

Clinical Task Instruction

Delegated Task

D-VO04: Bioimpedance spectroscopy of the upper and lower limb

Scope and objectives of clinical task

This CTI will enable the Allied Health Assistant to:

- accurately and safely measure extracellular fluid using Bioimpedance Spectroscopy (BIS) for the upper and lower limb.

VERSION CONTROL

Version: 1.0

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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 the Office of the Chief Allied Health Officer (OCAHO) 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/html/ahassist>

Prior to use please check <https://www.health.qld.gov.au/ahwac/html/clintaskinstructions> for the latest version of this CTI.

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Note: This CTI has been written for the SOZO® digital health platform which is commonly in use in Queensland Health facilities. If the site has a different BIS machine the CTI should be reviewed and amended to align with the unit features and manufacturers guidelines for use.

Requisite training, knowledge, skills and experience

Training

- Completion of CTI D-WTS01 When to stop.
- Mandatory training requirements relevant to Queensland Health clinical roles are assumed knowledge for this CTI. If not part of mandatory requirements, complete training in patient manual handling techniques, including those for sit to stand and the use of walk belts.

Clinical knowledge

- The following content knowledge is required by an allied health assistant delivering this task:
 - understand the purpose and rationale for undertaking BIS of the upper and/or lower limb including contraindications, precautions and limitations
 - the BIS machine features used in the local service including the process for collecting a measure, client position, skin preparation and limb placement.
- 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 allied health assistant delivering this task:
 - Nil

Safety and quality

Client

- The allied health assistant 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 allied health assistant during the task:
 - the SOZO® machine requires the client to step onto the footplates and stand still for approximately 45 seconds. If the client is unable to step onto the footplate, or stand still for the required timeframe, measurements can be collected in the seated position. For clients presenting in a wheelchair, position the wheelchair in front of the unit, move the wheelchair footplates away and engage brakes prior to asking the client to place their feet on the machine footplates. Note the position as part of feedback to the delegating health professional.
 - contraindications for BIS include electronic implanted devices and pregnancy. If the allied health assistant confirms or suspects that contraindications are present through implementing Step 2 of

the task procedure, BIS should not be commenced and the allied health assistant should liaise with the delegating health professional.

- the quality of the BIS recording is impacted by skin contact with the recording plates, skin moisture, large items of jewellery and metal bony implants. To improve comparison between repeated measures, the allied health assistant should check each and every time if there has been a change (insertion or removal) of bony implants and the presence of any jewellery around the arms, neck or legs that is not removed. Small jewellery such as simple piercings, jewellery on the face or head and simple rings do not need to be removed or noted.

Equipment, aids and appliances

- The safe working load (SWL) of the machine footplates should match the clients' requirements, which for a SOZO® this is 170kg. If the client's weight does not match the SWL for a standing measure, recordings can occur in a seated position. Confirm the SWL of the chair provided matches the client's needs and is made of plastic. Chairs made of metal should not be used as they may interfere with the signal and data readings. If the client is seated in a wheelchair and it is not clinically appropriate to transfer them into another chair, ensure the client is not touching the metal framing, including armrests, during measurement recording.
- Users require access to Wi-Fi and a computer tablet with the App prior to recording measurements. The tablet will need to be fully charged and paired to the machine using Wi-Fi to record measurements.

Environment

- Nil

Performance of clinical task

1. Delegation instructions

- Receive the delegated task from the health professional
- The delegating allied 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 test position; standing or seated.
 - if in standing, the assistance required to support the client to step on/off the footplates e.g. stand-by assistance or walk-belt required
 - adaptations to the testing protocol e.g. handpiece removed.

2. Preparation

- Check the computer tablet is charged, Wi-Fi is available and log in details are correct. If part of local processes, perform a self-test.
- Wet cloth available to moisten the client's hands and feet
- Check machine is on a level surface and a chair is available if required.

3. Introduce task and seek consent

- The allied health assistant introduces themselves to the client.
- The allied health assistant checks three forms of client identification: full name, date of birth, plus one of the following: hospital unit record (UR) number, Medicare number, or address.
- The allied health assistant describes the task to the client. For example:
 - “The L-Dex score detects subtle fluid changes associated with lymphoedema in the at-risk or affected limb by transmitting a low-level, painless electrical signal through the body. The test is non-invasive, takes approximately 45 seconds, and requires you to remain still. You may hear a clicking sound”.
- The allied health assistant seeks informed consent according to the Queensland Health Guide to Informed Decision-making in Health Care, Version 2.6 (2025).

4. Positioning

- The client’s position during the task should be:
 - standing on the footplates, weight evenly distributed. Arms slightly abducted with hands in contact with the handpiece electrodes.
 - if using a seated position, the client should sit with weight evenly distributed on both buttocks and shoulders upright. The back rest can be used if it is not metal. Knees should be bent at a right angle, plus or minus ten degrees.
- The allied health assistant’s position during the task should be:
 - standing in a position next to the client to support observation of client and provide assistance if required.

