Dietary Intakes and Diet Quality according to Levels of Organic Food Consumption in French Adults: Cross-sectional Findings from the NutriNet-Santé Cohort Study

Online Supplementary Material

**Supplemental Table 1. Relative share of organic food by level of organic food consumption in the overall diet, NutriNet-Santé Study, N=28,245\***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Q1 [0.00;0.01[ | Q2 [0.01;0.09[ | Q3 [0.09;0.25[ | Q4 [0.25;0.49[ | Q5 [0.49;1] |
|  | Ratio† | Ratio† | Ratio† | Ratio† | Ratio† |
| **Food groups (g/day)** | **Mean** | SEM | **Mean** | SEM | **Mean** | SEM | **Mean** | SEM | **Mean** | SEM |
| Vegetables | **0.00** | 0.00 | **0.06** | 0.00 | **0.26** | 0.00 | **0.42** | 0.00 | **0.74** | 0.00 |
| Soups | **0.00** | 0.00 | **0.07** | 0.00 | **0.28** | 0.00 | **0.48** | 0.00 | **0.78** | 0.00 |
| Fruit | **0.00** | 0.00 | **0.07** | 0.00 | **0.25** | 0.00 | **0.39** | 0.00 | **0.74** | 0.00 |
| Fruit juice | **0.00** | 0.00 | **0.08** | 0.00 | **0.24** | 0.00 | **0.42** | 0.00 | **0.75** | 0.00 |
| Nuts | **0.01** | 0.00 | **0.05** | 0.00 | **0.23** | 0.00 | **0.42** | 0.00 | **0.78** | 0.00 |
| Legumes | **0.01** | 0.00 | **0.05** | 0.00 | **0.19** | 0.00 | **0.38** | 0.00 | **0.76** | 0.00 |
| Seafood | **0.00** | 0.00 | **0.04** | 0.00 | **0.12** | 0.00 | **0.24** | 0.00 | **0.37** | 0.00 |
| Meat | **0.00** | 0.00 | **0.05** | 0.00 | **0.15** | 0.00 | **0.29** | 0.00 | **0.49** | 0.00 |
| Processed meat | **0.00** | 0.00 | **0.03** | 0.00 | **0.12** | 0.00 | **0.22** | 0.00 | **0.46** | 0.00 |
| Poultry | **0.00** | 0.00 | **0.11** | 0.00 | **0.27** | 0.00 | **0.38** | 0.00 | **0.62** | 0.00 |
| Eggs | **0.02** | 0.00 | **0.26** | 0.00 | **0.51** | 0.00 | **0.67** | 0.00 | **0.85** | 0.00 |
| Milk | **0.00** | 0.01 | **0.06** | 0.01 | **0.19** | 0.01 | **0.47** | 0.01 | **0.82** | 0.01 |
| Dairy products | **0.00** | 0.00 | **0.03** | 0.00 | **0.18** | 0.00 | **0.35** | 0.00 | **0.66** | 0.00 |
| Cheese | **0.00** | 0.00 | **0.03** | 0.00 | **0.10** | 0.00 | **0.22** | 0.00 | **0.49** | 0.00 |
| Milky desserts | **0.00** | 0.00 | **0.01** | 0.00 | **0.07** | 0.00 | **0.19** | 0.00 | **0.42** | 0.00 |
| Potatoes | **0.00** | 0.00 | **0.05** | 0.00 | **0.21** | 0.00 | **0.39** | 0.00 | **0.70** | 0.00 |
| Bread‡ | **0.00** | 0.00 | **0.06** | 0.00 | **0.16** | 0.00 | **0.30** | 0.00 | **0.64** | 0.00 |
| Cereals§ | **0.01** | 0.00 | **0.05** | 0.00 | **0.18** | 0.00 | **0.36** | 0.00 | **0.73** | 0.00 |
| Wholegrain products|| | **0.01** | 0.00 | **0.10** | 0.00 | **0.26** | 0.00 | **0.47** | 0.00 | **0.79** | 0.00 |
| Vegetable oil | **0.01** | 0.00 | **0.10** | 0.00 | **0.26** | 0.00 | **0.49** | 0.00 | **0.84** | 0.00 |
| Butter/Margarine | **0.00** | 0.00 | **0.05** | 0.00 | **0.16** | 0.00 | **0.36** | 0.00 | **0.70** | 0.00 |
| Other fats¶ | **0.00** | 0.00 | **0.04** | 0.00 | **0.14** | 0.00 | **0.33** | 0.00 | **0.70** | 0.00 |
| Dressing | **0.01** | 0.00 | **0.03** | 0.00 | **0.13** | 0.00 | **0.27** | 0.00 | **0.61** | 0.00 |
| Cookies | **0.01** | 0.00 | **0.02** | 0.00 | **0.08** | 0.00 | **0.17** | 0.00 | **0.46** | 0.00 |
| Sweets\*\* | **0.01** | 0.00 | **0.07** | 0.00 | **0.19** | 0.00 | **0.34** | 0.00 | **0.62** | 0.00 |
| Fast food | **0.00** | 0.00 | **0.03** | 0.00 | **0.11** | 0.00 | **0.22** | 0.00 | **0.47** | 0.00 |
| Snacks†† | **0.01** | 0.00 | **0.02** | 0.00 | **0.12** | 0.00 | **0.23** | 0.00 | **0.54** | 0.00 |
| Grains‡‡ | **0.26** | 0.01 | **0.39** | 0.01 | **0.51** | 0.01 | **0.70** | 0.01 | **0.93** | 0.00 |
| Dairy substitutes§§ | **0.02** | 0.01 | **0.21** | 0.01 | **0.39** | 0.01 | **0.66** | 0.01 | **0.89** | 0.01 |
| Meat substitutes | **0.09** | 0.02 | **0.50** | 0.01 | **0.69** | 0.01 | **0.81** | 0.01 | **0.91** | 0.00 |
| Non-alcoholic drinks|||| | **0.01** | 0.00 | **0.02** | 0.00 | **0.12** | 0.00 | **0.31** | 0.00 | **0.71** | 0.00 |
| Alcohol | **0.00** | 0.00 | **0.03** | 0.00 | **0.11** | 0.00 | **0.19** | 0.00 | **0.40** | 0.00 |
| Soda | **0.01** | 0.00 | **0.01** | 0.00 | **0.08** | 0.00 | **0.20** | 0.00 | **0.39** | 0.00 |

