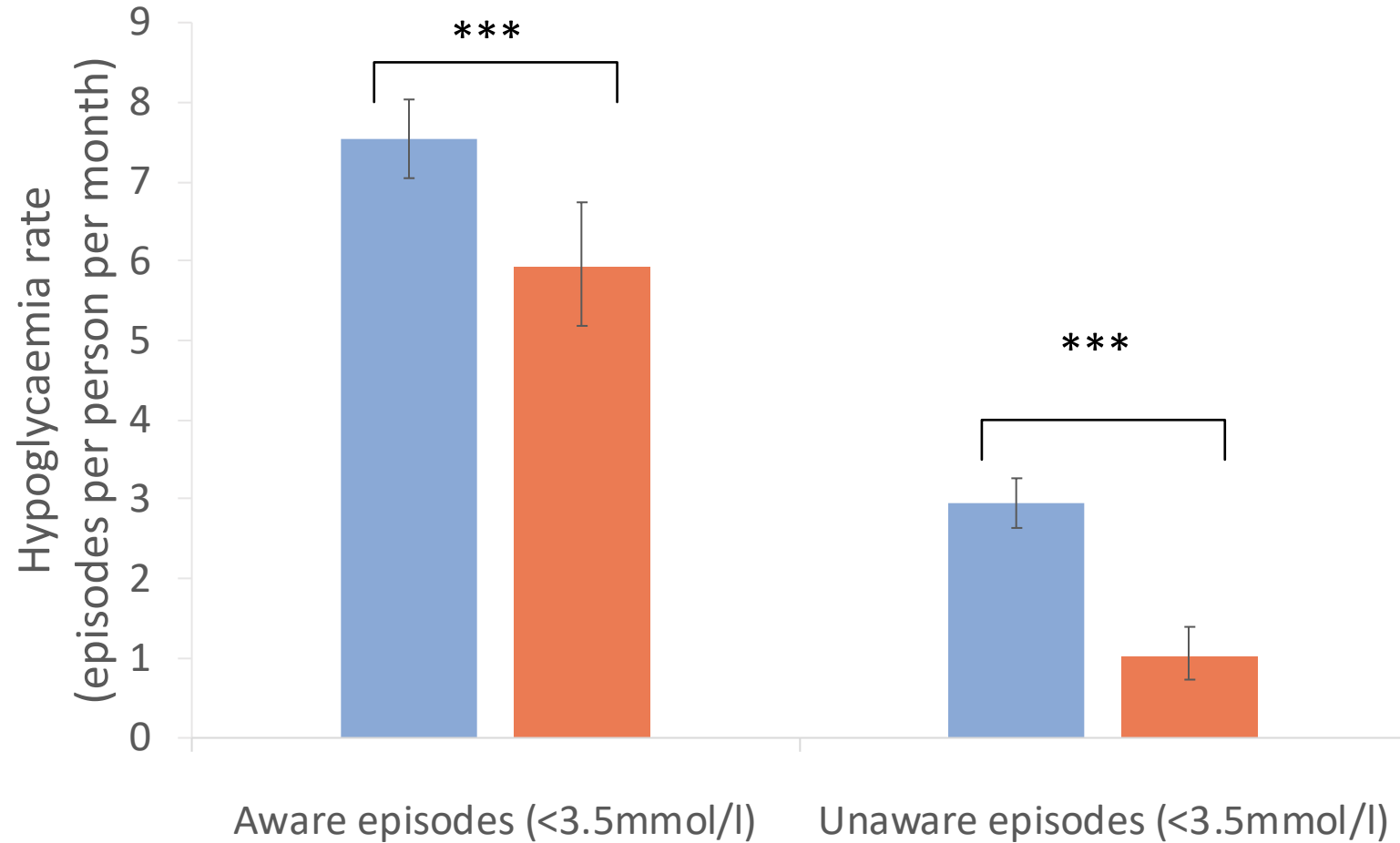


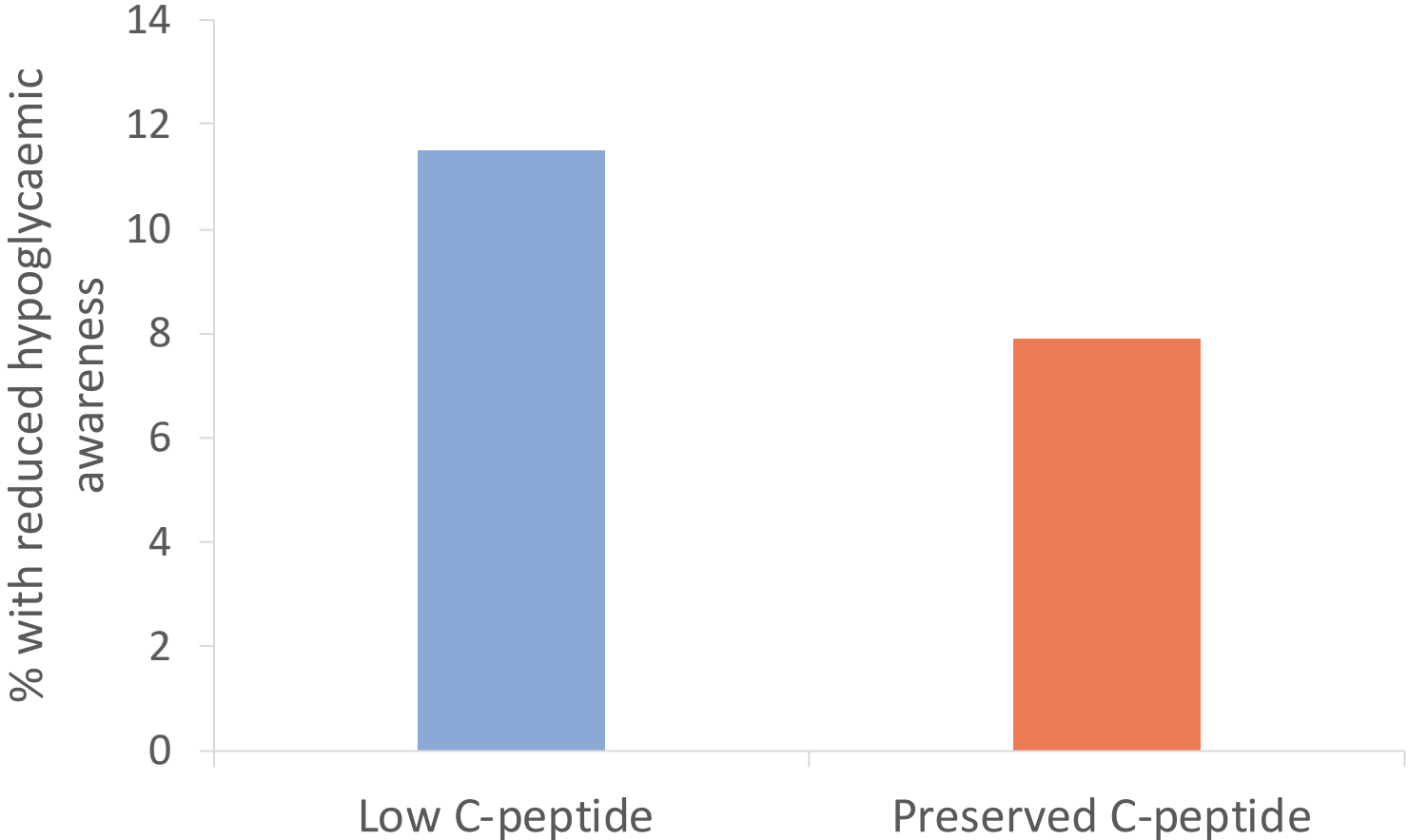
**Table S1** – Hypoglycaemia analysis cohort characteristics. Values reported as n (%) or median (IQR). *p* values are Mann Whitney U unless otherwise stated, \* denotes Chi<sup>2</sup>.

