

A Healthy Food Basket in Israel

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Abstract

This chapter outlines, for the first time in Israel, the features of a basic healthy food basket. The chapter begins with a detailed discussion of the basket's potential components, based on Ministry of Health recommendations for a proper and balanced nutrition. This is followed by a presentation of the prices of the goods included in the basket, and a calculated estimate of the per capita cost of funding the basket. Based on this cost figure, the authors assess the economic ability of Israeli households with different demographic makeups and income levels, to purchase such a basket. The results show that the mean incomes of the three highest income quintiles are sufficient to purchase the healthy food basket, even if they choose not to do so due to preference or lack of awareness. By contrast, the poorest quintile would have trouble affording a basic health food basket for all family members, due to income limitations and the other expenditures involved in household management.

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Introduction

One-fifth of Israeli families, including a third of the country's children, report food insecurity (Endeweld, Barkali, Abrahamov, Gealia, and Gottlieb, 2014). Based on National Nutritional Security Council income and expenditure criteria, 110,000 Israeli households were eligible for food purchasing assistance in 2012 (National Nutritional Security Council, 2014). One reason for this is that food prices rose substantially and precipitously between 2005 and 2011. During this period, the prices of most food groups became more expensive in Israel than in other OECD countries. Israeli dairy prices, which in 2005 were only 6 percent higher than in the OECD, were 51 percent higher than the OECD average in 2011. During that same period, bread, grains and baked goods, which previously had been 19 percent less expensive in Israel, became 26 percent more expensive than in the OECD countries (Chernichovsky and Regev, 2014). It should be noted that the rising food prices along with surging housing costs contributed to stagnation in Israeli households' gross real wages (Brand, 2016).

Access to a basic healthy food basket ensures proper nutrition that is vital to physical, mental, cognitive, and social functioning. It is a basic right in modern society, like access to education and health care services. Even in the US, where economic liberalism reigns and where features of the welfare state are few, a Supplemental Nutrition Assistance Program (SNAP) has been in operation since 1964, providing food-purchasing assistance to needy citizens. In 2016, over 44 million people across the US (13 percent of the country's population) received aid from SNAP. The program costs 5.5 billion dollars and provides, on average, assistance in the amount of \$130 a month per person (USDA, 2016).

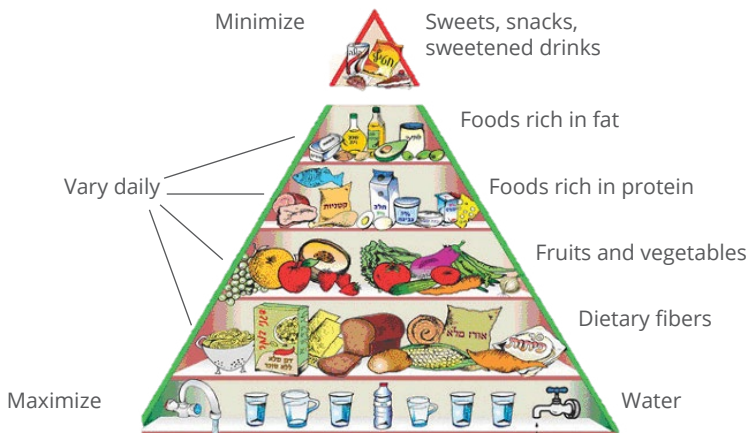
To date, there has been no serious attempt in Israel to define a basic healthy food basket or to determine what purchasing such a basket would mean for household budgets or for social policy. This chapter lays the foundation for defining a basic healthy food basket in several stages. First, it defines a healthy food basket that could be considered basic but adequate, and indicates the cost of its components. It then analyzes the cost of the total basket in relation to several indices, including household income and number of household members. The basket's components, and the funds needed to purchase it, could have policy implications with regard to social services, health care, education regarding proper nutrition, and food prices.

