

Clinical Task Instruction

Delegated Task

D-NM05: Measure active range of motion of the hip and knee using a goniometer

Scope and objectives of clinical task

This CTI will enable the Allied Health Assistant to:

- measure active range of motion of the hip and/or knee with a goniometer.

VERSION CONTROL

Version: 1.0

Endorsed:(Profession) Directors of Physiotherapy

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(Operational) Chief Allied Health Officer, Allied Health Professions' Office of Queensland

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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 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.

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Requisite training, knowledge, skills and experience

Training

- Completion of CTI D-WTS01 When to stop.
- Mandatory training requirements relevant to Queensland Health/Hospital and Health Service (HHS) clinical roles are assumed knowledge for this CTI.
- If not part of mandatory training requirements, complete patient manual handling techniques including assisting clients from lying into sitting.
- 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:
 - Physiotherapy Learner Guide: Deliver and monitor a client-specific exercise program
 - 2.2 Positions and planes
 - 2.3 Anatomical movements

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:
 - basic anatomy of the hip and knee including the anatomical landmarks used to measure range of motion at the hip and knee.
 - normal range of motion and movement patterns for the hip and knee, including anatomical starting position for each movement.
 - common compensatory strategies and movement errors observed during active range of motion of the hip and knee in lying including hip tilting, limb rotation or arching of the lower back.
 - basic understanding of the method for lower limb goniometry including positioning, measurement points and recording.
- The knowledge requirements will be met by the following activities:
 - complete 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 model, the skill or the ability to acquire competence in the use of a pain rating scale e.g. Visual Analogue Scale (VAS).

Safety and 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:
 - if the client has restrictions or specific requirements during measurements, the delegating health professional will advise. These may include hip precautions, weight bearing status, range of motion limits, wounds or patient manual handling requirements. Restrictions must be adhered to at all times during the task. If restrictions cannot be maintained, cease the task. If instructions are unclear or do not appear to match the client's requirements or presentation, liaise with the delegating health professional prior to commencing the task.
 - to support the visualisation of anatomical landmarks, clients may need to expose body parts. To maintain modesty, close curtains, provide a gown, drape with a towel and expose only the required area for each measurement during the task. The delegating health professional may also instruct the need for a chaperone. Chaperones should be positioned to observe the client and palpation. Immediately prior to exposing and palpating landmarks, re-confirm consent. If modesty cannot be maintained or consent is not provided, liaise with the delegating health professional.
 - when locating the bony landmark, use the anatomical structures and adjacent landmarks to visualise and approximate the expected bony landmark location. Apply firm, gentle pressure that depresses the skin, using your finger pads. A bony prominence will feel firm beneath the fingers. Visually locating and/or palpating landmarks can be difficult for clients with significant adipose tissue, pain or wound dressings (do not palpate a wound). Locating the landmark on the non-affected limb can assist in approximating the likely location of the landmark on the affected side. Avoid using excessive pressure during palpation as this can be painful and cause bruising. If the bony landmark cannot be located cease the task and liaise with the delegating health professional.

Equipment, aids and appliances

- The use of a height adjustable bed is recommended. Perform an equipment safety check ensuring that the safe working load is suitable for the client, the height adjustment features are functioning, and if in a Queensland Health facility, electrical test tags are valid. If the usual equipment is unavailable or becomes unserviceable, cease the task and liaise with the delegating health professional.

Environment

- An appropriate level of client privacy for the task e.g. door or curtains closed.

Performance of clinical task

1. Delegation instructions

- Receive the delegated task from the health professional.
- The delegating allied health professional should clearly identify the parameters for delivering the clinical task to the client, including any variance from the usual task procedure and expected outcomes. This may include:
 - the manual handling assistance and/or restrictions required to position the client for the required measurements.
 - the joint to be measured (hip, knee or both) and the side on which the measurement is to be taken i.e. left, right or both.
 - the active range of motion direction to be measured i.e. flexion/extension, abduction/adduction and/or rotation.
 - required alterations to standard measuring due to site of injury, comorbidities, surgical restrictions or protocol. This may include performing the task in an alternative posture such as standing instead of lying or using alternative anatomical landmarks.
 - timing of the measurement collection e.g. to coincide with a pain medication or rehabilitation regime (pre or post exercise).

2. Preparation

- Collect the goniometer (long arm) and recording sheet.

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 unit record (UR) number, Medicare number, or address.
- The AHA describes the task to the client. For example, “I am going to measure your hip/knee movement using this measuring device called a goniometer (show the client the goniometer). I will ask you to move your hip/knee in each direction and then I will take a measurement. This information is used by (delegating health professional) to review your progress and to make decisions about your ongoing care”.
- 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:
 - lying on a plinth (supine or prone) or sitting as relevant for the required measurement. Refer to the Learning resource section.
- The AHA’s position during the task should be:

- directly next to the client in a position to provide demonstration and to observe and measure the client's movements.

