

## **SOP 4. Disaggregation Procedure For Mixed Dishes**

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### **1. What**

An SOP explaining the procedure to follow when disaggregating mixed dishes and guidance on inputting those values into DINO.

### **2. When**

This SOP should be followed to disaggregate ALL existing food codes held in DINO and any subsequent new food codes created.

### **3. Why**

It is necessary to disaggregate food codes within DINO in order to get a better estimate of consumption, at the food level, to compare consumption data to dietary recommendations and support Government policy initiatives such as 5-a-day. Disaggregation at food code level enables maximum flexibility for the accurate reporting of foods.

### **4. Procedure**

The disaggregation categories are shown in Appendix 1, there are a total of 29 sub-categories. Food codes should be disaggregated as part of the process of calculating nutrient values as this will ensure the correct ingredients are used for disaggregation as well as creating the nutrient content. Using the product ingredient information or an appropriate recipe if the code is homemade, calculate the percentage of the ingredients which fall under each of the 29 disaggregation sub-categories. See examples in Appendix 2 and guidance which follows for specific disaggregation procedures.

#### **a) Calculating composite food codes**

This refers to food codes based on a variety of products to determine an average nutrient profile. As disaggregation occurs prospectively at the time of food code creation you should have details of the ingredients within each of the products used to create the nutrient data. Use the same ingredients to complete the disaggregation profile.

#### **b) Entering data onto DINO**

When complete, the disaggregation screen should resemble the screen shot in appendix 2, with all fields completed. Please note that all fields within the disaggregation tab on DINO must be completed, even if the amount is 0%. Once all disaggregation figures have been entered you may choose to left-click on the box marked 'Make Nulls Zero', which will replace all empty fields with a figure of '0'. This tool is particularly useful for those codes that do not contain any of the disaggregation food groups e.g. cereals and nutritional supplements. There is a box provided to make any notes relating to any aspect of disaggregation relating to that specific food code.

#### **c) Record keeping**

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It is important to keep a record of the products used to generate nutrient data as well as the disaggregation profile. An example of how to record this information is shown below;

FOOD CODE	FOOD NAME	SAMPLED FOODS
<i>EG</i>	<i>Baked beans (example only!)</i>	<i>Sainsburys</i>
		<i>Tesco</i>
		<i>Asda</i>
		<i>Waitrose</i>
		<i>Heinz</i>
		Tesco
		Goodfella's
10028	CHEESE OR CHEESE AND TOMATO PIZZA WITH VEGS AND/OR FRUIT. NO MEAT, NO FISH, WITH ANY BASE, RETAIL	Dr Oetker Ristorante
		Tesco
		Sainsburys
10029	PIZZA WITH MEAT TOPPING, WITH OR WITHOUT VEG/FRUIT, ANY BASE. NO CHICKEN. NO FISH. RETAIL	Sainsburys Hawaiian
		Goodfella's Pepperoni
		Sainsburys Pepperoni
		Dr Oetker Ristorante
		Waitrose Pepperoni
		Sainsbury's Deep Pan Spicy Beef
		Tesco Finest Ham Mushroom & Mascarpone
10030	CHICKEN PIZZA, WITH OR WITHOUT VEG/FRUIT, WITH OR WITHOUT ADDITIONAL SAUCES (E.G. BBQ, CAJUN, CHILLI)	Tesco Pizzeria Barbecue Chicken
		Goodfella's Delicia Deep Pan Chicken
		ASDA Loaded Deep Pan Sweet BBQ
		Goodfella's Chicken Provencal Sq
		Chicago Town Thin Dish BBQ Chicken
		Sainsbury's Cajun Chicken

### d) Documents for reference

Refer to the following publication for additional details;

E. Fitt, T. N. Mak, A. M. Stephen, C. Prynne, C. Roberts, G. Swan and M. Farron-Wilson (2010) Disaggregating composite food codes in the UK National Diet and Nutrition Survey food composition databank. Eur J Clin Nutr 64: S32-S36

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### Appendix 1 – Disaggregation categories

