Supplementary Table 1. Baseline characteristics of the study participants.

Variable	Mean	SD	Range
Baseline characteristics		n = 6	
Age (years)	44·3	5·2	40·0 - 53·0
Weight (kg)	83·0	10·0	72·9 - 99·9
BMI (kg/m^2)	24·8	2·5	22·3 - 28·6
WHR	0·95	0·1	0·89 - 1·0
Lean mass BIA (kg)	69·6	8·2	62·6 - 84·8
Fat mass BIA (kg)	13·4	4·3	9·3 - 18·4
Body fat BIA (%)	16·1	5·2	11·2 - 22·1
Blood pressure (mmHg)			
Systolic	125·5	8·8	120·0 - 140·0
Diastolic	78·3	4·1	70·0 - 80·0
Clinical chemical parameters			
Fasting blood glucose (mg/dl)	79·3	6·7	70·8 - 90·8
Cholesterol (mg/dl)	193·2	24·1	150·0 - 216·0
HDL (mg/dl)	60·7	5·6	53·0 - 67·0
LDL (mg/dl)	122·2	20·8	90·0 - 150·0
Triglycerides (mg/dl)	88·3	16·9	60·0 - 112·0
GOT (U/l)	31·7	9·7	26·0 - 49·0
GPT (U/l)	26·3	7·4	20·0 - 40·0
Creatinine (mg/dl)	0·87	0·05	0·79 - 0·94

WHR= Waist to hip ratio; BIA= Bioelectrical impedance analysis;

HDL=High-density lipoprotein; LDL= Low-density lipoprotein;

GOT= Glutamic oxaloacetic transaminase;

GPT=Glutamic pyruvate transaminase

Supplementary Table 2. Nutrient composition of test meals per dose.

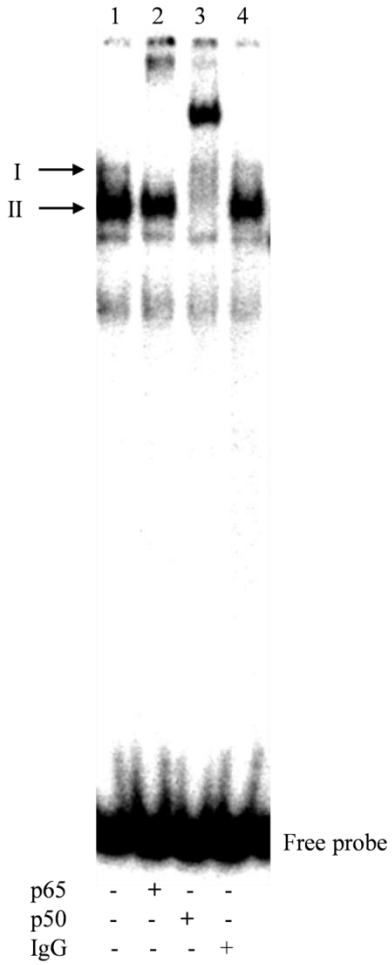
Test meal	Big Mac Menu	Healthy breakfast	OLTT
Composition	Big Mac, medium size fries, 0·5 l Fanta, ketchup (Mc Donalds, Germany)	100 g of whole grain bread , 35 g of cream cheese, 5 g margarine, 50 g boiled ham, 50 g tomato, 150 g yoghurt, 150 g apple, 200 g orange juice, 250 ml of herb tea	1:4 mixture of commercial available Calogen®neutral (Nutricia, Zoetemeer, The Netherlands) and Fresubin® energy drink chocolate (Fresenius Kabi, Bad Homurg, Germany)
	per dose	per dose	per dose[†]
kJ	4630	2710	3987·8
Protein (g)	31·1	30·5	17·9
Protein (%)	11	19	7·7
Carbohydrates (g)	132	87·8	60·1
Carbohydrates (%)	48	55	25·7
Fat (g)	49·4	17·2	71·8
Fat (%)	39	23	69·6
SFA (g)	19·8	8·3	7·2
MUFA (g)	11·8	5·8	44·2
PUFA (g)	12·5	2·6	20·4
Cholesterol (g)	0·066	0·0554	≤12
Fiber (g)	5·43	12·6	0·0
Water (ml)	626	901	249·4

