

**Dietary patterns reflecting healthy food choices are associated with lower serum LPS activity**

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**Supplementary Table 1** Basic characteristics of the validation study population

	n = 1171
Men (%)	41
Age (years)	47 (36 – 55)
Diabetes duration (years)	27 (17 – 38)
Body mass index (kg/m <sup>2</sup> )	25 (23 – 28)
Smoking (%)	14
Systolic blood pressure (mmHg)	135 (124 – 149)
Diastolic blood pressure (mmHg)	77 (71 – 84)
HbA <sub>1c</sub> (mmol/mol)	64 (56 – 73)
HbA <sub>1c</sub> (%)	8.0 (7.3 – 8.7)
Triglycerides (mmol/L)	0.90 (0.65 – 1.26)
Total cholesterol (mmol/L)	4.4 (3.9 – 5.0)
HDL cholesterol (mmol/L)	1.7 (1.4 – 2.0)

Data are presented as frequency or median (interquartile range)

**Supplementary Table 2** Associations between reported consumption of food items in the diet questionnaire and in the 6-day food record

	Diet questionnaire	6-day food record	Correlation coefficient	P-value
	Mean $\pm$ SD or %	Mean $\pm$ SD or %		
Coffee (cups per day)	3.8 $\pm$ 2.8	3.0 $\pm$ 2.0	0.77	<0.001
Filtered coffee (%)	82.0	84.9		<0.001
Tea (cups per day)	0.8 $\pm$ 1.4	0.6 $\pm$ 1.0	0.72	<0.001
Milk (glasses per day)	1.4 $\pm$ 1.5	0.9 $\pm$ 1.0	0.82	<0.001
Fat free milk (%)	44.2	47.1		<0.001
Sour milk (glasses per day)	0.3 $\pm$ 0.7	0.2 $\pm$ 0.4	0.76	<0.001
Fat free sour milk (%)	24.0	20.3		<0.001
Yoghurt or curd (portions per day)	0.8 $\pm$ 0.7	0.5 $\pm$ 0.5	0.68	<0.001
Low fat yoghurt or curd (%)	53.4	41.8		<0.001
Bread (slices per day)	4.7 $\pm$ 2.1	4.6 $\pm$ 2.1	0.63	<0.001
Rye bread (%)	85.6	91.0		<0.001
Vegetable based spread (%)	67.3	64.4		<0.001

For continuous variables, data are presented as mean  $\pm$  standard deviation (e.g. number of cups of coffee per day reported in the diet questionnaire and in the 6-day food record). For these data Pearson correlation coefficients are also provided. For categorical variables, percentages are shown (e.g. percentage of individuals reporting consumption of filtered coffee in the diet questionnaire and in the 6-day food record).

**Supplementary Table 3** Frequencies of monthly intake of the food groups according to the food frequency questionnaire (FFQ) and the 6-day food record

	FFQ	6-day food record	Correlation coefficient	P-value
	Mean $\pm$ SD	Mean $\pm$ SD		
Fish dishes	5.7 $\pm$ 5.1	8.3 $\pm$ 7.9	0.42	<0.001
Meat dishes	11.7 $\pm$ 9.3	17.5 $\pm$ 9.9	0.43	<0.001
Poultry	8.5 $\pm$ 7.3	6.5 $\pm$ 6.9	0.40	<0.001
Sausages and cold cuts	19.2 $\pm$ 17.8	27.0 $\pm$ 18.4	0.58	<0.001
Eggs	4.3 $\pm$ 5.9	4.6 $\pm$ 6.5	0.39	<0.001
Legumes	5.0 $\pm$ 7.3	4.6 $\pm$ 7.5	0.23	<0.001
Fresh vegetables	31.6 $\pm$ 18.2	34.5 $\pm$ 17.9	0.57	<0.001
Cooked vegetables	13.2 $\pm$ 12.0	14.3 $\pm$ 10.5	0.46	<0.001
Potatoes	17.1 $\pm$ 11.8	19.9 $\pm$ 11.8	0.55	<0.001
Pasta and rice	8.8 $\pm$ 7.8	9.6 $\pm$ 8.9	0.42	<0.001
Fruits and berries	28.1 $\pm$ 18.7	37.2 $\pm$ 19.3	0.53	<0.001
Cheese, $\geq$ 20% fat	8.6 $\pm$ 14.2	17.3 $\pm$ 18.1	0.51	<0.001
Cheese, <20% fat	21.0 $\pm$ 19.7	20.5 $\pm$ 20.1	0.52	<0.001
Yoghurt and curd	19.4 $\pm$ 16.7	18.6 $\pm$ 14.8	0.71	<0.001
Ice cream	2.5 $\pm$ 4.3	3.9 $\pm$ 5.8	0.31	<0.001
Soft drinks	8.7 $\pm$ 15.2	6.2 $\pm$ 12.2	0.55	<0.001
Sweet pastries	7.6 $\pm$ 9.8	9.2 $\pm$ 12.6	0.25	<0.001
Sweets and chocolate	6.7 $\pm$ 8.7	9.2 $\pm$ 2.6	0.48	<0.001

