Muscle Weakness Test

Patient information	
Name: Jordan Miller	**Date of birth:** March 15, 1980
Gender: Male	**Date of assessment:** July 3, 2025

Instructions

Each exercise includes step-by-step instructions on how to perform it. Follow the steps to conduct each assessment properly. Grade the performance of the patient using the Motor Strength Scale:

- **Grade 5:** Normal
- **Grade 4:** Movement against gravity and resistance
- **Grade 3:** Movement against gravity over (almost) the full range
- **Grade 2:** Movement of the limb but not against gravity
- **Grade 1:** Visible contraction without movement of the limb (not existent for hip flexion)
- **Grade 0:** No visible contraction

Upper extremities

I. Shoulder flexion

1. Have the patient sit upright with feet flat on the floor.
2. The arm to be tested should be at the side, elbow slightly flexed, and forearm pronated or supinated depending on the specific protocol.
3. Passively position the shoulder at approximately 90 degrees of flexion (lifting the arm forward) without rotation or horizontal movement.
4. The scapula should be free to move (abduct and rotate upwards)
5. Ask the patient to actively flex the shoulder to 90 degrees to confirm full range of motion and absence of pain

Grade: 4

II. Shoulder extension

1. Patient actively extends the shoulder through available range.
2. Apply resistance on the back of the distal humerus, pushing against the extension movement.
3. Patient must either:
    - Complete the full range of motion against maximal resistance (active resistance), or
    - Hold the end position against maximal resistance (break test).

Grade: 5

III. Scapula elevation

1. Patient seated, arms relaxed in lap, head turned away from test side. Therapist stands behind.
2. Feel for scapular elevators during movement.
3. Apply downward pressure on top of the shoulder.
4. Position patient prone for testing.

Grade: 3

IV. Shoulder abduction

1. Patient should be seated, shoulder positioned in the scapular plane 25 degrees anterior to frontal plane, thumb directed up.
2. Therapist is standing at test side.
3. Palpation over shoulder abductors.
4. For Grades 0-2 there is no 'gravity minimal' position for this movement.

Grade: 2

V. Elbow flexion

1. Patient is to flex the elbow. Therapist at test side.
2. Grades 2 to 5 testing - patient is seated
3. Grades 0 to 1 testing - patient is supine for 'gravity minimal' position
4. Hand positioning depends on specific muscle:
    - **Biceps:** supination
    - **Brachialis:** pronation
    - **Brachioradialis:** midposition
5. Therapists ensure wrist flexors are not contracting.
6. Palpation over intended test muscle.

Grade: 5

Lower extremities

I. Hip flexion

1. Start with the patient in a seated position on a treatment table or chair that doesn't have arm rests.
2. Have the patient put hands on the table. Do not allow the patient to grip the table, which could allow the patient to compensate and alter the test results. Have the patient's feet not touching the floor to avoid any possible compensations as well.
3. For optimal test position, the 2 joint muscles are tested at mid range while the 1 joint muscles are tested at end range to put the 2 joint muscles on active insufficiency, which isolates the 1 joint muscle being tested.
4. To test the hip flexors as a whole, therapist will bring the patient's tested leg into hip flexion at mid range and ask the patient to perform that motion without assistance.
5. To test Iliopsoas only, the physical therapist will bring the patient's tested leg into hip flexion at end range and ask the patient to perform that motion without assistance.
6. If the patient can perform the motion against gravity, continue the test in the seated position. If the patient was unable to perform the motion against gravity, put the patient in side-lying for a gravity eliminated position to test the hip flexors.
7. Apply resistance over the distal femur in a direction opposite to flexion.
8. The therapist will cross their arms, one hand on the patient's shoulder (same side as the tested hip) that will stabilize the patient and the other hand at the distal femur that will be used to apply the force against the hip flexors.

Grade: 3

II. Hip extension

1. Patient extends hip through entire available range of motion. Resistance is given straight downward toward the floor.
2. Therapist should stand at side of limb to be tested at level of pelvis.
3. The hand used to provide resistance is contoured over the posterior thigh just above the knee. The opposite hand stabilizes the pelvis laterally to maintain hip and pelvis posture.
4. For grades 4 to 5 apply resistance through distal thigh in the direction opposite to hip extension.

Grade: 4

III. Hip abduction

1. Patient actively abducts the hip
2. Therapist stands behind patient in side lying or on test side in supine.
3. Provide stabilization at the pelvis in side lying.
4. Palpation over hip abductors in supine.
5. For grades 4 and 5 provide resistance over lateral knee in the direction opposite to abduction.

Grade: 2

IV. Knee flexion

1. Patient actively flexes the knee through range.
2. Therapist to stand at test side in prone
3. If patient is in side lying, therapist to stand behind the patient support the lower leg through movement as required.
4. For grades 4 to 5 apply resistance through the distal tibia and fibula in a direction opposite to flexion To satisfy grade 5 'normal muscle' performance criteria, the patient must have the ability to move through complete range of motion (active resistance testing) OR maintain an end point range (break testing) against maximum resistance.

Grade: 4

V. Plantarflexion

1. Patient to perform plantar flexion in the form of single-limb heel raise
2. For testing gastrocnemius and soleus together:
    - Grades 3-5 - Test in standing on test leg, knee extended, patient can hold stable object such as a table or bench for balance
    - Grades 0-2 - Test in side-lying position, knee extended and ankle off plinth. ('gravity minimal' position)
3. For testing soleus only:
    - Grades 3-5 - Test in standing on test leg, knee slightly FLEXED, patient can hold stable object such as a table or bench for balance
    - Grades 0-2 - Test in side-lying with testing side knee bent to 90°.
4. For therapist: Both gastrocnemius and soleus together and soleus only:
    - Grades 3-5 - Therapist to position comfortably with a lateral view of the movement being performed
    - Grades 0-2 - Therapist to position at the feet

Grade: 3

Additional notes
Patient reports general fatigue and reduced activity level over the past 3 months. Most deficits noted in hip and shoulder girdle; suspect proximal muscle weakness consistent with deconditioning or possible early myopathy. Recommend referral for EMG testing if no improvement within 6 weeks of therapeutic exercise.

Healthcare professional information	
Name: Dr. Evelyn Santos, PT, DPT	**License ID:** PT-482730
Signature: Evelyn Santos	**Date of assessment:** July 3, 2025

Physiopedia. (2022). *Muscle strength testing*. Physiopedia. https://www.physiopedia.com/Muscle_Strength_Testing