

SUPPLEMENTARY DATA

Table S1. Baseline characteristics of the children participating in the study by IMAAT non-responder and responders.

	Non-responders		Responders	
	N	Mean, SD	N	Mean, SD
Age (years)	44	10.5, 1.1	60	10.7, 1.1
Body mass index (kg/m ²)	44	25.5, 3.3	60	25.4, 3.4
Hepatic fat (%)	43	5.9, 4.6	60	5.0, 2.9
IMAAT (%)	44	6.8, 1.0	60	7.3, 1.0
	N	n, %	N	n, %
Girls	44	19, 43.2	60	38, 63.3
Tanner stage				
Telarche or gonadarche	41		56	
I		18, 43.9		19, 33.9
II		16, 39.0		15, 26.8
III		5, 12.2		14, 25.0
IV-V		2, 4.8		8, 14.3
Pubarche	42		55	
I		17, 40.5		13, 23.6
II		16, 38.1		25, 45.5
III		6, 14.3		9, 16.4
IV-V		3, 7.2		8, 14.5
MAFLD presence	43	21, 48.8	60	23, 38.3

IMAAT: Intermuscular abdominal adipose tissue. MAFLD: Metabolic-associated fatty liver disease.

Participants were classified as responders when they reduce the IMAAT fat fraction after the intervention (Cohen's $d \geq 0.2$), whilst non-responders were categorized for those participants who did not experience a reduction (Cohen's $d < 0.2$). MAFLD presence was defined as having $> 5\%$ hepatic fat.

