

Online Supplementary Materials

Table S1. Trends in UK hummus and chickpea consumption overall and according to sociodemographic characteristics, 2008-2019

| | Hummus, % (95% CI) | | | | Other chickpea, % (95% CI) | | | |
|------------------|--------------------|-----------------|------------------|------------------|----------------------------|-------------------|-------------------|-------------------|
| | 2008-12 | 2012-14 | 2014-16 | 2016-19 | 2008-12 | 2012-14 | 2014-16 | 2016-19 |
| Total | 3.4 (2.7, 4.1) | 4.1 (3.0, 5.2) | 6.1 (4.8, 7.5) | 6.0 (5.0, 7.1) | 3.3 (2.6, 3.9) | 4.4 (3.2, 5.6) | 7.4 (5.8, 8.9) | 8.7 (7.4, 10.0) |
| Age group, y | | | | | | | | |
| 1.5-3 | 4.2 (2.4, 6.0) | 3.4 (0.3, 6.5) | 7.6 (4.4, 10.8) | 10.7 (7.6, 13.8) | 1.5 (0.5, 2.6) | 1.4 (0.4, 2.5) | 5.7 (3.0, 8.4) | 3.2 (1.7, 4.8) |
| 4-10 | 2.9 (1.9, 4.0) | 3.5 (1.6, 5.5) | 4.1 (2.2, 5.9) | 3.5 (2.0, 5.0) | 4.7 (3.2, 6.2) | 3.7 (1.6, 5.7) | 5.9 (3.3, 8.4) | 6.2 (4.0, 8.4) |
| 11-18 | 2.0 (1.0, 3.0) | 1.5 (0.3, 2.7) | 2.1 (0.8, 3.4) | 4.7 (2.8, 6.5) | 2.6 (1.5, 3.6) | 1.5 (0.2, 2.9) | 3.4 (1.5, 5.3) | 6.6 (4.2, 9.0) |
| 19-64 | 4.2 (3.1, 5.2) | 5.0 (3.4, 6.7) | 8.0 (6.0, 10.0) | 7.2 (5.6, 8.8) | 3.6 (2.6, 4.6) | 5.4 (3.6, 7.2) | 9.6 (7.3, 11.9) | 10.4 (8.5, 12.3) |
| ≥65 | 1.2 (0.1, 2.2) | 2.4 (0.6, 4.1) | 2.8 (1.0, 4.6) | 3.4 (1.4, 5.4) | 1.8 (0.7, 3.0) | 3.4 (0.9, 6.0) | 2.8 (0.3, 5.3) | 6.2 (3.6, 8.9) |
| Sex | | | | | | | | |
| Male | 2.5 (1.6, 3.4) | 2.6 (1.2, 3.9) | 4.8 (3.1, 6.5) | 4.5 (3.1, 5.8) | 2.7 (1.8, 3.6) | 4.1 (2.2, 6.0) | 6.4 (4.3, 8.5) | 8.0 (6.2, 9.9) |
| Female | 4.2 (3.1, 5.3) | 5.5 (3.8, 7.2) | 7.4 (5.4, 9.5) | 7.6 (5.9, 9.2) | 3.8 (2.8, 4.7) | 4.7 (3.2, 6.2) | 8.3 (5.9, 10.6) | 9.3 (7.4, 11.2) |
| Race | | | | | | | | |
| White | 3.3 (2.6, 4.0) | 4.1 (2.9, 5.3) | 6.0 (4.6, 7.4) | 5.7 (4.6, 6.8) | 1.9 (1.4, 2.4) | 2.8 (1.7, 3.9) | 5.6 (4.2, 7.1) | 7.9 (6.5, 9.2) |
| Other* | 3.9 (1.7, 6.1) | 3.8 (1.6, 6.1) | 6.9 (2.8, 11.0) | 7.9 (4.4, 11.5) | 13.0 (9.2, 16.8) | 16.7 (11.0, 22.4) | 16.5 (10.7, 22.4) | 13.7 (9.4, 17.9) |
| Income Tertile** | | | | | | | | |
| Low | 1.9 (0.8, 3.0) | 2.5 (1.1, 3.9) | 4.3 (2.0, 6.5) | 3.8 (2.0, 5.6) | 2.7 (1.6, 3.9) | 5.3 (2.6, 8.0) | 5.0 (2.8, 7.3) | 8.0 (5.6, 10.5) |
| Medium | 2.7 (1.6, 3.9) | 4.3 (1.9, 6.8) | 4.1 (2.0, 6.2) | 5.7 (3.7, 7.7) | 2.7 (1.7, 3.7) | 1.6 (0.4, 2.8) | 6.6 (3.6, 9.7) | 7.4 (5.1, 9.7) |
| High | 5.9 (4.3, 7.4) | 5.7 (3.6, 7.8) | 9.3 (6.7, 12.0) | 11.3 (8.6, 14.0) | 4.3 (3.0, 5.6) | 5.5 (3.3, 7.8) | 8.9 (6.1, 11.7) | 8.1 (5.9, 10.2) |
| Education*** | | | | | | | | |
| Low(≤16 y) | 1.6 (0.9, 2.4) | 2.0 (0.5, 3.5) | 1.8 (0.6, 2.9) | 3.3 (1.8, 4.8) | 1.6 (0.8, 2.4) | 2.7 (1.1, 4.3) | 3.2 (1.8, 4.6) | 5.0 (3.1, 6.9) |
| Medium (17-18y) | 4.2 (2.2, 6.2) | 4.6 (2.0, 7.2) | 7.2 (4.0, 10.5) | 4.7 (2.6, 6.9) | 2.9 (1.4, 4.4) | 7.0 (3.0, 11.1) | 5.2 (2.7, 7.7) | 8.1 (5.1, 11.1) |
| High(≥19 y) | 6.0 (4.0, 8.1) | 7.8 (4.7, 11.0) | 13.5 (9.6, 17.4) | 10.7 (7.9, 13.4) | 6.2 (4.0, 8.4) | 7.7 (4.7, 10.7) | 15.6 (11.1, 20.2) | 15.2 (12.0, 18.4) |