<b>Characteristics</b>	<b>Low C-peptide</b>	<b>Preserved C-peptide</b>	<b><i>p</i> value</b>
<b>No. of participants</b>	121	39	-
<b>No. Male (%)</b>	69 (57)	17 (44)	0.1*
<b>Age at diagnosis (years)</b>	5.7 (2.9, 10.8)	15.0 (12.2, 24.0)	<0.0001
<b>Age at recruitment (years)</b>	18.4 (13.5, 34.5)	29.3 (20.4, 43.0)	0.0004
<b>BMI (kg/m<sup>2</sup>)</b>	23.3 (19.6, 26.2)	24.5 (22.1, 27.4)	0.02
<b>BMI standard deviation score</b>	0.9 (0.1, 1.4)	0.8 (0.3, 1.5)	0.8
<b>Duration of diabetes (years)</b>	12.6 (8.3, 20.8)	12.1 (7.5, 21.4)	0.4
<b>C-peptide (pmol/l)</b>	<3 (<3, <3)	108 (37, 208)	<0.0001
<b>HbA1c (mmol/mol)</b>	67 (57, 75)	68 (59, 80)	0.4
<b>HbA1c (%)</b>	8.3 (7.4, 9.0)	8.4 (7.5, 9.5)	0.4
<b>Insulin dose in 24 h (U/kg)</b>	0.80 (0.67, 0.95)	0.71 (0.55, 0.94)	0.09
<b>No. in hypoglycaemia awareness analysis</b>	113	38	-

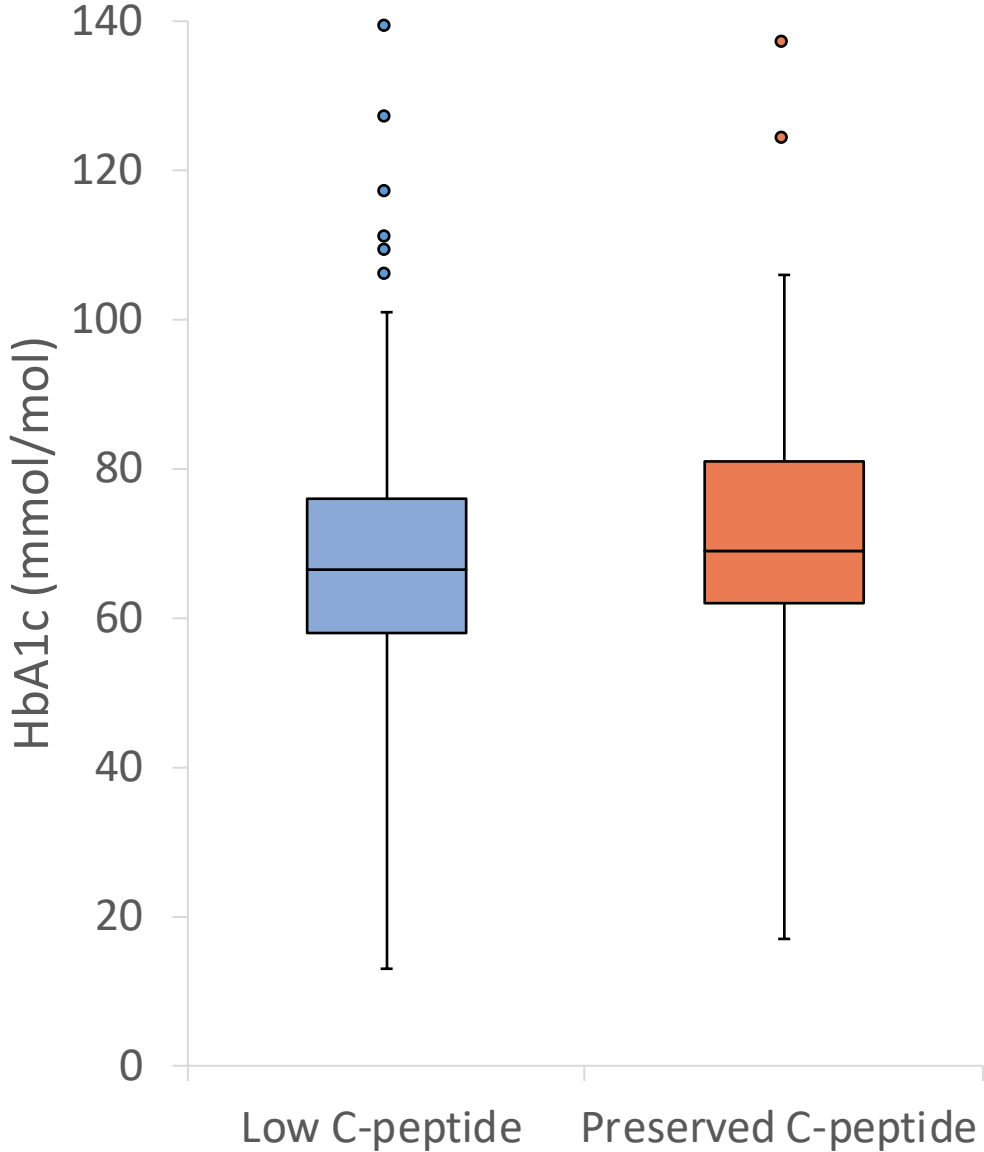
**Fig. S1** – Hypoglycaemia rates by C-peptide group. Number of hypoglycaemic (blood glucose <3.5mmol/l) episodes per month stratified by aware and unaware episodes. Rates derived from Clarke's questions 5 and 6. Low C-peptide group in blue (aware n=120, unaware n=119) and preserved C-peptide group in orange (n=39). \*\*\*p≤0.001 for low vs preserved C-peptide. Error bars represent 95% CI.