**Supplementary Table 4** Factor loadings of the dietary patterns formed from the food frequency questionnaire (FFQ) and 6-day food record

	Healthy		Traditional		Sweets		Healthy snack		Modern		Cheese	
	FFQ	6DFR	FFQ	6DFR	FFQ	6DFR	FFQ	6DFR	FFQ	6DFR	FFQ	6DFR
Fish dishes	0.27	0.24										
Meat dishes			0.89	0.78					0.33			
Poultry									0.63	0.22		
Sausages and cold cuts			0.22	0.23								
Eggs												0.24
Legumes	0.59	0.33										
Fresh vegetables	0.39	0.30					0.34	0.39				
Cooked vegetables	0.69	0.81							0.21			
Potatoes			0.42	0.34								
Pasta and rice									0.44	0.98		
Fruits and berries	0.27						0.60	0.80				
High-fat cheese											0.58	-0.31
Low-fat cheese							0.28	0.27			-0.43	0.88
Yoghurt and curd							0.51	0.26				
Ice cream					0.24	0.27						
Soft drinks												
Sweet pastries					0.72	0.96						
Sweets and chocolate					0.50	0.97						

A high positive loading of a food item indicates its strong positive association with a dietary pattern, while a negative loading indicates that the food item is inversely associated with a given pattern.

**Supplementary Table 5** The proportion of individuals classified into the same, same or adjacent, and opposite quartiles, formed from the factor scores of the factor analysis of the food frequency questionnaire and the 6-day food record data, and the correlation coefficients of the factor scores for the dietary patterns

	Classified into			Correlation coefficient	<i>P</i> -value
	same quartile	same or adjacent quartiles	opposite quartiles		
Chance	25.0	62.5	12.5		
Healthy snack	40.0	81.0	4.9	0.46	<0.001
Traditional	34.8	76.0	4.5	0.41	<0.001
Sweets	33.3	74.0	5.4	0.33	<0.001
Snack	40.7	80.2	3.1	0.51	<0.001
Modern	32.9	71.5	8.0	0.23	<0.001
Cheese	41.9	78.7	4.8	-0.44	<0.001

**Supplementary Table 6** The diet questionnaire

<b>Question</b>	<b>Type of data</b>	<b>Included in the validation study</b>
How many cups of coffee do you usually drink per day?	Numerical	Yes
How is the coffee made, that you usually drink?	<i>Multiple choice: choose the one that best describes your habits</i> Filtered coffee, or coffee made with coffee maker Coffee cooked in a pot, or coffee made with espresso machine Instant coffee Other type of coffee, specify I do not usually drink coffee	Yes
How many cups of tea do you usually drink per day?	Numerical	Yes
How many glasses (2 dl) of milk do you usually drink per day?	Numerical	Yes
What kind of milk do you usually drink?	<i>Multiple choice: choose the one that best describes your habits</i> Skim milk or lactose free skim milk drink Milk or lactose free milk drink with 1 – 1,5 % fat Full fat milk or unprocessed milk from farm Organic milk with 1 – 1,5 % fat Skim organic milk Milk with stanols or sterols added Other type of milk, specify I do not usually drink milk	Yes
How many glasses (2 dl) of sour milk do you usually drink per day?	Numerical	Yes
What kind of sour milk do you usually drink?	<i>Multiple choice: choose the one that best describes your habits</i> Skim sour milk Sour milk with 0,5 – 1,5 % fat Sour milk with 2 % or more fat Skim organic sour milk	Yes

