

Supplementary Table S1. Ultraprocessed food (and subclassification) included in the food-frequency questionnaire used for this study.

| Ultraprocessed food groups | Food-frequency questionnaire |
|---------------------------------|--|
| Dairy products | Packaged cream, smoothies, milk drinks with or without flavors, <i>petit-suisse</i> , custard, “fruit” yogurts, flan, pudding, ice-creams |
| Meat products | Ham, smoked bacon, chorizo, salami, mortadella, sausage, hamburger, pate, <i>foie-gras</i> , spicy sausage, black pudding mortadella and meatballs |
| Cereals | Packaged breakfast cereals |
| Pizza | Pre-prepared and ready-to-heat pizzas |
| Margarine | Margarine |
| Fried products | Potato chips and fried snacks |
| Cookies | Packaged cookies and chocolate cookies |
| Light products | Slimming products |
| Ready-to-eat products | Instant soups and creams, instant pasta, croquettes and powdered soups and purees |
| Mayonnaise | Mayonnaise sauce |
| Alcohol beverages | Alcoholic drinks produced by fermentation followed by distillation such as whisky, gin, rum |
| Pastries | Packaged buns, pre-prepared pies, prepared cakes, muffins, doughnuts, croissant or other business-type pastries, <i>churros</i> , chocolates and candies, nougat and <i>marzipan</i> |
| Sugar-sweetened beverages (SSB) | Sugar refreshment, carbonated drinks and packaged fruit drinks and juices |

Supplementary Table S2. Baseline anthropometric and biochemical characteristic of the participant excluded for microbiota analysis (subjects who consumed between 3 and 5 servings per day of UPFs).

| Variable | Subjects who consumed >3 and <5 serv/d of UPFs | Women who consumed >3 and <5 serv/d of UPFs | Men who consumed >3 and <5 serv/d of UPFs |
|--|--|---|---|
| UPF consumption (serv/ d) | 4.01 ± 0.5 | 4.0 ± 0.4 | 3.8 ± 0.4 |
| Age (y) | 45 ± 1 | 44 ± 2 | 45 ± 1 |
| Smoking | 38 | 25 | 13 |
| Alcohol habit | 109 | 70 | 39 |
| METs | 24.9 ± 2.3 | 22.9 ± 2.2 | 30.6 ± 3.4 |
| Depression prevalence | 5 | 5 | 0 |
| Anxiety prevalence | 7 | 7 | 0 |
| Energy intake (kcal) | 2664 ± 98 | 2633 ± 88 | 2752 ± 101 |
| Energy from UPFs (%) | 15.1 ± 1.7 | 15.1 ± 1.4 | 14.9 ± 2.1 |
| Adherence to MD | 7.5 ± 0.4 | 7.3 ± 0.5 | 6.9 ± 0.5 |
| BMI baseline (kg/m²) | 29.4 ± 4.8 | 29.2 ± 4.4 | 29.9 ± 4.4 |
| Weight (kg) | 80.9 ± 5.3 | 77.7 ± 4.8 | 90.3 ± 5.8 |
| Waist circumference (cm) | 96 ± 3 | 93 ± 3 | 103 ± 5 |
| Hip circumference (cm) | 108 ± 3 | 109 ± 4 | 105 ± 5 |
| PAS (mmHg) | 124 ± 2 | 120 ± 2 | 134 ± 5 |
| PAD (mmHg) | 77 ± 2 | 76 ± 3 | 82 ± 3 |
| Fat mass (kg) | 28.5 ± 6.3 | 28.9 ± 6.1 | 27.3 ± 5.5 |

| | | | |
|----------------------------------|-------------|------------|------------|
| Visceral fat mass (kg) | 1.2 ± 0.4 | 0.9 ± 0.2 | 1.9 ± 0.6 |
| Glucose (mg/dL) | 94 ± 4 | 92 ± 3 | 99 ± 4 |
| Total cholesterol (mg/dL) | 212 ± 4 | 211 ± 6 | 213 ± 7 |
| HDL-cholesterol (mg/dL) | 58 ± 3 | 61 ± 4 | 48 ± 2 |
| LDL-cholesterol (mg/dL) | 68 ± 4 | 65 ± 4 | 73 ± 5 |
| Triglycerides (mg/dL) | 96 ± 6 | 89 ± 4 | 117 ± 9 |
| ALT (U/L) | 23 ± 3 | 18 ± 3 | 32 ± 6 |
| AST (U/L) | 22 ± 1 | 21 ± 1 | 25 ± 2 |
| Insulin (mU/L) | 7.4 ± 2.1 | 7.4 ± 1.9 | 7.1 ± 2.2 |
| Adiponectin (μg/mL) | 11.8 ± 4.2 | 13.2 ± 3.9 | 8.2 ± 3.0 |
| TNF (pg/mL) | 0.8 ± 0.2 | 0.8 ± 0.1 | 0.8 ± 0.2 |
| Leptin (ng/mL) | 31.1. ± 4.7 | 38.5 ± 5.3 | 11.8 ± 3.9 |
| HOMA-IR | 1.8 ± 0.2 | 1.7 ± 0.2 | 2.0 ± 0.4 |
| CRP (μg/mL) | 2.5 ± 0.3 | 2.6 ± 0.4 | 2.2 ± 0.2 |

