Online Appendix Table A1: Construction of AHEI scores.

Components		Criteria for min. scores	Criteria for max. scores	Possible score range	AHEI scores in the 3698 participants *	AHEI score for the 339 participants with MetS at phase 5
					M ±SD	M ±SD
Vegetables (serving /day)		0	5	0-10	5.9±3.0	5.9±3.1
Fruit (serving /day)		0	4	0-10	6.4±3.1	6.3±3.3
Nuts and Soy (serving /day)		0	1	0-10	3.1±3.2	3.1±3.1
Ratio of white to red meat		0	4	0-10	5.2±2.8	5.0±2.9
Total Fiber (% of energy)		0	24	0-10	7.9±2.9	7.5±3.2
Trans Fat (% of energy)		≥4	≤0.5	0-10	8.4±2.7	8.6±2.6
Ratio of PUFA to SFA		≤0.1	≥1	0-10	5.2±2.7	5.5±2.8
Duration of multivitamin Use		<5 year	≥5 year	2.5-7.5	3.8±2.2	3.5±2.0
Alcohol serving/day	Men	0 or >3.5	1.5-2.5	0-10	4.8±3.7†	4.1±3.7†
Alcohol serving/day	Women	0 or >2.5	0.5-1.5	0-10		
Total Score				2.5-87.5	50.7±11.9	49.5±12.6

Abbreviation: AHEI, the alternative healthy eating index; PUFA, Polyunsaturated fatty acids; SAF, saturated fatty acids.
*Each AHEI component contributed from 0 to 10 points to the total AHEI score, except the multivitamin component which was dichotomous and contributing either 2.5 points (for nonuse) or 7.5 points (for use) A score of 10 indicates that the recommendations were fully met, whereas a score of 0 represents the least healthy dietary behavior. Intermediate intakes were scored proportionately between 0 and 10.
† Mean score for men and women combined.

ONLINE APPENDIX -

Online Appendix Table A2: Description of AHEI scores in the Whitehall II (WII) cohort and in two American cohorts (the HPFS and NHS)*

Components	AHEI SCORES			
	3698 participants from WII	**339 participants with MS at phase 5**	**AHEI score 51 529 men from the HPFS***	**AHEI score 67271 women from the NHS***
	M ±SD	M ±SD	M ±SD	M ±SD
Vegetables (serving /day)	5.9±3.0	5.9±3.1	6.1 2.6	5.6 2.4
Fruit (serving /day)	6.4±3.1	6.3±3.3	5.5 2.9	5.1 2.7
Nuts and Soy (serving /day)	3.1±3.2	3.1±3.1	4.7 3.4	2.8 3.0
Ratio of white to red meat	5.2±2.8	5.0±2.9	3.7 3.2	3.2 2.7
Total Fiber (% of energy)	7.9±2.9	7.5±3.2	4.5 2.2	3.4 1.8
Trans Fat (% of energy)	8.4±2.7	8.6±2.6	7.8 1.4	6.0 1.7
Ratio of PUFA to SFA	5.2±2.7	5.5±2.8	5.2 2.0	5.0 1.8
Dur.of multivitamin Use	3.8±2.2	3.5±2.0	3.7 2.2	3.4 1.9
Alcohol serving/day	4.8±3.7	4.1±3.7	3.8 2.2	3.9 4.1
Total Score	50.7±11.9	49.5±12.6	45.1 11.1	38.4 10.3
Range	10.5- 81.5	13.5 – 76.5	8.8- 86.0	9.8 – 83.6
Highest level †	median=62.5; 56.50-81.50	median=62.5; 56.50-76.5	median=59.9; 54.6-86.0	median=52.3 ; 47.1- 83.6
Lowest levels †	median=39.5; 10.5-45.5	median=36.5;13.5-43.50	median=31; 8.8-35.2	median=25.4; 9.8- 29.3

*51520 men aged 40-75 years were originally enrolled in the HPFS (the Health Professional's Follow up Study) and 121700 female nurses aged 30-55 y were originally enrolled in the NHS (the Nurses' Health Study). Results from both cohorts suggest that AHEI is associated with reduced risk of major chronic disease in men and women (McCullough et al. Am J Clin Nutr 2002; 76 (6) 1261-71).
†AHEI scores were categorized in tertiles in WII and in quintiles in the report by McCullough et al. (2002), in both studies highest levels were compared to lowest levels. Higher scores corresponded to greater adherence of AHEI diet.

Online Appendix Table A3: Characteristic of the participants with the metabolic syndrome (MetS) at baseline by reversion status at follow-up.

	All	**MetS reversion**		
	(n=339)	Yes (n=158)	No (n=181)	P-value†
Sex, % female	28.0	21.5	33.7	0.01
Age in years, mean (SD)	56.4 (6.0)	56.4 (5.8)	56.4 (6.2)	0.91
Ethnic group, % White	88.2	87.3	88.9	0.65
Marital status, % married or cohabited	74.7	75.3	74.0	0.48
Education, % with no academic qualification	10.6	8.2	12.7	0.22
Smoking habits, % current smokers	9.1	8.9	9.4	0.23
Intensity of physical activity, % low	16.2	16.5	16.0	0.13
Depressive symptoms, %	12.4	10.8	13.8	0.39
Persistent metabolic syndrome, %	45.7	35.4	54.7	0.0004
Component of metabolic syndrome at baseline				
Central obesity, %	73.1	63.8	81.6	0.0006
High triglycerides, %	86.7	85.4	87.8	0.51
Low HDL-cholesterol, %	62.1	60.8	63.2	0.65
Hypertension, %	82.5	85.4	80.0	0.19
High fasting glucose, %	38.9	35.4	41.9	0.22

*Definition of the metabolic syndrome was based on the NCEP definition (7). Baseline was phase 5 (1997-1999) and follow-up phase 7 (2002-2004) of the Whitehall II study.
†P-value for comparison of participant characteristics according to metabolic syndrome reversion status at follow-up.