1. Defining a basic healthy food basket

Current Ministry of Health recommendations are based on the Mediterranean diet pyramid, which follows the pattern of the traditional Mediterranean diet (Figure 1). This pattern emphasizes natural, unprocessed, plant-based foods – vegetables, fruits, whole grains, legumes, and nuts – supplemented by relatively small amounts of animal-based foods – eggs, dairy products, fish, poultry, and meat. The Mediterranean diet has four major advantages:

- **Health:** Proper nutrition can prevent disease and extend life expectancy.
- **Environmental sustainability:** A diet consisting primarily of plant-based foods with little reliance on animal-based foods is less harmful to the environment and to animals.
- **The socio-cultural sphere:** The Mediterranean diet promotes habits of social-familial dining and home cooking.
- **Economics:** Raw, plant-based foods are usually less expensive than processed, animal-based foods.

Figure 1. The Mediterranean food pyramid



Source: Ministry of Health, Department of Nutrition.

The Ministry of Health recommendations call for five food groups as components of a healthy diet. The food items included in each group in the food basket conform to the Israeli dietary pattern (Ministry of Health, 2004), and are based on current scientific knowledge and prevailing dietary recommendations. The food groups in the basket defined in Table 1 were developed by the US Department of Agriculture's Center for Nutrition Policy and Promotion and Israel's Ministry of Health. The Israeli recommendations are identical to the American recommendations except for the following:

- Potatoes: The US food basket assigns them to the vegetable group, while the Israeli basket places them in the grains group.
- Avocados and olives: In the US, these are included in the vegetable group, while Israel includes them in the fats and oils group.
- Peanut butter and seeds: The US includes these in the protein-rich group, while Israel places them in the fats and oils group.

Table 1. Details of the foods in the various food groups

Food group	Details of foods included in the group	Foods not included in the group
Whole grains	Whole wheat bread, pita, noodles, potatoes, rice	Breakfast cereals, baked goods, crackers
Fruit and vegetables	Fresh and cooked vegetables and fruit	Fresh juice, dried fruit
Protein-rich foods	Milk, yogurt, white and yellow cheese, meat, chicken, turkey, fish, eggs, legumes	Puddings, ice cream, cream, peanuts, sunflower and other seeds, fatty meats
Foods high in fat	Oil, nuts, avocado, tehina	Margarine, butter and foods high in fat and transfats

Source: Ministry of Health, Department of Nutrition.

The relative shares of the food groups in the basket and the recommended daily intakes are reflected in the food servings. Serving size calculations are based on US Department of Agriculture and Israel Ministry of Health definitions.

- Grains group serving: one slice of bread or half a cup of pasta/rice/cooked potatoes
- Vegetable group serving: half a cup of cooked or raw vegetables
- Fruit group serving: a medium-sized fruit (apple/banana/orange/tangerine), half a grapefruit; half a cup of pitted fruit (for fruits with pits)
- Protein-rich group serving:

Dairy protein: a quantity that supplies 300 milligrams of calcium

Animal-based protein: equivalent to 75 grams of lean (cooked) meat; an egg is considered equivalent to 30 grams of meat

Legumes: Half a cup of cooked legumes is considered equivalent to 30 grams of meat

- Fats and oils group serving: a quantity that supplies ten grams of fat

Table 2. Daily recommended nutritional servings
By gender and age

Age (years) and gender	Recommended caloric intake	Food groups					
		Whole grains	Vegetables	Fruit	Protein-rich foods	Fatty foods	
					Milk	Animal/legumes	
2-3*	1,300	6	3	2	1	3	1
4-6	1,800	7	3	2	1	3	1
7-10	2,000	8	4	3	1	3	1.5
11-14	2,500	10	5	4	2	4	3
15-18 (boys)	3,000	11	5	4	2	4	3
19-24 (boys)	2,900	11	5	4	1	4	3
25-50 (men)	2,900	11	5	4	2	4	3
51+ (men)	2,300	9	4	3	2	3	3
11-24 (women)	2,200	9	4	3	2	3	3
25-50 (women)	2,200	9	4	3	2	3	3
51+ (women)	1,900	7	4	3	2	2	3

* Serving size for ages 2-3 are equal to 2/3 of the serving size for the other age groups, except for milk products.