Variables are expressed as means ± SE for quantitative variables and as numbers of cases for qualitative variables. Differences between groups were assessed by t-test or Mann-Whitney test (METs, glucose, adiponectin, ALT, AST, TNFa, HOMA-IR and CRP) according to the distribution of data and quantitative values variables were assessed by chi squared.

Serv/day: servings per day.

ALT: alanine aminotransferase, AST: aspartate aminotransferase, CRP: C-reactive protein, DBP: diastolic blood pressure, HDL-c: HDL cholesterol,

HOMA-IR: insulin resistance index, LDL-c : LDL cholesterol, MD: Mediterranean diet, MET: metabolic equivalent of tasks, SBP: systolic blood pressure, Serv/d :servings per day, TNF: tumor necrosis factor alpha, TSH: thyroid-stimulating hormone, UPF: ultra-processed food.

Each variable was analyzed using total UPFs consumption adjusted for BMI, age and energy intake, except differences in age, BMI, weight, energy form UPFs and total energy.

Supplementary Table S3. Non-significant bacterial taxa (FDR>0.05) analyzed by EdgeR between subjects who consumed less than 3 and more than 5 servings per day of UPFs.

| | log2FC | Pvalues | FDR |
|------------------------------|-----------|----------|----------|
| Genus | | | |
| <i>Turicibacter</i> | -0.9585 | 0.015324 | 0.077896 |
| <i>Bacteroides</i> | 0.41952 | 0.018839 | 0.088398 |
| <i>Holdemania</i> | 0.52153 | 0.044022 | 0.19181 |
| <i>Paraprevotella</i> | 0.7564 | 0.080406 | 0.32699 |
| <i>Clostridium</i> | -0.42848 | 0.088814 | 0.3386 |
| <i>Dielma</i> | -0.59626 | 0.10585 | 0.35948 |
| <i>Alistipes</i> | 0.34515 | 0.10608 | 0.35948 |
| <i>Bilophila</i> | 0.44273 | 0.11546 | 0.3707 |
| <i>Barnesiella</i> | -0.53665 | 0.13994 | 0.40648 |
| <i>Acidaminococcus</i> | 0.75102 | 0.1673 | 0.46387 |
| <i>Christensenella</i> | -0.47747 | 0.20011 | 0.50986 |
| <i>Oscillospira</i> | -0.36878 | 0.2006 | 0.50986 |
| <i>Romboutsia</i> | 0.36267 | 0.22457 | 0.53338 |
| <i>Phascolarctobacterium</i> | 0.54317 | 0.22734 | 0.53338 |
| <i>Haemophilus</i> | -0.51229 | 0.24577 | 0.55526 |
| <i>Catenibacterium</i> | 0.56088 | 0.2706 | 0.57915 |
| <i>Dorea</i> | -0.21554 | 0.2778 | 0.57915 |
| <i>Blautia</i> | 0.22347 | 0.28483 | 0.57915 |
| <i>Sutterella</i> | 0.51293 | 0.30339 | 0.597 |
| <i>Butyrivibrio</i> | -0.46843 | 0.35303 | 0.67297 |
| <i>Melainabacter</i> | -0.42192 | 0.42821 | 0.77321 |
| <i>Parasutterella</i> | 0.30209 | 0.43337 | 0.77321 |
| <i>Adlercreutzia</i> | 0.25562 | 0.44702 | 0.77321 |
| <i>Lachnoclostridium</i> | 0.15336 | 0.45632 | 0.77321 |
| <i>Howardella</i> | 0.22312 | 0.55574 | 0.91623 |
| <i>Oscillibacter</i> | -0.095313 | 0.58016 | 0.93131 |
| <i>Veillonella</i> | 0.20519 | 0.61143 | 0.93254 |
| <i>Peptococcus</i> | -0.15082 | 0.68226 | 0.93254 |
| <i>Prevotella</i> | -0.18811 | 0.69092 | 0.93254 |
| <i>Senegalemassilia</i> | 0.12031 | 0.72999 | 0.93254 |
| <i>Candidatus_Soleferrea</i> | -0.15827 | 0.73814 | 0.93254 |
| <i>Eubacterium</i> | -0.054164 | 0.7391 | 0.93254 |
| <i>Catabacter</i> | -0.11038 | 0.76723 | 0.93254 |
| <i>Anaerostipes</i> | -0.14425 | 0.78042 | 0.93254 |
| <i>Victivallis</i> | 0.1019 | 0.79862 | 0.93254 |
| <i>Allisonella</i> | 0.094404 | 0.80763 | 0.93254 |

