# 26th Australian Total Diet Study

## Appendix 1: Detailed food preparation instructions

### Preparation instructions

#### *Avoiding cross contamination*

Care must be taken to ensure no mixing of any kind between the three primary samples ('purchases') when preparing composite samples. This means thorough cleaning and drying of utensils in between removing portions of each primary sample for compositing.

#### *Gloves*

Gloves are to be worn whenever the food being prepared could come into contact with hands.

The food preparation gloves to be used include those such as Ansell latex gloves (subject to allergy concerns) or nitrile not containing lubricant.

#### *Equipment*

Equipment for sample preparation at the coordinating laboratory may include the following:

- Stainless steel knives.
- Wooden cutting board (good quality, smooth, crack free).
- Stainless steel utensils (i.e. fry pans, spatulas, etc.).
- Glass/Pyrex equipment can be used if desired.
- For the purposes of mixing liquids, a large stainless steel or Pyrex receptacle such as a jug or bowl is to be used.
- Laboratory mixer with stainless steel or glass vessel.
- Utilise glass, aluminium, polyethylene or polypropylene storage containers which are suitable for long term freezing without leaching.
- Plastic bags for enclosing sample containers.

#### *Washing of equipment*

The coordinating laboratory is to determine the detergent to be used in the washing of food preparation equipment. The detergent chosen should not interfere with the analysis for the analytes of interest.

#### *Handling purchases for food preparation*

Each purchase as provided by the Purchasing Officer should arrive in separate packaging. Purchases from each jurisdiction will be in lots of three. Each purchase will represent a primary sample. Unprocessed, raw foods such as chicken breasts will be in separate

packages clearly labelled with the name of the food and primary sample identification (A,B or C) which will correspond with the detailed information on the sample spread sheet completed by the Purchasing Officer. The sample spread sheet should be checked by the laboratory for completeness and to ensure that recorded information corresponds to sample labels.

***Compositing and storing samples***

- Primary samples (purchases) are to be prepared in their 'ready-to-eat' state as indicated, for example, if cooking is required, cook first (refer to summarised food preparation instructions below). In preparing foods for analysis, it is imperative that preparation instructions are followed and that all of the food that would be consumed forms the analytical sample in the proportions that would typically be eaten.
- Once prepared as indicated, mix the primary sample (i.e. edible portion) until homogenous. If the sample is a liquid, do not allow it to sit and separate out.
- Accurately measure (solids and semi solids can be weighed, liquids measured by volume) out the minimum weight required for the composite sample (e.g. one third of the total amount required for the composite sample allowing for some wastage) and place this into a vessel for further mixing or blending of the composite sample. For example, for orange juice, if 1000ml is required for triplicate analysis for each screen/analyte then at least 333ml of each primary sample ('purchase') of fruit juice needs to be used to prepare the composite sample. See further information below:
    - An aliquot of all three State or Territory-specific primary samples for each food must be combined into a single composite sample for analysis according to the instructions under the point above. For example, primary NSW chicken breast samples A, B and C should be individually and separately cooked to a table ready state, homogenised, and sub-sampled to produce a single composite NSW chicken breast sample for analysis.
- For the remainder of the primary sample, label a suitable sized and type of storage container and transfer the remaining sample. The label should be given a unique identifier that will enable it to be definitively linked to the primary sample information recorded by the Purchasing Officer in Attachment 1 (refer to example table on page 7).
- Once the primary samples are all added to the vessel mix until homogenous. If the sample is a liquid do not allow to sit and separate out.
- Label a suitable sized and type of storage container and transfer sufficient composite sample material for the analytical test(s), including repeat analysis and possibly one inter-laboratory proficiency test if required). The label for the composite sample should ensure the sample can be definitively linked to its three constituent primary samples and the analytical results.

Note: all samples are to be stored for 12 months after final report has been received.