Source: Minsitry of Health, Department of Nutrition.

2. Cost of the basket

In order to calculate the cost of the basket as a whole, the prices of its component products were estimated and combined with the recommended serving figures presented in Table 2. Since recommended daily servings can be composed of several items in each group—for example, the grain group serving can be made up of bread, pasta, etc.—the median cost of the food items that fulfill the per serving recommendations was chosen for each group. For example, in the dairy protein group, one serving is meant to provide 300

milligrams of calcium. This requirement can be fulfilled by drinking a quarter bag of milk, or eating a container of yogurt or a single slice of yellow cheese. In the animal-based protein and legumes group, a serving is equivalent to 75 grams of lean meat, two to three eggs, 150 grams of uncooked poultry or 100 grams of canned tuna (for more detailed information see Appendix Table 1). The cost of a serving in each group was calculated as the median price of these various options.

In order to reduce the basket cost without compromising the minimal composition needed to ensure its nutritional value, the basket was formulated according to the following principles:

- For each group, the least expensive and most accessible items were chosen, those that reflect a balance between the nutritional value provided by the various sources, and the consumption habits of different ethnic groups (“the Israeli basket”).
- The weight of the food items was reduced to the minimum necessary to maintain the required nutritional value per serving.
- The serving cost was calculated in terms of the median price of its components, not the average price, as stated previously.
- From the most expensive food group – animal-based protein and legumes – more costly types of meat, such as beef and hamburger, were excluded. They were replaced by items that would reduce the serving cost: eggs and legumes.

In order to calculate the cost of the entire food basket per person, the cost of each serving was multiplied by the number of recommended servings for each age group. For adults, the number of servings was calculated in terms of the mean number of servings per man and woman aged 25-50, while the number of servings per child was calculated as the mean number of servings required in each group up to age 18.

**Table 3. Cost of a basic healthy food basket per adult and child
2015 prices, NIS**

Food group	Recommended daily serving	Median price per serving	Daily cost	Monthly cost
Adult				
Whole grains	10.0	0.63	6.30	189.00
Vegetables	4.5	0.71	3.20	96.00
Fruit	3.5	0.91	3.19	95.70
Protein-rich foods:				
Milk	2.0	0.57	3.14	94.20
Animal protein/legumes	3.5	3.19	11.17	335.10
Foods high in fat	3.0	0.38	1.14	34.20
Total cost per month for an adult: NIS 844.20				
Child (average portion for each group ages 2-18)				
Whole grains	8.5	0.63	5.36	160.80
Vegetables	4.0	0.71	2.84	85.20
Fruit	3.0	0.91	2.73	81.90
Protein-rich foods:				
Milk	1.5	1.57	2.36	70.80
Animal protein/legumes	3.3	3.19	10.53	315.90
Foods high in fat	2.0	0.38	0.76	22.80
Total cost per month for a child: NIS 737.40				

Source: Taub Center.

Data: Central Bureau of Statistics database and leading food sites, May–November, 2015.

