

Clinical Task Instruction

DELEGATED TASK

D-NM01: Apply electrical stimulation to the shoulder for hemiplegia

Scope and objectives of clinical task

This CTI will enable the Allied Health Assistant (AHA) to:

- accurately and safely apply electrical stimulation (ES) to the shoulder for hemiplegia.

VERSION CONTROL

Version:	2.1	Author:	Darling Downs Hospital and Health Service
Endorsed: (Professional)	Directors of Physiotherapy, Directors of Occupational Therapy	Date approved:	3/11/2018
Approved: (Operational)	Chief Allied Health Officer, Allied Health Professions' Office of Qld.	Date approved:	6/11/2018
Document custodian:	Chief Allied Health Officer, Allied Health Professions' Office of Qld.	Review date:	6/11/2021
Acknowledgements:	Physiotherapy Department, Darling Downs HHS		

The CTI reflects best practice and agreed process for conduct of the task at the time of approval and should not be altered. Feedback, including proposed amendments to this published document, should be directed to AHPOQ at: allied_health_advisory@health.qld.gov.au.

This CTI should be used under a delegation framework implemented at the work unit level. The framework is available at: <https://www.health.qld.gov.au/ahwac>

Please check <https://www.health.qld.gov.au/ahwac/html/clintaskinstructions.asp> for the latest version of this CTI.

© State of Queensland (Queensland Health) 2015



This work is licensed under a Creative Commons Attribution Non-Commercial No Derivatives 3.0 Australia licence. This work is licensed under a Creative Commons Attribution Non-Commercial No Derivatives 3.0 Australia licence. In essence, you are free to copy and communicate the work in its current form for non-commercial purposes, as long as you attribute Queensland Health and authoring unit listed above, and abide by the licence terms. You may not alter or adapt the work in any way. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/3.0/au/deed.en>.

For further information contact Allied Health Professions' Office of Queensland, PO Box 2368, Fortitude Valley BC QLD 4006, email allied_health_advisory@health.qld.gov.au, phone (07) 3328 9298. For permissions beyond the scope of this licence contact: Intellectual Property Officer, Queensland Health, GPO Box 48, Brisbane Qld 4001, email ip_officer@health.qld.gov.au, phone (07) 3328 9862.

Disclaimer

Queensland Health has made every effort to ensure that the information in this resource, at the time of distribution, is correct. The information in this resource will be kept under review and future publications will incorporate any necessary amendments.

The information in this resource does not constitute clinical advice and should not be relied upon as such in a clinical situation. The information is provided solely on the basis that readers will be responsible for making their own assessment of the matters presented herein and readers are advised to verify all relevant representations, statements and information. Specialist advice in relation to the application of the information presented in this publication must be sought as necessary to ensure the application is clinically appropriate.

In no event, shall Queensland Health be liable (including negligence) for any claim, action, proceeding, demand, liability, costs, damages, expenses or loss (including without limitation, direct, indirect, punitive, special or consequential) whatsoever brought against it or made upon it or incurred by Queensland Health arising out of or in connection with a person's use of information in this publication

Requisite training, knowledge, skills and experience

Training

- Completion of CTI D-WTS01 When to stop
- Mandatory training requirements relevant to Queensland Health/HHS clinical roles are assumed knowledge for this CTI.
- Completion of the following Queensland Health allied health assistant training modules (or corresponding units of competency in HLT43015 Certificate IV in Allied Health Assistance) or equivalent work-based learning:
 - Assist with physiotherapy treatments and interventions

Access the module/s at: <https://www.health.qld.gov.au/ahwac/html/ahassist-modules>

Clinical knowledge

The following content knowledge is required by an AHA delivering this task:

- common conditions that cause upper limb hemiplegia and strategies used to prevent shoulder subluxation during hemiplegia including care with transfers, positioning, sling wear, electrical stimulation and facilitation of movement
- ES machine features used in the local service including the application process, client position, skin preparation, electrode placement, contraindications, precautions and limitations
- surface anatomy to support correct electrode placement e.g. heads of deltoid, scapular
- normal sensation responses and acceptable adaptations to the procedure that may be required to improve the application

The knowledge requirements will be met by the following activities:

- completing the training program/s (listed above)
- reviewing the Learning Resource
- receiving instruction from an allied health professional in the training phase.