<p>How many portions (2dl) of yoghurt/curd do you usually eat per day?</p>	<p>Sour milk with stanols  Other type of sour milk, specify  I do not usually drink sour milk</p>	<p>Numerical</p>	<p>Yes</p>
<p>What kind of yoghurt/curd do you usually eat?</p>	<p><i>Multiple choice: choose the one that best describes your habits</i>  Skim or low fat yoghurt/curd  Yoghurt/curd with regular amount of fat  I do not usually eat yoghurt/curd</p>	<p>Numerical</p>	<p>Yes  Yes</p>
<p>How many slices of bread do you usually eat per day?</p>	<p><i>Multiple choice: choose all that apply</i>  Rye bread or bread made mainly of rye  Bread made from mixed flour  Wheat bread  Rye crisp  Other type of bread, specify _____  I do not usually eat bread</p>	<p>Numerical</p>	<p>Yes Yes</p>
<p>What kind of bread do you usually eat almost daily?</p>	<p><i>Multiple choice: choose the one that best describes your habits</i>  I do not use any spread on bread  Butter  Butter and vegetable oil mix  Margarine with 70 – 80 % fat  Low-fat spread with 65 % fat or less  Margarine with stanols or sterols  Unripened cheese, cheese spread or like  I do not usually eat bread</p>	<p>Numerical</p>	<p>Yes</p>
<p>What kind of spread do you usually consume on bread?</p>	<p><i>Multiple choice: choose the one that best describes your habits</i>  I do not use any fat for cooking  Vegetable oil (for example olive oil, canola oil)</p>	<p>Numerical</p>	<p>No. Cooking fats were seldom reported in the food record.</p>

- Butter
- Butter and vegetable oil mix
- Margarine or fluid margarine
- Cooking margarine
- Margarine with stanols or sterols
- I do not cook at home

How often do you add salt to your food at table?

*Multiple choice: choose the one that best describes your habits*

- Almost never
- Usually when food does not taste salty enough
- Almost always prior tasting

No. The timing of the salt addition was not specified in the food record.

Do you prefer low-salt foodstuffs?

*Multiple choice: choose the one that best describes your habits*

- Never
- Seldom
- Sometimes
- Mostly
- Always

No. Participants rarely reported the salt content of the commercial products.

Have you consumed foods or supplements with lactic acid bacteria over the preceding month?

No / Yes, trade name and dose

No. Supplements were not recorded in the food record.

Have you used any dietary supplements (for example vitamin or mineral supplements or oil capsules) over the preceding month?

No / Yes, trade name and dose

No. Supplements were not recorded in the food record.

Have you used any natural products (i.e. herbal remedies or homeopathic products) over the preceding month?

No / Yes, trade name and dose

No. Supplements were not recorded in the food record.

Have you received any instructions concerning your diet from someone working at the health care system?

*Multiple choice: choose all that apply*

- No
- Yes, from the dietitian
- Yes, from the diabetes nurse
- Yes, from the doctor
- Yes, from someone else. From whom?

No. Dietary recommendations were not queried in the food record.



When have you received instructions regarding your diet from the health care system?

*Multiple choice: choose all that apply*

- I have not received any instructions
- At the time of diabetes diagnosis
- At the time of another diagnosis: when, which diagnosis?
- At another time: when?

No. Dietary recommendations were not queried in the food record.

Do you follow the dietary instructions given to you at the health care system?

*Multiple choice: choose the one that best describes your habits*

- I have not received any instructions
- Never
- Seldom
- Sometimes
- Most of the time
- Always

No. Dietary recommendations were not queried in the food record.

Do you follow any special diet at the moment?

*Multiple choice: choose all that apply*

- No
- Low-lactose or lactose-free diet based on the diagnosis or recommendation given at health care system
- Low-lactose or lactose-free diet on my own decision
- Gluten-free diet based on the diagnosis or recommendation given at health care system
- Gluten-free diet on my own decision
- Protein restricted diet based on the diagnosis or recommendation given at health care system
- Protein restricted diet on my own decision
- Vegetarian or vegan diet based on the diagnosis or recommendation given at health care system
- Vegetarian or vegan diet on my own decision
- Vegetarian or vegan diet based on other reasons
- Other special diet, specify

No. Special diets were not specifically reported in the food record.

How often have you consumed the following food items over the preceding month?

*Multiple choice: choose the one that best describes your habits*

	Several times a day	
	Once a day	
	4-6 times a week	
	2-3 times a week	
	Once a week	
	1-3 times a month	
	Less frequently or never	
Fish dishes		Yes
Meat dishes (cattle, pork, lamb, game)		Yes
Poultry (chicken, broiler, or other bird)		Yes
Sausages and cold cuts		Yes
Eggs (boiled, fried, or as omelets)		Yes
Peas, beans, and other legumes		Yes
Fresh vegetables (salads and such)		Yes
Cooked vegetables (excluding potatoes)		Yes
Potatoes		Yes
Pasta and rice		Yes
Fruits and berries (excluding juices)		Yes
Cheese containing 20% fat or more		Yes
Low-fat cheese (less than 20% fat)		Yes
Yoghurt, curd		Yes
Ice cream		Yes
Soft drinks		Yes
Sweet pastries (cakes, cookies and such)		Yes
Sweets and chocolate		Yes
Fried and grilled foods		No. The cooking methods were not always evident in the food records.

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# Supplementary information

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