5. Task procedure

- The task comprises the following steps:
 1. Explain and demonstrate (where applicable) the task to the client.
 2. Check the client has understood the task and provide an opportunity to ask questions.
 3. Position the client in the required starting posture for the required measurement using verbal instruction and if required, patient manual handling principles.
 4. Identify the required anatomical landmarks of the joint being measured, using visual inspection and gentle palpation.
 5. Inform the client which movement will be measured and demonstrate the movement.
 6. Check that the client is in the correct starting position for the measurement, refer to the Learning Resource.
 7. Ask the client to perform the required movement.
 8. Using the anatomical landmarks, accurately place the goniometer and record the measurement.
 9. Instruct the client to return the limb to the starting position.
 10. Repeat steps 1-9 for each of the required joint measurements.
- During the task:
 - provide feedback and correct errors in the performance of the task including:
 - if the client does not perform the movement correctly or movement errors are observed, provide verbal cueing and/or gentle manual guidance to reposition to the correct starting position and repeat the measurement. Common movement errors include arching, tilting, leaning or twisting of the lower back, rotating the pelvis or lower limb, lifting the buttock off the seating surface.
 - if full range of movement is not observed, ask the client what is stopping them from moving further. It is not uncommon for clients to prematurely stop at their functional range and continue further into the movement once prompted. If the client indicates a limitation e.g. pain, fear, anxiety, record the measurement and note the limitation in the documentation.
 - if the client reports or show signs of pain, pause the movement, record the measurement and instruct the client to resume a more comfortable position. If symptoms settle, ask the client if they consent to resuming the task, including re-measuring. If the symptoms persist, or the client does not consent, cease the task and liaise with the delegating health professional.
 - 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:
 - encourage feedback from the client on the task.
 - ensure the client 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:
 - joint/s measured and side/s on which the measurement was taken i.e. hip/knee, left and/or right.
 - the range of motion as measured with the goniometer for each delegated movement e.g. flexion, extension, abduction, etc.
 - any abnormal movement patterns or errors, including any limiting factors such as pain, stiffness or fear of movement.
 - if relevant, the difference between measures e.g. start/end of a treatment session, difference to the unaffected side or pre-morbid baseline measure.

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.asp>
- Queensland Health (2017). Guide to Informed Decision-making in Health Care (2nd edition). Available at: https://www.health.qld.gov.au/_data/assets/pdf_file/0019/143074/ic-guide.pdf

Assessment: performance criteria checklist

D-NM05: Measure active range of motion of the hip and knee using a goniometer

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 collecting the goniometer.			
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. <ul style="list-style-type: none"> a) Clearly explains the task, checking the client's understanding. b) Accurately identifies the required anatomical landmarks on the limb being measured, using visual inspection and gentle palpation. c) Informs the client which movement will be measured and correctly demonstrates each movement. d) Instructs the client to perform the movement and observes performance. e) At the end of range, uses the anatomical landmarks to accurately place the goniometer and note the measurement. f) Instructs the client to return the limb to a neutral and comfortable position. g) Records the measurement. h) Repeats steps b) to h) for each of the required measurements. 			

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.			
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.			

Hip and knee measurements that the AHA has been trained and assessed as competent to deliver:

The allied health assistant has been trained and assessed as competent in the following hip measurements using a goniometer:

- Flexion in supine
- Extension in prone
- Abduction in supine
- Adduction in supine
- Internal rotation in sitting
- External rotation in sitting

The allied health assistant has been trained and assessed as competent in the following knee measurements using a goniometer:

- Flexion in supine In prone In sitting
- Extension in supine

If the AHA has been trained and assessed as competent to deliver hip/knee measurements using a different method list the reference to the test protocol or variations from CTI task procedure:

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Comments

Record of assessment competence:

Assessor name:	Assessor position:	Competence achieved: / /
Scheduled review:		
Review date: / /		

Measure active range of motion of the hip and knee using a goniometer:

Learning resource

Measuring range of motion of a joint can be used to monitor change over time e.g. before or after treatment and/or between sessions. The unaffected side may be used as a baseline.

There are multiple protocols available to measure range of motion. The health service will determine the protocol to be used in the local setting. If a protocol is used that differs to that in the task procedure of this CTI, this should be recorded on the Performance Criteria Checklist.

Required reading

- Dutton M. (2020). Orthopaedic examination, evaluation and intervention. Online Learning Centre. Principles of goniometry. Available at: http://highered.mheducation.com/sites/0071474013/student_view0/chapter8/goniometry.html
- Physiopedia (2020) Goniometry
 - Hip flexion. Available at: <https://www.physio-pedia.com/Goniometry: Hip Flexion>
 - Hip extension. Available at: <https://physio-pedia.com/Goniometry: Hip Extension>
 - Hip internal rotation. Available at: <https://physio-pedia.com/Goniometry: Hip Internal Rotation>
 - Hip external rotation. Available at: <https://physio-pedia.com/Goniometry: Hip External Rotation>
 - Knee flexion. Available at: <https://physio-pedia.com/Goniometry: Knee Flexion>
 - Knee extension. Available at: <https://physio-pedia.com/Goniometry: Knee Extension>

Required viewing

Knee – Active range of motion

- Goniometry knee flexion and extension Dr Bryan – Physical therapist (2015). Available at: <https://www.youtube.com/watch?v=HM6KLTxukXU&t=26s>

Optional reading/viewing

- Med School Made Easy (2013). Landmarks of the lower extremity. Available at: <https://www.youtube.com/watch?v=BpeFMZG2kF0>
- NSW State Spinal Cord Injury Service (2015). ACI Handy hints finding bony landmarks. Available at: https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0004/312790/RD4.1_Handy_Hints_Finding_Bony_Landmarks.pdf