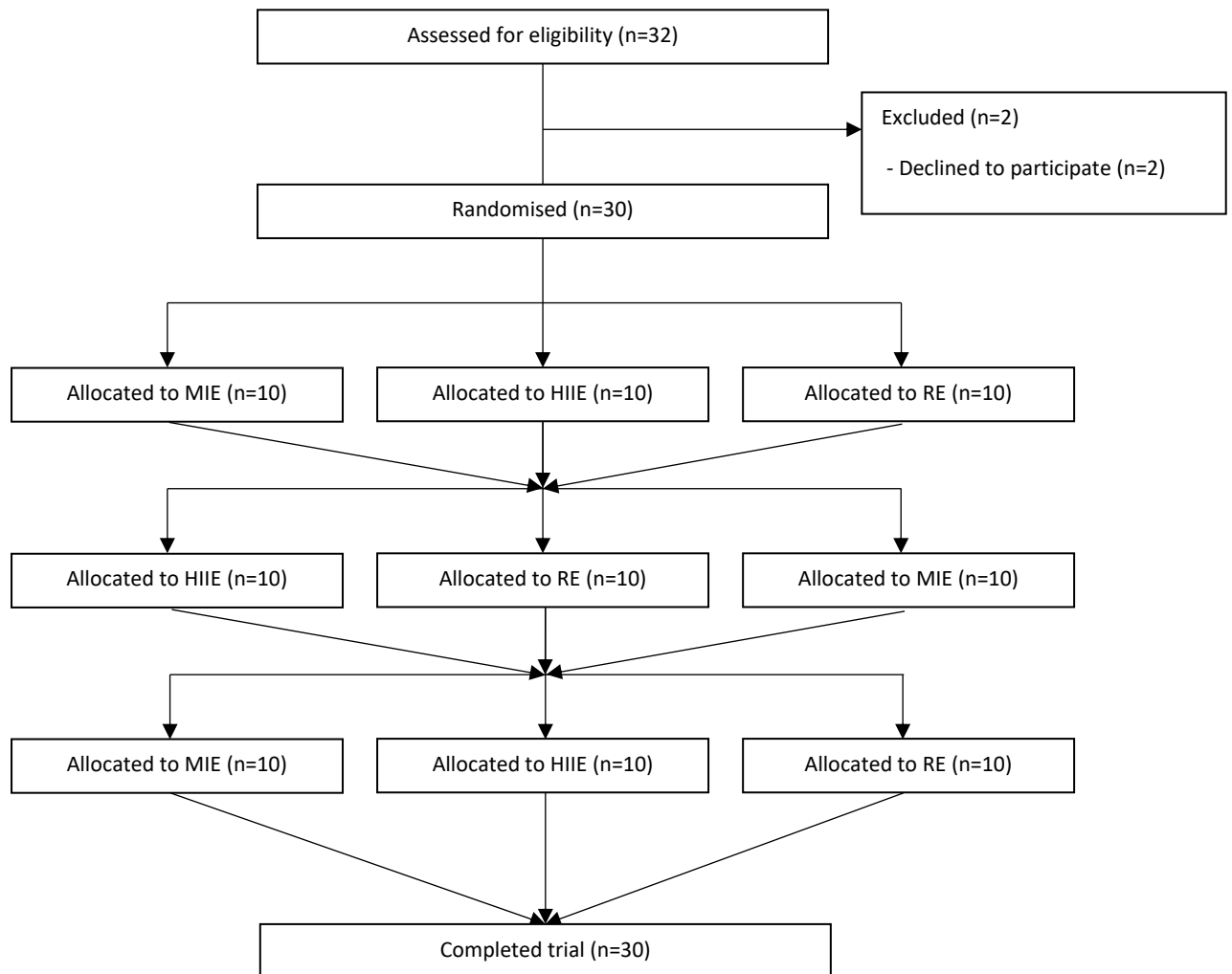
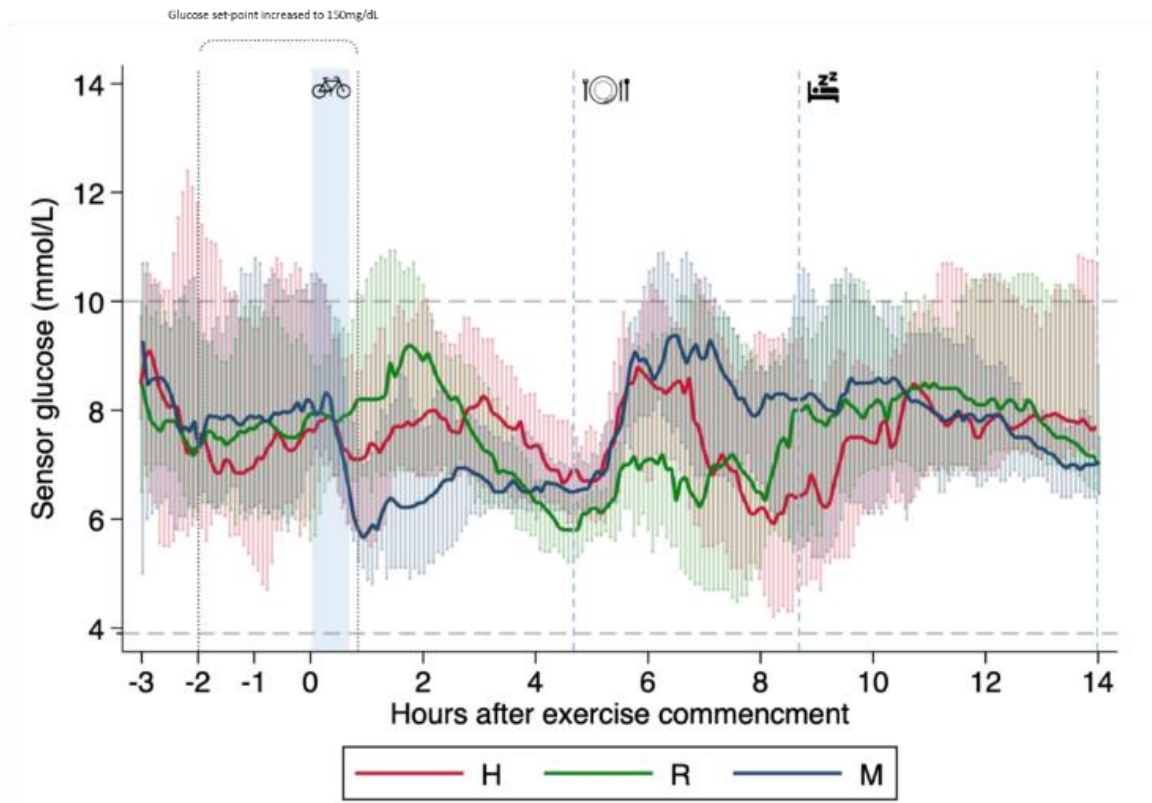


