| Supplementary material: The Delphi study  Table S1. Derivation of initial items for round 1 of the Delphi study | | | |
| --- | --- | --- | --- |
| **Item** | **Changes reported during Early ACTID(14)** | **Relationship with nutrition guidelines(15)** | **Diabetes UK food-based guidelines(16)** |
| **Food frequency questions** |  |  |  |
| Fruit | No | Component of Mediterranean diet and DASH diet / source of soluble fibre | "Aim for at least five portions of fruit and/or vegetables every day" |
| Vegetables | No |
| Do you have fruit or vegetables with at least 2 meals each day? | No |
| Oily fish | No | Component of Mediterranean diet / source of long chain omega-3 | "Oily fish… are particularly good for you" |
| Full fat milk | Yes (men and women) | Sources of saturated fat / high energy density foods | "Eat less fat - particularly saturated fat…. using skimmed or semi-skimmed milk and other low-fat dairy products" |
| Cheese | Yes (men) |
| Butter | No |
| Cream or ice cream | No |
| Processed meat | No | High in saturated fat / salt / high energy density foods | "Eat less fat -particularly saturated fat" "Reduce your salt…. try cutting back on processed foods" |
| Pies, pasties or other savoury pastries | Yes (men) | High in saturated fat / salt / monitoring carbohydrate intake / high energy density foods |
| How often do you eat fast foods (either from a take-away or in a restaurant)? | N/A |
| Crisps, salted nuts or other salty snacks | Yes (men) |
| Sweet biscuits or cookies | Yes (men) | High in saturated fat / sugar / monitoring carbohydrate intake / high energy density foods | "Eat less fat - particularly saturated fat" "Cut back on sugar" |
| Cakes or sweet pastries | Yes (men) |
| Drinks that contain sugar | Yes (men and women) | High glycaemic index / monitoring carbohydrate intake |
| Added sugar in tea, coffee or other drinks? | Yes (men) |
| White bread | Yes (men and women) | Low fibre, high glycaemic index / monitoring carbohydrate intake | Specific high fibre breads / cereals like granary and porridge are mentioned |
| Low fibre cereal | Yes (men reduced low fibre; women increased high fibre) |
| Tinned or dried pulses (e.g. kidney beans, lentils, chickpeas) | No | High fibre / low glycaemic index / component of the Mediterranean diet | "Eat plenty of beans" |
| Alcohol | Yes (men) | > 2 alcoholic drinks / day increases blood pressure / high energy density | "Drink sensibly" “Alcohol is high in calories. To lose weight consider cutting back” |
| **Food habits questions** |  |  |  |
| How often do you eat a ready meal? | Yes (women) | Potentially high in saturated fat / foods | N/A |
| How often do you use ‘cook-in’ sauces? | Yes (women) |
| How often do you have any two or more of these foods at your main meal: Bread; Potatoes/chips; Pasta; Rice; Taro; Yam? | N/A | Monitoring carbohydrate intake |
| How many meals each day do you eat? | No | Weight management | "Eat regular meals" |
| How often do you eat breakfast? | No |
| How often do you ‘pick’ or ‘snack’ on foods outside of your planned meal or snack times? | No |
| How often do you eat because you are bored? | N/A | N/A |
| How often do you eat out of habit? | N/A |
| How often do you feel uncomfortably full after a meal? | N/A |  |
| How often do you think you have too much food on your plate? | N/A |
| Do you ever think you eat too fast? | N/A |  |
| How often do you feel out of control with eating? | N/A |
| **Patient-centred questions** |  |  |  |
| How motivated are you to change your diet? | N/A | "A person centred approach… involves assessing… willingness and readiness to change… and joint decision making" p7 | N/A |
| How confident are you that you could change your diet? | N/A |  |
| Are there any changes to your eating or drinking habits you think you could make? | N/A |
| N/A = not applicable |  |  |  |

**Consensus**

Round 1 consensus was established if there was a:

* Percentage agreement of ≥ 75%
* Coefficient of variation of ≤ 0.20
* Mean ≥ 2.75

Round 2 consensus was established as above.

