

## **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	Beef	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 'Components' section of the NDNS nutrient databank. It features a table with the following columns: Food Name, Food Code, Amount, Base Value, Vitamin Loss, and Comment. The table lists various ingredients and their quantities:

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

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

The screenshot shows the 'Disaggregation' tab in the DINO interface. It displays a grid of input fields for various food groups and categories. The 'Disaggregation Date' is set to 24/06/2011. The 'Mixed Dish?' dropdown is set to 'Mixed Dish?'. The 'Notes' field contains 'EF'. The 'Percentage of Red Meat' is set to 3, and the 'Percentage of Vegetables' is set to 2. The 'Make Nulls Zero' button is visible.

Food Group	Measures	Proximates	Sugars	Inorganics	Vitamins	Fatty Acids	Disaggregation	
<b>Mixed Dish?</b>							<b>Disaggregation Date</b> 24/06/2011	
<b>Fruit &amp; Fruit Juice</b>							<b>Meat</b>	
Fresh/Canned Fruit	<input type="text" value="0"/>							Beef
Dried Fruit	<input type="text" value="0"/>							Lamb
Fruit Juice	<input type="text" value="0"/>							Pork
Smoothie Fruit	<input type="text" value="0"/>							Processed Red Meat
<b>Vegetables</b>							Other Red Meat	
Tomatoes	<input type="text" value="0"/>							Burgers & Grill Steaks
Tomato Puree	<input type="text" value="0"/>							Sausages
Brassicaceae	<input type="text" value="0"/>							Offal
Yellow, Red & Dark Green Leafy Vegetables	<input type="text" value="2"/>							Poultry
Other Vegetables	<input type="text" value="30"/>							Processed Poultry
Beans & Pulses	<input type="text" value="0"/>							Game Birds
Nuts	<input type="text" value="0"/>							
Notes	<input type="text" value="EF"/>							
							<b>Fish</b>	
							White Fish	
							Oily Fish	
							Canned Tuna	
							Shellfish	
							<b>Cheese</b>	
							Cottage Cheese	
							Cheddar Cheese	
							Other Cheese	
							Make Nulls Zero	
							Percentage of Red Meat	
							Percentage of White Meat	
							Percentage of Fish	
							Percentage of Fruit	
							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"/>			
<span>Food Group</span>   <span>Measures</span>   <span>Proximates</span>   <span>Sugars</span>   <span>Inorganics</span>   <span>Vitamins</span>   <span>Fatty Acids</span>   <span>Disaggregation</span>						
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		<b>Cheese</b>		
Tomatoes	<input type="text" value="0"/>	Burgers & Grill Steaks		Cottage Cheese	<input type="text" value="0"/>	
Tomato Puree	<input type="text" value="0"/>	Sausages		Cheddar Cheese	<input type="text" value="0"/>	
Brassicaceae	<input type="text" value="0"/>	Offal		Other Cheese	<input type="text" value="0"/>	
Yellow, Red & Dark Green Leafy Vegetables	<input type="text" value="0"/>	Poultry		<input type="button" value="Make Nulls Zero"/>		
Other Vegetables	<input type="text" value="0"/>	Processed Poultry		Percentage of Red Meat	<input type="text" value=""/>	
Beans & Pulses	<input type="text" value="100"/>	Game Birds		Percentage of White Meat	<input type="text" value=""/>	
Nuts	<input type="text" value="0"/>			Percentage of Fish	<input type="text" value=""/>	
Notes	<input type="text" value="NZ"/>				Percentage of Fruit	<input type="text" value=""/>
				Percentage of Vegetables	<input type="text" value=""/>	