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Everyday Emotional Dynamics in the Depression–Inflammation Link

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This cohort panel study examined whether daily affective dynamics serve as mechanisms underlying bidirectional and longitudinal associations between depressive symptoms and inflammation. Data were drawn from the second and third waves of the Midlife in the United States (MIDUS) study and included 563 adults who participated in both the Daily Diary and Biomarker Projects ($M_{\text{age}} = 52.4$; 57% female; 84% White). Depressive symptoms were assessed using the CESD-20. Inflammatory markers included C-reactive protein (CRP) and four cytokines (IL-6, IL-8, TNF- α , IL-10), combined into a composite index for primary analyses. Daily affect and stress were assessed across eight consecutive days, from which two affect dynamics indicators were derived: affective variability and affective reactivity to daily stressors. Multilevel structural equation models simultaneously estimated person-level autoregressive and cross-lagged associations between depressive symptoms and inflammation, along with day-level mediated pathways involving daily affect dynamics. Results indicated that affective variability and stress reactivity mediated the autoregressive stability of depressive symptoms across waves. Positive affective variability mediated the pathway from higher baseline depressive symptoms to elevated CRP at follow-up, whereas negative affective reactivity to daily stressors mediated the pathway from higher baseline CRP to increased subsequent depressive symptoms. These findings identify daily affective processes as key mechanisms linking depressive symptoms and inflammation over time, highlighting the importance of promoting affective stability and adaptive stress responses in everyday life to support long-term mental and physical health.