Electronic Supplementary Material (ESI) for Food & Function. This journal is © The Royal Society of Chemistry 2023 (b) (a)  $\infty$ Weighted mean difference of insulin ( $\mu U/mI$ ) Weighted mean difference of HOMA-IR -1.5 -2 20 30 50 20 30 40 40 10 10 50 Duration of supplement with L-carnitine (week) Duration of supplement with L-carnitine (week) (c) 200 (d) 40 0 Weighted mean difference of TC (mg/dL) Weighted mean difference of TG (mg/dL) 0 0 0 0 -20 -100 0 -200 0 50 30 50 20 20 30 Ó 10 40 Ó 10 40 Duration of supplement with L-carnitine (week) Duration of supplement with L-carnitine (week)