Participants were also asked to decide whether an item (including newly suggested items) was “suitable for inclusion in a questionnaire” or “better discussed by a dietitan” and to pick their top 15 items for inclusion in a brief dietary questionnaire. If ≥ 75% of people agreed that an item was “suitable for inclusion in a questionnaire” it was automatically included, items that scored ≤50 % were automatically excluded and a judgement was made for the remaining items using a combination of consensus measures, how many people selected the item for their top 15 items, round 1 comments and a considered opinion as to whether inclusion would enhance dietary assessment.

|  |  |  |
| --- | --- | --- |
| **Table S2. Items suggested during round 1, with round 2 results** | | |
| Suggested item  (n=number who made a selection) | Percentage selecting item as good for a questionnaire | Percentage selecting for top 15 (n=29) |
| Sweets and chocolate (n=38)i | 84.2 | 27.6 |
| Are you concerned about your weight? (n=37) | 63.1 | 31.0 |
| Do you eat pudding or dessert with your meals? (n=36) | 60.5 | 13.8 |
| How often do you eat sugary foods in a day? (n=37) | 55.3 | 17.2 |
| Pasta and rice (n=36) | 47.4e | 10.3 |
| How much oil do you add to cooking? (n=37) | 44.7e | 10.3 |
| Red meat (n=38) | 42.1e | 6.9 |
| Do you cater for yourself or others as well? (n=37) | 39.5e | 17.2 |
| Whole grains (n=37) | 39.4e | 10.3 |
| Sources of monounsaturated fat (avocado, nuts and olive oil) (n=38) | 34.2e | 6.9 |
| Asian foods (n=37) | 34.2e | 0.0 |
| How many courses do you eat at a meal? (n=36) | 31.6e | 13.8 |

| Table S3. Round 1 results, ordered by the mean importance (n=49) | | | |
| --- | --- | --- | --- |
|  | **Mean (standard deviation)** | **Coefficient of variation** | **Percentage of agreement** |
| Fruit | 3.51 (0.54) | 0.16 | 98.0\* |
| How motivated are you to change your diet? | 3.47 (0.58) | 0.17 | 95.9\* |
| Vegetables | 3.53 (0.58) | 0.16 | 95.9\* |
| How often do you eat breakfast? | 3.31 (0.58) | 0.18 | 93.9\* |
| Sweet biscuits or cookies | 3.33 (0.72) | 0.22 | 93.9 |
| Cakes or sweet pastries | 3.31 (0.74) | 0.22 | 91.8 |
| How many meals each day do you eat? | 3.41 (0.64) | 0.19 | 91.8\* |
| Oily fish | 3.22 (0.71) | 0.22 | 91.8 |
| How often do you ‘pick’ or ‘snack’ on foods outside of your planned meal or snack times? | 3.31 (0.68) | 0.21 | 91.8 |
| Drinks that contains sugar | 3.37 (0.81) | 0.24 | 91.8 |
| Added sugar in tea, coffee or other drinks | 3.24 (0.80) | 0.25 | 89.8 |
| Alcohol | 3.31 (0.77) | 0.23 | 89.8 |
| Crisps, salted nuts or other salty snacks | 3.27 (0.76) | 0.23 | 89.8 |
| Pies, pasties or other savoury pastries | 3.31 (0.71) | 0.22 | 89.8 |
| Butter | 3.16 (0.69) | 0.22 | 87.8 |
| Cheese | 3.24 (0.66) | 0.20 | 87.8 |
| How often do you eat fast foods (either from a take-away or in a restaurant)? | 3.27 (0.73) | 0.22 | 87.8 |
| Do you have fruit or vegetables with at least 2 meals each day? | 3.20 (0.71) | 0.22 | 87.8 |
| White bread | 3.02 (0.85) | 0.28 | 87.6 |
| Full fat milk | 3.14 (0.79) | 0.25 | 87.3 |
| How confident are you that you could change your diet? | 3.08 (0.73) | 0.24 | 85.7 |
| Are there any changes to your eating or drinking habits you think you could make? | 3.14 (0.76) | 0.24 | 85.7 |
| Low fibre cereal | 3.08 (0.70) | 0.23 | 83.7 |
| How often do you eat because you are bored? | 2.90 (0.82) | 0.28 | 81.6 |
| Processed meat | 3.10 (0.74) | 0.24 | 81.6 |
| Cream or ice cream | 2.98 (0.80) | 0.27 | 79.6 |
| How often do you eat out of habit? | 2.84 (0.83) | 0.29 | 77.6 |
| Tinned or dried pulses (e.g. kidney beans, lentils, chickpeas) | 2.88 (0.63) | 0.22 | 77.6 |
| How often do you think you have too much food on your plate? | 2.80 (0.74) | 0.26 | 69.4 |
| How often do you feel out of control with eating? | 2.73 (0.86) | 0.31 | 67.3 |
| How often do you have any two or more of these foods at your main meal: Bread; Potatoes/chips; Pasta; Rice; Taro; Yam? | 2.78 (0.71) | 0.26 | 65.3 |
| Do you ever think you eat too fast? | 2.59 (0.70) | 0.27 | 59.2 |
| How often do you eat a ready meal? | 2.61 (0.81) | 0.31 | 57.1 |
| How often do you feel uncomfortably full after a meal? | 2.51 (0.87) | 0.35 | 55.1 |
| How often do you use ‘cook-in’ sauces? | 2.43 (0.74) | 0.30 | 53.1 |