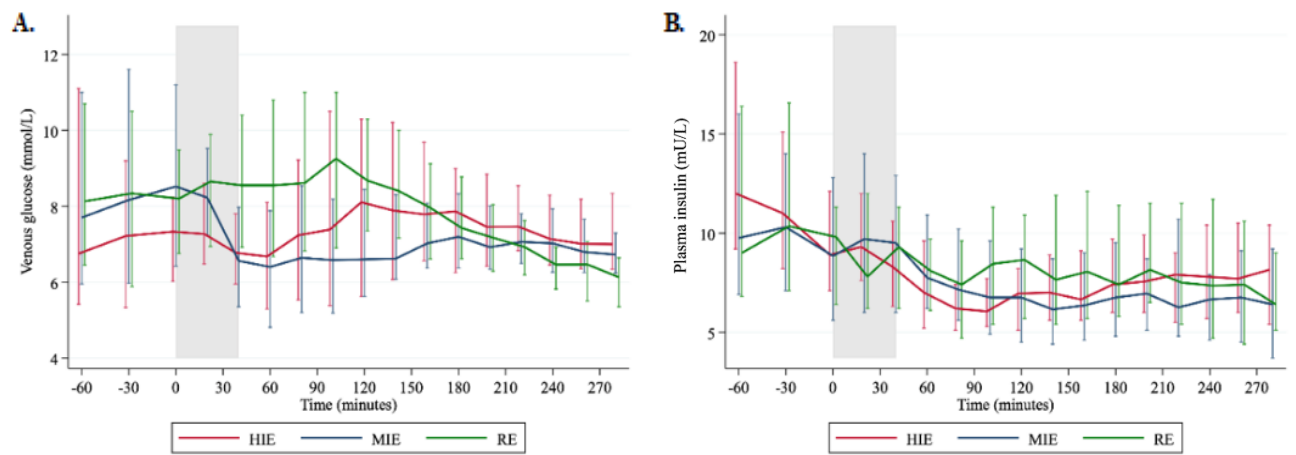
SUPPLEMENTARY MATERIAL



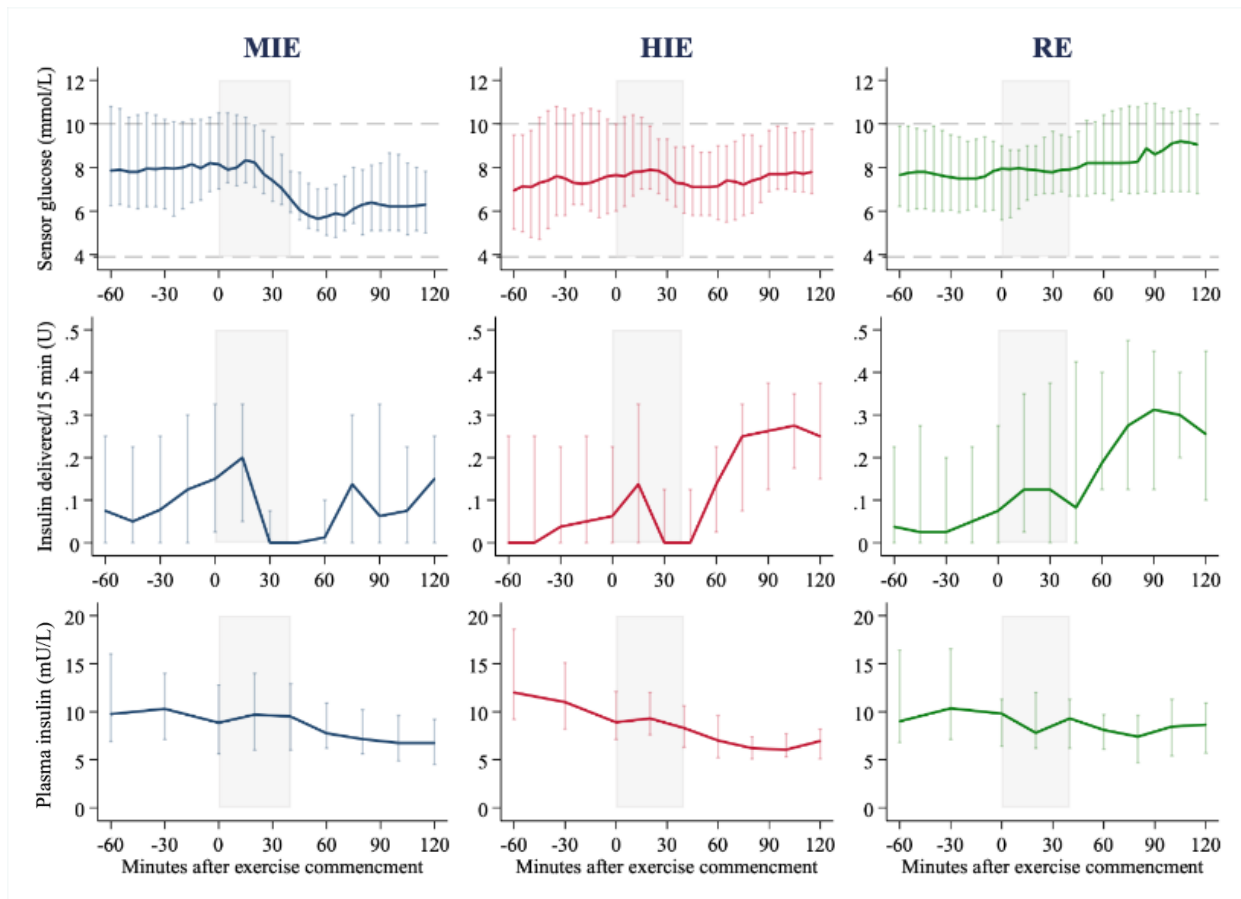
Supplementary Figure 1: Participant flow diagram.



Supplementary Figure 2: Continuous Glucose Monitoring profiles for High Intensity Exercise (red line), Resistance Exercise (green line) and Moderate Intensity Exercise (blue line) for the 14 hours following exercise commencement. Results presented are median and interquartile range.



Supplementary Figure 3: Changes in A: Venous glucose and B: Plasma insulin for -60 min to 280 min post-exercise commencement for High Intensity Exercise (HIE); Moderate Intensity Exercise (MIE) and Resistance Exercise (RE).



Supplementary Figure 4: Sensor glucose, insulin delivery and plasma insulin for High Intensity Exercise (HIE); Moderate Intensity Exercise (MIE) and Resistance Exercise (RE).

Characteristic	n=30
Age (yrs)	38 ± 9
Sex (M F)	16 14
BMI (kg.m ⁻²)	26.3 ± 3.4
Duration of diabetes (yrs)	22.6 ± 10.2
Duration of insulin pump therapy (yrs)	9.8 ± 4.5
Total daily insulin (units.kg ⁻¹ .day ⁻¹)	0.54 ± 0.20
