

SUPPLEMENTARY DATA

**Supplementary Material A)** Hypoglycemia awareness status assessed by 3 different validated methods.

<b>Method of hypoglycemia unawareness classification</b>	<b>Aware</b>	<b>Unaware</b>
Pedersen-Bjergaard method (10): (N) “Can you feel when you are low?” <ul style="list-style-type: none"> <li>• Always (aware)</li> <li>• Usually (impaired awareness)</li> <li>• Sometimes (unaware)</li> <li>• Never (unaware)</li> </ul>	9 (100%) - - -	- - 11 (79%) 3 (21%)
Gold method (11): ”Do you know when your hypos are commencing?” (median (min-max))*	1 (1-2)	5.5 (4-7)
Clarke method (12): Eight questions regarding exposure to moderate and severe hypoglycemia and the glycaemic threshold as well as the symptomatic responses to hypoglycemia. <ul style="list-style-type: none"> <li>• <math>\leq 2</math> R (reduced awareness)= aware (N)</li> <li>• <math>\geq 4</math> R (reduced awareness) = impaired awareness (N)</li> </ul>	9 (100%) -	- 14 (100%)

\*) 7-point Likert scale where 1 is always and 7 is never. A score of  $\geq 4$  implies impaired awareness.

SUPPLEMENTARY DATA

**Supplementary Material B)** Results of the quantitative EEG analyses including the absolute amplitude and centroid frequency (CF). The results originate from quantitative EEG analyses on 5-min EEG recordings under standardized conditions from the C3-P3 electrodes. Results were analyzed by repeated measures ANOVA. Variables are described as mean (SEM).

	Normo-glycaemia (1)	Hypo-glycaemia (2)	Recovery (3)	Dif between 1 and 2 (p value)	Dif between 1 and 3 (p value)
<b>Aware</b>					
log (Absolut amplitude Alpha, $\mu$ V)	1.88 (0.20)	1.93 (0.16)	1.95 (0.17)	0.5	0.5
log (Absolut amplitude Theta, $\mu$ V)	1.47 (0.18)	1.72 (0.17)	1.65 (0.16)	0.003	0.049
log (Absolut amplitude Alpha-theta, $\mu$ V)	2.44 (0.19)	2.57 (0.16)	2.56 (0.14)	0.04	0.2
CF Alpha (Hz)	10.1 (0.10)	10.1 (0.06)	10.1 (0.06)	0.6	0.98
CF Theta (Hz)	5.92 (0.05)	5.95 (0.05)	5.93 (0.04)	0.5	0.8
CF Alpha-Theta (Hz)	8.37 (0.10)	8.20 (0.10)	8.28 (0.14)	0.06	0.3
<b>Unaware</b>					
log (Absolut amplitude Alpha, $\mu$ V)	2.16 (0.17)	2.2 (0.15)	2.14 (0.18)	0.5	0.7
log (Absolut amplitude Theta, $\mu$ V)	1.43 (0.14)	1.79 (0.14)	1.56 (0.14)	<0.001	0.01
log (Absolut amplitude Alpha-theta, $\mu$ V)	2.60 (0.15)	2.77 (0.14)	2.63 (0.16)	0.02	0.5
CF Alpha (Hz)	10.1 (0.08)	10.1 (0.06)	10.1 (0.08)	0.4	0.9
CF Theta (Hz)	6.00 (0.04)	5.98 (0.04)	5.98 (0.04)	0.5	0.3
CF Alpha-Theta (Hz)	8.74 (0.12)	8.44 (0.12)	8.58 (0.11)	<0.001	0.03

SUPPLEMENTARY DATA

**Supplementary Material C)** Results of the artefact-free quantitative EEG analyses including the absolute amplitude and centroid frequency (CF). The results originate from quantitative EEG analyses on 10 segments of artefact-free EEG recordings from the C3 channel. Each segment is at least 4 seconds long. During each glucose level 2 EEG recordings were performed. For these analyses the mean for each variable at each glycemic level was used. The recordings were performed under standardized conditions. Results were analyzed by repeated measures ANOVA unless otherwise stated. Variables are described as mean (SEM).

	Normo-glycaemia (1)	Hypo-glycaemia (2)	Recovery (3)	Dif. between 1 and 2 (p value)	Dif. between 1 and 3 (p value)
<b>Aware</b>					
log (Absolut amplitude Alpha, $\mu$ V)	2.97 (0.35)	2.96 (0.29)	2.95 (0.33)	0.9	0.7
log( Absolut amplitude Theta, $\mu$ V)	2.68 (0.40)	3.12 (0.35)	2.86 (0.31)	0.009	0.2
log (Absolut amplitude Alpha-theta, $\mu$ V)	3.69 (0.36)	3.86 (0.32)	3.74 (0.3)	0.1	0.5
CF Alpha (Hz)*	9.82 (0.16)	9.84 (0.13)	9.82 (0.13)	0.3	0.3
CF Theta (Hz)	6.07 (0.09)	5.99 (0.07)	5.99 (0.09)	0.4	0.1
CF Alpha-Theta (Hz)	8.15 (0.16)	7.72 (0.17)	7.92 (0.18)	0.01	0.03
<b>Unaware</b>					
log (Absolut amplitude Alpha, $\mu$ V)	3.29 (0.29)	3.51 (0.22)	3.41 (0.29)	0.02	0.2
log (Absolut amplitude Theta, $\mu$ V)	2.45 (0.30)	3.14 (0.26)	2.68 (0.29)	0.002	0.02
log (Absolut amplitude Alpha-theta, $\mu$ V)	3.78 (0.27)	4.17 (0.23)	3.94 (0.27)	0.001	0.06
CF Alpha (Hz)*	10.0 (0.10)	9.76 (0.20)	9.94 (0.11)	0.02	0.2
CF Theta (Hz)*	6.11 (0.06)	6.29 (0.13)	6.12 (0.08)	0.35	0.9
CF Alpha-Theta (Hz)	8.71 (0.20)	8.21 (0.22)	8.60 (0.22)	0.01	0.15

\*Differences within the group were assessed by the Wilcoxon signed rank test