Table S1. Distribution of total energy intake (%) according to NOVA food groups across quintiles of ultra-processed foods consumption in Portuguese adults, elderly and overall sample (2014-2015): the Upper project

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NOVA food groups** |   | **TOTAL (n=3852)** |   | **ADULTS (n=3102)** |  | **ELDERLY (n=750)** |
|  | **Quintiles of the energy share from ultra-processed food products** |   | **Quintiles of the energy share from ultra-processed food products** |  | **Quintiles of the energy share from ultra-processed food products** |
|   |   | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** |   | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** |  | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** |
| **Unprocessed or minimally processed foods** |  | **48.69** | **45.8** | **43.42** | **39.92** | **32.08\*** |   | **49.59** | **45.87** | **42.48** | **39.57** | **31.45\*** |  | **47.53** | **44.73** | **43.32** | **42.62** | **35.00\*** |
| Fruit and fresh fruit juice |  | 7.58 | 7.58 | 6.66 | 6.60 | 4.88\* |  | 7.34 | 7.28 | 5.96 | 6.29 | 4.67\* |  | 8.16 | 8.27 | 7.87 | 8.57 | 7.16 |
| Cerealsa |  | 7.34 | 6.69 | 7.03 | 6.23 | 5.21\* |  | 7.43 | 6.53 | 7.09 | 6.07 | 4.88\* |  | 5.21 | 5.66 | 5.88 | 4.36 | 4.07 |
| Red meat |  | 6.62 | 6.65 | 6.42 | 5.34 | 3.91\* |  | 7.47 | 6.74 | 6.43 | 5.39 | 4.07\* |  | 5.56 | 4.62 | 5.39 | 5.69 | 3.27 |
| Potatoes and other tubers and roots |  | 6.78 | 5.79 | 5.01 | 4.74 | 3.59\* |  | 6.45 | 5.64 | 4.66 | 4.80 | 3.41\* |  | 7.17 | 5.86 | 5.85 | 6.23 | 4.21\*\* |
| Poultry |  | 4.84 | 4.23 | 4.03 | 3.79 | 3.90\*\* |  | 5.59 | 4.43 | 4.74 | 3.85 | 3.74\* |  | 3.53 | 2.94 | 2.92 | 2.35 | 3.11 |
| Milk and plain yoghurt |  | 4.53 | 4.32 | 4.40 | 3.87 | 3.51\*\* |  | 3.60 | 4.17 | 3.92 | 3.80 | 3.38 |  | 6.40 | 5.92 | 4.96 | 5.11 | 4.95 |
| Fish and seafood |  | 3.06 | 2.87 | 2.54 | 2.32 | 1.42\* |  | 3.12 | 2.80 | 2.10 | 2.24 | 1.38\* |  | 3.26 | 2.57 | 3.24 | 3.09 | 2.23 |
| Pasta |  | 2.05 | 1.96 | 2.13 | 2.06 | 1.76 |  | 2.30 | 2.2 | 2.07 | 2.07 | 2.02 |  | 2.16 | 1.50 | 1.04 | 1.83 | 0.71 |
| Vegetables |  | 1.72 | 1.71 | 1.52 | 1.48 | 1.23\* |  | 1.83 | 1.73 | 1.52 | 1.46 | 1.19\* |  | 1.63 | 1.76 | 2.02 | 1.77 | 1.98 |
| Eggs |  | 1.72 | 1.64 | 1.46 | 1.56 | 1.20\*\* |  | 1.65 | 1.79 | 1.50 | 1.54 | 1.12\* |  | 1.72 | 1.91 | 1.22 | 1.14 | 1.48 |