\*Consensus (percentage of agreement ≥75%; Coefficient of variation ≤0.20; mean ≥2.75)

| **Table S4. Round 2 results: initial items (n=38)** | | | |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Mean (standard deviation) | Coefficient of variation | Percentage of agreement | Percentage selecting item as good for a questionnaire | Percentage selecting for top 15 (n=29) |
| Fast foods (either from a take-away or in a restaurant)i | 3.24 (0.54) | 0.17 | 94.7\* | 92.1 | 44.8 |
| Alcoholi | 3.37 (0.54) | 0.16 | 97.4\* | 89.5 | 65.5 |
| Cakes or sweet pastriesi | 3.24 (0.49) | 0.15 | 97.4\* | 89.5 | 69.0 |
| Sweet biscuits or cookiesi | 3.24 (0.49) | 0.15 | 94.7\* | 89.5 | 58.6 |
| Vegetablesi | 3.55 (0.65) | 0.18 | 91.2\* | 89.5 | 79.3 |
| Fruiti | 3.55 (0.55) | 0.16 | 97.4\* | 86.8 | 75.9 |
| Pies, pasties or other savoury pastriesi | 3.24 (0.43) | 0.13 | 100\* | 84.2 | 72.4 |
| Crisps, salted nuts or other salty snacksi | 3.18 (0.51) | 0.16 | 97.4\* | 84.2 | 48.3 |
| Drinks that contains sugari | 3.58 (0.55) | 0.15 | 97.4\* | 84.2 | 89.7 |
| Cheesei | 3.05 (0.40) | 0.13 | 94.7\* | 81.6 | 62.1 |
| How often do you eat breakfast?i | 3.29 (0.52) | 0.16 | 97.4\* | 78.9 | 37.9 |
| Processed meati | 3.13 (0.53) | 0.17 | 92.1\* | 78.9 | 62.1 |
| Added sugar in tea, coffee or other drinks?i | 3.24 (0.59) | 0.18 | 91.2\* | 76.3 | 44.8 |
| White breadi | 2.95 (0.66) | 0.22 | 86.8 | 76.3 | 17.2 |
| How often do you ‘pick’ or ‘snack’ on foods outside of your planned meal or snack times? | 3.29 (0.57) | 0.17 | 94.7\* | 73.7 | 51.7 |
| Butter | 2.95 (0.57) | 0.19 | 86.8\* | 73.7 | 41.4 |
| How motivated are you to change your diet? | 3.55 (0.50) | 0.14 | 100.0\* | 68.4 | N/A |
| How many meals each day do you eat? | 3.26 (0.69) | 0.21 | 86.8 | 68.4 | 34.5 |
| Low fibre cereal | 2.92 (0.54) | 0.18 | 86.8\* | 65.8 | 34.5 |
| Full fat milk | 2.82 (0.65) | 0.23 | 73.7 | 65.8 | 58.6 |
| Oily fish | 3.00 (0.57) | 0.19 | 89.5\* | 63.2 | 37.9 |
| How confident are you that you could change your diet | 3.19 (0.46) | 0.14 | 97.3\* | 60.5 | N/A |
| How often do you eat a ready meal? | 2.76 (0.59) | 0.21 | 68.4 | 59.5 | 27.6 |
| Are there any changes to your eating or drinking habits you think you could make? | 3.29 (0.50) | 0.15 | 100.0\* | 55.3 | N/A |
| Do you have fruit or vegetables with at least 2 meals each day? | 3.05 (0.52) | 0.17 | 89.5\* | 55.3 | 24.1 |
| How often do you eat out of habit? | 2.84 (0.44) | 0.15 | 81.6\* | 55.3 | 13.8 |
| Cream or ice cream | 2.76 (0.59) | 0.21 | 73.7 | 55.3 | 20.7 |
| How often do you eat because you are bored? | 2.97 (0.43) | 0.15 | 89.5\* | 52.6 | 13.8 |
| How often do you think you have too much food on your plate?e | 2.84 (0.59) | 0.21 | 73.7 | 50 | 13.8 |
| Tinned or dried pulses (e.g. kidney beans, lentils, chickpeas)?e | 2.76 (0.59) | 0.21 | 68.4 | 50 | 13.8 |
| How often do you feel out of control with eating?e | 2.76 (0.59) | 0.21 | 73.7 | 44.7 | 20.7 |
| How often do you feel uncomfortably full after a meal?e | 2.58 (0.79) | 0.31 | 55.3 | 44.7 | 10.3 |
| Do you ever think you eat too fast?e | 2.47 (0.60) | 0.24 | 52.6 | 44.7 | 6.9 |
| How often do you have any two or more of these foods at your main meal: Bread; Potatoes/chips; Pasta; Rice; Taro; Yame | 2.71 (0.65) | 0.24 | 60.5 | 31.6 | 10.3 |
| How often do you use ‘cook-in’ sauces?e | 2.42 (0.60) | 0.25 | 47.4 | 31.6 | 10.3 |

