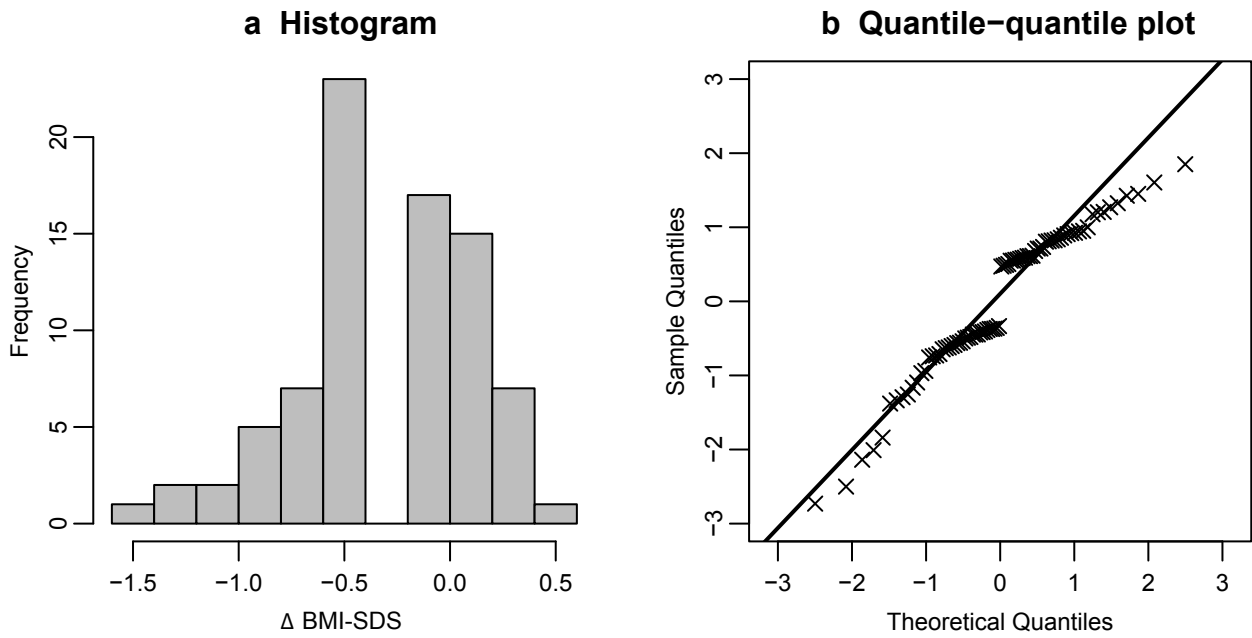


## Online Resource

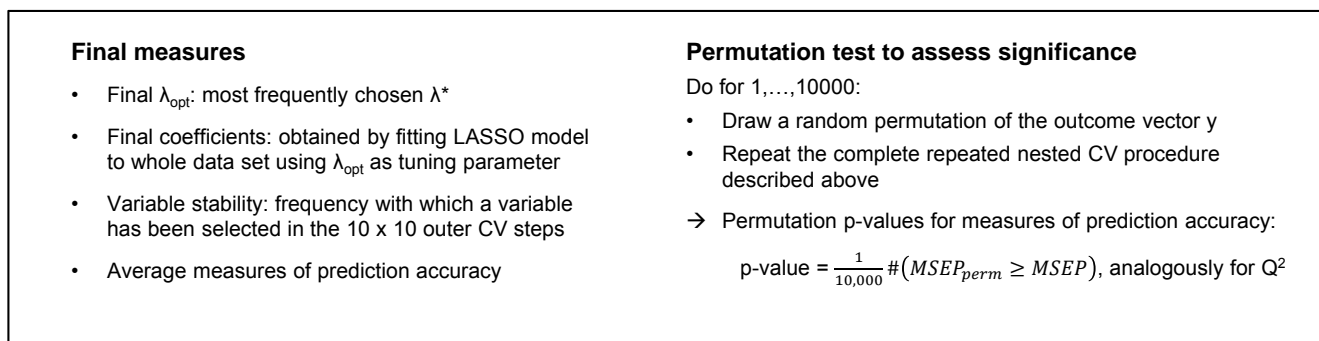
