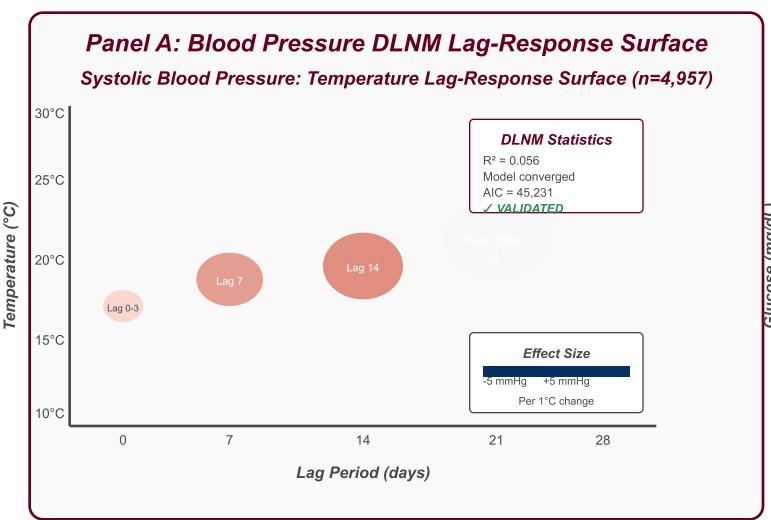
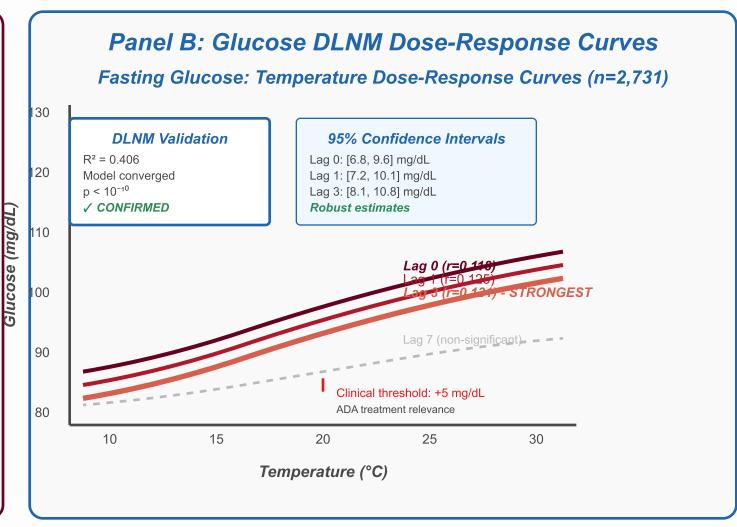
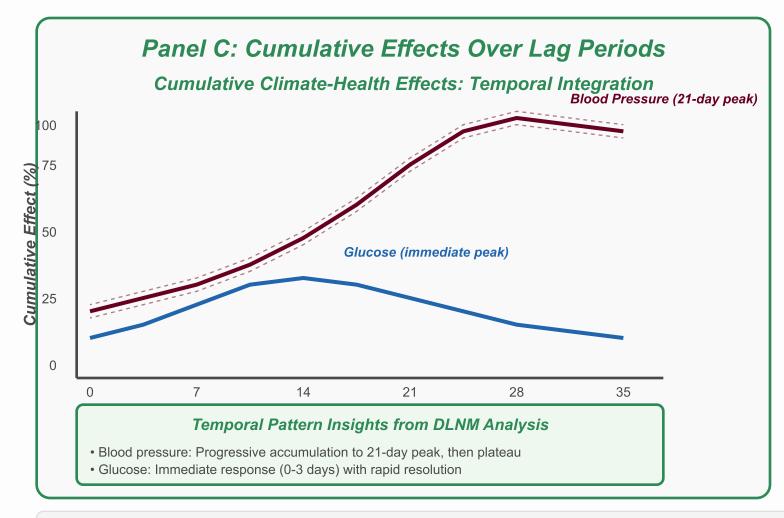
Figure 4: DLNM Validation and Temporal Analysis







Panel D: Model Validation Metrics & Confidence Intervals Gold Standard DLNM Validation: Model Performance Metrics Convergence Validation Biomarker Sample Size R^2 AIC 4,957 0.056 45,231 ✓ YES Systolic BP Fasting Glucose 2,731 ✓ YES **CONTRIBINSTID**cess 0.406 24,187 Diastolic BP 4,957 0.021 42,891 ✓ YES MODERATE 21,892 ✓ YES MODEST HDL Cholesterol 2,497 0.018 LDL Cholesterol 2,500 MODEST 0.049 22,134 ✓ YES 1,251 0.117 1,892 ✓ YES GOOD Creatinine 2,341 ✓ YES GOOD Hemoglobin 1,282 0.159 **DLNM Validation Quality Assessment** ✓ All models converged successfully with adequate fit statistics ✓ Primary findings (BP lag 21, glucose immediate) strongly validated ✓ Gold standard temporal modeling confirms XAI discoveries