## Summarised food preparation instructions used in the 26th ATDS by food sample type

| Food name | Preparation instructions |
|---|---|
| **Bacon, middle cut, rind on** | Remove rind, dry fry and discard fat in pan |
| **Baked beans in tomato sauce** | Include a proportional quantity of sauce |
| **Beef, minced, regular** | Dry fry until brown and cooked through. Do not scrape pan. Discard fat in the pan |
| **Biscuits, sweet** | No further preparation needed |
| **Bread, white** | Include a proportional quantity of crust |
| **Breakfast cereal, mixed grain** | No further preparation needed |
| **Butter, salted** | No further preparation needed |
| **Cheese, cheddar, full fat** | No further preparation needed |
| **Chicken breast** | Grill until cooked through and discard fat in grill tray |
| **Chocolate, milk** | No further preparation needed |
| **Eggs** | Hard boil in unsalted tap water. Allow to cool and remove shell |
| **Fish fillets, lower fat varieties** | Bake at approximately 180°C until cooked through |
| **Fish fillets, salmon** | Bake at approximately 180°C until cooked through |
| **Fish portions, crumbed, frozen** | Bake according to the package instructions |
| **Fruit, various** | Apples - Wash in tap water. Remove core and stem (do not peel)<br>Bananas - Remove skin<br>Grapes - Wash in tap water. Remove stalks<br>Peaches/plum/nectarines - Wash in tap water. Remove stone. Do not peel |
| **Hamburger** | No further preparation needed |
| **Infant dinner** | No further preparation needed |
| **Infant formula, non-soy based** | Make up according to manufacturer's directions |
| **Juice, orange** | No further preparation needed |
| **Lamb chops, loin** | Grill until cooked through and discard fat in grill tray. Cut all the meat away from the bone and trim off excess fat |
| **Leg ham, sliced delicatessen style** | No further preparation needed |
| **Liver pate** | No further preparation needed |
| **Milk, full cream** | No further preparation needed |
| **Peanut butter** | No further preparation needed |
| **Pizza** | If uncooked, bake according to package instructions and cool |
| **Potatoes** | Wash, peel and boil in unsalted tap water |
| **Rice, white, long grain** | Boil in unsalted tap water according to the instructions on the packaging |
| **Sausages, beef, thick** | Dry fry until browned all over and cooked through. Discard fat in pan |

| Food name | Preparation instructions |
|---|---|
| **Sushi** | No further preparation needed |
| **Tuna, canned in brine** | Drain liquid from can |
| **Vegetable oil** | No further preparation needed |
| **Vegetables, various** | Broccoli - Remove stalk, cut into florets and wash thoroughly with tap water. Microwave until tender<br>Pumpkin – Cut into even sized pieces, remove seeds and wash thoroughly in tap water. Boil, unpeeled, in unsalted tap water until tender. When cooked, remove the skin<br>Corn (frozen) – Microwave, discard liquid<br>Lettuce – Remove any shrivelled outer leaves and roots and wash in tap water |
| **Water, tap** | No further preparation needed |

## Food preparation instructions glossary

| Term | Definition |
|---|---|
| **Boiling** | Except where other instructions are provided, ‘boiling’ means that the food is to be boiled in ‘unsalted’ tap water. |
| **Washing** | Foods are to be washed in accordance with standard practice for the food concerned. |
| **Mixing** | When the preparation instruction states 'mix' or 'mix thoroughly', then the sample should be pureed in a laboratory grade mixer or ground finely by hand until the sample is homogenous and comprises only very fine particles. Liquids such as milk or oil can simply be stirred in a glass or stainless steel vessel. Do not allow mixed samples to sit and potentially separate out before decanting into the sample container. |
| **Cooking, Frying, Grilling, Baking** | In the case of samples of meat, it is imperative that classic cooking behaviour be followed. For example, meat that is fried will exude fat. As the fried food is removed from the fry pan some fat will remain in the fry pan and some will remain on the cooked meat product. The fat remaining in the fry pan is to be discarded and only the fat on the cooked food is to be included for analysis. |