SUPPLEMENTARY DATA

Preparation of study medication. A 100 ml sodium chloride solution was mixed with 2 ml of sterile serum from the respective participant. On verum day the active agent was injected into the preparation and the solution was filled into a 50 ml syringe (B. Braun, Melsungen/Germany) that was placed into the syringe pump (B. Braun, Melsungen/Germany) and connected to the plastic cannula in the right cubital vein. For the MRI scan, the syringe pump was placed outside the scanner room and the syringe was connected with the plastic cannula via a 7 m plastic tube (HMV Filtramed, Rotenburg/Germany), leading through the cable channel to the scanner room.

Preanalytics of blood samples. At every blood draw, two vacutainers (Sarstedt, Nümbrecht/Germany), one for plasma (with EDTA and aprotinin added) and one for serum were filled. The EDTA vacutainer was centrifuged immediately at 3500 g (relative centrifugal force) for 10 min at 4 °C using a Labofuge 400 R (Heraeus Instruments, Hanau/Germany). Serum tubes were incubated for 30 min at room temperature (25 °C) to coagulate and then centrifuged with the same parameters. Then both serum and EDTA plasma were divided into four aliquots of 1 ml each and transferred to plastic vials (2 ml volume size, Eppendorf, Hamburg/Germany) and stored immediately in a freezer at -80 °C until analysis.

Lipsia standard preprocessing chain. All data sets were initially corrected for motion and slicetime offsets. A baseline correction was applied using a highpass filter with a cutoff frequency of 1/90 Hz, and a spatial smoothing with a Gaussian filter of Full width at half maximum (FWHM) = 7 mm was used. All data sets were initially registered to an anterior commissure/posterior commissure (AC/PC) coordinate system where the data were resampled to an isotropic voxel grid with a resolution of 3 x 3 x 3 mm^3.

SUPPLEMENTARY DATA

Supplementary Table 1. Values for "responders" and "non-responders" included in fMRI analysis

	"Responders"	"Non-Responders"	*p*-value
n *	11	11	
Male (n)	11	11	
Age (years)	27.6 ± 5.1	27.8 ± 8.1	0.95
Height (meters)	1.82 ± 0.10	1.81 ± 0.07	0.96
Weight (kg)	121.1 ± 20.5	121.0 ± 18.1	0.99
BMI (kg/m²)	36.5 ± 4.4	36.9 ± 6.4	0.88
Waist circumference (meters)	1.24 ± 0.12	1.20 ± 0.15	0.49
Hip circumference (meters)	1.22 ± 0.10	1.22 ± 0.08	0.94
WHR	1.02 ± 0.03	0.98 ± 0.06	0.08
1st study day placebo (*n*)	4	7	
Duration of fasting (min), placebo	1010 ± 242	920 ± 261	0.41
Duration of fasting (min), exenatide	1078 ± 199	903 ± 284	0.11
Basal hunger score (mm on VAS), pl.	35 ± 29	42 ± 22	0.55
Basal hunger score (mm on VAS), ex.	33 ± 23	37 ± 28	0.68
Basal hunger score, difference ex.-pl.	2 ± 28	-4 ± 31	0.60
Total EI (kcal), placebo	1550 ± 439	1229 ± 641	
Total EI (kcal), exenatide	1175 ± 446	1351 ± 673	
Total EI, difference ex.-pl.	-374 ± 215	122 ± 180	< 0.001

Mean ± standard deviation. BMI = body mass index, EI = energy intake, ex. = exenatide study day, kcal = kilocalories, min = minutes, pl. = placebo study day, VAS = visual analog scale, WHR = waist to hip ratio. * 2 participants excluded from fMRI-analysis due to brain morphological abnormalities.

SUPPLEMENTARY DATA

Supplementary Figure 1. Serum exenatide concentrations on exenatide-day for “responders” (n = 13) and “non-responders” (n = 11). X-axis indicates time after beginning of the experiment. There were no statistically significant differences between the two groups at any of the 6 time points (all p-values > 0.41).