

Clinical Task Instruction

Delegated Task

D-NM02: Measure range of motion of the wrist using a goniometer

Scope and objectives of clinical task

This CTI will enable the Allied Health Assistant to:

- measure wrist range of motion with a goniometer (ulna side of the wrist).

VERSION CONTROL

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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 must 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/calderdale-framework.asp>

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.
- 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.
 - Occupational Therapy Learner Guide: Assist with the rehabilitation of clients.

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 hand and wrist including the anatomical landmarks used to measure range of motion at the wrist.
 - normal range of motion and movement patterns for the wrist.
 - ulna method for wrist goniometry measuring including positioning and recording, common problems and adaptations to improve accuracy.
- 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 delivery model, skill or the ability to acquire competence in the use of a pain rating scale e.g. Visual Analogue Scale (VAS).
 - If required for the local service delivery model, skill or the ability to acquire competence in the application of a heat and/or ice pack.

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:

- clients may present with oedema, wounds or scars. If the AHA observes abnormalities in the appearance of the wrist and hand that are not consistent with the delegation instruction, cease the task and liaise with the delegating health professional. Abnormalities may include excessive pain, increased oedema, signs of infection, excessive ooze from a wound or abnormal scar formation.

Equipment, aids and appliances

- Clients often present for wrist measurement wearing a splint. Do not remove the splint if this was not part of the delegation instruction. Ask the client if they have experienced any concerns or problems with the splint fit including rubbing, ongoing pain, discomfort or problems with straps. If problems are present, cease the task and liaise with the delegating health professional. If the delegation instruction did not include information about the splint, confirm with the client who prescribed and applied the splint and liaise with the delegating health professional, prior to commencing 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 side on which the measurement is to be taken i.e. left, right or both.
 - the range of motion direction to be measured including the type (active or passive) e.g. flexion/extension, radial/ulnar deviation and/or supination/pronation.
 - limiting factor for movement e.g. pain, resistance, angle.
 - alterations to standard positioning or landmarks for measurements e.g. due to site of injury, comorbidities, surgical restrictions or protocol.
 - timing of the measurement collection e.g. to coincide with a pain medication regime, heat or ice pack application or removal of plaster/splint. Note: If the AHA is applying the heat or ice pack, the AHA must have been trained and assessed as competent in the application of heat and/or ice.

2. Preparation

- Collect the goniometer and recording sheet.

3. Introduce task and seek consent

- The AHA introduces themselves 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 wrist movement using this measuring device called a goniometer (show the client the goniometer). I will ask you to move your wrist 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:
 - sitting in a chair behind a table. The position of the upper limb will vary according to the required measurement. Refer to the Learning resource.
- The AHA’s position during the task should be:
 - positioned directly opposite the client, sitting in a chair and in a position to provide demonstration and to observe and measure the client’s movements.

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. Identify the required anatomical landmarks of the wrist being measured, using gentle palpation and visual inspection.
 2. Inform the client which movement will be measured and demonstrate the movement.
 - i. For active range of motion, ask the client to move their wrist in the movement direction. Instruct the client when they should stop the movement e.g. “up to where it starts to hurt”; “as far as you can.”
 - ii. For passive range of motion, gently support and move the client’s hand in the movement plane. Stop moving the wrist when the client reports or is observed to have pain, or when resistance is felt, whichever occurs first.
 3. Ensure the client is in the correct position for the measurement, refer to the Learning resource.
 4. Using the anatomical landmarks, accurately place the goniometer and record the measurement.
 5. Repeat steps 1-4 for each of the required wrist measurements.
- During the task:
 - provide feedback and correct errors in the performance of the task including:
 - if the client does not perform the movement in the required plane, provide verbal cueing and/or gentle manual guidance e.g. for ulnar and radial deviation “remember to keep your wrist in a neutral position, don’t let your wrist come up or down”.
 - if the client reports or show signs of excessive pain performing the required movement, pause the measurement and request the client resume a more comfortable posture. Monitor the client’s pain e.g. using a pain rating scale. Determine the onset of the pain e.g. at the commencement, during or at the end of the movement. If the pain settles, resume

measuring by re-instructing the client to perform the required movement to the onset of discomfort only. If the pain persists, cease the task and liaise with the delegating health professional.