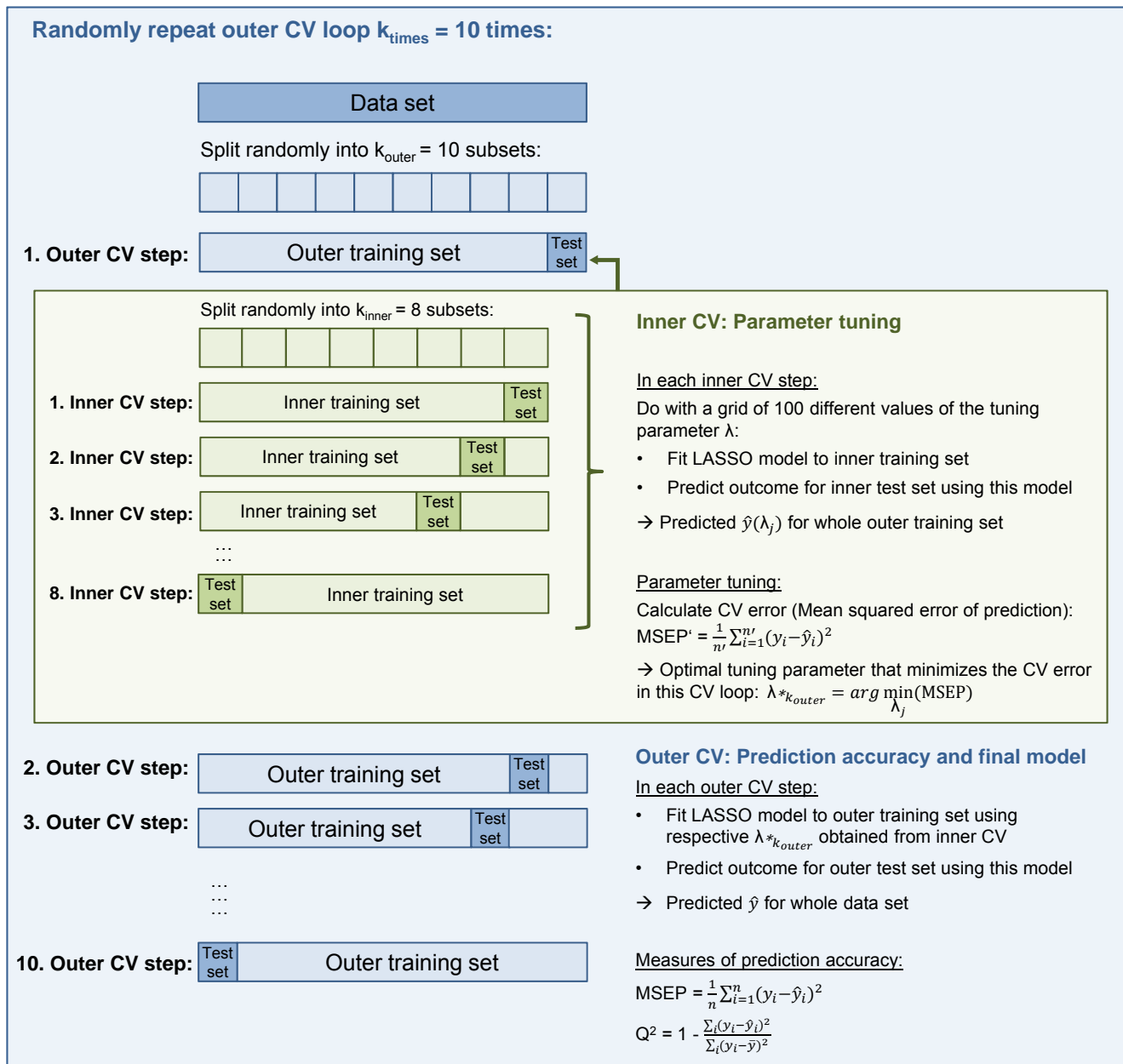
Metabolomics reveals determinants of weight loss during lifestyle intervention in obese children