[†]on average 425 ml per dose

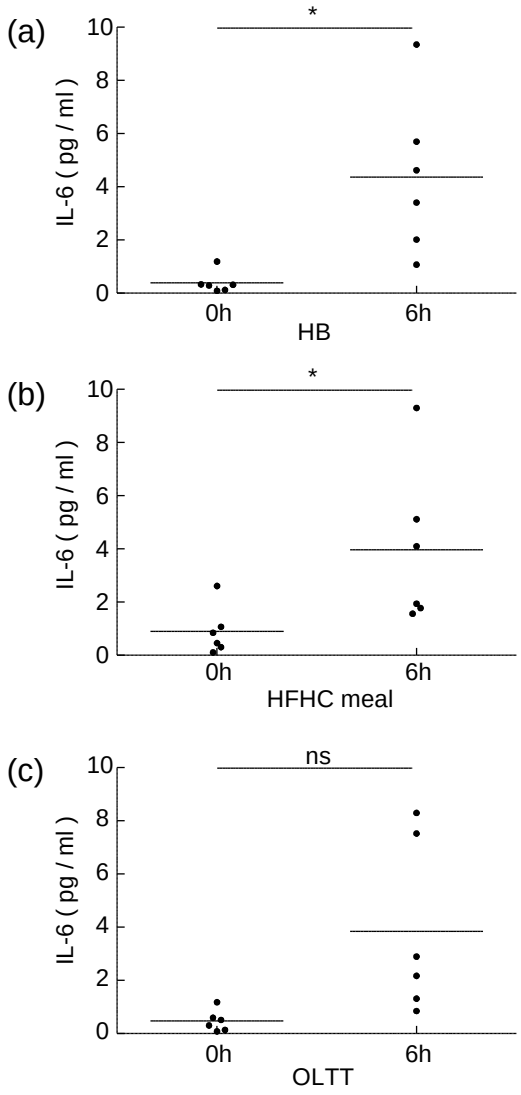
Supplementary Table 3. Within subject correlations of metabolic-, inflammatory signalling pathways and plasma insulin levels. Within subject correlation for fold change of indicated metabolic-, inflammatory markers, and plasma insulin at each time point of each meal separately (OLTT, HFHC meal and HB) and each subject was calculated.

Variables	OLTT		HFHC meal		HB	
	r†	P	r†	P	r†	P
NF-κB / IκB-α	-0·4457	0·0290	-0·4216	0·0640	-0·0944	0·7281
p-Akt / NF-κB	0·2971	0·1585	0·6404	0·0018	0·5771	0·0192
p-Akt / IκB-α	-0·4700	0·0205	-0·7255	0·0003	-0·5043	0·0463
p-S6K / plasma insulin	0·6621	0·0004	0·3511	0·1290	0·5143	0·0415
NF-κB / plasma insulin	-0·3207	0·9874	-0·5775	0·0061	-0·4671	0·0068

†ANCOVA correlation coefficient



Supplementary Fig. 1. Representative electrophoretic mobility shift assay (EMSA) showing the relative NF-κB binding to the double stranded oligonucleotide containing the NF-κB DNA-binding site in a representative postprandial nuclear extract from MNC. Two complexes were detected in the gels (I and II). The super shift assay showed that complex I contains the p65 subunit and complex II the p50 subunit of NF-κB. Lane 1: EMSA. Lane 2: Supershift assay with the use of an antibody against the p65 subunit. Lane 3: Supershift assay with the use of an antibody against the p50 subunit. Lane 4: Supershift assay with the use of an isotype control IgG showing no effect with the EMSA.



Supplementary Fig. 2. Postprandial plasma IL-6 levels. Plasma IL-6 levels (pg/ml) at baseline and 6 h following the consumption of a HB (a), a HFHC meal (b) and an OLTT (c) are shown. Data of plasma IL-6 levels are individual data points and mean; n = 6. Comparison of mean baseline and mean 6 h postprandial IL-6 levels by two-tailed paired t-tests for HFHC meal and OLTT, and Wilcoxon matched pairs test for HB; * P<0·05.