Assessment Criteria**
LO1 Know the contra-indications, safety considerations and precautions when providing dry needling techniques	1.1 Describe the safety considerations, precautions and contra-indications when providing dry needling techniques
	1.2 Summarise the complications, accidents and adverse reactions to dry needling

Learning Outcome	**Assessment Criteria**
LO2 know how to provide dry needling techniques	2.1 Describe the standard puncture needle
	2.2 Summarise the application and mobilisation techniques in dry needling

2. Practical Examination

The content of LO3 and LO4 are covered by a practical assessment and case studies (see below). The practical examination will be conducted by an external examiner; either through direct observation at the centre or through the use of remote monitoring activities using live streaming. A remote examination guidance document can be found on the VTCT (ITEC) website. It is recommended that a full range of formative assessments covering **all** muscle groups should be completed prior to the summative assessment.

Learning Outcome	**Assessment Criteria**
LO3 Be able to plan and prepare for dry needling techniques	3.1 Conduct and record appropriate safety checks to equipment and environment prior to dry needling treatments
	3.2 Carry out and record appropriate client assessment techniques
	3.3 Devise treatment plans for dry needling techniques
	3.4 Obtain informed consent from client for devised treatment plan

Learning Outcome	**Assessment Criteria**
LO4 Be able to administer dry needling techniques to common muscle groups	4.1 Prepare clients for dry needling techniques
	4.2 Demostrate safe and effective application of dry needling techniques to common muscle groups
	4.3 Monitor tissues throughout treatments
	4.4 Gain feedback from clients throughout teatments
	4.5 Demonstrate safe and effective removal and disposal of needles
	4.6 Provide safe and effective aftercare advice

3. Case studies

In addition to the practical examination outlined above, learners must complete a **minimum of 5 supervised dry needling case studies**. Each case study needs to include a client assessment, treatment plan, application of dry needling treatment and evaluation of the treatment and its outcomes. Case studies should be internally set and internally assessed. Evidence of case studies should be documented for sampling by the external examiner.

The supervised case studies may also be used gather evidence of application of knowledge outcomes where appropriate, and for formative assessment of dry needling across muscle groups.

Document History

Version	Issue Date	Changes	Role
v1.0	30/11/2022	First published	Product and Regulation Coordinator
v2.0	20/03/2024	Amended unit content to reflect changes in insurance requirements linked to patient safety.	Qualifications Administrator