| Legumes |  | 1.16 | 1.23 | 1.16 | 1.02 | 0.80\*\* |  | 1.07 | 1.04 | 1.10 | 0.85 | 0.75\*\* |  | 0.91 | 2.06 | 0.87 | 1.23 | 0.79 |
| Other unprocessed or minimally processed foodsb |   | 1.29 | 1.12 | 1.06 | 0.89 | 0.66\*\* |   | 1.72 | 1.5 | 1.39 | 1.21 | 0.85\* |  | 1.81 | 1.66 | 2.07 | 1.27 | 1.05 |
| **Processed culinary ingredientes** |  | **13.53** | **12.71** | **12.1** | **11.16** | **9.65\*** |   | **13.52** | **12.32** | **12.1** | **11.1** | **9.39\*** |  | **13.99** | **12.13** | **13.27** | **11.53** | **10.83\*\*** |
| Olive oil |  | 7.83 | 7.50 | 6.59 | 6.06 | 4.88\* |  | 7.73 | 7.08 | 6.54 | 5.90 | 4.66\* |  | 8.06 | 7.09 | 8.53 | 6.92 | 5.80\*\* |
| Table sugar |  | 2.69 | 2.24 | 2.35 | 2.26 | 1.82\* |  | 2.6 | 2.13 | 2.29 | 2.14 | 1.79\*\* |  | 2.90 | 2.36 | 2.77 | 2.26 | 2.56 |
| Animal fatsc |  | 1.74 | 1.74 | 1.82 | 1.66 | 1.62 |  | 1.90 | 1.81 | 1.84 | 1.70 | 1.66 |  | 1.59 | 1.63 | 1.27 | 1.25 | 1.58 |
| Other plant oils |  | 1.21 | 1.18 | 1.32 | 1.16 | 1.31 |  | 1.21 | 1.26 | 1.4 | 1.34 | 1.26 |  | 1.39 | 1.03 | 0.69 | 1.06 | 0.83 |
| Other processed culinary ingredientsd |   | 0.07 | 0.04 | 0.03 | 0.03 | 0.02 |   | 0.08 | 0.05 | 0.03 | 0.03 | 0.02 |  | 0.04 | 0.02 | 0.01 | 0.04 | 0.05 |
| **Processed foods** |  | **32.43** | **27.9** | **23.68** | **20** | **15.81\*** |   | **30.39** | **26.47** | **22.54** | **18.79** | **15.04\*** |  | **35.6** | **34.25** | **29.03** | **25.43** | **20.59\*** |
| Non-industrial breads |  | 19.47 | 16.57 | 13.44 | 11.53 | 8.54\* |  | 18.35 | 15.07 | 12.72 | 10.76 | 7.71\* |  | 21.19 | 21.57 | 17.79 | 14.64 | 12.91\* |
| Beer and wine |  | 6.51 | 5.06 | 3.75 | 1.85 | 1.33\* |  | 6.08 | 4.75 | 2.95 | 1.54 | 1.28\* |  | 7.02 | 5.56 | 5.76 | 5.30 | 1.98\* |
| Cheeses |  | 3.36 | 3.16 | 3.04 | 2.96 | 2.83\*\* |  | 2.98 | 3.38 | 3.02 | 2.82 | 2.91 |  | 4.01 | 4.01 | 2.52 | 3.20 | 2.93 |
| Ham and other salted, smoked, or canned meat or fish |  | 1.69 | 1.59 | 1.54 | 1.48 | 0.88\* |  | 1.59 | 1.40 | 1.71 | 1.37 | 0.85\*\* |  | 1.78 | 1.82 | 2.04 | 1.32 | 1.20 |
| Vegetables and other plant foods preserved in brine |  | 0.48 | 0.54 | 0.75 | 0.80 | 1.01\* |  | 0.55 | 0.62 | 0.88 | 0.88 | 1.09\* |  | 0.68 | 0.59 | 0.42 | 0.31 | 0.69 |
| Other processed foodse |   | 0.92 | 0.98 | 1.17 | 1.36 | 1.23\*\* |   | 0.85 | 1.25 | 1.26 | 1.42 | 1.20 |  | 0.93 | 0.70 | 0.49 | 0.66 | 0.89 |