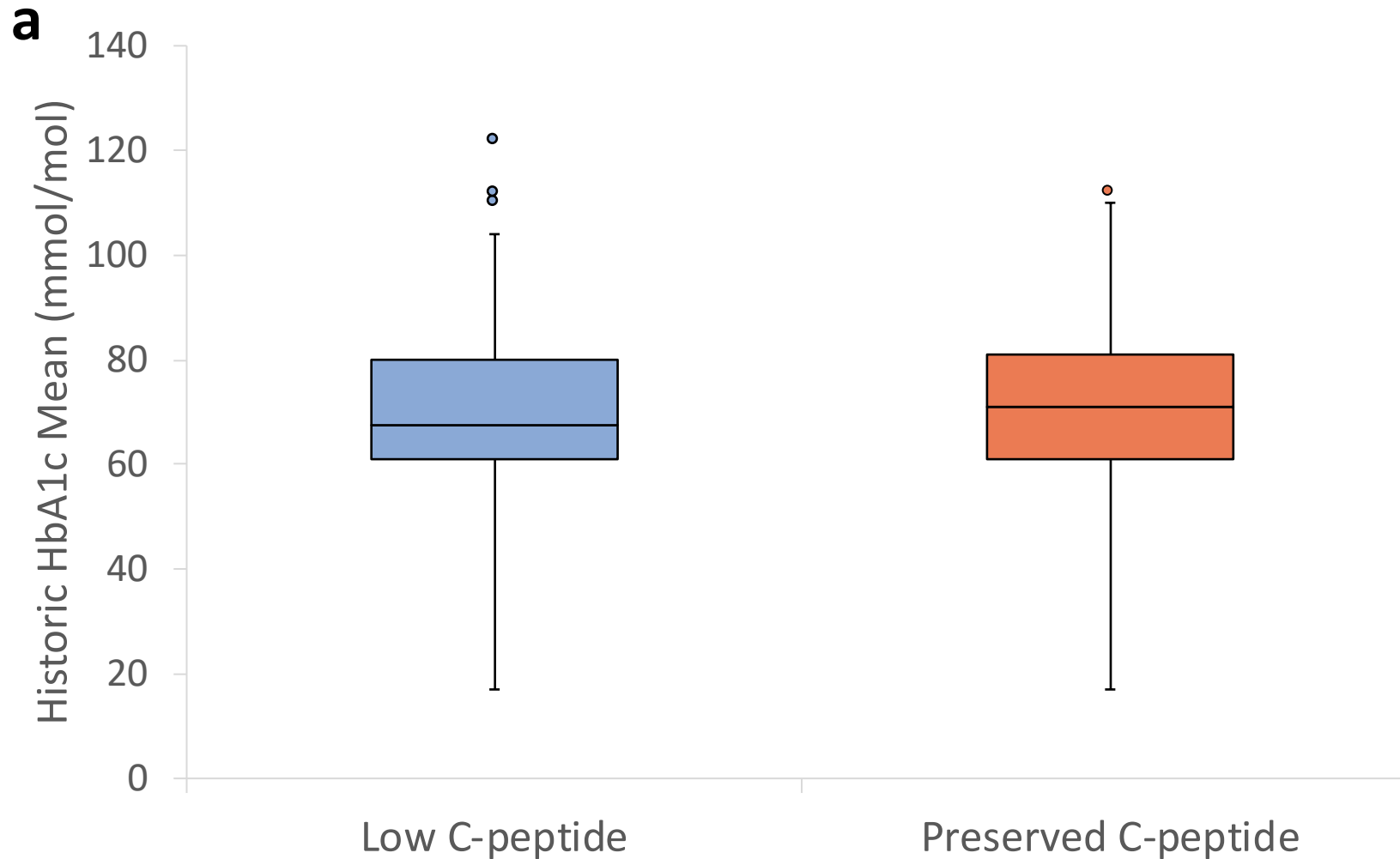
**Fig. S2** – Reduced hypoglycaemic awareness by C-peptide group. Proportion of the low (blue, n=113) or preserved (orange, n=38) C-peptide group with reduced hypoglycaemic awareness, defined as a Clarke score >4/7. Hypoglycaemic awareness was similar in both groups, p=0.5.