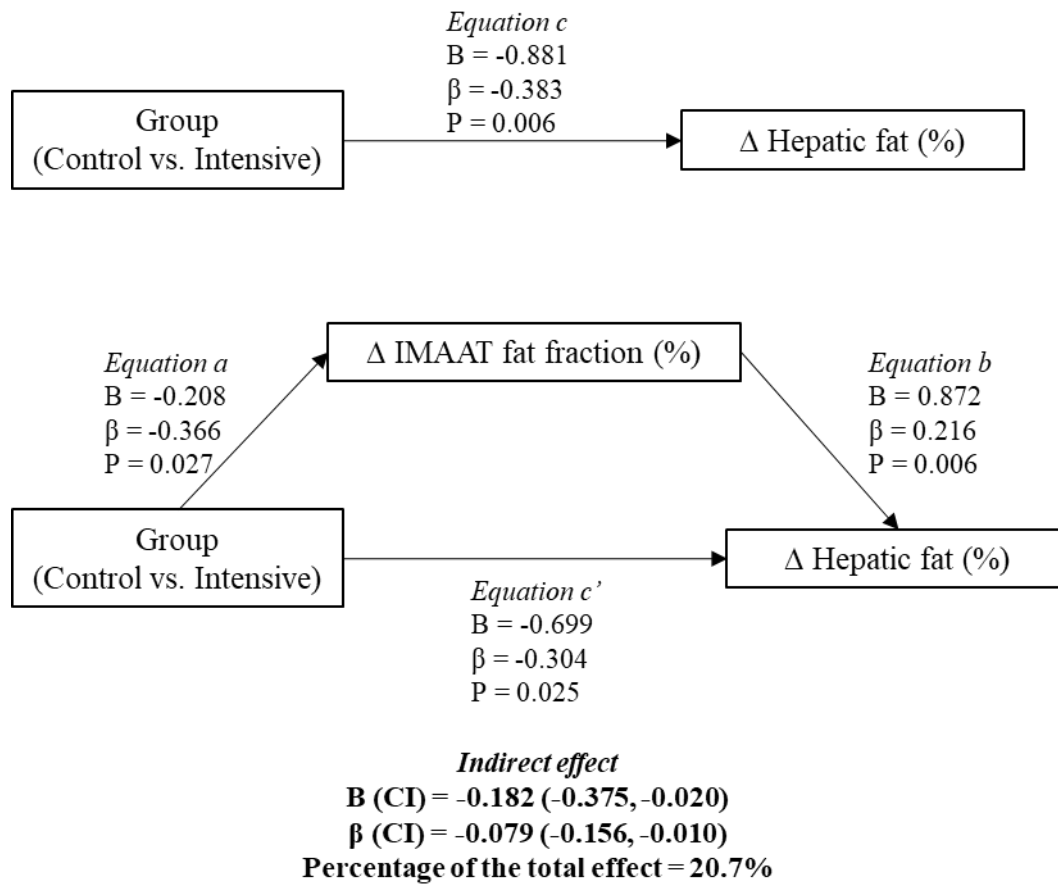
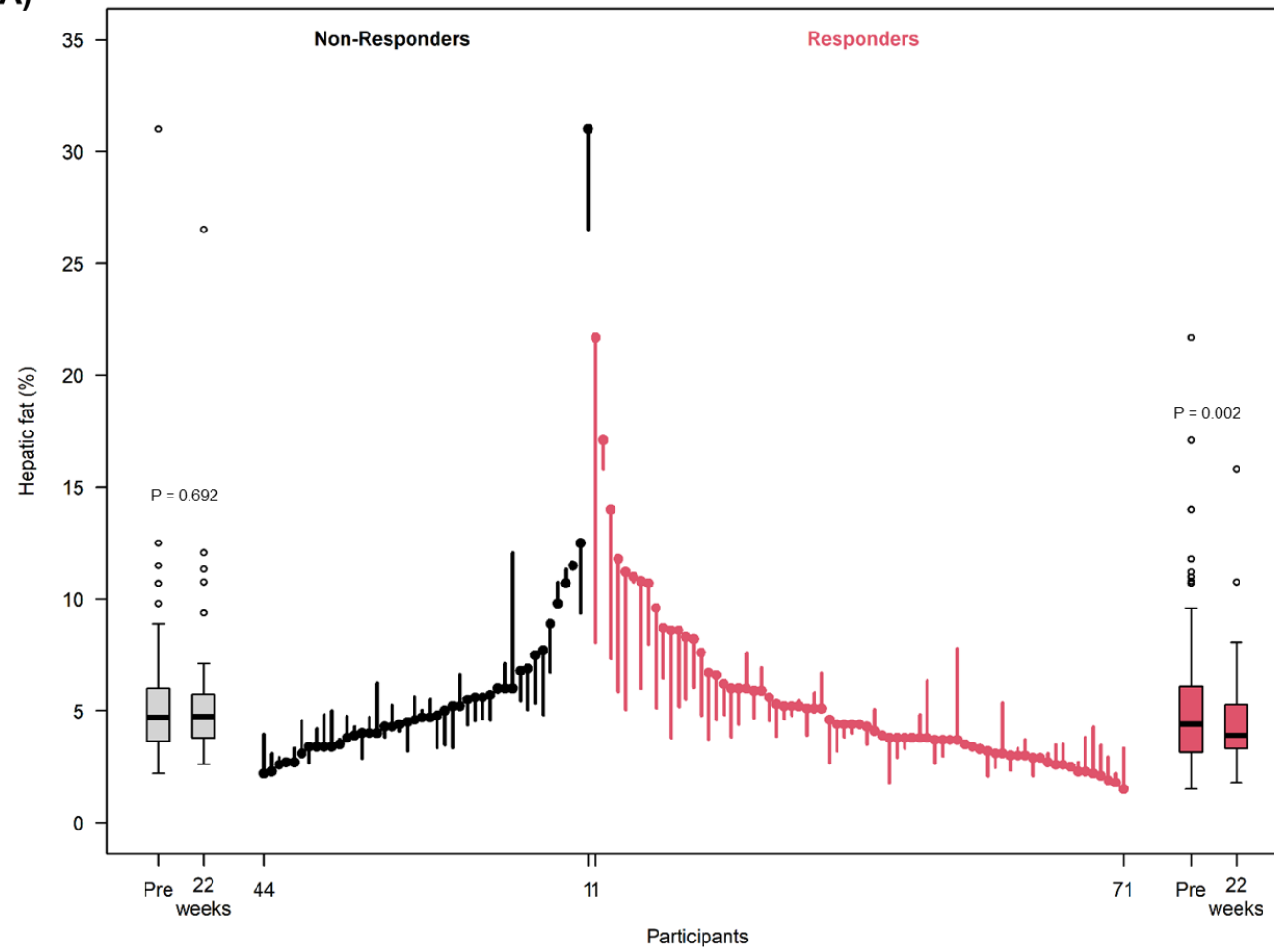