| | | | |
|-------------------------------|------------|----------|----------|
| <i>Ruminococcus</i> | 0.052355 | 0.8102 | 0.93254 |
| <i>Erysipelatoclostridium</i> | -0.082912 | 0.81323 | 0.93254 |
| <i>Faecalibacterium</i> | 0.039918 | 0.8163 | 0.93254 |
| <i>Tyzzerella</i> | 0.053546 | 0.82901 | 0.93254 |
| <i>Dialister</i> | -0.10781 | 0.83578 | 0.93254 |
| <i>Butyricimonas</i> | -0.061085 | 0.84922 | 0.93254 |
| <i>Coprococcus</i> | 0.028656 | 0.85056 | 0.93254 |
| <i>Odoribacter</i> | -0.038453 | 0.8561 | 0.93254 |
| <i>Dehalobacterium</i> | -0.041268 | 0.88126 | 0.93673 |
| <i>Fusicatenibacter</i> | -0.024237 | 0.89066 | 0.93673 |
| <i>Streptococcus</i> | -0.029081 | 0.93279 | 0.95033 |
| <i>Eggerthella</i> | -0.024835 | 0.93476 | 0.95033 |
| <i>Saccharibacteria</i> | -0.0037541 | 1 | 1 |
| Family | | | |
| Porphyromonadaceae | 0.43077 | 0.01233 | 0.098636 |
| Enterobacteriaceae | 0.8612 | 0.056983 | 0.31802 |
| Bacteroidaceae | 0.31836 | 0.077958 | 0.35638 |
| Coriobacteriaceae | 0.38395 | 0.092938 | 0.37175 |
| Rikenellaceae | 0.34037 | 0.10461 | 0.37195 |
| Desulfovibrionaceae | 0.40622 | 0.13647 | 0.39261 |
| Mogibacteriaceae | -0.45222 | 0.13651 | 0.39261 |
| Clostridiaceae | -0.34612 | 0.14723 | 0.39261 |
| Sutterellaceae | 0.37967 | 0.17643 | 0.39751 |
| Christensenellaceae | 0.47014 | 0.18216 | 0.39751 |
| Unclassified_Clostridiales | 0.50169 | 0.19243 | 0.39751 |
| Acidaminococcaceae | 0.53209 | 0.19875 | 0.39751 |
| Victivallaceae | 0.42977 | 0.28631 | 0.53894 |
| Pasteurellaceae | -0.43215 | 0.3151 | 0.56018 |
| Peptostreptococcaceae | 0.26329 | 0.35898 | 0.59436 |
| Melainabacteriaceae | -0.47076 | 0.37147 | 0.59436 |
| Lachnospiraceae | -0.13184 | 0.45032 | 0.6862 |
| Erysipelotrichaceae | -0.16315 | 0.47712 | 0.69399 |
| Prevotellaceae | -0.15586 | 0.70285 | 0.9309 |
| Catabacteriaceae | -0.1143 | 0.74462 | 0.9309 |
| Streptococcaceae | -0.10165 | 0.74748 | 0.9309 |
| Peptococcaceae | 0.098997 | 0.77815 | 0.9309 |
| Oscillospiraceae | -0.043496 | 0.7869 | 0.9309 |
| Rs_045 | -0.057159 | 0.83319 | 0.9309 |
| Veillonellaceae | -0.076243 | 0.84363 | 0.9309 |
| Dehalobacteriaceae | -0.039199 | 0.89564 | 0.94042 |
| Eubacteriaceae | -0.018218 | 0.91103 | 0.94042 |
| Ruminococcaceae | -0.010227 | 0.94312 | 0.94312 |