Skills or experience

The following skills or experience are not identified in the task procedure but support the safe and effective performance of the task and are required by an AHA delivering this task:

- if required for the local service setting, competence in using a disposable razor blade to shave the client's skin, including basic first aid response to minor nicks and cuts.

Safety & quality

Client

- The AHA will apply CTI D-WTS01 When to stop at all times.
- In addition, the following potential risks and precautions have been identified for this clinical task and should be monitored carefully by the AHA during the task:
 - The placement of the electrodes should be clear e.g. by being insitu on the limb, diagram in the notes or having markings on the client's skin to indicate the required electrode placement. If electrode placement is unclear, liaise with the delegating health professional prior to commencing the task.
 - ES is usually applied over a number of sessions. Inspection and monitoring of the client's skin is required between applications. The skin should be dry, hairless and oil-free. The delegating health professional will have determined the need to shave the client's skin. Where the delegation instruction does not include an instruction to shave the skin, and the electrode contact with the skin appears affected by the client's hair, liaise with the delegating health professional. If the skin shows signs of irritation, including rash, redness or wounds, note the type, size and location of the skin irritation and discuss with the delegating health professional prior to commencing the task.
 - Clients must at a minimum be able to stay still during the application and communicate the sensation of tingling and contraction versus pain and discomfort for setting adjustments. If the client displays signs of reduced alertness, confusion, unpredictable behaviour or a change to sensation or communication that does not match the delegation instruction, cease the task and liaise with the delegating health professional.
 - The client must be able to understand the warning provided on every occasion that electrical stimulation is applied as part of consent. If the client has a change in cognition or communication or the response does not match the delegation instruction, liaise with the delegating health professional prior to commencing the task.

Equipment, aids and appliances

- Check the machine settings match those prescribed for the client as per the care plan. If unclear, consult with the delegating health professional. See the Learning Resource, Appendix A flowchart for setting/adjusting parameters.
- Check the machine is in working order by confirming the test and tag date is current. If the machine does not deliver a stimulus, check that the ES machine has an operational battery and that lead connections are securely attached. If the problem persists, locate an alternative machine. Prior to introducing a new ES machine to the client, perform a sensation safety check on yourself and check the dose settings match the delegation instruction.
- Electrodes are allocated to a single client and re-usable on the same client. For infection control, check that the electrodes are clean and allocated to the named client.

Environment

- ES can pose a safety risk during common clinical procedures. It should always be removed prior to contact with water (e.g. showering), clinical investigations (e.g. x-ray or cardiac monitoring) or in the case of an emergency (e.g. defibrillator use). Use local processes to advise the healthcare team that ES treatment is occurring and how it can be removed e.g. place a notice above the client, an identification

badge on the client, and check that a quick reference guide for removal is attached to the stimulator. See the Learning Resource for example signage.

Performance of Clinical Task

1. Delegation instructions

- Receive the delegated task from the health professional
- The delegating health professional should clearly identify parameters for delivering the clinical task to the specific client, including any variance from the usual task procedure and expected outcomes. This may include:
 - the client's position during the task e.g. sitting or side lying
 - electrode placement location
 - ES machine settings to be used for the application including frequency, pulse width, intensity, duration, dosage, ramp speed, waveform, on/off cycle.

2. Preparation

- Collect the client's allocated ES machine, including electrodes (if relevant). Check the machine is in working order. See the "Safety and quality" section.

3. Introduce task and seek consent

- The AHA introduces him/herself to the client.
- The AHA checks three forms of client identification: full name, date of birth, *plus one* of the following: hospital UR number, Medicare number, or address.
- The AHA describes the task to the client.
- The AHA provides a warning to the client and requests confirmation the client has understood. For example:
 - "When having this electrical stimulation, you may feel tingling and a muscle contraction. If you feel anything other than this, or any pain or discomfort, you must call your nurse immediately with this buzzer. Otherwise, you may risk skin and other tissue damage under the electrodes. Please do not adjust any of the equipment during your treatment". A copy of this warning may be located on the back of the stimulator box or provided to the client. See the "Safety and quality" section.
- The AHA seeks informed consent according to the Queensland Health Guide to Informed Decision-making in Health Care, 2nd edition (2017).

