

Note: The following outcome measures have been selected as they are commonly reported in the literature, supported by expert clinical opinion and used extensively clinically.

Pain-free grip strength (PFGS):

Using a hand held dynamometer such as a Jamar, the patient is instructed to squeeze slowly until they begin to feel discomfort. Both the physiotherapist and patient should be unable to read the dial of the dynamometer during testing. The pain free grip strength is measured 3 times, with a 20-second rest interval between each measurement. Record the mean value of 3 efforts. The research for this test was done with the elbow at 0° but could be done with the elbow at 90° if grip is very painful.

Stratford P, Levy D, 1994. Assessing valid change over time in patients with lateral epicondylitis at the elbow. *Clinical Journal of Sport Medicine*; 4: 88-91.

Thomsen Test:

With the shoulder flexed to 60°, the elbow extended, the forearm pronated and the wrist extended about 30°, pressure is applied to the dorsum of the second and third metacarpal bones in the direction of flexion and ulnar deviation to stress the extensor carpi radialis brevis and longus. A positive test is pain elicited in the region of the lateral epicondyle.

Maudsley Test:

Resisted extension of the middle finger with the elbow extended. A positive test causes pain in the region of the lateral epicondyle.

Both the Thomsen and Maudsley tests can be measured using a hand held dynamometer. The score should be the mean of three readings of the amount of pressure needed for the patient to start to feel discomfort.

Details of pain rating scales

Numeric Pain Rating Scale (NPRS):

The patient is asked to rate their pain on a scale of zero to ten with zero being no pain and ten being the worst pain they can imagine.

The NPRS can be used to rate pain during the Thomsen or Maudsley's tests or while doing a specific activity such as picking up a full cup of coffee or a milk bottle.

Visual Analog Scale:

The scale consists of a line, usually 10 cm long, whose ends are labeled 'no pain' and 'unbearable pain'. The rest of the line is blank. The patient is asked to mark the line at a position that best describes their pain.

References, pain rating scales

Downie W, Leatham P, Rhind V, Wright V, Branco J, Anderson J . Studies with pain rating scales. *Ann Rheum Dis*. 1978; 37:378-381.

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