*Other includes Mixed ethnic group, Black or Black British, Asian or Asian British, Any other group. These groups were combined because there was not sufficient sample size in each group. ** Equivalised household income tertiles was calculated by creating a score for each household (based upon the number, age and relationships of adults and children in the household), and then dividing the total household income by this score to get an equivalised household income.

*** Education is the age when education is completed

Table S2. UK chickpea and bean consumption overall and according to socio-demographic characteristics, 2016-2019

| | Consumers, % (95% confidence interval) | | |
|--------------------|--|-----------------------------|--------------------------------|
| | Chickpea consumers (n=363) | Bean consumers* (n=1708) | Non-bean consumers (n=1487) |
| Total | 12.3 (10.8, 13.8) | 48.1 (45.9, 50.3) | 39.6 (37.5, 41.8) |
| Age group, y | | | |
| 1.5-3 | 13.4 (9.9, 16.8) | 41.5 (35.2, 47.7) | 45.2 (38.8, 51.6) |
| 4-10 | 8.8 (6.3, 11.3) | 52.8 (48.5, 57.0) | 38.5 (34.4, 42.5) |
| 11-18 | 10.3 (7.4, 13.2) | 46.2 (41.9, 50.6) | 43.4 (39.2, 47.7) |
| 19-64 | 14.4 (12.1, 16.6) | 49.9 (46.8, 53.1) | 35.7 (32.7, 38.7) |
| ≥65 | 8.1 (5.2, 10.9) | 41.8 (37.1, 46.4) | 50.2 (45.4, 55.0) |
| Sex | | | |
| Male | 10.9 (8.8, 12.9) | 49.7 (46.4, 53.0) | 39.4 (36.2, 42.7) |
| Female | 13.7 (11.6, 15.8) | 46.5 (43.6, 49.5) | 39.8 (36.9, 42.6) |
| Race/ethnicity | | | |
| White | 11.3 (9.8, 12.9) | 47.3 (45.0, 49.7) | 41.4 (39.1, 43.7) |
| Other | 18.5 (13.6, 23.4) | 53.0 (46.7, 59.3) | 28.5 (23.0, 34.0) |
| Income Tertile | | | |
| Low | 9.9 (7.2, 12.5) | 46.7 (42.6, 50.8) | 43.4 (39.4, 47.4) |
| Medium | 10.8 (8.2, 13.5) | 47.0 (42.8, 51.2) | 42.2 (38.1, 46.3) |
| High | 16.9 (13.8, 20.0) | 51.4 (47.4, 55.3) | 31.7 (28.2, 35.3) |
| Education (adults) | | | |
| Low (≥16 y) | 6.5 (4.7, 8.3) | 46.4 (42.9, 49.8) | 47.1 (43.7, 50.6) |
| Medium (17-18 y) | 10.5 (7.7, 22.8) | 50.8 (46.3, 55.4) | 38.7 (34.2, 43.2) |
| High (≥19 y) | 19.8 (16.7, 22.8) | 48.0 (44.3, 51.7) | 32.2 (29.0, 35.5) |