| | Order | | |
|----------------------|---------------|----------|----------|
| Desulfovibrionales | 0.52781 | 0.036221 | 0.19318 |
| Enterobacteriales | 0.86802 | 0.056367 | 0.22547 |
| Coriobacteriales | 0.41669 | 0.082551 | 0.24171 |
| Burkholderiales | 0.439 | 0.090643 | 0.24171 |
| Bacteroidales | 0.19821 | 0.1376 | 0.31451 |
| Lactobacillales | -0.30047 | 0.31941 | 0.61108 |
| RF32 | -0.46229 | 0.34373 | 0.61108 |
| Selenomonadales | 0.18853 | 0.49201 | 0.78721 |
| I025 | -0.15417 | 0.55791 | 0.8115 |
| Melainabacteriales | -0.25078 | 0.63634 | 0.83841 |
| Victivallales | 0.16264 | 0.68121 | 0.83841 |
| Clostridiales | 0.040545 | 0.74484 | 0.83987 |
| Erysipelotrichales | -0.033183 | 0.88881 | 0.88881 |
| | Class | | |
| Erysipelotrichi | 0.67915 | 0.014214 | 0.11371 |
| Delta proteobacteria | 0.51205 | 0.044448 | 0.23706 |
| Beta proteobacteria | 0.43633 | 0.092721 | 0.33676 |
| Bacteroidia | 0.21163 | 0.10524 | 0.33676 |
| Alphaproteobacteria | -0.58778 | 0.22564 | 0.54569 |
| Coriobacteriia | 0.41763 | 0.23874 | 0.54569 |
| Bacilli | -0.28093 | 0.3547 | 0.7094 |
| Negativicutes | 0.18414 | 0.49786 | 0.79143 |
| Melainabacteria | -0.29178 | 0.58098 | 0.79143 |
| Gammaproteobacteria | 0.16768 | 0.65982 | 0.79143 |
| TM7_3 | -0.093143 | 0.71412 | 0.79143 |
| Erysipelotrichia | -0.081757 | 0.71512 | 0.79143 |
| Clostridia | 0.040763 | 0.74002 | 0.79143 |
| Lentisphaeria | 0.13126 | 0.74197 | 0.79143 |
| | Phylum | | |
| Bacteroidetes | 0.33027 | 0.021792 | 0.087167 |
| Proteobacteria | 0.37481 | 0.039947 | 0.10653 |
| Firmicutes | 0.1405 | 0.17196 | 0.27514 |
| Lentisphaerae | 0.18315 | 0.64834 | 0.86445 |
| TM7 | -0.066766 | 0.86424 | 0.88413 |
| Melainabacteria | -0.078499 | 0.88413 | 0.88413 |

Log2FC: logarithm 2 fold change (positive value when the abundance increases in group of consumption >5 serv/d of adjusted UPFs); FDR: False Discovery Rate.

Supplementary Table S4. Non-significant bacterial taxa (FDR>0.05) analyzed by EdgeR between women who consumed less than 3 and more than 5 servings per day of UPFs.

| | log2FC | Pvalues | FDR |
|-------------------------------|----------|----------|---------|
| Genus | | | |
| <i>Oxalobacter</i> | 1.1599 | 0.026612 | 0.14924 |
| <i>Streptococcus</i> | -0.75635 | 0.028426 | 0.14924 |
| <i>Veillonella</i> | -0.89863 | 0.053702 | 0.24894 |
| <i>cc_115</i> | 0.72805 | 0.057862 | 0.24894 |
| <i>Saccharibacteria</i> | -0.5763 | 0.059271 | 0.24894 |
| <i>Collinsella</i> | 0.64797 | 0.068954 | 0.27151 |
| <i>Romboutsia</i> | -0.56988 | 0.088614 | 0.32839 |
| <i>Turicibacter</i> | -0.75866 | 0.1167 | 0.39181 |
| <i>Roseburia</i> | -0.49312 | 0.1182 | 0.39181 |
| <i>Bilophila</i> | 0.53146 | 0.12438 | 0.39181 |
| <i>Christensenella</i> | -0.71317 | 0.13841 | 0.41522 |
| <i>Catabacter</i> | -0.59923 | 0.19195 | 0.53651 |
| <i>Catenibacterium</i> | 0.81834 | 0.20079 | 0.53651 |
| <i>Peptococcus</i> | -0.59068 | 0.20863 | 0.53651 |
| <i>Victivallis</i> | 0.61617 | 0.21463 | 0.53651 |
| <i>Blautia</i> | -0.31129 | 0.22142 | 0.53651 |
| <i>Eggerthella</i> | -0.5123 | 0.23518 | 0.54875 |
| <i>Butyricimonas</i> | -0.4532 | 0.25347 | 0.5703 |
| <i>Barnesiella</i> | -0.51035 | 0.26282 | 0.57096 |
| <i>Holdemania</i> | 0.37302 | 0.27495 | 0.57226 |
| <i>Clostridium</i> | -0.34033 | 0.28159 | 0.57226 |
| <i>Erysipelatoclostridium</i> | -0.45978 | 0.29973 | 0.58028 |
| <i>Granulicatella</i> | 0.35219 | 0.31062 | 0.58028 |
| <i>Fusicatenibacter</i> | -0.22922 | 0.31317 | 0.58028 |
| <i>Prevotella</i> | -0.53648 | 0.3332 | 0.59976 |
| <i>Lachnoclostridium</i> | -0.24522 | 0.34538 | 0.60441 |
| <i>Eubacterium</i> | -0.19001 | 0.38745 | 0.64532 |
| <i>Haemophilus</i> | -0.43256 | 0.38924 | 0.64532 |
| <i>Alistipes</i> | 0.21102 | 0.40155 | 0.64866 |
| <i>Howardella</i> | 0.3927 | 0.41615 | 0.65544 |
| <i>Faecalibacterium</i> | -0.17142 | 0.43802 | 0.67306 |
| <i>Tyzzerella</i> | 0.23234 | 0.49425 | 0.74138 |
| <i>Oscillospira</i> | -0.22238 | 0.53015 | 0.75435 |
| <i>Sutterella</i> | -0.36089 | 0.54093 | 0.75435 |
| <i>Dielma</i> | -0.26119 | 0.55393 | 0.75435 |
| <i>Ruminococcus</i> | 0.15226 | 0.5652 | 0.75435 |

