

# Persistency of Depressive Symptoms and Physical Performance in Knee Osteoarthritis

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## BACKGROUND

- Knee osteoarthritis (OA): prevalent arthritic disorder exacerbated by chronic depressive episodes.
- Depressive symptoms in knee OA associated with a decline in physical activity.
- Impact of persistent depressive symptoms on physical performance is unclear.

## OBJECTIVE

To determine how the persistence of depressive symptoms affects functional capacity in knee OA.

## METHODS

### Sample

- N=2,212 from the Osteoarthritis Initiative with radiographic knee OA (Kellgren-Lawrence grade  $\geq 2$ ).

### Measures

- Exposure: Depressive symptomology.
- Outcome: Physical performance.
- Depressive symptoms: Center for Epidemiologic Studies Depression Scale (CES-D; range = 0-60).

## ACKNOWLEDGMENTS

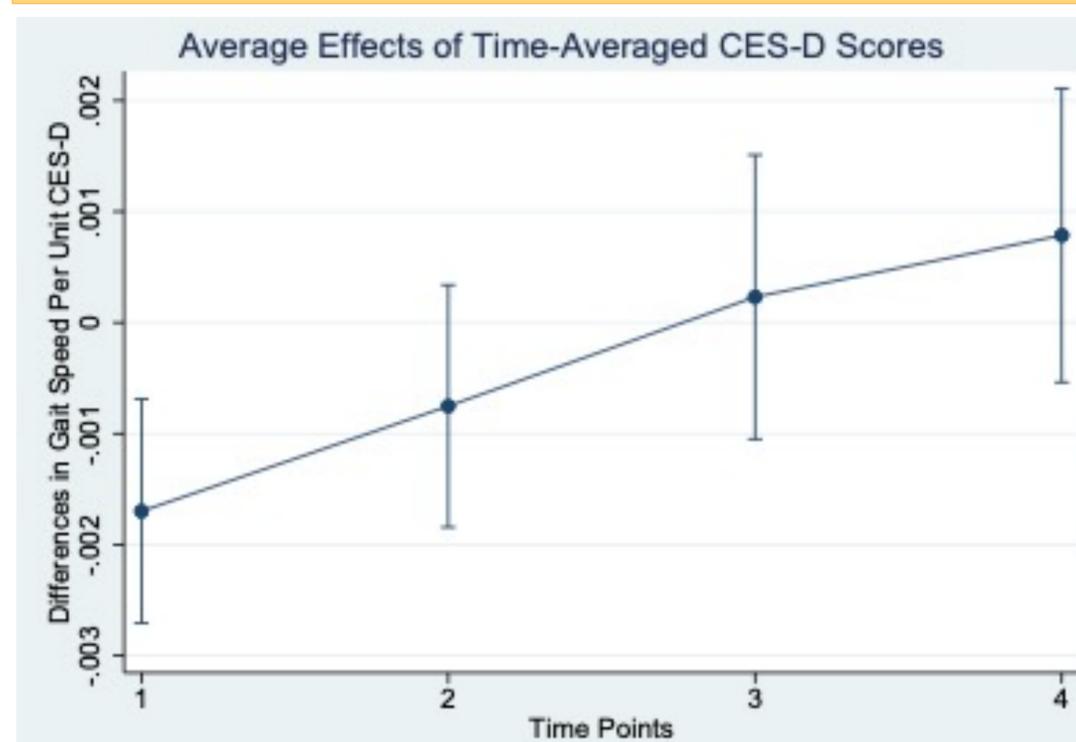
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- Persistence of depressive symptoms: average severity of symptoms over time.
- Physical performance: 20-meter gait speed (m/s) (in standard deviations).

### Statistical Analysis

- Marginal structural models with exposure by time interactions.
- Post-estimation linear combinations: time-specific exposure effects and association between persistency of depressive symptoms and gait speed

## RESULTS



**Figure 1.**

- Marginal estimates of time-averaged CES-D scores on gait speed across time.
- Interaction between averaged CES-D scores and time indicators statistically significant ( $P < 0.001$ ).
- Depressive symptoms at baseline negatively impacted gait speed at first follow-up.
- Subsequent estimates decreased in magnitude and reversed in directionality, nearing 0.

Persistence of Depressive Symptoms	Gait Speed Assessment	$\beta$	95% CI
Year 0 to Year 4	Year 1 to Year 4	-0.0018	-0.0062, 0.0027
Year 0 to Year 1	Year 1	-0.0077	-0.0125, 0.0030
Year 0 to Year 2	Year 2	-0.0033	-0.0084, 0.0019
Year 0 to Year 3	Year 3	0.0014	-0.0046, 0.0074
Year 0 to Year 4	Year 4	0.0077	0.0009, 0.0145

**Table 1.**

- Adjusted main and time-specific associations
- Adjusted slopes demonstrating the same trend as marginal estimates.
- Year 0: Baseline

## CONCLUSION

- The negative effect of depressive symptoms on physical performance decreases over time.
- Previous findings show an association between gait speed and mortality; thus, small differences in physical performance are clinically relevant.
- Due to long follow-up intervals, current results may underestimate the magnitude of this relationship.