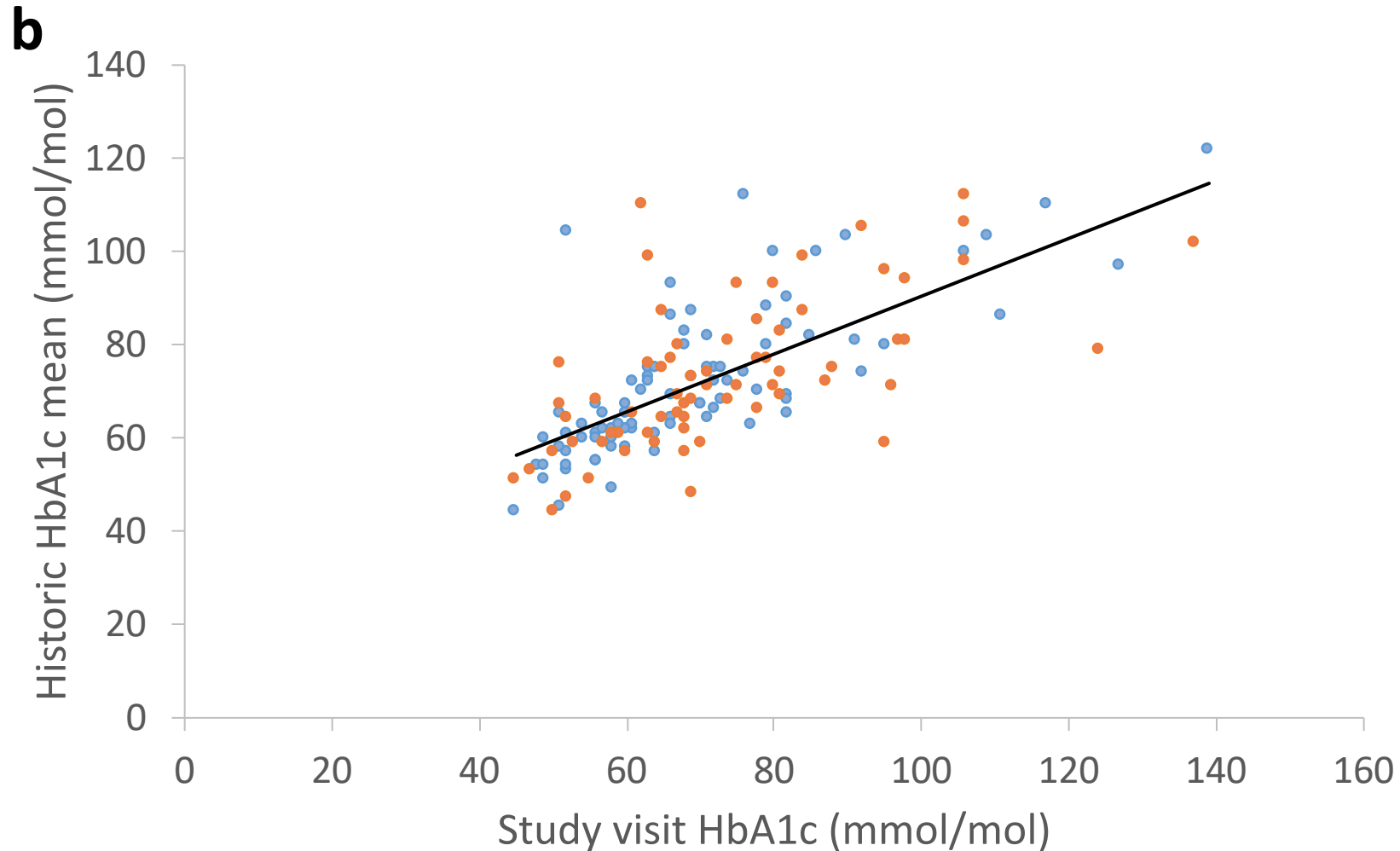
**Fig. S3** – Boxplot of study visit HbA1c by C-peptide group. Study visit HbA1c was similar in the low (n=148) and preserved (n=70) C-peptide groups p=0.06. Including outliers.