Basal proportion of daily insulin (%)	49.9 ± 11.3
HbA1c (mmol/mol)	54 ± 11
HbA1c (%)	7.1 ± 1.0
Max heart rate (bpm)	177 ± 9
VO ₂ peak (ml.kg ⁻¹ .min ⁻¹)	37.5 ± 11.1
Maximal power (watts)	244 ± 91

Supplementary Table 1: Participant characteristics. Continuous data are presented as mean +/- SD. Categorical data are presented as frequency (%).

Exercise Order	Number
HIE-MIE-RE	5
HIE-RE-MIE	3
MIE-HIE-RE	3
MIE-RE-HIE	9
RE-HIE-MIE	5
RE-MIE-HIE	5

Supplementary Table 2: Order in which exercise interventions were implemented.

Factor	Value
N	30
% time glucose 70-180 mg/dL	72.2 (65.5, 80.7)
% time glucose 70-140 mg/dL	45.0 (39.9, 52.9)
% time glucose <70 mg/dL	1.8 (0.8, 3.4)
% time glucose <54 mg/dL	0.25 (0.00, 0.75)
% time glucose >180 mg/dL	25.2 (17.7, 32.0)
% time glucose >250 mg/dL	4.1 (0.8, 8.8)
Mean glucose (mmol/L)	8.4 (8.0, 9.0)
Coefficient of variation (%)	33.0 (29.3, 36.4)

Supplementary Table 3: Baseline continuous Glucose Monitoring (CGM) metrics 4 days prior to first exercise. Results are reported as median (IQR).