

Muscle testing may also be referred to as motor testing, muscle strength grading, manual muscle testing). It is often preferred as part of a physical exam.

Why?

- To rule out neurological deficits in patients with suspected neurological pathologies
- To assess muscle strength in patients who report weakness or clumsiness
- To assess muscle strength in patients with muscle injuries

How?

- Muscle testing is performed with the muscle of interest in a mid-range to shortened position.
- The patient is asked to hold a concentric contraction while the examiner begins to apply force gently to avoid injuring the patient, and slowly increases the amount of force until they feel the patient is maximally exerting their strength.
- Hold for at least 5 seconds or hold 1 second for ten repetitions.

Interpretation and Documentation

The following table shows the most common method of documenting muscle strength. Some sources use additional letters or symptoms to express more specific findings such as + or – after the number.

Grade	Description	Interpretation
5/5	Full strength	Normal, muscle locks into place with no give
4/5	Complete range of motion, able to resist moderate pressure	May be clinically significant depending on history and other S/Sx
3/5	Complete range of motion against gravity	Pathological: without pain suspect neurological damage or complete rupture of muscle or tendon
2/5	Complete range of motion with gravity eliminated	Pathological
1/5	Visible or palpable evidence of contraction, no joint movement	Pathological
0/5	No evidence of visible or palpable muscle contraction	Pathological

Other Considerations

- Functional movement strength (such as rising from a chair, climbing stairs) may be more valuable to track in some clinical scenarios.
- More objective measures such as dynamometry may be more valuable in to track in some clinical scenarios.
- Accuracy may be difficult to achieve: Intraobserver reliability ranges from 0.71 to 0.96 and interobserver relatability ranges from 0.72 to 0.93. It is difficult to determine small differences from side to side and on subsequent visits.
- Performance fatigability on repetitive testing may indicate neurological injury.

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References

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