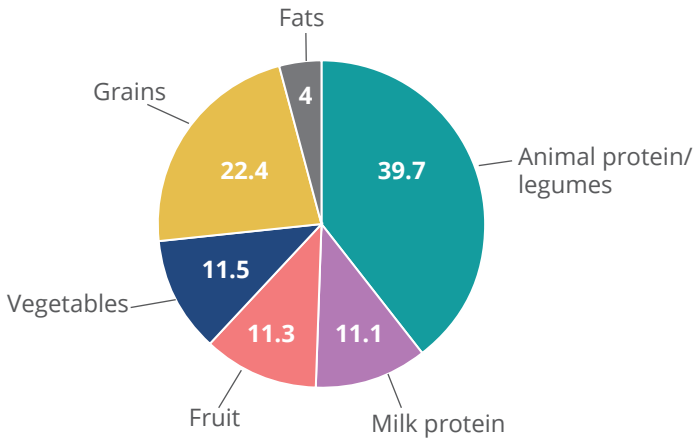
Thus, the basic healthy food basket's monthly cost per adult amounted to NIS 844 in 2015, while the monthly cost per child was about NIS 737. The monthly cost distribution of the major basket components per adult are presented in Figure 2: animal protein and legumes — NIS 335 (39.7 percent); grains — NIS 189 (22.4 percent); vegetables — NIS 96 (11.5 percent); fruit — NIS 96 (11.3 percent); dairy products — NIS 94 (11.1 percent); and fats

and oils – NIS 34 (4 percent). The distribution for the recommended basket for children is very similar.

It should be emphasized again that the estimate presented here is a preliminary one that represents a general range. Clearly, food prices change almost daily and the basket cost fluctuates accordingly. Nevertheless, the estimate gives an overall picture of the cost of a healthy, recommended diet.

Figure 2. Distribution of the cost of the healthy food basket by food group

Percent



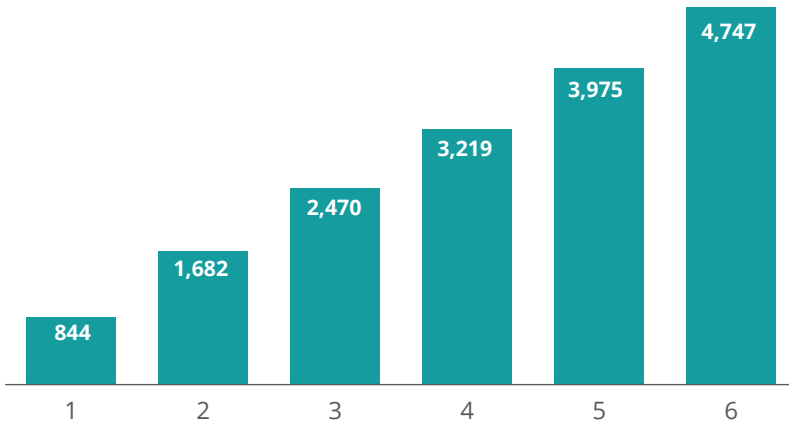
Source: Taub Center. Data: Central Bureau of Statistics, Expenditure Survey 2014.

3. Household expenditure on a healthy food basket

Naturally, household food-basket expenditures rise as the number of people in the household increases. For example, the mean food basket expenditure of a three-person household is NIS 2,470, that of a four-person household is NIS 3,219, and that of a five-person household is NIS 3,975 per month. However, the actual increase is not linear, due to households' differing age compositions (adults versus children). Figure 3 shows the average monthly household food-basket expenditure for different sized households. As shown, each person added to a household beyond the first two increases the mean expenditure by NIS 760.

Figure 3. Average monthly household expenditure on the healthy food basket

By number of household members, NIS



Source: Taub Center.

Data: Central Bureau of Statistics, Expenditure Survey 2014.

On average, the monthly expenditure required to purchase a healthy food basket decreases as household income rises, because in Israel there is an inverse ratio between household size and income level (Table 4). That is, in the highest decile, the mean expenditure required to buy a basic healthy food basket is the lowest, because the mean number of persons per household in this decile is the lowest – 2.46. By contrast, in the lowest decile, the mean number of persons per household is the highest (4.37) meaning that the total monthly expenditure needed to finance a healthy food basket for this decile is the highest: NIS 3,450.¹ A negative correlation exists despite the fact that the per person healthy food basket expenditure actually rises as household income rises, because the lower deciles consist of many large families, and there are economies of scale when calculating the basket cost (Figure 4).