*bean consumer consumes beans but not chickpeas

Table S3. Comparison of dietary intakes among chickpea consumers, bean consumers*, and non-bean consumers, 2016-2019 (youth and adults)

| | Multivariable adjusted ¹ mean (95% CI) | | |
|---|---|-----------------------------------|-----------------------------------|
| | Chickpea consumers (n=363) | Bean consumers (n=1708) | Non-bean consumers (n=1487) |
| Kcal/d | 1686 (1622, 1749) | 1670 (1635, 1704) | 1584 (1548, 1620) ^a |
| Protein, g/d | 66.3 (63.1, 69.5) ^{a,b} | 67.5 (66.0, 69.0) ^a | 63.6 (61.7, 65.5) ^b |
| Carbohydrate, g/d | 206 (197, 215) ^{a,b} | 210 (205, 215) ^a | 196 (192, 201) ^b |
| Free sugar, g/d | 45.9 (41.4, 50.4) | 48.6 (46.4, 50.8) | 46.7 (44.4, 49.0) |
| Dietary fiber g/d | 21.1 (20.0, 22.3) ^a | 18.0 (17.4, 18.6) ^b | 14.8 (14.4, 15.2) ^c |
| Total fat, g/d | 66.9 (63.9, 69.9) ^a | 63.2 (61.6, 64.8) | 60.8 (59.1, 62.6) |
| Saturated fat, g/d | 23.5 (22.1, 24.9) | 23.6 (22.8, 24.3) | 23.2 (22.4, 23.9) |
| MUFA, g/d | 24.8 (23.6, 26.1) ^a | 23.2 (22.6, 23.8) | 22.3 (21.6, 23.0) |
| PUFA, g/d | 10.6 (10.0, 11.2) ^a | 9.0 (8.7, 9.2) ^b | 8.2 (7.9, 8.5) ^c |
| Potassium, mg/d | 2652 (2550, 2755) | 2550 (2494, 2606) | 2355 (2297, 2414) ^a |
| Vitamin D, µg/d | 4.7 (3.0, 6.5) | 4.8 (3.7, 5.8) | 4.4 (3.3, 5.6) |
| Iron, mg/d | 11.9 (9.5, 14.3) ^{a,b} | 10.9 (10.2, 11.5) ^a | 9.3 (8.8, 9.8) ^b |
| Magnesium, mg/d | 276.5 (262.4, 290.6) ^a | 242.1 (235.7, 248.4) ^b | 218.5 (211.1, 226.0) ^c |
| Sodium, mg | 1873 (1769, 1978) | 1921 (1871, 1971) | 1707 (1653, 1761) ^a |
| Calcium, mg | 831 (787, 874) | 804 (782, 826) | 762 (738, 786) ^a |
| Food groups | | | |
| Fruits and Vegetables (g) | 306.8 (281.8, 331.8) ^a | 244.8 (233.5, 256.1) ^b | 221.6 (209.9, 233.2) ^c |
| Pulses and nuts (g) | 37.0 (30.5, 43.4) ^a | 26.3 (23.1, 29.5) ^b | 1.9 (0.8, 2.9) ^c |
| Red and processed meat, g | 26.4 (21.7, 31.1) ^a | 44.9 (42.1, 47.8) | 41.8 (38.9, 44.7) |
| Fish, g | 15.0 (11.0, 19.1) | 16.2 (14.4, 18.1) | 14.2 (12.6, 15.9) |
| Oily fish, g | 6.4 (3.4, 9.4) | 6.3 (5.1, 7.4) | 5.2 (4.0, 6.4) |
| Modified Healthy Diet Score (range 0-14) | 7.4 (7.2, 7.7) ^a | 6.5 (6.4, 6.6) ^b | 6.1 (6.0, 6.2) ^c |

