

# THE DEFINITIVE GUIDE TO FUNCTIONAL MOVEMENTS





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An important component of every Functional Posture Analysis is the basic human functional movements. This guide provides you with a system of analysis for human functional movements.

## THE MOVEMENTS INCLUDE:

1. Squat
2. Plank
3. Straight Leg Deadlift
4. Scapular Retraction
5. Pushup
6. Arms Overhead
7. Static Jump



These movements are analyzed in a safe place, to see if they can be performed without postural collapse. If the patient is unable to perform these movements in a safe environment, they will likely hurt themselves in a stressful situation.

The basic movements of human function simulate motions that humans perform on a normal basis. For example, the inability to perform a squat in your office means the patient can be injured when getting up from a chair or when squatting down to sit on a chair.

The inability to perform a deadlift means the patient is more prone to injure themselves when bending forward and lifting an object from the ground.

Do your patients have to be athletes to do these movements? The answer is absolutely not. Yes, with our athletes we want to ensure that they are able to perform them too.

But these movements are not reserved just for athletes to be doing in the gym. Any human who cannot properly perform functional human movements is likely to experience postural decline and has an increased likelihood of injuring themselves.

When evaluating functional movements, it is best practices to take a video of the patient performing the movement for two reasons.

1. One, you can show the patient their progression as they improve throughout their treatment plan.
2. And secondly, you the Posture Expert can more specifically analyze the patient's dynamic posture.

Squats, planks, straight leg deadlifts, scapular retractions, pushups, arms overhead, and static jumps are the movements that we primarily focus on during the dynamic phase of postural analysis and postural correction.

When making the analysis you want to evaluate each Posture Quadrant to see if postural collapse is present. If you see flexion or extension anywhere of the spine, it's considered a postural fault.

Each movement has a possible score of 4, allotting one point to each posture quadrant.

- If the patient performs the functional movement without any postural collapse, they receive a score of 4.
- If they performed the movement but had forward head posture and a hyperlordosis of the lumbar spine, they would receive a score of 2.
- While taking notes in your clinic, also note in which posture quadrants postural collapse was present.
  - In relation to the previous example, if the patient has postural collapse of posture quadrants 1 and 3 it would be scored in the following manner: Overall score of 2 with collapse of PQ 1 and PQ 3.



## FUNCTIONAL MOVEMENT: SQUAT

- Cervical spine is neutral and the eyes are parallel with the horizon.
- The most common mistakes are cervical extension and jaw clenching.
- Patients will commonly look up while performing a squat putting the neck into extension
- Patients commonly clench their jaw
- Shoulders pulled back with the back straight.
- As the patient does squats down their chest should stay upright.
  - Mistakes:
    - Shoulder instability
    - Anterior chest flexion.
- Pelvis is neutral and is level from side to side
- It is much more common to see an anterior pelvic tilt
- Anterior pelvic tilt is shown as a visual hyperlordosis of the lumbar spine
- Shins are vertical with the knees over the ankles, feet are pointed forward.
- Knees and feet stay pointed forward and don't collapse to the midline.

Mistakes:

Pronation of the feet

Knees are drawn forward

Knees collapse medially





## FUNCTIONAL MOVEMENT: STRAIGHT LEG DEADLIFT

- The cervical spine should stay in a neutral position throughout the movement.
- Cervical flexion or extension as the patient lowers down or raises up is considered a postural fault.
- Thoracic spine and shoulders should be straight and in proper alignment.
- Weak Posture:
  - Scapular winging
  - Shoulder anteriority with a rounded spine
- Common compensation:
  - Arched lower back while raising back up causing a hyperlordosis.
- Movement happens at the hips with the back straight and contraction of the core musculature.
- Feet pointed forward, slightly apart, and the legs stay straight.
- They shouldn't be locked, but they should stay straight throughout the movement.





## FUNCTIONAL MOVEMENT: PLANK

- The cervical spine should be in a neutral position.
- Cervical flexion or extension is considered a postural fault.
- The patient should be able to place a rod along their spine and all places of the spine would be touching the rod with the rod parallel to the floor.
- A rod can be laid across the back and is flat against the lumbar spine.
  - If there is a gap then hyperlordosis is present.
- Common mistakes:
  - Dropping the pelvis down or arching the back and sticking their behind in the air
- Legs are straight and the knees are not bent.
- The heels stay perpendicular to the ground and do not collapse medially or laterally.





## FUNCTIONAL MOVEMENT: PUSHUPS

- The cervical spine is in a neutral position.
- Cervical flexion or extension is considered a postural fault.
- The wrists are aligned under the shoulders and the back is straight, you shouldn't see a C shaped curve.
- Common mistakes:
  - Elbows will go out laterally
  - Hands turned out
- The lower back is flat without anterior or posterior pelvic tilt.
- With weak core musculature you will commonly see a curve of the lumbar spine.
- Legs are straight and the knees are not bent.





# FUNCTIONAL MOVEMENT: SCAPULAR RETRACTIONS

- Cervical spine is neutral with the eyes parallel to the ground.
- Ear is in alignment with the shoulder.
- Common Mistakes:
  - Thoracic spine curves
  - Shoulder anteriority
  - Forward Head Posture
- Shoulders pulled back, the back straight, and the elbows close to the body.
- Common Mistakes:
  - With shoulder instability the shoulders will round forward.
  - Elbows bow out medially
- Pelvis is neutral with no anterior or posterior pelvic tilt.
- No hip rotation as they pull the arm back.
- Equal weight distribution on the right and left sides.
- Both feet are facing forward and feet are slightly apart.





## FUNCTIONAL MOVEMENT: ARMS OVERHEAD

- Neutral cervical spine
- Back of the head against the wall with the chin tucked and the eyes are parallel to the floor.
- Common Mistakes:
  - Forward head posture
  - Patient looking up
- Shoulders are pulled back and the thoracic spine is against the wall.
- When patients present with hyperkyphosis this will be very difficult for them.
- The lower back is flat against the wall and the pelvis is neutral.
- Patients who present with anterior pelvic tilt will have difficulty flattening their back.
- If there is a gap between the wall and the patient's back, there is postural collapse of this posture quadrant.
- Heels of the feet are against the wall and the toes are pointed forward.



## FUNCTIONAL MOVEMENT: STATIC JUMPS

- The cervical spine is in a neutral position.
- Eyes parallel to the floor
- Thorax is strong, meaning that the chest doesn't collapse when the patient lands.
- The thoracic spine is straight, the shoulders are back and they do not round forward as the patient lands.
- Pelvis is neutral throughout the jump and landing.
- Common mistake:
  - Anterior pelvic tilt, seen as a lumbar lordosis as the patient swings their arms back in preparation for the jump.
- Knees bend, the shins stay vertical with the knees over the ankles.
- The feet are pointed forward when the patient is in pre-jump stance and when they land.