\*Consensus (percentage of agreement ≥75%; Coefficient of variation ≤0.20; mean ≥2.75)

**Justification for inclusion/exclusion**

Three items that reached consensus were not included in the questionnaire (“How often do you eat because you are bored”; “How often do you eat out of habit” and, “Do you have fruit or vegetables with at least 2 meals each day”). This was because 17 or more people (≥44.7%) thought that these items were better discussed by a dietitian, which was close to the cut off of 50%, and fewer than a quarter of people selected these items for their top 15. Comments from round 1 made it clear that the item on eating habitually was potentially confusing and that eating when bored was thought to be related to emotional eating (“comfort eating”) and would therefore be more appropriate to include in a questionnaire that included more emotional / behavioural questions (being out of control with eating; feeling too full; eating too fast). It was thought that including a third question on fruit and vegetables would not add any additional information to the dietary assessment.

Consensus was not reached for 3 of the included items. White bread was automatically included because over 75% of the panel thought it was a good item for a questionnaire, although this item was adapted since 25 of the 33 participants who expressed an opinion thought that a question that included all bread types was preferable. The other 2 items, “How many meals each day do you eat?” and, “full fat milk”, were thought to be good items for a questionnaire by 25 or more people (≥65.8%) and more than a third of people selected these items for their top 15. The item on number of meals was included because asking this question alongside questions on breakfast (automatically included) and snacking (gained consensus; 73.7% thought this a good item for a questionnaire and over half selected it for their top 15 items) would give a clearer understanding of meal and snack patterns. The wording was changed to consider meal regularity rather than number of meals to reflect the round 1 comments. The item on full fat milk was included because inclusion of this item may enhance the ability of the questionnaire to measure fat intake and was adapted to be “What type of milk do you usually use?” because 33 out of 35 who expressed an opinion preferred this wording. Similarly the extra question, “Do you eat pudding or dessert with your meals?” was included to provide extra information on fat and sugar intake. The extra question, “Are you concerned about your weight” was included because it complements the patient-centred questions on motivation and confidence.

The item on cake was amalgamated with sweet biscuits (26 people out of 30 thought this preferable) and adding sugar to tea or coffee was amalgamated with drinks containing sugar (22 out of 31 of the panel thought this preferable). Questions about cereal were changed to ask about all cereals (34 out of 35 of the panel thought this preferable) rather than low fibre alone, which complemented the change to the item on bread. Full fat margarine was added to the question on butter (29 out of 35 thought this preferable) and 26 out of 36 preferred the cheese question to make some distinction between low and high fat cheeses.