**\***Q, quintile

†Values are average ratios computed by averaging the total organic food intake (g/day) out of the total intake excluding water (g/day) adjusted for sex and age calculated among consumers of each food group

‡Including bread and whole bread

§Including pasta, white rice, muesli, semolina and breakfast cereals

|| Including wholegrain rice and wholegrain pasta

¶Including mayonnaise, fresh cream and vegetal fresh cream

\*\*Including jam, honey, sugar, sweeteners, confectionary, chocolate and chocolate and spread bars, cakes, brownies, pancakes and ice cream

††Including chips, popcorns, salted cakes aperitif, peanuts, almonds and pistachio nuts

‡‡ Includingsprouted seeds, bran and wheat germs

§§Including soy yogurt, vegetal-based cheese, vegan fresh cheese and soy milk

|||| Including coffee, tea, chicory and hot chocolate

**Supplemental Table 2. Nutrient intake by level of organic food consumption in the diet, NutriNet-Santé Study, N=28,245 \***†

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Q1 [0.00;0.01[ | Q2 [0.01;0.09[ | Q3 [0.09;0.25[ | Q4 [0.25;0.49[ | Q5 [0.49;1] | p-trend‡ |
|  | **Mean** | SEM | **Mean** | SEM | **Mean** | SEM | **Mean** | SEM | **Mean** | SEM |  |
| Total energy intake (kcal/day)§ | **2005.4** | 9.5 | **2175.1** | 9.3 | **2159.2** | 9.4 | **2166.5** | 9.2 | **2129.0** | 9.2 | <0.0001 |
| Lipids (% of total energy intake)§ | **39.1** | 0.1 | **40.3** | 0.1 | **40.8** | 0.1 | **40.5** | 0.1 | **40.2** | 0.1 | <0.0001 |
| Carbohydrates (% of total energy intake)§ | **40.7** | 0.1 | **40.2** | 0.1 | **39.4** | 0.1 | **40.5** | 0.1 | **42.5** | 0.1 | <0.0001 |
| Total simple carbohydrates (% of total energy intake)§ | **20.1** | 0.1 | **19.8** | 0.1 | **19.0** | 0.1 | **19.4** | 0.1 | **21.1** | 0.1 | <0.0001 |
| Proteins (% of total energy intake)§ | **19.8** | 0.1 | **19.1** | 0.1 | **19.4** | 0.1 | **18.7** | 0.1 | **16.9** | 0.1 | <0.0001 |
| Lipids of animal origin (g/day) || | **55.7** | 0.3 | **52.3** | 0.3 | **54.6** | 0.3 | **49.5** | 0.2 | **38.9** | 0.2 | <0.0001 |
| Lipids of plant origin (g/day) || | **35.7** | 0.3 | **40.9** | 0.3 | **39.8** | 0.3 | **44.0** | 0.3 | **53.7** | 0.3 | <0.0001 |
| Proteins of animal origin (g/day) || | **75.1** | 0.4 | **70.0** | 0.4 | **72.1** | 0.4 | **65.1** | 0.4 | **47.3** | 0.4 | <0.0001 |