- if during measuring the client attempts to provide overpressure with their non-affected hand to increase their range of motion, advise the client what the required measurement is e.g. “we only need to measure your active range of motion, there is no need to push”.
- if the client remains in a position for measurement for a sustained period of time, return the client to a neutral position. This may be due to disruptions to the session or the AHA experiencing difficulty locating the identified anatomical landmarks. Relocate the anatomical landmarks, check the client’s position and recommence 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.
- 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:
 - side/s on which the measurement was taken i.e. left and/or right.
 - the degree of wrist range of motion as measured with the goniometer for each delegated movement e.g. flexion, extension, ulnar deviation, radial deviation, supination and pronation.
 - 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, 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

- Norkin, C. & White, D. (2017). Upper Extremity Testing. In *Measurement of Joint Motion: A guide to goniometry* (p. 115-186). Philadelphia, PA. F.A. Davis Company.
- 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-NM02: Measure range of motion of the wrist 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 including acronyms, purpose of active ROM, basics of hand therapy conditions and a basic knowledge of hand anatomy.			
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) Correctly identifies the required anatomical landmarks on the limb being measured, using gentle palpation and visual inspection. c) Selects the correct position for the movement and informs the client which movement will be measured and correctly demonstrates. d) Positions and observes the client's wrist to move accurately for the requested movement. e) Accurately places the goniometer, measures the wrist movement and records the measurement. f) Completes all required measurements. g) During the task, maintains a safe clinical environment and manages risks appropriately. h) 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.			

Comments on the local service model:

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

- Flexion
- Extension
- Radial deviation
- Ulnar deviation
- Forearm supination
- Forearm pronation

Comments:

Record of assessment competence:

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

Review date:	/ /	
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Measure range of motion of the wrist using a goniometer: Learning resource

Measuring range of motion of the wrist 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.

Required reading

- Clarkson, H. (2013) Chapter 5: Wrist and Hand. In Musculoskeletal assessment: joint motion and muscle testing 3rd Edition. p181-260. Lippincott Williams and Wilkins: Philadelphia. Available at: <https://www.google.com/url?esrc=s&q=&rct=j&sa=U&url=https://dl.uswr.ac.ir/bitstream/Hannan/139276/1/9781609138165.pdf&ved=2ahUKEwjmkST79MH0AhVDlFYBHX3qClgQFnoECAUQAg&usg=AOvVaw0ldzmDx-I-EeS8Skw-CVfq>
- Kosmahl, E. (2018). Goniometry. Coventry University. Available at: <https://www.studocu.com/en-gb/document/coventry-university/assessment-of-health-and-fitness/goniometry-guide/1491196>

QH employees only

- Driessens, S (2017). An initiative of the Queensland Hand Therapy Network. Introduction to assessment of the hand. Available at: https://qheps.health.qld.gov.au/_data/assets/pdf_file/0042/1797882/Introduction-to-assessment-of-the-hand-v2.pdf

Required viewing

Wrist Flexion, Extension,

- Elizabeth Bryan (2015). Goniometry wrist flexion & extension. Dr. Bryan - Physical Therapist. Available at: <https://www.youtube.com/watch?v=mW5BKT6Kldc>

Radial Deviation & Ulnar Deviation

- Elizabeth Bryan (2015). Goniometry wrist radial and ulnar deviation. Dr. Bryan - Physical Therapist. Available at: <https://www.youtube.com/watch?v=rMwP2LyZ9BY>

Forearm Pronation & Supination

- MCCCPTAP (2014). Forearm pronation and supination ROM using a goniometer. Available at: <https://youtube.com/watch?v=88sDkozPNQ0>

Quick reference table

Table 1 Positioning of client and goniometer alignment for each wrist range of motion movement

