Inclinometers and goniometers are devices used to measure range-of-motion. Range-of-motion can be measured from the neutral position to give a reading of flexion, extension, abduction, adduction, pronation, supination, dorsiflexion, plantarflexion, etc. or it can measure the entire range to yield a total range-of-motion of the joint in question.

The inclinometer is simple to use: place it near the joint to be measured; turn the dial until the scale reads zero; take the joint through its range; read the range-of-motion (in degrees) directly from the dial.

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**SHOULDER**

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### Flexion & Extension
- Put shoulder into neutral position
- Place goniometer on upper arm, set zero
- Flex or extend shoulder
- Read result

*Note: Do not allow the subject to twist*

### Abduction & Adduction
- Put shoulder into neutral position
- Place goniometer on upper arm, set zero
- Abduct or adduct shoulder
- Read result

*Note: Do not allow the subject's body to twist*

### Rotation of Flexed Shoulder
- Put shoulder at 90° flexion, elbow at 90° flexion, forearm and upper arm horizontal
- Place goniometer on forearm, set zero
- Internally or externally rotate shoulder
- Read result from inner or outer dial

*Note: Keep subject's arm horizontal*

### Rotation of Abducted Shoulder
- Put shoulder at 90° abduction, elbow at 90° flexion, forearm and upper arm horizontal
- Place goniometer on forearm, set zero
- Internally or externally rotate shoulder
- Read result from inner or outer dial

*Note: Keep the subject's arm horizontal*

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**SPINE**

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### Flexion & Extension
- Stand subject upright
- Place goniometer on region of spine to be tested, set zero
- Flex or extend the spine
- Read result

*Note: If the subject is clothed, the goniometer may slip during flexion*

### Plotting Curvature
- With the goniometer on its side, set true zero
- Stand subject upright
- Place the goniometer at different levels of the spine
- Read result at each level and plot

*Note: Kyphotic and Lordotic curvatures are shown as positive or negative values*

### Lateral Movement
- Stand subject upright
- Place goniometer on ribs under arm, set zero
- Laterally flex the spine
- Read result

*Note: The higher the goniometer is placed the greater will be the measured compound angle*

### Dorsiflexion & Plantarflexion
- Lay subject supine, with foot over edge of bed
- Place goniometer on the sole of foot, set zero
- Plantarflex or dorsiflex the ankle
- Read result

*Note: More accurate readings can be obtained when the subject wears flat shoes to reduce the curvature of the foot*

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**WRIST**

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### Flexion & Extension
- Put hand and forearm prone on table
- Place goniometer behind MCP joints on back of hand, set zero
- Move hand over edge of table, flex or extend wrist
- Read result from inner or outer dial

*Note: Ensure forearm and elbow are always in contact with the table*

### Abduction & Adduction
- Put side of hand, forearm and elbow on table
- Place goniometer on side of hand, set zero
- Move hand over edge of table, abduct or adduct wrist
- Read result

*Note: Ensure back of the hand is always in vertical plane. To eliminate abduction/adduction of MCP joints put fingers in full flexion*

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**ANKLE**

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### Flexion & Extension
- Put hand prone on table, finger over the edge
- Place goniometer on finger, set zero
- Flex or extend MCP
- Read result

*Note: Maintain full extension of the PIP joint. For small fingers a wooden splint may be taped to the finger*

### Abduction & Adduction
- Put side of hand, forearm and elbow on table
- Place goniometer on finger, set zero
- Abduct or adduct MCP
- Read result

*Note: Ensure the little finger, wrist and elbow are always in contact with the table*