| Proteins of plant origin (g/day) || | **26.9** | 0.1 | **27.8** | 0.1 | **28.4** | 0.1 | **31.6** | 0.1 | **40.3** | 0.1 | <0.0001 |
| Polyunsaturated fat (g/day)|| | **13.5** | 0.1 | **14.8** | 0.1 | **15.0** | 0.1 | **15.5** | 0.1 | **18.2** | 0.1 | <0.0001 |
| Monounsaturated fatty acids (g/day)|| | **34.8** | 0.1 | **36.6** | 0.1 | **36.8** | 0.1 | **37.1** | 0.1 | **37.5** | 0.1 | <0.0001 |
| Saturated fatty acids (g/day)|| | **36.1** | 0.1 | **34.8** | 0.1 | **35.7** | 0.1 | **33.7** | 0.1 | **29.9** | 0.1 | <0.0001 |
| Omega-3 fatty acids (g/day)|| | **1.6** | 0.0 | **2.0** | 0.0 | **2.0** | 0.0 | **2.2** | 0.0 | **2.7** | 0.0 | <0.0001 |
| Omega-6 fatty acids (g/day)|| | **11.1** | 0.1 | **12.0** | 0.1 | **12.2** | 0.1 | **12.5** | 0.1 | **14.8** | 0.1 | <0.0001 |
| Cholesterol (mg/day)|| | **355.9** | 1.9 | **329.8** | 1.9 | **334.2** | 1.9 | **334.8** | 1.9 | **243.8** | 1.9 | <0.0001 |
| Added fat (g/day)|| | **25.3** | 0.2 | **30.4** | 0.2 | **28.5** | 0.2 | **30.6** | 0.2 | **31.2** | 0.2 | <0.0001 |
| Lipids of plant origin (g/day)|| | **19.4** | 0.2 | **24.7** | 0.2 | **22.2** | 0.2 | **24.7** | 0.2 | **26.1** | 0.2 | <0.0001 |
| Lipids of animal origin (g/day)|| | **5.9** | 0.1 | **5.8** | 0.1 | **6.3** | 0.1 | **5.9** | 0.1 | **5.1** | 0.1 | <0.0001 |
| Fibre (g/day)|| | **20.8** | 0.1 | **21.8** | 0.1 | **21.7** | 0.1 | **24.0** | 0.1 | **31.5** | 0.1 | <0.0001 |
| Ethanol (g/day)|| | **8.3** | 0.2 | **8.3** | 0.2 | **9.6** | 0.2 | **8.0** | 0.2 | **7.6** | 0.2 | 0.0014 |
| Retinol (mg/day)|| | **723.7** | 21.1 | **580.0** | 20.7 | **580.8** | 20.9 | **624.5** | 20.5 | **474.4** | 20.5 | <0.0001 |
| Vitamin B1 (mg/day)|| | **1.5** | 0.0 | **1.4** | 0.0 | **1.5** | 0.0 | **1.5** | 0.0 | **1.7** | 0.0 | <0.0001 |
| Vitamin B2 (mg/day)|| | **2.4** | 0.0 | **2.3** | 0.0 | **2.4** | 0.0 | **2.4** | 0.0 | **2.2** | 0.0 | <0.0001 |
| Vitamin B-3/total PP (mg/day)|| | **26.7** | 0.1 | **25.6** | 0.1 | **27.1** | 0.1 | **26.5** | 0.1 | **24.7** | 0.1 | <0.0001 |
| Vitamin B5 (mg/day)|| | **6.9** | 0.0 | **6.8** | 0.0 | **6.9** | 0.0 | **6.9** | 0.0 | **6.6** | 0.0 | <0.0001 |
| Vitamin B6 (mg/day)|| | **2.1** | 0.0 | **2.1** | 0.0 | **2.2** | 0.0 | **2.2** | 0.0 | **2.4** | 0.0 | <0.0001 |
| Vitamin B9/Folic acid (µg/day)|| | **395.5** | 2.3 | **395.5** | 2.2 | **395.6** | 2.2 | **433.7** | 2.1 | **526.8** | 2.2 | <0.0001 |
