Statistical visualisation tool development in Mathematica for longitudinal data analysis

Hulmán A[1], Karsai J[1], Nyári TA[1], Tabák AG[2,3], Witte DR[4]

[1]University of Szeged, Szeged, Hungary, [2]University College London, London, United Kingdom, [3]Semmelweis University, Budapest, Hungary and [4]Steno Diabetes Center A/S, Gentofte, Denmark.

The translation of statistical models into a clinical setting is usually not simple when the model includes interactions and nonlinear associations between time-varying variables. We introduce the problem with a case-study from diabetes epidemiology. A large longitudinal dataset was analysed with multilevel models to assess fasting and 2h plasma glucose trajectories during 18 years of follow-up, with adjustment for time-varying covariates. An interactive application was developed in Wolfram Mathematica to enhance the interpretation of the results.