¹ The average household expenditure by household size does not generally represent a simple product of basket cost per person by number of household members, due to varying household age compositions.

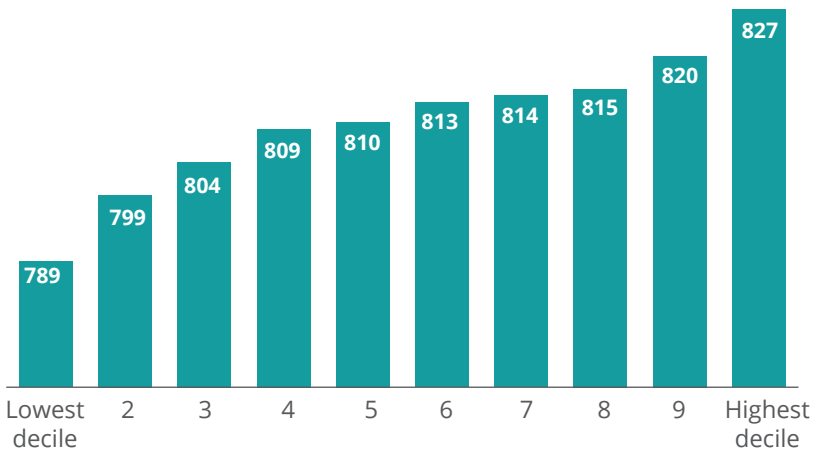
Table 4. Monthly cost for a healthy food basket per household
By income deciles and average number of household members

Income decile	Average number of household members	Average monthly cost, NIS
Lowest decile	4.37	3,450
2	3.73	2,987
3	3.65	2,937
4	3.33	2,694
5	3.27	2,653
6	3.13	2,558
7	3.12	2,541
8	2.95	2,411
9	2.73	2,248
Highest decile	2.46	2,039

Source: Taub Center.

Data: Central Bureau of Statistics, Expenditure Survey 2014.

Figure 4. Average monthly expenditure required per person to finance a healthy food basket
By household income decile, NIS



Source: Taub Center.

Data: Central Bureau of Statistics, Expenditure Survey 2014.

The healthy food basket expenditure's share of household net monetary income (according to Central Bureau of Statistics definitions, 2014) increases as the number of persons per household rises (Figure 5). For a household of two people, the recommended healthy food basket expenditure represents 14.0 percent of total income; for a three-person household, it represents 19.4 percent; and for a five-person household, food basket expenditure reaches 24.7 percent.

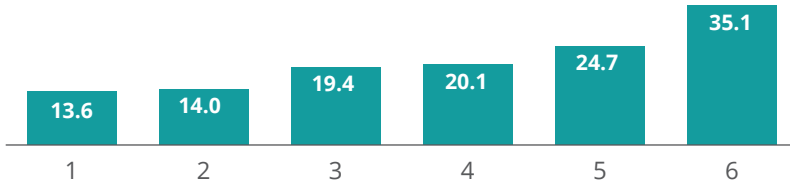
As noted, the different income levels display large differences in the average number of persons per household. For this reason, it is also important to look at the required expenditure share by income quintile (a more useful and accepted breakdown than income decile). The quintile-based calculation paints a picture of large disparities between the lowest and highest quintiles both in terms of the share of income that is required to finance the healthy food basket expenditure and in terms of the gap between the required percentage and the amount actually spent on food purchase.

Based on Central Bureau of Statistics data (2014), an average family in the highest quintile needs to spend 7.2 percent of its income (NIS 2,143) in order to pay for a healthy food basket for all household members, while the actual expenditure is 10.2 percent (Figure 6). In the fourth quintile, the actual percent expenditure is also slightly higher than the percent of expenditure needed to buy a healthy food basket (14.4 percent versus 13.6 percent, respectively).