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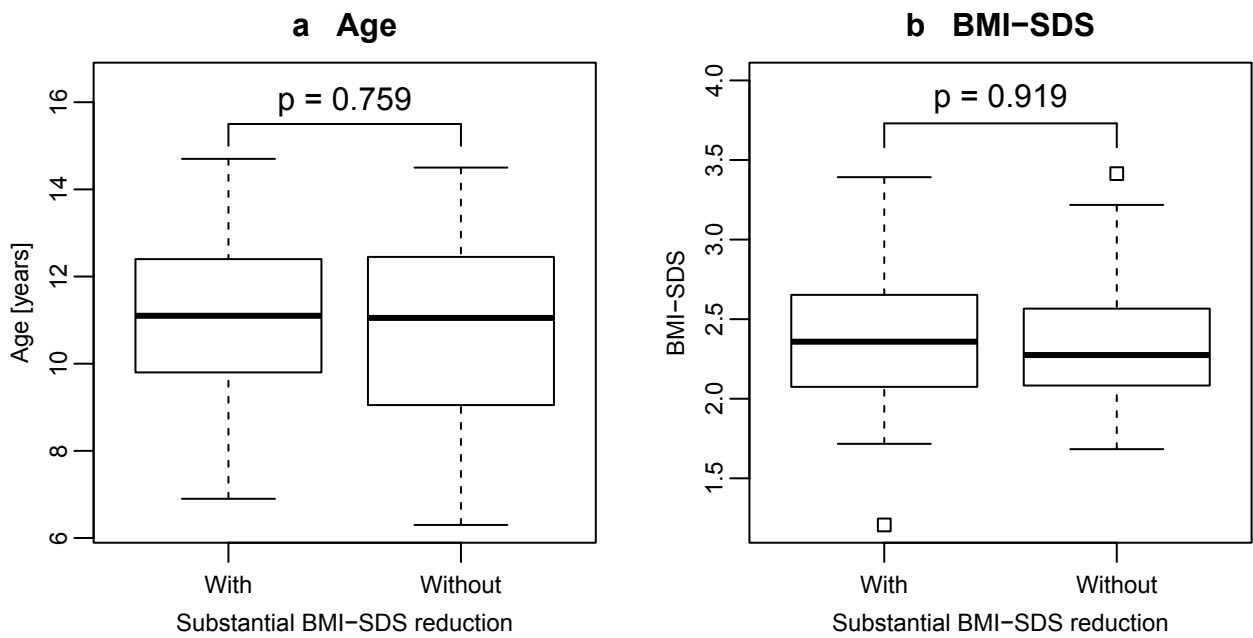
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**Figure S1** Distribution of the continuous outcome variable „Change in body mass index standard deviation score (BMI-SDS) during the intervention“ ( $\Delta$  BMI-SDS). **(a)** Histogram. **(b)** Normal quantile-quantile plot. The distribution is not normal according to Shapiro-Wilk test (p-value = 0.0019).



**Figure S2** Repeated nested cross-validation and permutation scheme. CV, cross-validation; MSEP, mean squared error of prediction



**Figure S3** Boxplots of **(a)** age and **(b)** BMI-SDS before the intervention in children with and without substantial weight loss during intervention. Kolmogorov-Smirnov test p-values are shown. Age and BMI-SDS distribution did not differ significantly between children with and without substantial weight loss

**Table S1** Anthropometric and clinical traits at baseline and at the end of the 1-year lifestyle intervention

Variable	Children with substantial weight loss (n = 40)		Children without substantial weight loss (n = 40)	
	<i>Change during intervention<sup>a</sup></i>	<i>p-value<sup>b</sup></i>	<i>Change during intervention<sup>a</sup></i>	<i>p-value<sup>b</sup></i>
Waist circumference (cm)	-4.0 (-73.0, 15.5)	5.8E-03	3.0 (-13.0, 22.0)	3.9E-02
Fasting serum insulin (mU/l)	-3.7 (-29.9, 21.1)	2.2E-04	2.1 (-29.3, 52.7)	1.6E-01
Fasting glucose (mg/dl)	2.0 (-15.0, 189.0)	4.5E-01	2.5 (-21.0, 20.0)	3.1E-01
HOMA-IR (mU/l x mmol/l)	-0.9 (-6.1, 27.7)	4.8E-04	0.7 (-5.4, 14.1)	1.5E-01
Total cholesterol (mg/dl)	-6.0 (-59.0, 40.0)	6.6E-02	-8.0 (-35.0, 56.0)	1.2E-01
LDL cholesterol (mg/dl)	-3.0 (-58.0, 73.0)	1.1E-01	-3.0 (-46.0, 57.0)	1.3E-01
HDL cholesterol (mg/dl)	3.2 (-12.4, 32.2)	4.8E-02	-3.3 (-18.1, 44.5)	3.4E-02
Triglycerides (mg/dl)	-21.0 (-93.0, 44.0)	5.3E-03	7.0 (-232.0, 122.0)	3.0E-01
Systolic blood pressure (mmHg)	-5.5 (-61.0, 60.0)	2.3E-03	-5.0 (-41.0, 55.0)	9.7E-03
Diastolic blood pressure (mmHg)	0.0 (-35.0, 10.0)	8.9E-02	0.0 (-41.0, 25.0)	5.3E-01

<sup>a</sup>Median (range). <sup>b</sup>P-values were derived from Wilcoxon signed-rank test. “With substantial BMI-SDS reduction” was defined as BMI-SDS reduction  $\geq$  0.5, “without substantial BMI-SDS reduction” as BMI-SDS reduction  $<$  0.1. BMI-SDS, body mass index standard deviation score; HDL, high density lipoprotein; HOMA-IR, homeostatic model assessment of insulin resistance; LDL, low density lipoprotein