Main category header	Sub-category name	Sub-category description
Fruit and fruit juice	Fresh/canned fruit	All types of fruit in fresh or canned form. Canned fruit values do not include the proportion of juice/syrup.
	Dried fruit	All fully-dried and semi-dried fruit but not including the proportion of added sugar, coatings, etc that may be in the food.
	Fruit juice	Pure juice extracted from any fruit. The pure juice content of sugar-sweetened and diluted juice drinks should only be included.
	Smoothie fruit	NDNS variable only (year 4 onwards). The fruit proportion within smoothie food codes. This variable enables smoothie consumption to be limited to 2 portions of fruit/day as stated in DH 5-a-day policy guidelines.
Vegetables	Tomatoes	All tomatoes, including; raw, cooked, sun-dried, sun-blush, passata and canned tomatoes
	Tomato puree	Concentrated tomato purees (purchased)
	Brassicaceae	All vegetables within the Brassicaceae/Cruciferous family
	Yellow, red and dark green leafy	All vegetables characterised in appearance as yellow or red flesh or having dark green leaves. Often high carotene content.
	Other vegetables	All vegetables that do not fit into the above vegetable categories.
	Beans and pulses	All beans and pulses, fresh or dried/rehydrated including baked beans and other canned varieties.
	Nuts	All nuts, excluding coconut which is classified as a seed
	Meat	Any muscle meat*, casseroles, stir-fries, curries, including; beef and veal
	Lamb	Any muscle meat*, casseroles, stir-fries, curries, including; lamb, mutton, hoggat
	Pork	Any muscle meat*, casseroles, stir-fries, curries, includes pork only

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	Processed red meat	Manufactured, cured or dried red meat**, includes; ham, bacon
	Other red meat	Any muscle meat*, casseroles, stir-fries, curries, includes; goat, venison, game mammals
	Burgers and grillsteaks	Any red meat consumed as a burger or grillsteak, excludes poultry burgers
	Sausages	Any meat (red or white) consumed as a sausage
	Offal	Internal organs of any animal, including; heart, kidney, liver, tongue.
	Poultry (white meat)	Any muscle meat*, casseroles, stir-fries, curries, includes; chicken and turkey
	Processed poultry	Manufactured, cured or dried white meat**, includes; chicken paste
	Game birds	Any muscle meat*, casseroles, stir-fries, curries, includes; partridge, pheasant, duck, goose
Fish	White fish	All white flesh fish including; fresh, processed, raw, smoked, canned, frozen
	Oily fish	All oil-rich fish (or oily fish) that have oil distributed through their body, mainly concentrated in the liver including; fresh, raw, smoked, canned, frozen
	Canned tuna	Any canned tuna products, in brine, water or oil. Canned tuna values do not include the proportion of canning liquid.
	Shellfish	All shellfish and molluscs
Cheese	Cottage cheese	All cottage cheese products, plain or flavoured. Only the proportion of cottage cheese counts not the additional ingredients.
	Cheddar cheese	Any Cheddar cheese, including melted cheddar.
	Other cheese	All other forms of cheese, not cheddar or cottage, including melted cheese.

Notes to meat classification:

Fresh and processed meat are classified by the following definitions from the New Zealand beef and lamb marketing bureau

<http://www.meatandcancer.co.nz/Meat%20Consumption.html>);

\*Muscle meat includes; steak, mince, roast, chops

\*\*Processed meat; meat products containing >30% meat, where the meat either singly or in combination with other ingredients or additives, has undergone a method or processing other

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than boning, slicing, dicing, mincing or freezing, and includes manufactured meat and cured and/or dried meat on whole cuts or pieces.

### Appendix 2 – Disaggregation examples

1. Recipe already provided in the NDNS nutrient databank:

a. Select the food code you wish to disaggregate

The screenshot shows the NDNS nutrient databank interface. At the top, the Food Code is 10960 and the Name is PEA AND HAM SOUP, CANNED. Below this, there are fields for Name, Sub Group Name, Dilution, Maximum Weight, and Description. The Sub Group Name is SOUP MANUFACTURED/ RETAIL. The Dilution is 1. The Maximum Weight is 600. The Water Loss is 0. The Description is empty. To the right, there are fields for Food Code (10960) and Sub Group Code (50C). Below these, there is a Comments field with the text DNSIYC MS 24/06/11 EF. A Recipes... button is also visible. At the bottom, there is a Components table with columns for Food Name, Food Code, Amount, Base Value, Vitamin Loss, and Comment. The table lists various ingredients and their amounts.