By contrast, the data for the three lowest quintiles point to lower spending than would be required to finance a healthy food basket. A family in the lowest quintile would need to spend 65 percent of its monthly disposable income (NIS 4,965) to purchase a healthy food basket, but in practice, it spends just 42 percent of its income on food. The amount that families in the second and third quintiles spend on food is also lower than the amount needed to buy a healthy food basket. The gap between the required sum and the actual expenditure decreases as income increases. In the lowest income quintile, the gap is NIS 1,126 per month (23 percent); in the second quintile the gap is NIS 745 (8 percent), and in the third quintile the disparity drops to NIS 360 (less than 3 percent). We conclude that, the probability that households in the lowest quintile would be able to bear the cost of the healthy basket is exceedingly low.

Figure 5. Share of average monthly monetary household income required to finance a healthy food basket

By number of household members, percent

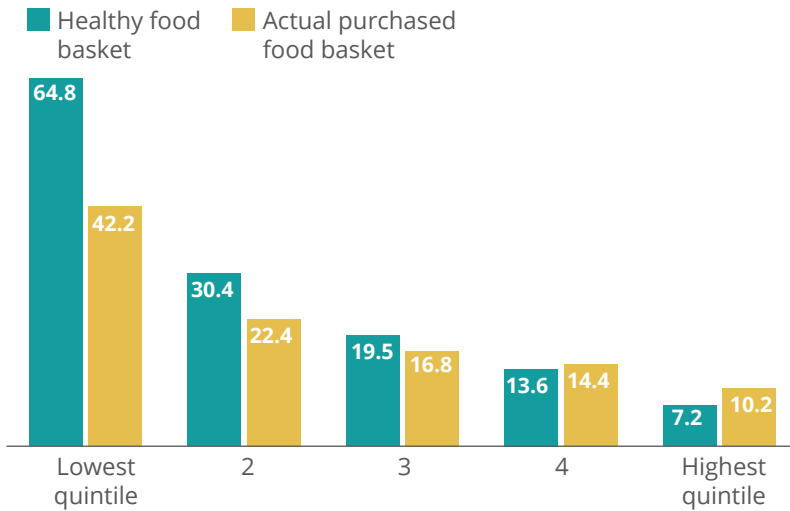


Source: Taub Center.

Data: Central Bureau of Statistics, Expenditure Survey 2014.

Figure 6. Household expenditure on food as a percent of monthly monetary income, 2014

By income quintile



Source: Taub Center.

Data: Central Bureau of Statistics, Expenditure Survey 2014.

Conclusion

This chapter constitutes a first attempt at defining an Israeli basic healthy food basket and analyzing its household-budget implications. In accordance with Ministry of Health recommendations, the basket encompasses the Israeli food pyramid, and is meant to represent foods that, while sufficiently nutritious, are widely accessible in the market.

Calculations based on recommended daily serving numbers indicate a mean monthly basket cost per adult of NIS 844, and a mean monthly cost per child of NIS 737 (in 2015 prices). Given the household compositions of families at different income levels, the basket cost per family is NIS 2,040 per month in the highest decile, and NIS 3,450 per month in the lowest decile.

When comparing the required expenditure for a healthy food basket with actual food expenditures, we find that in the highest income quintiles actual spending is higher than would be necessary to finance a healthy food basket (Quintiles 4 and 5), or lower by a few percentage points (Quintile 3). By contrast, in the two lowest quintiles (especially Quintile 1), actual food expenditure is significantly lower than the recommended sum. It is hard to know whether the gaps are due to preferences for cheaper (and often less healthy) foods, differing priorities, or economic constraints. However, while for the three highest income quintiles purchasing the healthy basket is probably a matter of awareness and preference, for the lowest quintile, buying the basket is not a realistic possibility given prevailing household income limitations and the other required household expenditures. Further study is warranted to determine the reasons for the lowest income quintiles' low levels of food spending. Such research would enable the Israeli government to take the policy measures needed to encourage the country's entire population to adhere to the healthy Mediterranean diet.

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