

# BEND-AND-LIFT ASSESSMENT PROTOCOL

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## Squat Pattern

**Objective:** To assess symmetrical lower-extremity mobility and stability and trunk mobility and stability during a bend-and-lift movement

**Equipment:**

- ▶ None

**Instructions:**

- ▶ Briefly discuss the protocol so the client understands what is required.
- ▶ Ask the client to stand with the feet shoulder-width apart with the arms hanging freely to the sides.
- ▶ Ask the client to perform five to 10 bend-and-lift movements (i.e., squats), lowering as deep as is comfortable. It is important not to cue the client to use good technique, but instead observe his or her natural movement.

**Observations:**

- ▶ Anterior view:
  - Feet: Is there evidence of pronation, supination, eversion, or inversion?
  - Knees: Do they move inward or outward?
  - Torso: How is the overall symmetry of the entire body

over the base of support? Is there evidence of a lateral shift or rotation?

▶ Side view:

- Feet: Do the heels remain in contact with the floor throughout the movement?
- Hip and knee: Does the client exhibit “glute” or “quadriceps dominance” (i.e., is the descent initiated by driving the knees forward or by pushing the hips backward)?
- Hip and knee: Does the client achieve a parallel position between the top of the thighs and the floor?
- Knee: Does the client control the descent to avoid resting the hamstrings against the calves at the bottom of the squat?
- Lumbar and thoracic spine: Does the client exhibit an exaggerated curve in the lumbar (i.e., “lumbar dominance”) or thoracic spine during the descent?
- Head: Are any changes in the position of the head observed during the movement?

**Interpretation:**

- ▶ Identify origin(s) of movement limitation or compensation.
- ▶ Evaluate the impact on the entire kinetic chain.