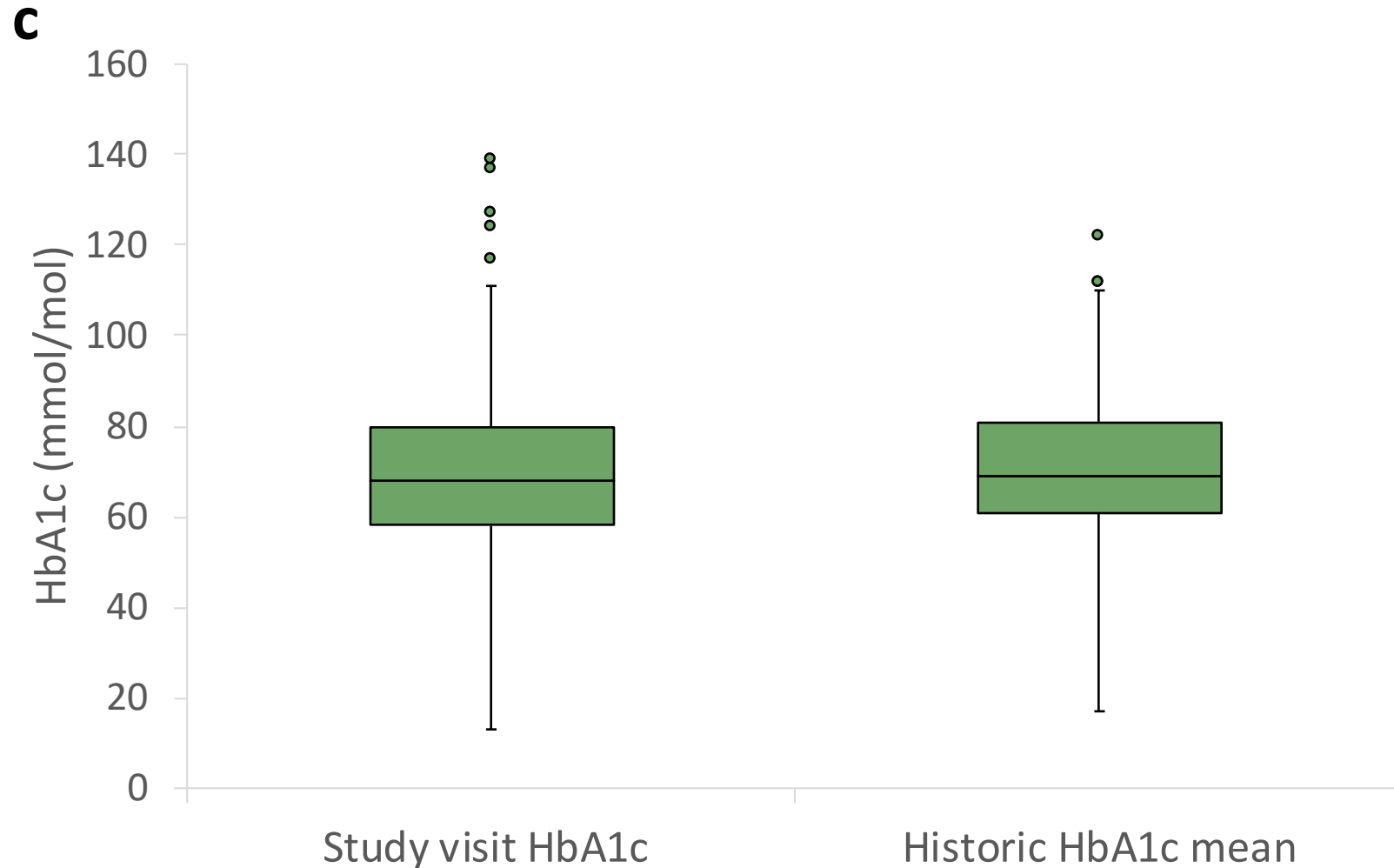
**Fig. S4** - Historic HbA1c mean analysis **(a)** Boxplot showing similar historic HbA1c mean in low (n=86) vs preserved (n=67) C-peptide group, p=0.4. **(b)** Scatter graph of study visit HbA1c and historic HbA1c mean (n=153). Spearman's rho = 0.72, p<0.0001. Low C-peptide group (n=86) shown in blue and preserved C-peptide group (n=67) in orange. **(c)** Boxplot showing similar study visit HbA1c (n=153) vs historic HbA1c mean (n=153), p=0.1.