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| <i>Dorea</i> | -0.13408 | 0.57474 | 0.75435 |
| <i>Coprococcus</i> | -0.12733 | 0.6088 | 0.78274 |
| <i>Dialister</i> | -0.2692 | 0.66481 | 0.83173 |
| <i>Candidatus_Soleaferrea</i> | -0.24139 | 0.67331 | 0.83173 |
| <i>Paraprevotella</i> | 0.16165 | 0.75975 | 0.89631 |
| <i>Parasutterella</i> | 0.14444 | 0.76043 | 0.89631 |
| <i>Odoribacter</i> | 0.080339 | 0.77325 | 0.89631 |
| <i>Allisonella</i> | -0.12495 | 0.78258 | 0.89631 |
| <i>Rothia</i> | 0.085236 | 0.81035 | 0.89631 |
| <i>Phascolarctobacterium</i> | 0.14786 | 0.81095 | 0.89631 |
| <i>Adlercreutzia</i> | -0.070147 | 0.84896 | 0.92214 |
| <i>Bacteroides</i> | 0.034011 | 0.86858 | 0.92746 |
| <i>Oscillibacter</i> | 0.016785 | 0.94016 | 0.98717 |
| <i>Senegalemassilia</i> | -0.0060053 | 0.98676 | 1 |
| <i>Anaerostipes</i> | -0.003831 | 0.9914 | 1 |
| <i>Dehalobacterium</i> | -0.0081582 | 1 | 1 |
| Family | | | |
| Lactobacillaceae | 1.5095 | 0.00091988 | 0.058901 |
| Melainabacteriaceae | -2.0743 | 0.0017001 | 0.058901 |
| Oxalobacteraceae | 1.4027 | 0.0060622 | 0.05968 |
| Enterobacteriaceae | 1.4804 | 0.0070211 | 0.05968 |
| Bifidobacteriaceae | 0.93625 | 0.013598 | 0.092463 |
| Streptococcaceae | -0.79126 | 0.017924 | 0.10157 |
| Victivallaceae | 0.97609 | 0.05227 | 0.25388 |
| Rs_045 | -0.56548 | 0.063949 | 0.27178 |
| Unclassified_Clostridiales | 0.79644 | 0.10983 | 0.37554 |
| Porphyromonadaceae | 0.34068 | 0.11045 | 0.37554 |
| Peptostreptococcaceae | -0.50465 | 0.12475 | 0.3856 |
| Mogibacteriaceae | -0.49315 | 0.22417 | 0.53536 |
| Prevotellaceae | -0.57496 | 0.23548 | 0.53536 |
| Desulfovibrionaceae | 0.40042 | 0.23619 | 0.53536 |
| Eubacteriaceae | -0.23726 | 0.25525 | 0.5424 |
| Veillonellaceae | -0.45428 | 0.33539 | 0.62624 |
| Acidaminococcaceae | 0.53468 | 0.34327 | 0.62624 |
| Erysipelotrichaceae | -0.28425 | 0.35528 | 0.62624 |
| Catabacteriaceae | -0.39774 | 0.36838 | 0.62624 |
| Carnobacteriaceae | 0.26948 | 0.45145 | 0.73091 |
| Coriobacteriaceae | 0.20949 | 0.48316 | 0.7467 |
| Clostridiaceae | -0.1959 | 0.50902 | 0.75246 |
| Christensenellaceae | 0.22884 | 0.61102 | 0.80633 |
| Rikenellaceae | 0.11654 | 0.63187 | 0.80633 |
| Peptococcaceae | -0.22577 | 0.63984 | 0.80633 |

