

Supplementary Material

The Time in range Estimation in Type 2 Diabetes Patients is advanced by incorporating with Fasting and Postprandial Glucose Levels

Authors

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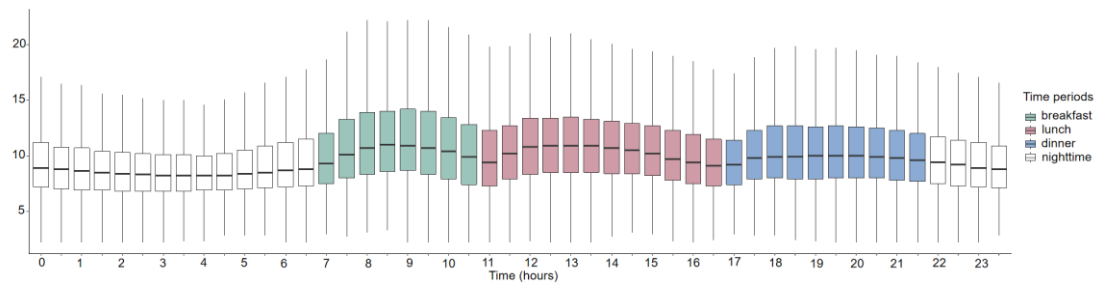
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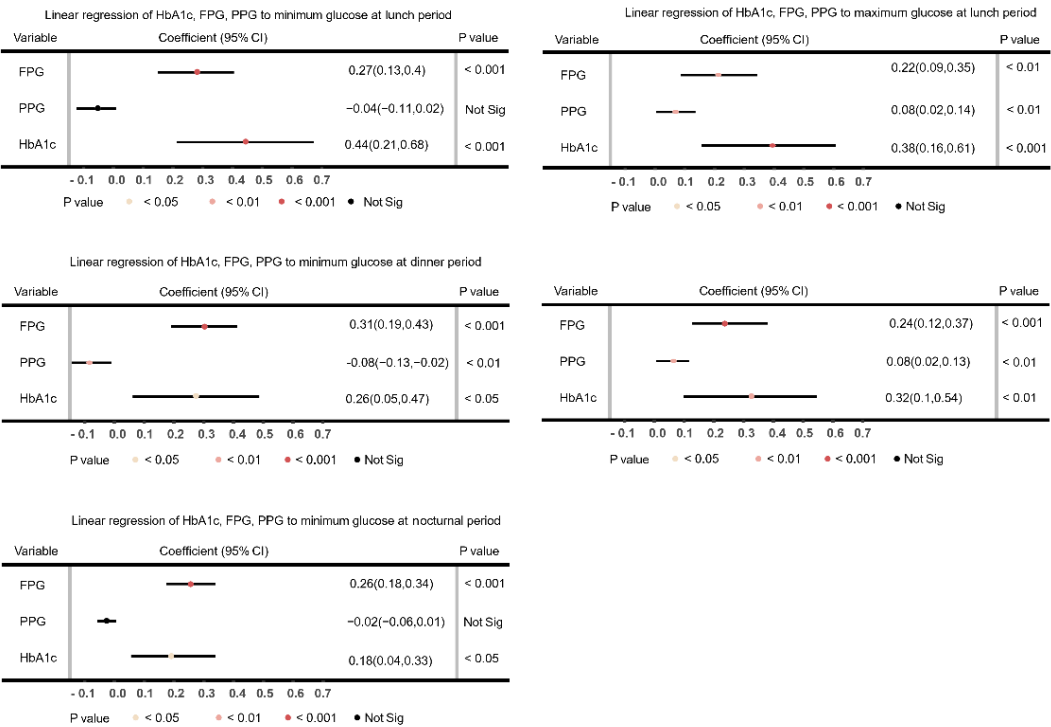
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Supplementary Figure S1. General glucose profiles (mean $\pm$ SE). Each natural day was divided into bin units (1 bin=1 h), and the mean glucose concentration in each bin was presented. Peak and Trough glucose referred to the lowest and highest glucose concentration during each meal's consumption and during nocturnal periods (while ensuring that the time of trough glucose was earlier than that of peak glucose).



Supplementary Figure S2. Linear regression analysis results of HbA1c, FPG, PPG as related to Trough (left) & Peak (right) glucose concentrations at lunch, dinner and the nocturnal period.



FPG fasting plasma glucose, *PPG* postprandial plasma glucose

Supplementary Table 1 Performance of the TIR prediction model in the general population (with additional variable)

Models	Correlation (95% CI)	RMSE	MAE	MSE
Random Forest (PPG-FPG, FPG, PPG, HbA1c)	0.76 (0.76, 0.76) ^{a,b}	18.57 ^{a,b}	15.08 ^{a,b}	346.04 ^{a,b}
Linear Model (PPG-FPG, FPG, PPG, HbA1c)	0.71 (0.69, 0.72) ^{a,c}	20.29 ^{a,c}	16.62 ^{a,c}	413.09 ^{a,c}
Linear Model (HbA1c) [31]	0.61 (0.58, 0.63) ^{b,c}	25.45 ^{b,c}	20.47 ^{b,c}	651.78 ^{b,c}

a, P value < 0.05 in comparison of Random Forest (PPG-FPG, FPG, PPG, HbA1c) vs. Linear Model (PPG-FPG, FPG, PPG, HbA1c)

b, P value < 0.05 in comparison of Random Forest (PPG-FPG, FPG, PPG, HbA1c) vs. Linear Model (HbA1c) [31]

c, P value < 0.05 in comparison of Linear Model (PPG-FPG, FPG, PPG, HbA1c) vs. Linear Model (HbA1c) [31]

Supplementary Table 2 Example for TIR estimation in general population model

For sample 1-4, those are the subjects that we have CGM data and other glycemic profiles available. The estimated TIR is close to the CGM derived TIR in most cases. For sample 5-8, their CGM data is not available.

Sample	CGM derived TIR (%)	FPG (mmol/L)	PPG (mmol/L)	HbA1c (%)	Estimated TIR (%)
1	56.9	9.2	15.2	8.3	57.1
2	52.4	9	15.7	8.2	63.6
3	75.4	8.7	13.8	7.9	70.7
4	67.2	8.8	13.6	7.9	70.5
5	NA	9.8	17.8	8.3	42.5
6	NA	9	14.3	7.2	74.8
7	NA	9.8	18.9	8.3	42.7
8	NA	9.3	13.7	7.5	75.1