

An update on the current salt content of Portuguese processed foods

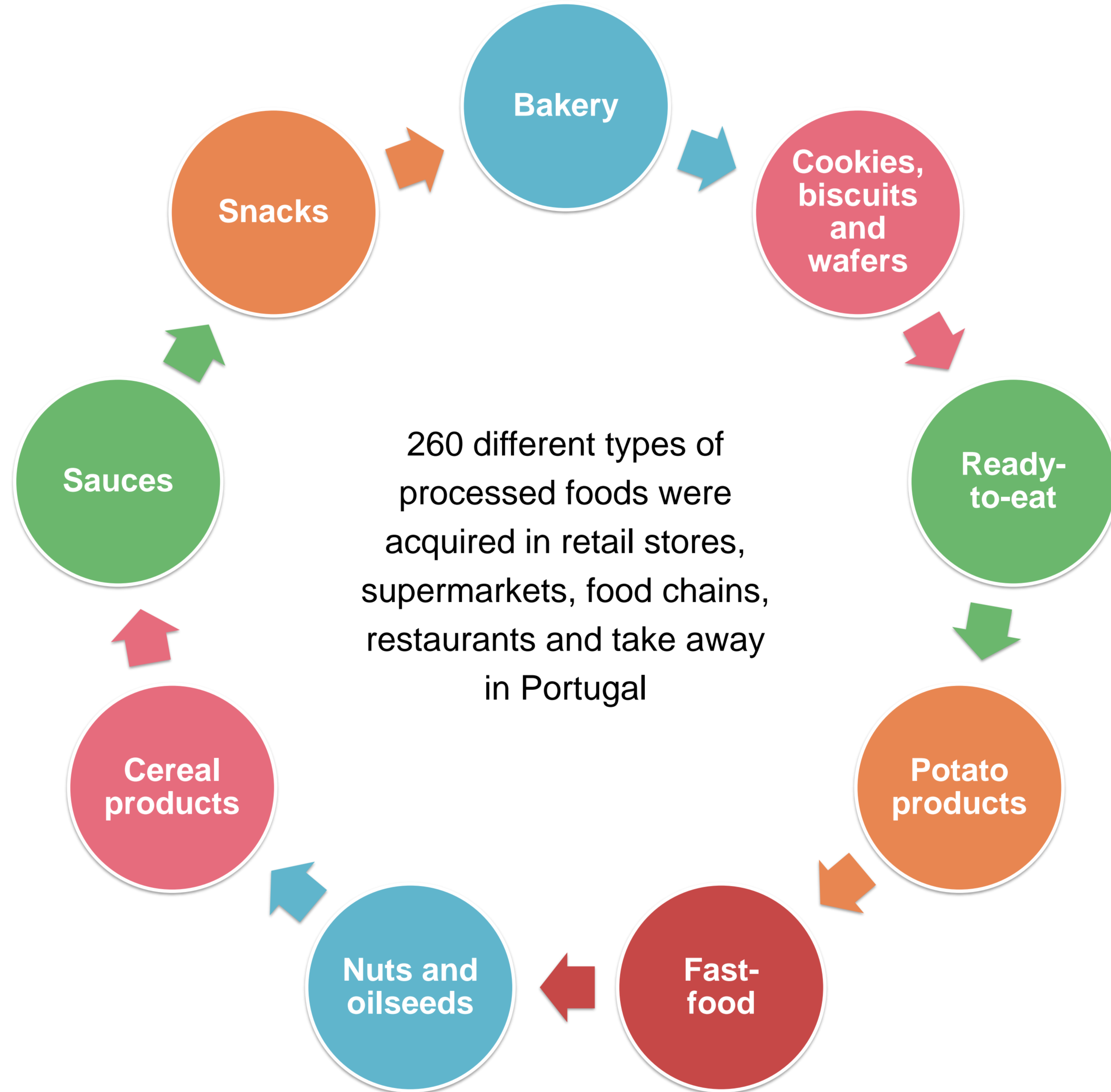
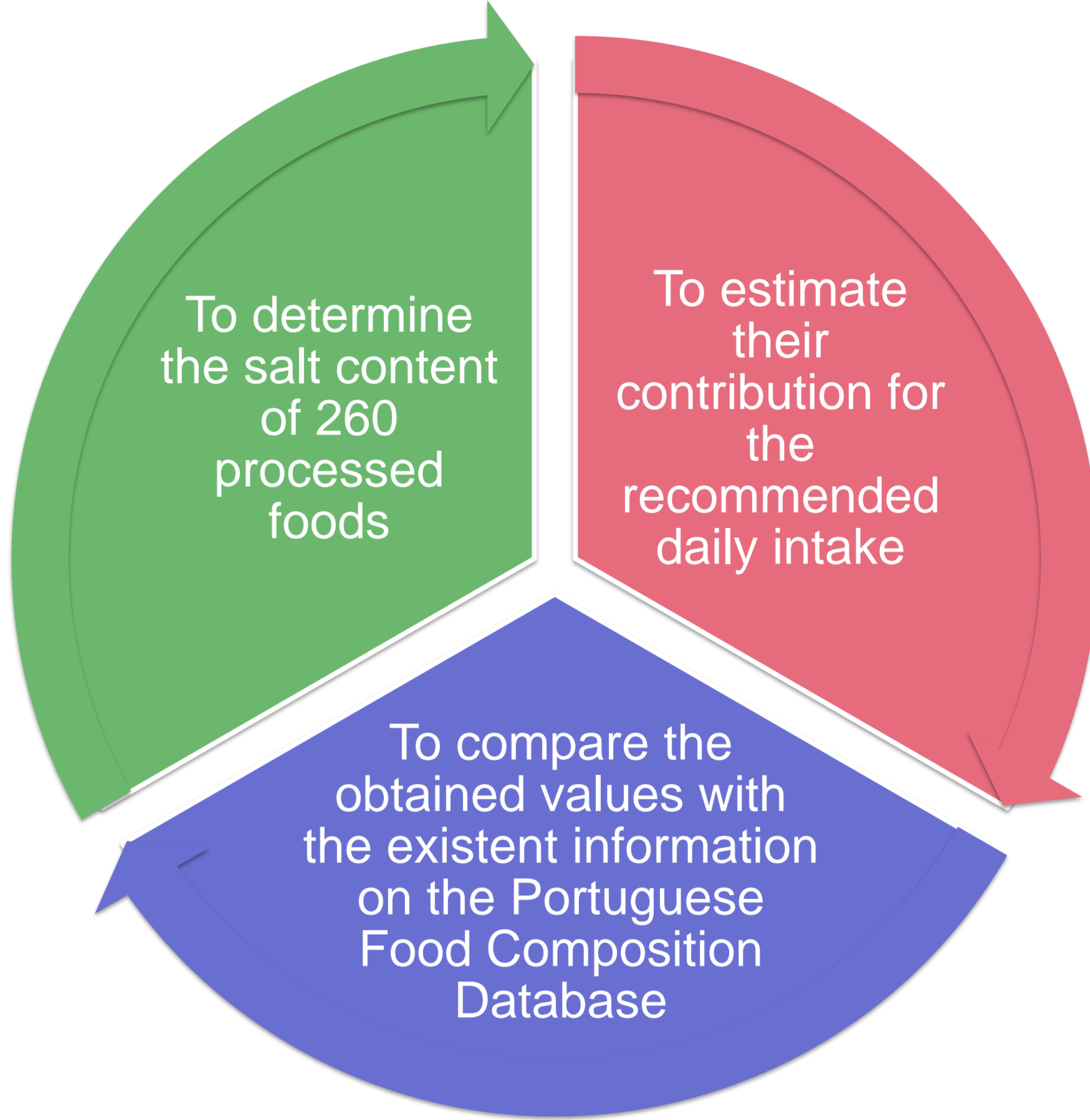
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- In the last thirty years, the processed foods market has grown like never before and every day "new" processed foods with different features are available in the market.
- From a nutrition point of view, food processing raises several questions regarding the nutritional quality and safety of food, and it is linked with the development of several chronic diseases.
- About 75–80% of dietary salt is obtained through processed food consumption. Therefore, World Health Organization (WHO) strongly encourages the implementation of reduction strategies for the salt content in this type of foodstuffs.
- A high intake of foods rich in salt is related with an increased risk for the development of hypertension, which contributes to the burden of heart disease, stroke and kidney failure, premature mortality and disability.

