

The Deep Bend Diagnostic: Tuck-Retention System Test

Phase 1: The Research Protocol

- **The Central Problem:** Lower back exposure and immediate untucking when bending at the waist.
- **Problem Statement:** A measurable vertical displacement of the shirt tail occurs, but the root cause must be isolated between garment length, the trouser anchor point, or a combined system failure.
- **Primary Objective:** To mathematically diagnose whether a tuck failure is caused by an inadequate shirt center back length, an inappropriately low trouser rise, or a combination of both.

Phase 2: Isolate & Control Variables

- **Primary Independent Variables (The Suspects):**
 - *Center Back Length:* The absolute vertical fabric allowance.
 - *Trouser Rise:* The anchor point distance from the crotch seam to the waistband.
- **Secondary Modifier (Optional):**
 - *Tail Shape:* (Noted for context, but secondary to overall length).
- **Confounding Variables (The Controls):**
 - *The Motion: Instruction:* You must perform a strict 90-degree hinge at the waist with straight legs. Do not perform a deep squat, as this alters the tension on the trousers.
 - *Belt Tension: Instruction:* Fasten your belt to its standard daily tightness. Do not over-tighten to artificially trap the fabric.

Phase 3: The Quantitative Data Log (The 90-Degree Hinge)

- **The Action:** Tuck your shirt completely. Stand straight. Hinge exactly 90 degrees at the waist (as if touching your toes). Return to a standing position.
- **The Metric:** Measure the exact number of inches the center back tail has escaped from the top of the waistband.
- **The Multi-Entry Log:** Complete this matrix to isolate the failing variable.

Date	Shirt Length	Trouser Rise	Escape (Inches)	Notes

Phase 4: Quantitative Analysis (The Diagnostic Split)

Review your logged escape measurements and trouser rise to diagnose the root cause:

- **0 – 0.5 Inches (Pass):** Green Signal. Perfect system harmony.
- **1.0+ Inches with Mid/High Rise trousers (Shirt Failure):** Dark Signal. **Likely shirt-tail too short.** The trousers are providing a proper anchor point, meaning the shirt genuinely lacks the necessary physical length to remain tucked.
- **1.0 – 2.0 Inches with Low Rise trousers (Trouser/Anchor Failure):** Dark Signal. **Likely trouser anchor failure.** The low waistline compromises the anchor point, making it impossible to evaluate the shirt's length accurately without isolating the trouser variable first.
- **2.5+ Inches with Low/Mid Rise trousers (Combined Failure):** Dark Signal. **Combined system failure.** The anchor point is unstable, *and* the shirt's center back length is fundamentally too short for your torso.

Phase 5: The Testable Hypothesis & A/B Loop

- **Example Hypothesis:** "My 2-inch tail escape occurred while wearing low-rise trousers, indicating an anchor failure. **Hypothesis:** By swapping to a mid-rise trouser with the exact same shirt, I will establish a higher anchor point and reduce the tail escape to 0.5 inches or less."
- **The A/B Test Instruction:** Wear the failing shirt with your low-rise trousers and perform the hinge test. Immediately change into mid- or high-rise trousers, re-tuck the same shirt, and perform the exact same hinge.
 - *Outcome A:* If the escape drops to zero, the shirt is fine—your trousers were causing the failure.
 - *Outcome B:* If the escape remains over 1.5 inches, you have confirmed a combined failure and must also increase the shirt's center back length.