

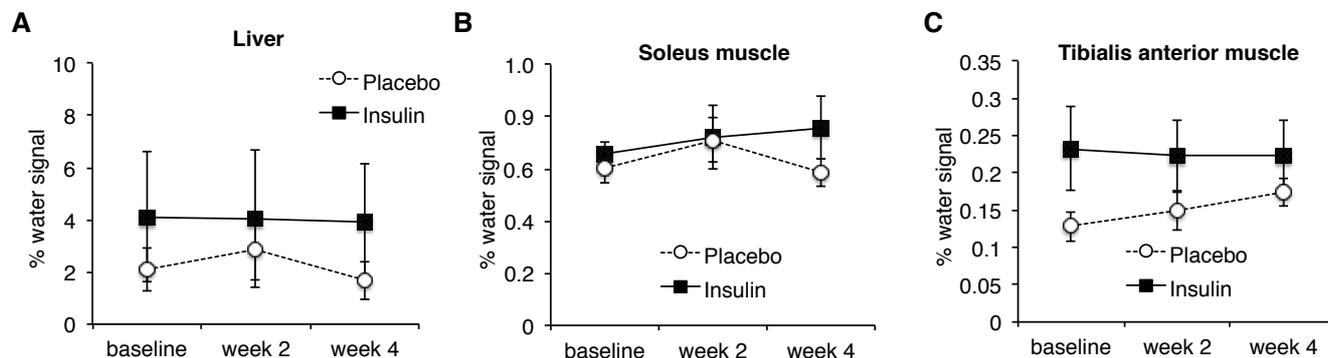
Supplemental Data

Chronic intranasal insulin does not affect hepatic lipids, but lowers circulating BCAAs in healthy male subjects

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Supplementary Figures

Supplementary Figure 1



Supplementary Fig. 1 | IN insulin application for 4 weeks does not affect hepatic lipid content.

(A) Hepatic lipid content as assessed by ^1H -MRS in absolute values at baseline and after 2 and 4 weeks of IN insulin or placebo treatment. (C, D) Intramyocellular lipid content assessed by ^1H -MRS at the indicated time points (baseline, week 2 and week 4) of the soleus muscle (B) and the tibialis anterior muscle (C). All error bars are SEM. N = 10 per group.

Supplementary Table 1 | Absolute plasma amino acid (AA) levels at baseline and after 4 weeks of IN insulin or placebo treatment as assessed by GCMS.

	baseline		week 4		p-value (vs. Placebo)	
	Placebo	Insulin	Placebo	Insulin		
Histidine	67 ± 3	74 ± 4	70 ± 3	69 ± 3	0.81	
Lysine	123 ± 9	144 ± 18	128 ± 9	115 ± 4	0.22	
Aspartic acid	14 ± 3	16 ± 5	16 ± 4	50 ± 36	0.39	
Serine	97 ± 12	107 ± 23	103 ± 11	93 ± 11	0.49	
Threonine	47 ± 3	58 ± 5	50 ± 3	49 ± 4 §	0.88	
Glutamate	47 ± 6	65 ± 8	50 ± 5	53 ± 6 §§	0.69	
Alanine	255 ± 20	324 ± 19	260 ± 24	313 ± 24	0.07	
Methionine	51 ± 3	51 ± 5	54 ± 3	49 ± 4	0.31	
BCAA	Valine	92 ± 11	116 ± 16	99 ± 13	83 ± 7 §	0.27
	Isoleucine	53 ± 4	64 ± 7	54 ± 4	46 ± 3 §	0.14
	Leucine	123 ± 9	150 ± 14	131 ± 8	116 ± 6 §	0.12
aromatic AA	Phenylalanine	50 ± 3	56 ± 3	55 ± 4 §	50 ± 2 §	0.29
	Tyrosine	61 ± 4	82 ± 10	64 ± 5	62 ± 3 §	0.75
Glycine	156 ± 8	195 ± 15	162 ± 10	174 ± 7	0.33	
Proline	153 ± 15	202 ± 20	175 ± 11	159 ± 13	0.38	

Abbreviations: BCAA, branched-chain amino acids; AA amino acids

All values are mean ± SEM; N = 10 per group

§ paired TTEST (baseline vs week 4) P<0.05

§§ paired TTEST (baseline vs week 4) P<0.01

§ paired TTEST (baseline vs week 4) P=0.06