4. Positioning

- The client's position during the task should be:
 - in sitting or side lying with the affected arm in a supported position.
- The AHA's position during the task should be:
 - either standing or sitting in front of the client.

5. Task procedure

- Explain and demonstrate (where applicable) the task to the client.
- Check the client has understood the task and provide an opportunity to ask questions.
- The task comprises the following steps:
 1. Inspect the client's skin. See the "Safety and quality" section
 - If electrodes are not insitu, clean skin with an alcohol wipe and apply the electrodes to the marked treatment area.
 2. Application of the ES machine
 - Attach the electrode leads to the electrode pads and the machine.
 3. Start stimulation
 - i. Turn the machine on and adjust the settings as per the delegation instruction and by using the manufacturer's guidelines.
 - ii. Slowly increase the intensity. The intensity should only be increased whilst the machine is in the 'on phase', see the manufacturer's guidelines for details.
 - iii. As the intensity increases, monitor the sensation felt by the client. As intensity increases the muscle will contract which may be evidenced as visible elevation of the humeral head or movement of the targeted body part.
 - iv. Ensure the client is comfortable and implement local safety procedures e.g. if the client is not being supervised during the session, ensure the call bell is accessible to the client, document in the client's bed chart to monitor the hours that stimulation is applied, hang safety signage and inform the nurse caring for the client of the presence of ES.
 4. End stimulation and remove electrodes.
 - i. When the required duration of ES has been achieved, checks the machine is turned off prior to removing the electrodes using the manufacturers guidelines e.g. remove the two electrodes and store on the plastic sheet on the side marked ON (not on the side marked NO).
 - ii. Return all contents in the ES kit to the box and place in the storage bag provided i.e. stimulator, lead, electrodes.
- During the task:
 - monitor for adverse reactions and implement appropriate mitigation strategies as outlined in the "Safety and quality" section above including CTI D-WTS01 When to stop.
 - advise the client to notify a staff member immediately if during ES they experience new or unusual sensations, pain or discomfort.
 - The prescribed duration of application may exceed the timer for some ES machines. If this is the case, the machine will need to be reset as part of the application. To do this, turn off the machine, do not remove the electrodes, repeat the CTI task procedure commencing with "Start stimulation" for the additional time required.
- At the conclusion of the task:
 - encourage feedback from the client on the task.
 - ensure the client is comfortable and safe, including correct positioning of the affected limb.
 - inspect the skin for signs of irritation, see the "Safety and quality" section.

6. Document

- Document the outcomes of the task in the clinical record, consistent with relevant documentation standards and local procedures. Include observation of client performance, expected outcomes that were and were not achieved, and difficulties encountered or symptoms reported by the client during the task.
- For this task the following specific information should be presented:
 - consent, warning given and understood, settings used during the session, reported sensation and observation of the skin pre- and post-application and any actions taken. This may also include the use of any local templates for recording e.g. ES monitoring sheet.

7. Report to the delegating health professional

- Provide comprehensive feedback to the health professional who delegated the task.

References and supporting documents

- Queensland Health (2015). Clinical Task Instruction D-WTS01 When to stop.
<https://www.health.qld.gov.au/ahwac/html/clintaskinstructions.asp>
- Queensland Health (2017). Guide to Informed Decision-making in Health Care (2nd edition).
https://www.health.qld.gov.au/_data/assets/pdf_file/0019/143074/ic-guide.pdf
- Basmajian, J.V. & Bazant, F.J., 1959. Factors preventing downward dislocation of the adducted shoulder joint. The Journal of Bone and Joint Surgery - American Volume, 41(7) pp1182-1186.
- Australian Government (2017). National Health and Medical Research Council. Clinical Guidelines for Stroke Management 2017. Chapter 6: Managing complications: subluxation.
Available at: <https://www.clinicalguidelines.gov.au/print/10465>
<https://www.clinicalguidelines.gov.au/portal/2585/clinical-guidelines-stroke-management-2017>
- Queensland Government (2016). Darling Downs Hospital and Health Service. Shoulder Subluxation Electrical Stimulation (ES) – Monitoring sheet. MR16acg v3.00.
https://qheps.health.qld.gov.au/_data/assets/pdf_file/0026/416375/mr16acg.pdf
- Vafadar, A.K., Côté, J.N. and Archambault, P.S. (2015). Effectiveness of Functional Electrical Stimulation in Improving Clinical Outcomes in the Upper Arm following Stroke: A Systematic Review and Meta-Analysis. BioMed Research International, vol. 2015, Article ID 729768, 14 pages.
<http://dx.doi.org/10.1155/2015/729768>

