

**Supplementary table 1:** Clinical characteristics of included and excluded participants, OsteoLaus study, Lausanne, Switzerland.

	Included	Excluded	P-value
Sample size	1203	272	
Age (years)	64.3 ± 7.5	65.7 ± 8.0	0.004
Age groups (%)			0.032
50-59	360 (29.9)	64 (23.5)	
60-69	562 (46.7)	127 (46.7)	
70-79	281 (23.4)	81 (29.8)	
Education (%)			0.057
High	168 (14.0)	29 (11.0)	
Middle	324 (26.9)	58 (22.0)	
Low	711 (59.1)	177 (67.0)	
BMI (kg/m <sup>2</sup> )	25.7 ± 4.4	26.8 ± 4.9	<0.001
BMI categories (%)			0.006
Normal	570 (47.4)	106 (39.1)	
Overweight	430 (35.7)	99 (36.5)	
Obese	203 (16.9)	66 (24.4)	
Smoking status (%)			0.155
Never	557 (46.3)	118 (47.8)	
Former	446 (37.1)	78 (31.6)	
Current	200 (16.6)	51 (20.7)	
Physical activity: sedentary (%)	781 (64.9)	42 (76.4)	0.081
Participants with diabetes (%)	72 (6.0)	37 (14.2)	<0.001

BMI, body mass index. Results are expressed as number of participants (percentage) for categorical variables or as average ± standard deviation for continuous variables. Between group comparisons using chi-square for categorical variables or student's t-test for continuous variables.

**Supplementary table 2 :** Bivariate and multivariable analysis of the macronutrient intake in the lowest and highest tertiles of QUS parameters, OsteoLaus study, Lausanne, Switzerland.

	Stiffness Index			Broadband US Attenuation			Speed of Sound		
	Lowest tertile	Highest tertile	P-value	Lowest tertile	Highest tertile	P-value	Lowest tertile	Highest tertile	P-value
<b>Bivariate</b>									
Protein	-0.2 ± 11.8	0.3 ± 12.0	0.537	-0.5 ± 12.5	0.6 ± 12.5	0.231	0 ± 12.6	-0.4 ± 11.5	0.699
Vegetal protein	0.1 ± 5.5	-0.2 ± 4.9	0.430	0.2 ± 5.5	-0.5 ± 5.0	0.057	-0.1 ± 5.4	-0.2 ± 4.9	0.717
Animal protein	-0.3 ± 13.4	0.5 ± 13.5	0.394	-0.7 ± 14.2	1.1 ± 14.0	0.077	0 ± 14.1	-0.2 ± 13.0	0.837
Total carbohydrates	2.2 ± 40.1	-3.5 ± 36.6	0.036	3.3 ± 38.2	-4.1 ± 38.9	0.007	0.7 ± 40.6	-1.6 ± 37.1	0.405
Monosaccharides	2.4 ± 40.0	-1.7 ± 37.8	0.134	2.2 ± 38.1	-1.4 ± 38.3	0.192	1.5 ± 40.0	0 ± 38.0	0.604
Polysaccharides	-0.1 ± 35.9	-1.8 ± 31.4	0.496	1.1 ± 35.8	-2.7 ± 32.3	0.114	-0.8 ± 34.4	-1.6 ± 30.9	0.709
Total fat	-1.1 ± 14.1	1.4 ± 13.0	0.011	-1.2 ± 13.4	1.4 ± 13.5	0.007	-0.6 ± 14.0	0.8 ± 13.3	0.148
SFA	-0.1 ± 6.6	0.1 ± 6.1	0.642	-0.2 ± 6.5	0.2 ± 6.3	0.361	0 ± 6.4	-0.3 ± 5.9	0.459
MUFA	-0.7 ± 7.3	1.0 ± 7.4	0.001	-0.7 ± 7.0	0.9 ± 7.2	0.002	-0.5 ± 7.3	0.8 ± 7.5	0.013
PUFA	-0.3 ± 3.0	0.2 ± 2.9	0.024	-0.2 ± 2.8	0.3 ± 3.1	0.021	-0.2 ± 3.2	0.2 ± 3.0	0.104
Alcohol	1.8 ± 98.1	-0.1 ± 71.1	0.762	-0.2 ± 86.4	1.2 ± 72.7	0.804	3.6 ± 100.8	0.7 ± 73.1	0.642
<b>Multivariable</b>									
Protein	0.2 ± 0.6	-0.2 ± 0.6	0.697	0.1 ± 0.6	0 ± 0.7	0.956	0.1 ± 0.6	-0.5 ± 0.6	0.474
Vegetal protein	0.1 ± 0.3	-0.2 ± 0.3	0.478	0.1 ± 0.3	-0.4 ± 0.3	0.158	0.1 ± 0.3	-0.3 ± 0.3	0.307
Animal protein	0.1 ± 0.7	0 ± 0.7	0.947	-0.1 ± 0.7	0.5 ± 0.8	0.631	0 ± 0.7	-0.2 ± 0.7	0.803
Total carbohydrates	1.5 ± 2.0	-2.7 ± 2.0	0.158	2.0 ± 2.0	-2.8 ± 2.1	0.112	0.8 ± 2.0	-1.8 ± 2.0	0.365
Monosaccharides	2.0 ± 2.0	-1.3 ± 2.1	0.277	1.7 ± 2.0	-0.9 ± 2.1	0.392	1.2 ± 2.0	0.3 ± 2.0	0.767
Polysaccharides	-0.5 ± 1.7	-1.4 ± 1.8	0.714	0.3 ± 1.8	-1.9 ± 1.8	0.416	-0.3 ± 1.7	-2.1 ± 1.7	0.469
Total fat	-0.9 ± 0.7	1.1 ± 0.7	0.056	-0.9 ± 0.7	1.0 ± 0.7	0.076	-0.6 ± 0.7	0.7 ± 0.7	0.194
SFA	-0.2 ± 0.3	0.1 ± 0.3	0.542	-0.2 ± 0.3	0.2 ± 0.3	0.447	-0.1 ± 0.3	-0.2 ± 0.3	0.829
MUFA	-0.5 ± 0.4	0.8 ± 0.4	0.020	-0.5 ± 0.4	0.6 ± 0.4	0.041	-0.4 ± 0.4	0.7 ± 0.4	0.057
PUFA	-0.2 ± 0.2	0.2 ± 0.2	0.087	-0.2 ± 0.2	0.2 ± 0.2	0.112	-0.2 ± 0.2	0.2 ± 0.2	0.123
Alcohol	1.3 ± 4.4	0.5 ± 4.6	0.905	-0.4 ± 4.1	1.4 ± 4.3	0.784	2.3 ± 4.5	2.1 ± 4.5	0.965

MUFA, monounsaturated fatty acids; PUFA, polyunsaturated fatty acids; SFA, saturated fatty acids; US, ultrasound. Analysis conducted on the residuals after applying the energy adjustment regression method. Results are expressed in gr/day and as average ± standard deviation for bivariate analyses and as adjusted average ± standard error for multivariable analyses. Between group comparisons using student's t-test for bivariate analyses and analysis of variance adjusting for age groups (50-59/60-69/70-79), weight (continuous), educational level (high/middle/low), and smoking (former/never/current) for multivariable analyses.