Food Name	Food Code	Amount	Base Value	Vitamin Loss	Comment
WATER NOT AS A DILUENT	5000	54.5	54.50		
PEAS SPLIT DRIED BOILED	1813	21	21.00		
PEAS FROZEN BOILED	1808	5	5.00		
POTATOES OLD BOILED	1829	7	7.00		
HAM WITH ADDED WATER NOT SMOKED	9381	3	3.00		
CELERY FRESH BOILED	1726	2	2.00		
ONIONS BOILED	1786	2	2.00		
CARROTS, OLD, FRESH, BOILED	1711	2	2.00		
BLENDED VEGETABLE OIL	871	1	1.00		
SALT TABLE	2522	0.5	0.50		
CORN FLOUR	8	2	2.00		

b. Transfer the amounts (%) of the relevant ingredients in the recipe to DINO

The screenshot shows the DINO interface for disaggregating food code 10960 (PEA AND HAM SOUP, CANNED). The interface has tabs for Food Group, Measures, Proximates, Sugars, Inorganics, Vitamins, Fatty Acids, and Disaggregation. The Disaggregation tab is selected. It shows a Mixed Dish? dropdown set to Mixed Dish, a Disaggregation Date of 24/06/2011, and a list of food groups with their respective amounts. The food groups are Fruit & Fruit Juice, Vegetables, Meat, Fish, and Cheese. The amounts are as follows:

Food Group	Amount
Fruit & Fruit Juice	0
Vegetables	30
Meat	3
Fish	0
Cheese	0

Below the food groups, there are fields for Notes (EF) and a Make Nulls Zero button. At the bottom, there are fields for Percentage of Red Meat, Percentage of White Meat, Percentage of Fish, Percentage of Fruit, and Percentage of Vegetables.

c. Complete the data and notes fields as appropriate and save the record.

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2. Recipe not required, individual food item:

- a. Enter the amount in the appropriate sub-category. Complete the date and notes fields.

Food Code	<input type="text" value="10958"/>	Food Name	<input type="text" value="ADUKI BEANS, CANNED, BOILED, DRAINED WEIGHT"/>		
<div>Food Group   Measures   Proximates   Sugars   Inorganics   Vitamins   Fatty Acids   Disaggregation</div>					
Mixed Dish? <input type="text" value=""/>		Disaggregation Date <input type="text" value="22/06/2011"/>			
<b>Fruit &amp; Fruit Juice</b>		<b>Meat</b>		<b>Fish</b>	
Fresh/Canned Fruit	<input type="text" value="0"/>	Beef	<input type="text" value="0"/>	White Fish	<input type="text" value="0"/>
Dried Fruit	<input type="text" value="0"/>	Lamb	<input type="text" value="0"/>	Oily Fish	<input type="text" value="0"/>
Fruit Juice	<input type="text" value="0"/>	Pork	<input type="text" value="0"/>	Canned Tuna	<input type="text" value="0"/>
Smoothie Fruit	<input type="text" value="0"/>	Processed Red Meat	<input type="text" value="0"/>	Shellfish	<input type="text" value="0"/>
<b>Vegetables</b>		Other Red Meat			
Tomatoes	<input type="text" value="0"/>	Burgers & Grill Steaks		<b>Cheese</b>	
Tomato Puree	<input type="text" value="0"/>	Sausages		Cottage Cheese	<input type="text" value="0"/>
Brassicaceae	<input type="text" value="0"/>	Offal		Cheddar Cheese	<input type="text" value="0"/>
Yellow, Red & Dark Green Leafy Vegetables	<input type="text" value="0"/>	Poultry		Other Cheese	<input type="text" value="0"/>
Other Vegetables	<input type="text" value="0"/>	Processed Poultry			
Beans & Pulses	<input type="text" value="100"/>	Game Birds		<input type="button" value="Make Nulls Zero"/>	
Nuts	<input type="text" value="0"/>			Percentage of Red Meat	<input type="text" value=""/>
Notes	<input type="text" value="NZ"/>		Percentage of White Meat		<input type="text" value=""/>
			Percentage of Fish		<input type="text" value=""/>
			Percentage of Fruit		<input type="text" value=""/>
			Percentage of Vegetables		<input type="text" value=""/>