

Cost of the protein transition for consumers

No. 2023/19A5e, The Hague, 13 December 2023

Background document to:

A healthy protein transition

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The Dutch Food Price Database

In 2018, researchers at the Amsterdam Public Health Research Institute created the Food Price Database.¹ This contains the prices of more than 900 of the foods most commonly consumed in the Netherlands. These prices were obtained from 20 different shops in Amsterdam (both supermarkets and smaller, local shops) in 2017 and 2018. The lowest price per product was added to the database. Special offers were disregarded. Each price was calculated per 100 grams of purchased product, after which a correction was applied for shrinkage (of vegetables, for example), expansion (when cooking rice, for example) and losses during preparation. This resulted in the price per 100 grams of edible product.

Once the Food Price Database had been linked to food consumption data from a number of Dutch cohorts (EPIC-NL and HELIUS),^{1,2} it became possible to calculate the cost of individual food consumption. The Food Price Database was also used in the DIETCOST programme,³ which accounts for variations in food patterns (in a two-week period) and compares the cost of current and modelled diets.

The cost of the protein transition for consumers

The Committee used the data in the Dutch Food Price Database to estimate the cost of the protein transition for consumers (See Table 1). Prices were expressed per 100 grams of edible product. The cost of protein sources were linked to the average composition of the current diet (with 40% plant-based protein) and a diet with 60% plant-based protein.

In the current example, the shift in protein sources (including a 10% reduction of total protein) resulted in a slight increase in the cost of protein sources in the diet (2.94 euros instead of 2.89 euros). However, the price does depend on the specific foods chosen. The plates for the current situation show the shift in all protein sources (a little bit of everything). As such, they may reflect a reasonable average, but not the possible variation around the average.

The data used were collected in 2018. According to Statistics Netherlands, the price of food has increased by approximately 33% since this time. The price of animal-based products has increased slightly more (27–43%) than the price of plant-based products (20–30%; See Table 2). After correcting the price of the plates for inflation (+35% for animal-based protein sources and +25% for plant-based protein sources), the cost of the sample plates are closer (3.73 euros and 3.76 euros respectively).

It is possible that protein source changes will lead to other dietary changes as well. The plates do not show the full daily diet. As a consequence, dietary changes other than protein-source changes have not been included in the calculations.

Table 1 The cost of two sample plates: current protein sources, and protein sources after a shift to 40/60 animal-based/plant-based protein plus a 10% decrease in protein intake (data: Food Price Database 2018)

	Current ratio (60/40 animal-based/plant-based, 1,666 g, 1,274 kcal)		Shift to 40/60 plus 10% decrease (1,609 g, 1,354 kcal)	
	Portion (grams)	Price in euros per portion	Portion (grams)	Price in euros per portion
Minced beef^a	21.4	0.12	12.8	0.07
Pork fillet	22.5	0.27	13.5	0.16
Chicken breast	31.5	0.28	18.9	0.17
Milk	199.8	0.14	119.9	0.08
Yoghurt	101.1	0.07	60.7	0.04
Cheese	33.4	0.26	20.0	0.15
Fish	14.6	0.07	8.8	0.04
Eggs	19.8	0.06	11.9	0.04
Bread	170.9	0.22	230.7	0.30
Pasta	20.7	0.03	27.9	0.04
Rice	65.9	0.03	88.9	0.04
Nuts	19.0	0.26	25.6	0.35
Vegetables	167.6	0.87	226.3	1.18
Potatoes	105.9	0.20	142.9	0.27
Legumes	5.3	0.01	7.1	0.01
Price (euros)		2.89		2.94

^a a cheap beef product.

Table 2 Food price increases between 2018 and (February) 2023 Source: Statistics Netherlands.

	CPI 2018	CPI February 2023	% increase	Note
Foods, total	103.58	137.23	31.4	NB:ready-made meat substitutes are not mentioned separately
Meat	105.22	140.76	33.8	
Fish, crustaceans and shellfish	115.64	147.10	27.2	
Milk, cheese and eggs	108.39	155.68	43.4	Incl. soy milk
Bread and grains	100.01	129.55	29.5	
Fruit	109.60	127.68	16.5	Incl. nuts and seeds
Vegetables	106.86	139.85	30.9	Incl. legumes and soy products

CPI: consumer price index = index number that reflects the price development of the average basket of goods and services that all Dutch households buy.

References

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- 3 Hoenink JC, Waterlander W, Vandevijvere S, Beulens JWJ, Mackenbach JD. The cost of healthy versus current diets in the Netherlands for households with a low, middle and high education. *SSM Popul Health* 2022; 20: 101296.

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