*bean consumer consumes beans but not chickpeas. Differing letters indicate that values are different at the p<0.05 level across each row. If there is no letter than the value is not significantly different from any of the other values. ¹Adjusted for age group, sex, race, family income and education;

Table S4. Comparison of dietary intakes among chickpea consumers, bean consumers*, and non-bean consumers, 2016-2019 (just adults)

| | Mean (95% CI) | | |
|--|-----------------------------------|-----------------------------------|-----------------------------------|
| | Chickpea consumers (n=213) | Bean consumers (n=893) | Non-bean consumers (n=738) |
| Kcal/d | 1860 (1806, 1914) | 1830 (1779, 1878) | 1708 (1667, 1749) ^a |
| Protein, g/d | 74.7 (71.5, 77.9) | 76.5 (74.5, 78.6) | 70.3 (68.3, 72.4) ^a |
| Carbohydrate, g/d | 219 (212, 226) | 220 (213, 227) | 202 (197, 208) ^a |
| Free sugar, g/d | 46.0 (42.4, 49.5) | 49.0 (46.2, 51.7) | 47.4 (44.2, 50.5) |
| Dietary fiber g/d | 24.4 (23.2, 25.6) ^a | 20.5 (19.6, 21.3) ^b | 16.6 (16.1, 17.1) ^c |
| Total fat, g/d | 74.0 (71.3, 76.8) ^a | 69.1 (67.0, 71.3) ^b | 65.8 (63.8, 67.8) ^c |
| Saturated fat, g/d | 25.4 (24.2, 26.6) | 25.4 (24.4, 26.3) | 24.8 (24.0, 25.7) |
| MUFA, g/d | 27.6 (26.4, 28.9) ^a | 25.4 (24.5, 26.3) ^b | 24.1 (23.3, 24.9) ^c |
| PUFA, g/d | 12.1 (11.5, 12.7) ^a | 10.0 (9.6, 10.4) ^b | 9.0 (8.6, 9.3) ^c |
| Potassium, mg/d | 3023 (2928, 3118) | 2906 (2832, 2980) | 2656 (2590, 2722) ^a |
| Vitamin D, µg/d | 6.8 (5.1, 8.5) | 6.0 (4.5, 7.4) | 5.6 (4.3, 6.9) |
| Iron, mg/d | 14.1 (11.5, 16.7) | 12.5 (11.7, 13.3) | 10.9 (10.0, 11.8) ^a |
| Magnesium, mg/d | 324.2 (309.2, 339.1) ^a | 283.0 (274.1, 291.7) ^b | 250.9 (242.5, 259.4) ^c |
| Sodium, mg | 2033 (1952, 2114) | 2100 (2039, 2160) | 1858 (1797, 1919) ^a |
| Calcium, mg | 862.2 (824.1, 900.3) | 855.5 (826.1, 884.8) | 805 (777, 832) ^a |
| Fruits and Vegetables (g) | 387.7 (366.0, 409.3) ^a | 294.7 (281.0, 308.4) ^b | 255.9 (242.2, 269.7) ^c |
| Pulses and nuts (g) | 45.5 (39.3, 51.8) ^a | 31.1 (26.6, 35.7) ^b | 4.1 (3.3, 4.8) ^c |
| Red and processed meat, g | 24.3 (19.7, 28.8) ^a | 48.1 (44.6, 51.5) | 44.4 (41.0, 47.7) |
| Fish, g | 20.8 (17.1, 24.6) | 21.6 (19.3, 23.9) | 21.8 (19.4, 24.2) |
| Oily fish, g | 10.5 (7.6, 13.5) | 9.6 (8.2, 11.1) | 7.9 (6.5, 9.3) |
| Modified Healthy Diet Score (range 0-14) | 8.0 (7.8, 8.2) ^a | 6.8 (6.6, 6.9) ^b | 6.2 (6.1, 6.4) ^c |

