

Group #15

Featurization of long term CGM data to characterize menstrual cycle patterns in female patients with diabetes

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Pivoting from solely patient-driven feedback, continuous glucose monitoring (CGM) offers potential for data-driven treatment approaches for patients with diabetes. Previous studies show menstrual phases affect glucose regulation, raising the need to characterize menstrual rhythms within CGM data for proper intervention plans. This study enlists 15,999 diabetic individuals with labels for age, sex, diabetes type, and treatment method. Following data cleaning via a self-developed algorithm, signal processing methods were utilized to characterize cyclicity. Our findings indicate that daily statistical aggregates, rather than complex multimodal features, best model the monthly cyclicity unique to menstruating women: with heterogeneity between individuals and cyclical features offering future analysis to assess translatability into machine learning models.