| **Ultra-processed food products** |  | **5.35** | **13.59** | **20.8** | **28.92** | **42.46\*** |   | **6.50** | **15.34** | **22.88** | **30.54** | **44.12\*** |  | **2.88** | **8.89** | **14.38** | **20.42** | **33.58\*** |
| Yogurt and milk-based drinks |  | 0.93 | 2.23 | 2.87 | 4.64 | 5.01\* |  | 1.11 | 2.64 | 3.42 | 4.83 | 5.05\* |  | 0.46 | 1.56 | 2.16 | 1.98 | 4.44\* |
| Industrial cakes and desserts |  | 0.31 | 1.42 | 2.67 | 4.09 | 6.99\* |  | 0.48 | 1.56 | 2.86 | 4.16 | 7.03\* |  | 0.19 | 0.62 | 1.51 | 3.05 | 7.17\* |
| Sausage and other reconstituted meat products |  | 1.42 | 2.57 | 3.06 | 3.12 | 4.65\* |  | 1.56 | 3.05 | 2.94 | 3.82 | 4.87\* |  | 0.77 | 2.41 | 1.80 | 2.76 | 1.79\*\* |
| Industrial breads and toasts |  | 0.26 | 1.23 | 2.22 | 3.57 | 5.87\* |  | 0.30 | 1.44 | 2.54 | 3.83 | 6.13\* |  | 0.17 | 0.54 | 1.19 | 2.83 | 4.39\* |
| Packaged sweet snacksf |  | 0.50 | 1.38 | 2.81 | 3.57 | 4.34\* |  | 0.59 | 1.42 | 3.19 | 3.51 | 4.83\* |  | 0.52 | 0.94 | 2.09 | 3.08 | 2.69\* |
| Soft drinks and sugar-sweetened beverages |  | 0.34 | 1.01 | 1.26 | 2.32 | 3.47\* |  | 0.48 | 1.22 | 1.85 | 2.39 | 3.74\* |  | 0.03 | 0.44 | 0.68 | 0.63 | 1.79\* |
| Breakfast cereals |  | 0.14 | 0.77 | 1.31 | 1.56 | 2.19\* |  | 0.17 | 0.81 | 1.43 | 1.67 | 2.30\* |  | 0.03 | 0.30 | 1.14 | 1.12 | 1.81\* |
| Ready-to-eat foodsg |  | 0.05 | 0.44 | 0.98 | 1.29 | 3.03\* |  | 0.11 | 0.56 | 0.89 | 1.53 | 3.25\* |  | 0.00 | 0.01 | 0.86 | 0.84 | 2.11\*\* |
| Imitation cheese, margarine, and other spreads |  | 0.73 | 0.97 | 1.17 | 1.18 | 1.35\* |  | 0.78 | 0.92 | 1.16 | 1.15 | 1.29\* |  | 0.34 | 1.14 | 1.27 | 1.17 | 1.47\*\* |
| Packaged pre-prepared foods |  | 0.04 | 0.35 | 0.60 | 1.11 | 2.04\* |  | 0.12 | 0.36 | 0.71 | 1.14 | 2.07\* |  | 0.04 | 0.18 | 0.26 | 0.43 | 2.30\*\* |
| Confectionery |  | 0.23 | 0.40 | 0.56 | 0.78 | 1.10\* |  | 0.28 | 0.44 | 0.57 | 0.77 | 1.20\* |  | 0.10 | 0.29 | 0.59 | 0.46 | 0.94\*\* |
| Other ultra-processed foodsh |   | 0.41 | 0.83 | 1.28 | 1.71 | 2.41\* |   | 0.53 | 0.93 | 1.31 | 1.75 | 2.36\* |   | 0.24 | 0.46 | 0.84 | 2.06 | 2.68\* |
| **Total** |  | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |  | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |  | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |

a-i See Table 1 footnote. \* p < 0.001 and \*\*p<0.05 for linear trend across quintiles of ultra-processed foods consumption.