| Vitamin B12 (µg/day)|| | **7.7** | 0.1 | **6.7** | 0.1 | **6.9** | 0.1 | **7.1** | 0.1 | **5.6** | 0.1 | <0.0001 |
| Vitamin C (mg/day)|| | **145.3** | 1.3 | **147.6** | 1.2 | **144.9** | 1.3 | **152.6** | 1.2 | **191.6** | 1.2 | <0.0001 |
| Vitamin D (µg/day)|| | **2.7** | 0.0 | **3.0** | 0.0 | **3.1** | 0.0 | **3.3** | 0.0 | **2.7** | 0.0 | <0.0001 |
| Vitamin E (mg/day)|| | **13.4** | 0.1 | **14.5** | 0.1 | **13.8** | 0.1 | **14.7** | 0.1 | **17.2** | 0.1 | <0.0001 |
| Vitamin K (mg/day)|| | **196.8** | 2.3 | **192.1** | 2.2 | **217.9** | 2.2 | **230.3** | 2.2 | **311.0** | 2.2 | <0.0001 |
| Calcium (mg/day)|| | **1124.8** | 4.6 | **1172.1** | 4.5 | **1134.2** | 4.6 | **1131.7** | 4.5 | **1069.2** | 4.5 | <0.0001 |
| Iron (mg/day)|| | **15.2** | 0.1 | **14.8** | 0.1 | **15.7** | 0.1 | **16.3** | 0.1 | **18.6** | 0.1 | <0.0001 |
| Magnesium (mg/day)|| | **463.0** | 2.0 | **471.7** | 2.0 | **488.8** | 2.0 | **507.6** | 2.0 | **550.4** | 2.0 | <0.0001 |
| Phosphorus (mg/day)|| | **1558.5** | 4.3 | **1544.9** | 4.2 | **1562.6** | 4.3 | **1550.2** | 4.2 | **1520.7** | 4.2 | <0.0001 |
| Potassium (mg/day)|| | **3859.4** | 13.0 | **3826.9** | 12.7 | **3884.2** | 12.8 | **3865.3** | 12.6 | **4166.0** | 12.6 | <0.0001 |
| Sodium (mg/day)|| | **2671.4** | 11.2 | **2648.1** | 11.0 | **2915.1** | 11.1 | **2915.1** | 10.9 | **2397.2** | 10.9 | <0.0001 |
| Copper (mg/day)|| | **2.0** | 0.0 | **1.9** | 0.0 | **2.0** | 0.0 | **2.2** | 0.0 | **2.6** | 0.0 | <0.0001 |
| Zinc (mg/day)|| | **14.2** | 0.0 | **13.4** | 0.0 | **13.8** | 0.0 | **13.3** | 0.0 | **13.2** | 0.0 | <0.0001 |
| Manganese (mg/day)|| | **4.3** | 0.0 | **4.6** | 0.0 | **4.7** | 0.0 | **5.5** | 0.0 | **7.1** | 0.0 | <0.0001 |
| Selenium (µg/day)|| | **82.4** | 0.3 | **83.0** | 0.3 | **86.5** | 0.3 | **86.9** | 0.3 | **86.3** | 0.3 | <0.0001 |
| Iodine (µg/day)|| | **188.8** | 4.5 | **194.8** | 4.4 | **205.7** | 4.5 | **221.0** | 4.4 | **352.4** | 4.4 | <0.0001 |

\*Q, quintile

†As a unique food composition database has been used for nutrient calculations, potential differences for contents in organic versus conventional foods have not been taken into account

‡Values based on linear contrast test

§Values are means (± SEMs) adjusted for sex and age

|| Values are means (± SEMs) adjusted for sex, age and total energy intake. Energy adjustment was performed using the residual method.