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. Turn the computer tablet on and open the app. If the client is new, create a profile. For client’s presenting for re-measurement, select their existing profile and confirm details.
 2. Confirm the client does not have any contraindications to participating. Note any bony metal implants present or removed.
 3. Instruct the client to remove:
 - 3.1. all metal jewellery/accessories on arms, legs and around the neck including bracelets, necklaces, watches. See Safety and quality
 - 3.2. belts, electronics or metal from pockets e.g. phone, keys
 - 3.3. shoes, stockings/socks and/or gloves to expose the palms of their hands and soles of their feet.
 4. Wipe the client’s palms and soles of the feet with a wet cloth and wipe the electrode plates.
 5. Instruct the client to place their feet onto the footplate and centre their feet. Confirm both feet are flat and in full contact with each electrode plate.
 6. Instruct the client to place their hands onto the hand recording plates, with thumbs securely wrapped around the moulded plastic hand guides. Confirm that each palm is flat and in full

contact with each silver plate and that arms are slightly abducted i.e. elbows not in contact with the torso.

7. Press 'measure'. Enter the client's weight and follow the instructions to commence the recording.
 8. Press 'start' and provide the count down, encouraging the client to remain still.
 9. Once the measurement is complete determine if all six Cole plots are present. If one or more Cole plots are medium or low quality, repeat the measurement by repeating steps 4-8. If a second measure is recorded, note as part of feedback.
 10. Instruct the client to release the handpiece, step off the footplate and put on their removed items.
 11. Use local processes to record L-Dex in the client's medical record.
 12. Wipe over the electrode plates for the next user using standard infection control processes.
- During the task:
 - provide feedback and correct errors in the performance of the task including:
 - recordings are impacted by skin contact. Clients who have a hand or foot deformity (partial amputation, congenital) or scarring, should be encouraged to position the hand or foot for maximal skin contact.
 - recordings are impacted by moisture. To reduce air drying minimise the time between wiping over hands, feet and electrode plates and the measurement being collected.
 - the client's skin between their legs not touching during measures. For clients who are wearing shorts or skirts and cannot effectively separate their inner thighs, place a layer of towelling between.
 - encourage the client to remain still throughout the recording period by providing feedback, including counting down the time remaining.
 - 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.
 - At the conclusion of the task:
 - provide summary feedback to client, emphasising positive aspects of performance, for example standing still
 - ensure the client has collected all their personal items, is comfortable and safe.

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:
 - right or left, upper or lower limb measures
 - quality of the Cole plot and if a solid semi-circular line is present and/or if a repeat measure was required
 - presence or absence of bony metal implants, including location.

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. Available at: <https://www.health.qld.gov.au/ahwac/html/clintaskinstructions>.
- Queensland Health (2025). Guide to Informed Decision-making in Health Care. Version 2.6. Available at: <https://www.health.qld.gov.au/consent/clinician-resources/guide-to-informed-decision-making-in-healthcare>.
- LBL-537-en REV A Impedimed® (May 2018). Manufactures instruction guide.
- SOZO® Digital Health Platform. impedimed®. Measurement Guide. (2024). Available at: https://www.impedimed.com/wp-content/uploads/2025/08/LBL-504-OUS-Rev-J-SOZO-Measurement-Guide_DIGITAL.pdf

Assessment: performance criteria checklist

D-VO04: Bioimpedance spectroscopy of the upper and lower limb

Name:

Position:

Work Unit:

| Performance criteria | Knowledge acquired | Supervised task practice | Competency assessment |
|--|---|---|---|
| | <i>Date and initials of supervising AHP</i> | <i>Date and initials of supervising AHP</i> | <i>Date and initials of supervising AHP</i> |
| 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 <ul style="list-style-type: none"> - checks the computer tablet is charged, Wi-Fi is available and log in details are correct - if part of local processes, performs a self-test - checks a chair and wipes are available and that the machine is on a level surface. | | | |
| Introduces self to the client and checks client identification. | | | |
| Describes the purpose of the delegated task and seeks informed consent. | | | |
| Positions self and client appropriately to complete the task and ensure safety. | | | |
| Delivers the task effectively and safely as per delegated instructions and CTI procedure. <ol style="list-style-type: none"> a) Clearly explains the task, checking the client's understanding. b) Uses the computer app to enter, or locate, a client profile. c) Confirms the client does not have any contraindications and notes the presence/removal of bony implants. d) Instructs the client to remove necessary items to improve the measurement quality. e) Wipes the client's palms, feet and machine electrode plates with a wet cloth. f) Correctly positions the client on the footplates and hand recording devices. g) Records a measure. h) Accurately identifies the presence of Cole plots, semi-circular solid line and if a re-measure is required. i) During the task, maintains a safe clinical environment and manages risks appropriately. j) Provides feedback to the client on performance during and at completion of the task. | | | |

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|---|-----|--------------------|--------------------------|
| 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: | | | |
| | | | |
| Record of assessment competence: | | | |
| Assessor name: | | Assessor position: | Competence achieved: / / |
| Scheduled review: | | | |
| Review date: | / / | | |

Bioimpedance spectroscopy of the upper and lower limb: Learning resource

Required reading

- Australian Lymphology Association (2025). Lymphoedema. Available at: <https://www.lymphoedema.org.au/about-lymphoedema/what-is-lymphoedema/>
- Manufacturers instructions for the BIS used in the local service.
If using a SOZO™ this includes
 - impedimed® (n.d.)
 - What is BIS? Available at: <https://www.impedimed.com/resources/bis-technology/>
 - How to take a SOZO measurement. Available at: <https://www.impedimed.com/how-to-take-a-sozo-measurement-software-version-6-0/>
 - SOZO® Digital Health Platform. impedimed®. Measurement Guide. (2024). Available at: https://www.impedimed.com/wp-content/uploads/2025/08/LBL-504-OUS-Rev-J-SOZO-Measurement-Guide_DIGITAL.pdf