Fig. S1. Mediation model to determine whether changes in IMAAT mediated changes in hepatic fat percentage. *Intention-to-treat analysis.*

Data presented following *intention-to-treat* analysis. Analyses were adjusted for baseline values, age, and sex. Delta (Δ) expresses the outcome at post-intervention with respect to baseline.
 IMAAT: Intermuscular abdominal adipose tissue. β : Standardized beta coefficient. CI: Confidence Interval.

A)



B)

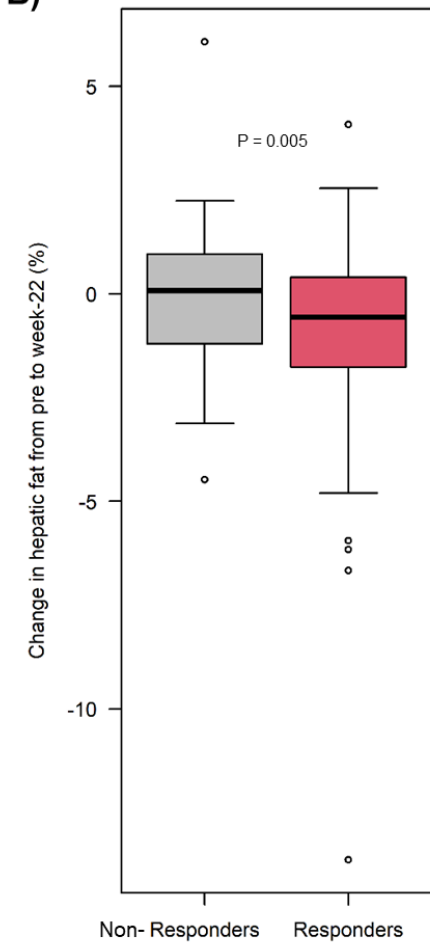


Fig. S2. Changes in hepatic fat (%) in the group of children who did not experience an intermuscular abdominal adipose tissue (IMAAT) reduction (non-responders) and in the group of children who experienced an IMAAT reduction (responders) after the intervention. *Intention-to-treat* analysis.

Panel A shows boxplots of the hepatic fat percentage by IMAAT non-responders (coloured in grey colour) and responders (colour in pink colour) at baseline (pre) and after 22-week intervention. The ends of the boxes in the boxplots are located at the first and third quartiles, with the black line in the middle illustrating the median. Whiskers extend to the upper and lower adjacent values, the location of the furthest point within a distance of 1.5 interquartile ranges from the first and third quartiles. The parallel line plot contains 1 vertical line for each participant which extends from their baseline to their 22-week value. Descending lines indicate a reduction in hepatic fat. Participants were classified as responders when they reduce the IMAAT fat fraction after the intervention (Cohen's $d \geq 0.2$), whilst non-responders were categorized for those participants who did not experience a reduction (Cohen's $d < 0.2$). Pre-test values are placed in ascending order for the non-responders' group (in black colour) and descending order for the responders' group (in pink colour). Panel B shows boxplots of the change in hepatic fat percentage. Changes were calculated as post- minus pre-intervention values. Analyses were adjusted for baseline values, age, and sex.

Data analyses were conducted under *intention-to-treat* principle.