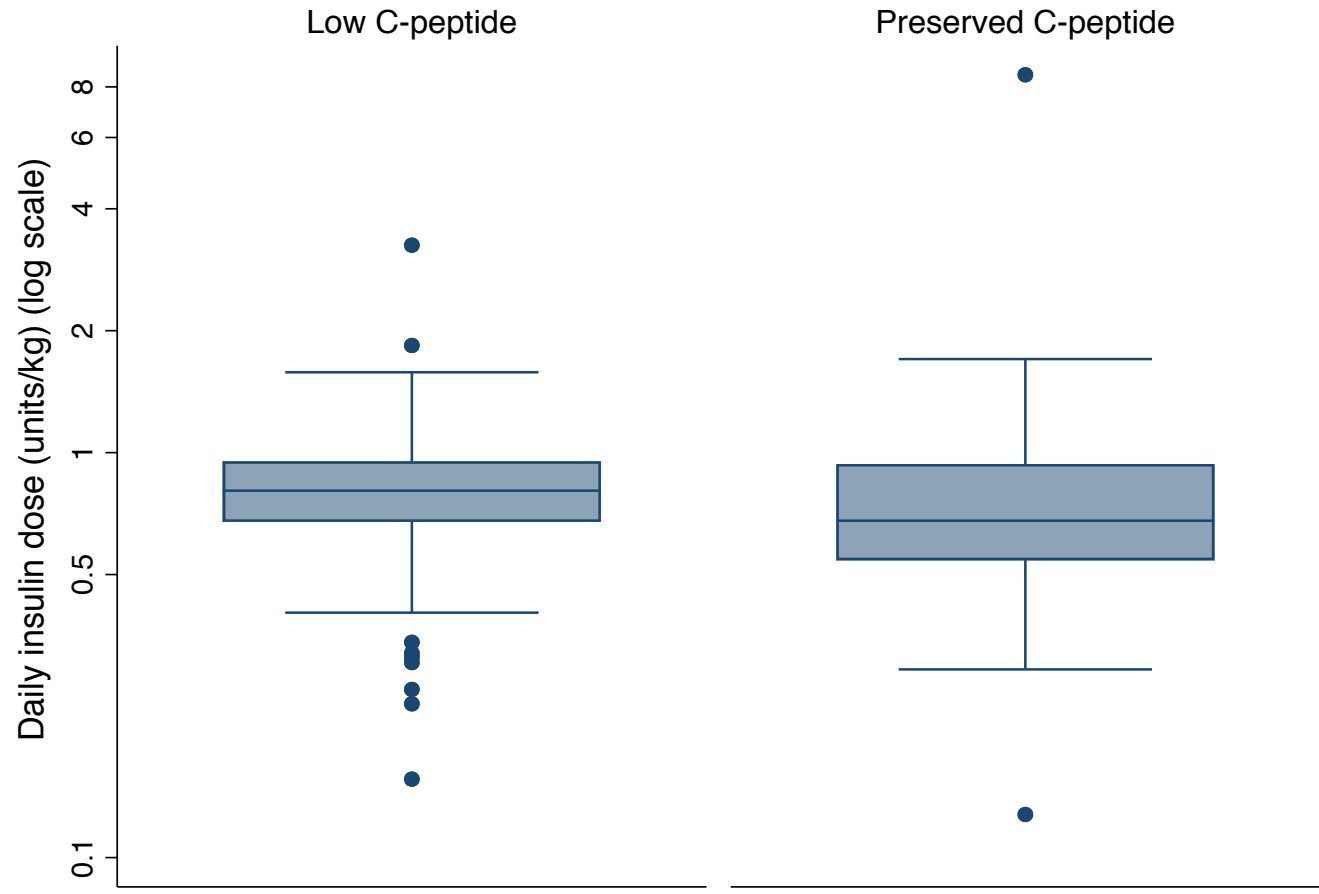
**Fig. S4** - Historic HbA1c mean analysis **(a)** Boxplot showing similar historic HbA1c mean in low (n=86) vs preserved (n=67) C-peptide group,  $p=0.4$ . **(b)** Scatter graph of study visit HbA1c and historic HbA1c mean (n=153). Spearman's  $\rho = 0.72$ ,  $p<0.0001$ . Low C-peptide group (n=86) shown in blue and preserved C-peptide group (n=67) in orange. **(c)** Boxplot showing similar study visit HbA1c (n=153) vs historic HbA1c mean (n=153),  $p=0.1$ .