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| Bacteroidaceae | -0.097746 | 0.64412 | 0.80633 |
| Pasteurellaceae | -0.20829 | 0.6692 | 0.80633 |
| Ruminococcaceae | -0.068439 | 0.68775 | 0.80633 |
| Lachnospiraceae | -0.071681 | 0.73806 | 0.83647 |
| Micrococcaceae | 0.081688 | 0.81698 | 0.88888 |
| Oscillospiraceae | -0.041361 | 0.83659 | 0.88888 |
| Sutterellaceae | -0.055242 | 0.86409 | 0.89027 |
| Dehalobacteriaceae | 0.018086 | 0.959 | 0.959 |
| Order | | | |
| Desulfovibrionales | 0.7387 | 0.021049 | 0.097433 |
| Melainabacteriales | -1.467 | 0.022926 | 0.097433 |
| Lactobacillales | -0.61157 | 0.055204 | 0.1877 |
| Victivallales | 0.83628 | 0.092873 | 0.22555 |
| Pasteurellales | -0.78417 | 0.1066 | 0.22652 |
| I025 | -0.44448 | 0.12342 | 0.23312 |
| Burkholderiales | 0.34639 | 0.2379 | 0.40443 |
| Coriobacteriales | 0.30225 | 0.34814 | 0.53803 |
| RF32 | 0.39065 | 0.517 | 0.69192 |
| Selenomonadales | 0.2215 | 0.58232 | 0.69192 |
| Clostridiales | 0.089626 | 0.58953 | 0.69192 |
| Actinomycetales | 0.16548 | 0.61052 | 0.69192 |
| Bacteroidales | -0.049846 | 0.73699 | 0.78305 |
| Erysipelotrichales | -0.042592 | 0.89137 | 0.89137 |
| Class | | | |
| Bacilli | -0.89177 | 0.0068279 | 0.10149 |
| Melainabacteria | -1.5129 | 0.018562 | 0.10149 |
| Actinobacteria | 0.73916 | 0.01903 | 0.10149 |
| ? | -0.49273 | 0.029949 | 0.11979 |
| Delta proteobacteria | 0.63639 | 0.043222 | 0.13831 |
| TM7_3 | -0.56296 | 0.056301 | 0.15013 |
| Lentisphaeria | 0.68928 | 0.16416 | 0.37022 |
| Gammaproteobacteria | 0.60013 | 0.18511 | 0.37022 |
| Erysipelotrichi | 0.47926 | 0.21793 | 0.38743 |
| Bacteroidia | -0.11134 | 0.42999 | 0.68798 |
| Alphaproteobacteria | 0.35687 | 0.55182 | 0.73853 |
| Coriobacteriia | 0.24621 | 0.6056 | 0.73853 |
| Betaproteobacteria | 0.14647 | 0.62249 | 0.73853 |
| Negativicutes | 0.1804 | 0.64621 | 0.73853 |
| Erysipelotrichia | -0.084652 | 0.78153 | 0.83363 |
| Clostridia | -0.001766 | 0.99002 | 0.99002 |
| Phylum | | | |
| Proteobacteria | 0.49245 | 0.019688 | 0.078751 |

| | | | | |
|---------------|----------------|----------|----------|---------|
| Cyanobacteria | Melanabacteria | -1.2146 | 0.053858 | 0.1275 |
| Lentisphaerae | | 0.88548 | 0.079689 | 0.1275 |
| TM7 | | -0.3794 | 0.27973 | 0.37298 |
| Firmicutes | | 0.11117 | 0.44425 | 0.50772 |
| Bacteroidetes | | 0.087331 | 0.64113 | 0.64113 |

Log2FC: logarithm 2 fold change (positive value when the abundance increases in group of consumption >5 serv/d of adjusted UPFs); FDR: False Discovery Rate.

Supplementary Table S5. Non-significant bacterial taxa (FDR>0.05) analyzed by EdgeR between women who consumed less than 3 and more than 5 servings per day of UPFs.

| | | log2FC | Pvalues | FDR |
|-------------------------------|--|----------|-----------|----------|
| Genus | | | | |
| <i>Bacteroides</i> | | 1.0775 | 0.0033593 | 0.05207 |
| <i>Romboutsia</i> | | 1.5112 | 0.0057909 | 0.071807 |
| <i>Gemmiger</i> | | 1.3974 | 0.0093589 | 0.08904 |
| <i>Clostridium</i> | | -1.1993 | 0.010053 | 0.08904 |
| <i>Lactobacillus</i> | | 1.2702 | 0.013103 | 0.10154 |
| <i>Lachnoclostridium</i> | | 0.91369 | 0.015553 | 0.10715 |
| <i>Oscillospira</i> | | -1.1448 | 0.029235 | 0.18125 |
| <i>Turicibacter</i> | | -1.5627 | 0.034899 | 0.18275 |
| <i>Paraprevotella</i> | | 1.5486 | 0.035371 | 0.18275 |
| <i>Sutterella</i> | | 1.7487 | 0.041707 | 0.18563 |
| <i>Parabacteroides</i> | | 0.8396 | 0.043611 | 0.18563 |
| <i>Adlercreutzia</i> | | 0.96408 | 0.047993 | 0.18563 |
| <i>Eggerthella</i> | | 1.0868 | 0.048994 | 0.18563 |
| <i>Veillonella</i> | | 1.4308 | 0.052106 | 0.18563 |
| <i>Saccharibacteria</i> | | 0.93266 | 0.053892 | 0.18563 |
| <i>Streptococcus</i> | | 1.1053 | 0.076648 | 0.25012 |
| <i>Butyricimonas</i> | | 0.80558 | 0.11302 | 0.32053 |
| <i>Phascolarctobacterium</i> | | 1.2254 | 0.11782 | 0.32053 |
| <i>Melanabacter</i> | | 1.2892 | 0.11895 | 0.32053 |
| <i>Roseburia</i> | | -0.67942 | 0.1233 | 0.32053 |
| <i>Dielma</i> | | -1.085 | 0.12484 | 0.32053 |
| <i>Alistipes</i> | | 0.63498 | 0.13349 | 0.32053 |
| <i>Bifidobacterium</i> | | 0.84769 | 0.13591 | 0.32053 |
| <i>Faecalibacterium</i> | | 0.4955 | 0.13959 | 0.32053 |
| <i>Holdemania</i> | | 0.5913 | 0.15862 | 0.34916 |
| <i>Oscillibacter</i> | | -0.49912 | 0.16332 | 0.34916 |
| <i>Erysipelatoclostridium</i> | | 0.77414 | 0.17959 | 0.37114 |
| <i>Collinsella</i> | | 0.60807 | 0.1908 | 0.37424 |
| <i>Victivallis</i> | | -0.91643 | 0.19664 | 0.37424 |