*bean consumer consumes beans but not chickpeas

Table S5. Comparison of dietary intakes among chickpea consumers, bean consumers*, and non-bean consumers among adults only, 2016-2019

| | Multivariable Adjusted ¹ Mean (95% CI) | | |
|--|---|-----------------------------------|-----------------------------------|
| | Chickpea consumers (n=213) | Bean consumers (n=893) | Non-bean consumers (n=738) |
| Kcal/d | 1812 (1738, 1885) | 1793 (1750, 1837) | 1697 (1651, 1744) ^a |
| Protein, g/d | 73.4 (69.7, 77.1) ^{ab} | 74.8 (73.0, 76.7) ^a | 70.8 (68.3, 73.4) ^b |
| Carbohydrate, g/d | 212 (202, 223) ^{ab} | 215 (209, 222) ^a | 200 (194, 207) ^b |
| Free Sugar, g/d | 46.4 (41.0, 51.8) | 48.5 (45.7, 51.3) | 46.3 (43.3, 49.4) |
| Dietary fiber g/d | 23.6 (22.2, 24.9) ^a | 20.2 (19.4, 21.0) ^b | 16.7 (16.1, 17.2) ^c |
| Total fat, g/d | 71.9 (68.3, 75.5) ^a | 67.8 (65.8, 69.8) ^{ab} | 65.1 (62.7, 67.5) ^b |
| Saturated fat, g/d | 24.9 (23.3, 26.5) | 25.0 (24.0, 25.9) | 24.4 (23.4, 25.4) |
| MUFA, g/d | 26.7 (25.1, 28.2) ^a | 24.8 (24.1, 25.6) | 23.9 (22.9, 24.8) |
| PUFA, g/d | 11.6 (10.8, 12.3) ^a | 9.7 (9.4, 10.1) ^b | 8.9 (8.5, 9.3) ^c |
| Potassium, mg/d | 2995 (2876, 3115) | 2880 (2806, 2953) | 2675 (2598, 2753) ^a |
| Vitamin D, µg/d | 6.1 (4.0, 8.3) | 6.2 (4.7, 7.6) | 5.9 (4.3, 7.6) |
| Iron, mg/d | 13.4 (10.5, 16.4) ^{ab} | 12.3 (11.4, 13.3) ^a | 10.7 (9.9, 11.4) ^b |
| Magnesium, mg/d | 315.5 (297.7, 333.3) ^a | 278.6 (270.0, 287.2) ^b | 253.2 (243.1, 263.3) ^c |
| Sodium, mg | 2033 (1914, 2153) | 2070 (2007, 2133) | 1840 (1770, 1911) ^a |
| Calcium, mg | 870 (818, 922) | 851 (821, 880) | 799 (767, 831) ^a |
| Fruits and Vegetables (g) | 358.9 (328.9, 388.9) ^a | 294.0 (278.8, 309.2) ^b | 267.8 (252.2, 283.4) ^c |
| Pulses and nuts (g) | 40.7 (33.1, 48.3) ^a | 30.0 (25.6, 34.3) ^b | 4.1 (3.0, 5.2) ^c |
| Red and processed meat, g | 28.8 (23.2, 34.3) ^a | 48.6 (44.9, 52.4) | 44.2 (40.5, 48.0) |
| Fish, g | 19.9 (15.0, 24.8) | 21.6 (19.0, 24.1) | 19.4 (17.1, 21.7) |
| Oily fish, g | 10.2 (6.6, 13.9) | 10.1 (8.5, 11.7) | 8.7 (7.0, 10.4) |
| Modified Healthy Diet Score (range 0-14) | 7.7 (7.4, 8.0) ^a | 6.8 (6.6, 6.9) ^b | 6.2 (6.1, 6.4) ^c |

*bean consumer consumes beans but not chickpeas. Differing letters indicate that values are different at the p<0.05 level across each row. If there is no letter than the value is not significantly different from any of the other values. ¹Adjusted for age group, sex, race, family income and education;