Online Appendix Table A4: Cross-sectional association between baseline characteristics and the alternative healthy eating index (AHEI) among participants with metabolic syndrome at baseline.

	AHEI Score at baseline			
	Low (N=115)	Intermediate (N=111)	High (N=113)	p-value*
Sex, % female	30.4	26.1	27.4	0.76
Age in years, mean (SD)	57.0 (6.1)	55.5 (5.9)	56.7 (6.1)	0.16
Ethnic group, % White	90.4	87.4	86.7	0.65
Marital status, % married or cohabited	67.8	82.0	74.3	0.10
Education, % with no academic qualification	11.3	12.6	8.0	0.68
Smoking habits, % current smokers	12.2	8.1	7.1	0.43
Intensity of physical activity, % low	21.7	17.1	9.7	0.09
Depressive symptoms, %	11.3	10.8	15.0	0.57
Persistence of metabolic syndrome, %	48.7	44.1	44.2	0.73
Component of metabolic syndrome at baseline				
Central obesity, %	78.0	76.0	65.7	0.11
High triglycerides, %	89.6	82.9	87.6	0.32
Low HDL-cholesterol, %	59.1	58.8	68.2	0.27
Hypertension, %	85.2	81.8	80.5	0.63
High glucose, %	34.5	45.9	36.3	0.17

* P-value for trend across AHEI tertiles

Online Appendix Table A5: Association between long-term adherence* to the alternate healthy eating index (AHEI) and subsequent reversion of the metabolic syndrome.

	Odds ratios (95% CI) for MetS reversion	
Adherence to AHEI*, n of participants (n of reversion cases)	Model 1	Model 2
Entire cohort, N=337		
Low AHEI score 111 (44)	1.00 (reference)	1.00 (reference)
Intermediate AHEI score 115 (55)	1.45 (0.84; 2.50)	1.37 (0.78 ; 2.42)
High AHEI score 111 (58)	1.84 (1.05; 3.21)	1.83 (1.01; 3.34)
P-value †	0.03	0.05
Subcohort: With central obesity, N = 211		
Low AHEI score 72 (23)	1.00 (reference)	1.00 (reference)
Intermediate AHEI score 76 (33)	1.80 (0.90 ; 3.60)	1.71 (0.82 ; 3.54)
High AHEI score 63 (32)	2.82 (1.33 ; 5.99)	3.03 (1.32 ; 6.98)
P-value †	0.007	0.009
Subcohort: With high triglycerides, N = 293		
Low AHEI score 97(39)	1.00 (reference)	1.00 (reference)
Intermediate AHEI score 99 (44)	1.26 (0.70; 2.27)	1.23 (0.67; 2.25)
High AHEI score 97 (51)	1.90 (1.04; 3.48)	1.81 (0.96 ; 3.41)
P-value †	0.04	0.07
Subcohort: With low HDL-cholesterol, N = 197		
Low AHEI score 61 (26)	1.00 (reference)	1.00 (reference)
Intermediate AHEI score 69 (32)	1.06 (0.52 ; 2.18)	1.15 (0.53 ; 2.49)
High AHEI score 67 (35)	1.41 (0.68 ; 2.95)	1.58 (0.70; 3.54)
P-value †	0.36	0.27
Subcohort: With hypertension, N = 277		
Low AHEI score 94 (41)	1.00 (reference)	1.00 (reference)
Intermediate AHEI score 92 (47)	1.45 (0.80 ; 2.65)	1.53 (0.83; 2.84)
High AHEI score 91 (46)	1.48 (0.80; 2.70)	1.51 (0.80 ; 2.86)
P-value †	0.21	0.21
Subcohort: With high glucose, N = 129		
Low AHEI score 40 (14)	1.00 (reference)	1.00 (reference)
Intermediate AHEI score 45 (21)	1.56 (0.63 ; 3.83)	1.58 (0.58 ; 4.31)
High AHEI score 44 (20)	1.50 (0.60 ; 3.77)	1.51 (0.53 ; 4.28)
P-value †	0.13	0.43

*Long term adherence to AHEI was derived from the average AHEI scores at phases 3 and 5. Low AHEI adherence: median score =38.5, range 17.0-44.0; Intermediate AHEI adherence: median score =50.0, range 44.5-54.0 ; High AHEI adherence: median score =59.5, range 54.5-74.0.

†P value of the comparison between high vs. low AHEI score

Model 1: Adjusted for sex, age, ethnicity and energy intake.

Model 2: Model 1+ additionally adjusted for education, marital status, smoking habits, physical activity, persistence of the metabolic syndrome, and depressive symptoms.