| | | | |
|------------------------------|-----------|----------|---------|
| <i>Peptococcus</i> | 0.69652 | 0.19919 | 0.37424 |
| <i>Butyrivibrio</i> | -1.2023 | 0.21789 | 0.39362 |
| <i>Anaerofilum</i> | -0.59333 | 0.22379 | 0.39362 |
| <i>Parasutterella</i> | 0.80402 | 0.23408 | 0.39362 |
| <i>Fusicatenibacter</i> | 0.41973 | 0.2349 | 0.39362 |
| <i>Allisonella</i> | 0.75112 | 0.25832 | 0.41868 |
| <i>Catabacter</i> | 0.71895 | 0.26628 | 0.41868 |
| <i>Coprococcus</i> | 0.38566 | 0.27011 | 0.41868 |
| <i>Barnesiella</i> | -0.69812 | 0.28288 | 0.42776 |
| <i>cc_115</i> | 0.45153 | 0.30856 | 0.45549 |
| <i>Howardella</i> | -0.55704 | 0.37711 | 0.53138 |
| <i>Lachnospira</i> | -0.52758 | 0.38963 | 0.53682 |
| <i>Eubacterium</i> | 0.25393 | 0.40694 | 0.54848 |
| <i>Christensenella</i> | -0.45065 | 0.42013 | 0.55422 |
| <i>Odoribacter</i> | -0.32269 | 0.43706 | 0.55845 |
| <i>Prevotella</i> | 0.57413 | 0.45387 | 0.55845 |
| <i>Tyzzerella</i> | -0.31617 | 0.45715 | 0.55845 |
| <i>Dorea</i> | -0.32525 | 0.45937 | 0.55845 |
| <i>Haemophilus</i> | -0.42298 | 0.6458 | 0.77 |
| <i>Ruminococcus</i> | -0.18363 | 0.7101 | 0.81193 |
| <i>Oxalobacter</i> | 0.20183 | 0.71997 | 0.81193 |
| <i>Catenibacterium</i> | 0.27376 | 0.72054 | 0.81193 |
| <i>Bilophila</i> | -0.19793 | 0.73552 | 0.81193 |
| <i>Dehalobacterium</i> | -0.15799 | 0.74645 | 0.81193 |
| <i>Acidaminococcus</i> | -0.24665 | 0.84189 | 0.8975 |
| <i>Shigella</i> | -0.18959 | 0.85407 | 0.8975 |
| <i>Senegalemassilia</i> | -0.097961 | 0.87489 | 0.90405 |
| <i>Candidatus_Soleaferra</i> | -0.13671 | 0.89148 | 0.9061 |
| <i>Dialister</i> | -0.015896 | 0.97884 | 0.97884 |
| Family | | | |
| <i>Lactobacillaceae</i> | 1.1979 | 0.019354 | 0.12774 |
| <i>Sutterellaceae</i> | 1.0788 | 0.031387 | 0.17263 |
| <i>Streptococcaceae</i> | 1.1179 | 0.061828 | 0.29147 |
| <i>Rs_045</i> | 0.85885 | 0.084824 | 0.34671 |
| <i>Rikenellaceae</i> | 0.67804 | 0.099021 | 0.34671 |
| <i>Victivallaceae</i> | -1.1177 | 0.11676 | 0.34671 |
| <i>Acidaminococcaceae</i> | 1.0686 | 0.11945 | 0.34671 |
| <i>Mogibacteriaceae</i> | -0.73076 | 0.14002 | 0.34671 |
| <i>Porphyromonadaceae</i> | 0.4804 | 0.14039 | 0.34671 |
| <i>Peptococcaceae</i> | 0.77571 | 0.14709 | 0.34671 |
| <i>Bifidobacteriaceae</i> | 0.7356 | 0.20177 | 0.42339 |
| <i>Melanabacteriaceae</i> | 1.0346 | 0.20528 | 0.42339 |