The Portuguese Hypertension and SALT (PHYSA) study, conducted in 2013, revealed that the Portuguese population has an average salt intake of 10.3 g/day, which is more than the double of WHO recommendations.



Analytical determination of salt content

- 5 g of sample
- + 2.5 mL of zinc acetate + 2.5 mL of potassium ferrocyanide
- Filtration (Whatman paper n.º1)
- + 1 mL of nitric acid + 10 mL of silver nitrate
- Titration with potassium thiocyanate until orange colour

Table 1. Comparison of the obtained values and data reported in the Portuguese Food Composition database (PFCDDB) for salt content (g/100 g) in some of the analysed foods.
*Available at: <http://portfir.insa.pt/>

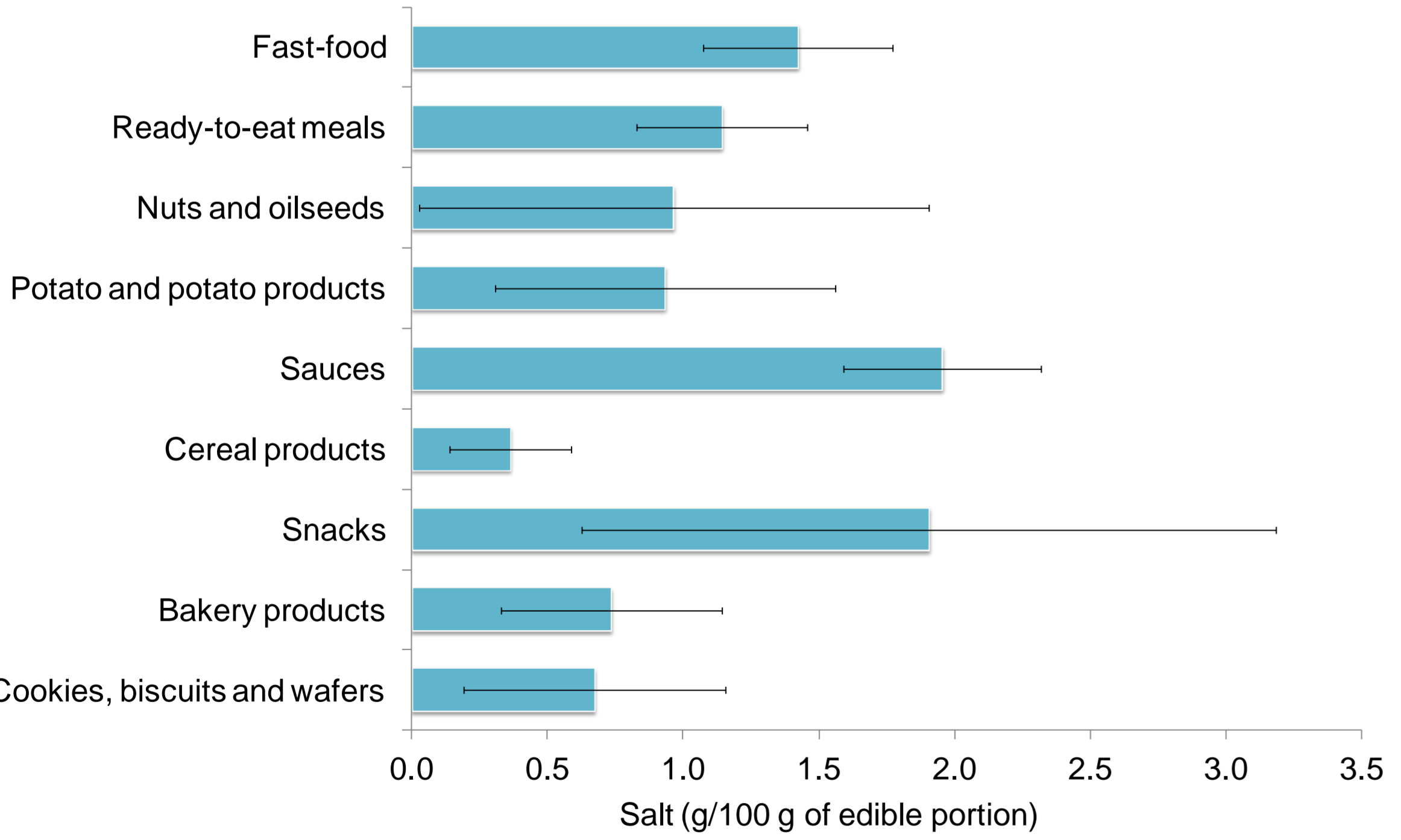


Figure 1. Salt content (g/100 g) for the analysed food categories.

- The highest mean values for salt were obtained in sauces, followed by snacks and fast-food, with 1.96, 1.91 and 1.42 g/100 g, respectively (Figure 1).
- A high variation for salt content was observed in nuts and oilseeds, but also in snacks category.
- Concerning the comparison of the obtained values (Table 1) with the data reported in the Portuguese food composition database (PFCDDB), 50% of the compared foods have a higher salt content than the data reported.
- Some of the analysed foods can have a significant contribution (>50%) of the recommended daily intake for salt (5 g/day for an adult).

Processed foods	Salt (g/100 g)	
	Obtained data	PFCDDB*
French fries	0.345	0.0
"Belgium" cookies	0.492	0.1
Chocolate "Swiss" rolls filled with vanilla	0.261	0.2
Chocolate cookies	0.463	0.2
Madeleines	0.286	0.3
Chocolate éclairs	0.162	0.4
"Pastel de nata"	0.347	0.4
Rice cakes	0.753	0.4
Deer's tongue biscuits	0.911	0.6
Doughnuts	0.928	0.6
Breakfast cereals (muesli)	0.238	0.6
"Bola de Berlim"	1.07	0.7
Muffins	0.289	0.7
Cream crackers	1.38	0.9
Shrimp savouries	1.91	1.0
"Maria" cookies	0.668	1.1
Sweet breads	1.00	1.1
Croissants	1.09	1.1
Potato chips	1.51	1.2
Meat pies	0.877	1.3
Meat savouries	1.32	1.4
Cheese, tomato and ham pizzas	1.44	1.5
Wholemeal cookies	0.962	1.6
Croquettes	2.13	1.6

- The salt content of Portuguese processed foods is still a public health concern in Portugal.
- Due to the important impact that the salt content of processed foods can represent it is crucial to update its occurrence in processed foods.
- It is possible to conclude that for some of the categories analysed within our study future strategies to reach the desired reduction of salt content should be addressed.
- Moreover, because some of these foods are highly appreciated by children and young people, it is of utmost importance to develop efforts together with food industry, to fully accomplish the reduction of salt in processed foods.