Assessment: Performance Criteria Checklist

D-NM01: Apply electrical stimulation to the shoulder for hemiplegia

Name:

Position:

Work Unit:

Performance Criteria	Knowledge acquired	Supervised task practice	Competency assessment
	Date and initials of supervising AHP	Date and initials of supervising AHP	Date and initials of supervising AHP
Demonstrates knowledge of fundamental concepts required to undertake the task.			
Obtains all required information from the delegating health professional, and seeks clarification if required, prior to accepting and proceeding with the delegated task.			
Completes preparation for the task including performing safety and maintenance checks as listed and perform session preparation steps as listed.			
Introduces self to the client and checks client identification.			
Describes the purpose of the delegated task, provides warning and seeks informed consent.			
Positions self and client appropriately to complete the task and ensure safety.			
<p>Delivers the task effectively and safely as per delegated instructions and CTI procedure.</p> <ul style="list-style-type: none"> a) Clearly explains the task, checking the client's understanding. b) Inspects the clients skin. c) Applies ES machine and attachments, as required. d) Performs the application including slowly increasing the intensity during the 'on phase'. e) Monitors and responds appropriately to changes in client wellbeing during the session. f) If required resets the machine for prescribed duration g) At the end of stimulation, checks machine and removes electrodes. h) During the task, maintains a safe clinical environment and manages risks appropriately. i) Provides feedback to the client on performance during and at completion of the task. j) Seeks feedback from the client on completion of ES application. 			
Documents the outcomes of the task in the clinical record, consistent with relevant documentation standards and local procedures.			
Provides accurate and comprehensive feedback to the delegating health professional.			

Comments on local service model

The AHA has been trained and assessed as competent to deliver ES using the following machine/s:

- _____
- _____
- _____

Comments:

Large empty rectangular area for handwritten or typed comments.

Record of assessment of competence

Assessor name:	Assessor position:	Competence achieved: / /
----------------	--------------------	--

Scheduled review

Review date / /

Apply electrical stimulation to the shoulder for hemiplegia: Learning Resource

Required reading

- Local workplace instructions related to the electrical stimulation local service model e.g. cleaning and storage of devices, recording form, safety signage related to use, etc.
- Manufacturers guidelines for all electrical stimulation devices used by the AHA within the local service
- If not part of the manufacturer's guidelines the delegating health professional should source other readings to outline the purpose for ES and the parameters used. For example:

– What is Electrical stimulation? Physiopedia. Electrical stimulation – its role in upper limb recovery post-stroke. Available at:

https://www.physio-pedia.com/Electrical_Stimulation_-_Its_role_in_upper_limb_recovery_post-stroke

Suggested reading

- National Stoke Foundation (2017). My Stroke Journey, Melbourne, Australia. Available at:

<https://strokefoundation.org.au/-/media/9F7CE6E04B3348DE907497DB8B4C7BD8.ashx?la=en>

- National Stoke Foundation factsheets:

- Communication after stroke
- Emotional and personality changes after stroke
- Fatigue after stroke
- Mobility and exercise after stroke
- Pain after stroke
- Thinking and perception after stroke
- Upper limb management after stroke.

Available at: <https://strokefoundation.org.au/About-Stroke/Help-after-stroke/Stroke-resources-and-factsheets>

Example recording form

- Queensland Government (2016). Darling Downs Hospital and Health Service. Shoulder Subluxation Electrical Stimulation (ES) – Monitoring Sheet. MR 16acg v3.00. Available at:

https://gheps.health.qld.gov.au/_data/assets/pdf_file/0026/416375/mr16acg.pdf

Example electrical stimulation signage and client identification



I'M WEARING E.S.

REMOVE BEFORE DEFIB

Appendix A: Flowchart for setting/adjustment parameters