| | | | |
|----------------------------|-----------|----------|----------|
| Oscillospiraceae | -0.36413 | 0.24547 | 0.4765 |
| Coriobacteriaceae | 0.41467 | 0.32183 | 0.55897 |
| Eubacteriaceae | 0.2455 | 0.39131 | 0.61839 |
| Unclassified_Clostridiales | -0.54135 | 0.39352 | 0.61839 |
| Veillonellaceae | 0.45727 | 0.44057 | 0.64482 |
| Catabacteriaceae | 0.46558 | 0.46124 | 0.64482 |
| Prevotellaceae | 0.47354 | 0.46896 | 0.64482 |
| Pasteurellaceae | -0.55507 | 0.52258 | 0.6898 |
| Dehalobacteriaceae | -0.30958 | 0.54355 | 0.68989 |
| Desulfovibrionaceae | -0.29439 | 0.58003 | 0.70893 |
| Lachnospiraceae | -0.17727 | 0.6289 | 0.7412 |
| Enterobacteriaceae | -0.40133 | 0.66732 | 0.75936 |
| Erysipelotrichaceae | -0.12451 | 0.7537 | 0.82907 |
| Christensenellaceae | 0.13457 | 0.79082 | 0.84184 |
| Ruminococcaceae | 0.059968 | 0.82563 | 0.85143 |
| Oxalobacteraceae | 0.034598 | 0.94168 | 0.94168 |
| Order | | | |
| Bacteroidales | 0.72169 | 0.004629 | 0.074064 |
| RF32 | -2.0138 | 0.025623 | 0.20498 |
| Burkholderiales | 0.98587 | 0.042474 | 0.22653 |
| Pasteurellales | -1.528 | 0.06967 | 0.27868 |
| Lactobacillales | 0.90133 | 0.12486 | 0.29254 |
| Selenomonadales | 0.72029 | 0.12798 | 0.29254 |
| Bifidobacteriales | 0.76186 | 0.18018 | 0.36037 |
| Melainabacteriales | 0.97117 | 0.24006 | 0.40363 |
| Victivallales | -0.80195 | 0.25227 | 0.40363 |
| I025 | 0.49588 | 0.28013 | 0.40747 |
| Coriobacteriales | 0.2784 | 0.4627 | 0.58066 |
| Enterobacteriales | -0.6578 | 0.47179 | 0.58066 |
| Desulfovibrionales | -0.29296 | 0.55177 | 0.63059 |
| Clostridiales | -0.11624 | 0.61814 | 0.65935 |
| Erysipelotrichales | -0.073674 | 0.8724 | 0.8724 |
| Class | | | |
| Alphaproteobacteria | -2.3022 | 0.010586 | 0.084685 |
| Betaproteobacteria | 1.0111 | 0.032476 | 0.16507 |
| Actinobacteria | 0.94971 | 0.041611 | 0.16507 |
| Erysipelotrichi | 0.63456 | 0.099874 | 0.26633 |
| Negativicutes | 0.71439 | 0.12473 | 0.2851 |
| TM7_3 | 0.64797 | 0.15297 | 0.28683 |
| Bacilli | 0.80048 | 0.16134 | 0.28683 |
| Lentisphaeria | -0.74606 | 0.28617 | 0.45788 |
| Melainabacteria | 0.81705 | 0.31486 | 0.45798 |

| | | | |
|------------------------------|-----------|----------|---------|
| Gammaproteobacteria | -0.70793 | 0.36542 | 0.48723 |
| Deltaproteobacteria | -0.25603 | 0.62015 | 0.76326 |
| Coriobacteriia | 0.15831 | 0.75642 | 0.86448 |
| Erysipelotrichia | -0.047767 | 0.9211 | 0.94883 |
| Clostridia | 0.012021 | 0.94883 | 0.94883 |
| Phylum | | | |
| Actinobacteria | 0.89132 | 0.032458 | 0.12983 |
| Lentisphaerae | -1.3896 | 0.051135 | 0.13636 |
| CyanobacteriaMelainabacteria | 1.1834 | 0.15378 | 0.30755 |
| TM7 | 0.57946 | 0.20678 | 0.32011 |
| Firmicutes | 0.16061 | 0.24009 | 0.32011 |
| Proteobacteria | 0.32024 | 0.32597 | 0.37253 |

Log2FC: logarithm 2 fold change (positive value when the abundance increases in group of consumption >5 serv/d of adjusted UPFs); FDR: False Discovery Rate.