**Fig. S4** - Historic HbA1c mean analysis **(a)** Boxplot showing similar historic HbA1c mean in low (n=86) vs preserved (n=67) C-peptide group, p=0.4. **(b)** Scatter graph of study visit HbA1c and historic HbA1c mean (n=153). Spearman's rho = 0.72, p<0.0001. Low C-peptide group (n=86) shown in blue and preserved C-peptide group (n=67) in orange. **(c)** Boxplot showing similar study visit HbA1c (n=153) vs historic HbA1c mean (n=153), p=0.1.



**Fig. S5** – Boxplot of daily insulin dose by C-peptide group. Insulin dose was lower in the preserved C-peptide group (n=70) vs the low (n=151) group, p=0.01. Including outliers.





**Table S2** - Complication analysis cohort characteristics. Values reported as n (%) or median (IQR). *p* values are Mann Whitney U unless otherwise stated, \* denotes Chi<sup>2</sup>.

<b>Characteristics</b>	<b>Low C-peptide</b>	<b>Preserved C-peptide</b>	<b><i>p</i> value</b>
<b>No. of participants (%)</b>	81	59	-
<b>No. Male (%)</b>	46 (57)	23 (39)	0.04*
<b>Age at diagnosis (years)</b>	10.9 (5.2 15.2)	17.0 (12.5, 23.8)	<0.0001
<b>Age at recruitment (years)</b>	34.4 (23.2, 47.9)	34.1 (26.1, 43.6)	0.8
<b>BMI (kg/m<sup>2</sup>)</b>	24.5 (22.5, 27.2)	25.5 (22.5, 27.3)	0.6
<b>BMI standard deviation score</b>	1.0 (0.4, 1.5)	1.0 (0.3, 1.5)	0.9
<b>Duration of diabetes (years)</b>	21.3 (12.4, 37.8)	14.1 (7.8, 23.2)	0.001
<b>C-peptide (pmol/l)</b>	<3 (<3, 4)	135 (57, 314)	<0.0001
<b>HbA1c (mmol/mol)</b>	66 (58, 78)	69 (63, 81)	0.08
<b>HbA1c (%)</b>	8.2 (7.5, 9.3)	8.5 (7.9, 9.6)	0.08
<b>Insulin dose in 24 h (U/kg)</b>	0.75 (0.59, 0.88)	0.67 (0.54, 0.92)	0.2
<b>No. in retinopathy analysis</b>	74	56	-
<b>No. in microalbuminuria analysis</b>	69	51	-

**Fig. S6** – Rates of retinopathy and microalbuminuria by C-peptide group. Proportion of C-peptide group with retinopathy in blue; background in dark blue, pre-proliferative in medium blue, proliferative in light blue. Proportion with retinopathy was similar in the low (n=55/74) vs preserved C-peptide group (n=37/56), p=0.3. Proportion of C-peptide group with microalbuminuria (green); similar in low (n=16/69) and preserved (n=10/51) C-peptide groups, p=0.6.