Movement	Client Position	Goniometer Alignment
Wrist Flexion	Position the client sitting, facing a supportive surface e.g. a table. Place their elbow and forearm on the supportive surface with the palm facing the floor. Bend 'flex' the wrist i.e. palm towards the client.	Centre the fulcrum of the goniometer over the lateral aspect of the wrist over the triquetrum and align the stabilised arm with the lateral midline of the ulna using the olecranon process and ulna styloid for reference. Align the moving arm of the goniometer with the lateral midline of the fifth metacarpal. ¹
Wrist Extension	Position the client sitting facing a supportive surface e.g. a table. Place their elbow and forearm on the supportive surface with the palm facing the floor. Bend the wrist backwards i.e. palm towards the ceiling.	Centre the fulcrum of the goniometer over the lateral aspect of the wrist over the triquetrum and align the stabilised arm with the lateral midline of the ulna using the olecranon process and ulna styloid for reference. Align the moving arm of the goniometer with the lateral midline of the fifth metacarpal. ¹
Radial Deviation	Position the client sitting, facing a supportive surface e.g. a table. Place their elbow, forearm and hand, palm down, on the supportive surface. Move the hand towards the radial side (thumb) keeping the palm on the table.	Centre the fulcrum of the goniometer over the dorsal aspect of the wrist over the capitate and align the stabilised arm with the dorsal midline of the forearm using the lateral epicondyle for reference. Align the moving arm of the goniometer with the middle of the third metacarpal. ¹
Ulnar Deviation	Position the client sitting facing a supportive surface e.g. a table. Place their elbow, forearm and hand, palm down, on the supportive surface. Move the hand towards the ulnar side (fifth finger) keeping the palm on the table.	Centre the fulcrum of the goniometer over the dorsal aspect of the wrist over the capitate and align the stabilised goniometer arm with the dorsal midline of the forearm using the lateral epicondyle for reference. Align the moving arm of the goniometer with the dorsal midline of the third metacarpal. ¹
Forearm Pronation	Position the client sitting with their elbow flexed to 90 degrees and locked into their torso. Move the hand to face the floor i.e. palm of the hand facing downwards.	Place the fulcrum of the goniometer laterally and proximally to the ulna styloid process and align the stabilised goniometer arm parallel to the anterior midline of the humerus. Align the moving arm of the goniometer across the dorsal aspect of the forearm, proximally and parallel to the styloid processes of the radius and ulna. ¹
Forearm Supination	Position the client sitting with their elbow flexed to 90 degrees and locked into their torso. Move the hand to face the ceiling i.e. palm of the hand facing upwards.	Place the fulcrum of the goniometer medially and proximally to the ulna styloid process then align the stabilised goniometer arm with the anterior midline of the humerus. Align the moving arm of the goniometer across the ventral aspect of the forearm, proximally and parallel to the styloid processes of the radius and ulna. ¹

1. Norkin, C. & White, D. (2017). Upper Extremity Testing. In Measurement of Joint Motion: A guide to goniometry (p 115-186). F.A. Davis Company.

Landmarks for Wrist Goniometry

Figure 1: Surface anatomical landmarks for goniometer alignment for measurement of wrist ROM (student photo used with permission, 2018)

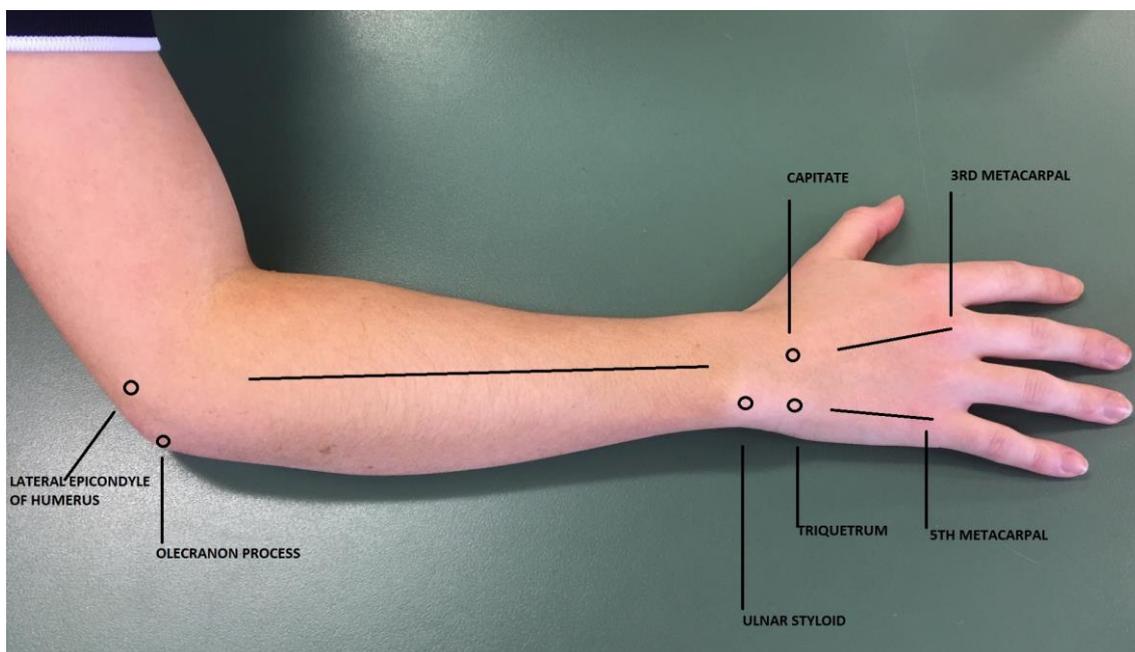


Figure 2: Bony anatomical landmarks for goniometer alignment for measurement of wrist ROM (Norkin & White, 2017, p 117).

