Factsheet for experts

The NBP model

The Nutritional Balance Points (NBP) model targets healthy adults with predominantly sedentary lifestyles and is designed to assess a lunch meal. Such a meal should provide approximately 700 kilocalories, covering about one third of the recommended daily energy intake. For this assessment, a scoring system was developed that enables a differentiated evaluation of selected nutrient elements. Depending on the amounts contained in the meal, points are assigned, from which the final NBP score is derived.

Nutrient Assessment:

- **Disqualifying nutrient elements (energy, fat, salt, sugar),** which can have negative health effects if consumed in excess, receive between 0 and 10 points. Typically, a very high content of these elements results in 10 points, while a very low content results in 0 points.
- **Qualifying nutrient elements (unsaturated fatty acids, carbohydrates, proteins, fruits/vegetables),** which tend to have positive health effects, can receive a maximum of 5 points.

For both qualifying and disqualifying nutrient elements, a score of 5 points corresponds to the recommended intake for a lunch meal. A detailed overview of the scoring system can be found in the following graphic (Fig. 1).

	Disqualifying nutrient elements						
points	**energy [kcal / meal]**		**fat [% of energy]**	**fat absolutely [g / meal]**	**sugar [% of carbohydrates]**	**sugar absolutely [g / meal]**	**salt [g / meal]**
0	< 420		< 20.0	< 15.56	< 2	< 1.75	< 2.50
1	≥ 420		≥ 20.0	≥ 15.56	≥ 2	≥ 1.75	≥ 2.50
2	≥ 490		≥ 22.5	≥ 17.50	≥ 4	≥ 3.50	≥ 2.67
3	≥ 560		≥ 25.0	≥ 19.44	≥ 6	≥ 5.25	≥ 2.84
4	≥ 630		≥ 27.5	≥ 21.39	≥ 8	≥ 7.00	≥ 3.01
5	**≥ 700**		**≥ 30.0**	**≥ 23.33**	**≥ 10**	**≥ 8.75**	**≥ 3.18**
6	≥ 770	≤ 350	≥ 32.0	≥ 24.89	≥ 12	≥ 10.50	≥ 3.50
7	≥ 840	≤ 280	≥ 34.0	≥ 26.44	≥ 14	≥ 12.25	≥ 3.82
8	≥ 910	≤ 210	≥ 36.0	≥ 28.00	≥ 16	≥ 14.00	≥ 4.13
9	≥ 980	≤ 140	≥ 38.0	≥ 29.56	≥ 18	≥ 15.75	≥ 4.45
10	≥ 1050	≤ 70	≥ 40.0	≥ 31.11	≥ 20	≥ 17.50	≥ 4.77

	Qualifying nutrient elements									
points	**UFA [% of fat]**	**UFA absolutely [g / meal]**	**F/V [g / meal]**	**proteins [% of energy]**		**proteins absolutely [g/meal]**		**carbohydrates [% of energy]**		**carbohydrates absolutely [g/meal]**	
0	< 42	< 9.80	< 108	< 10.0	> 28	< 17.50	> 49.0	< 25	> 80	< 43.75	> 140.00
1	≥ 42	≥ 9.80	≥ 108	≥ 10.0	≤ 28	≥ 17.50	≤ 49.0	≥ 25	≤ 80	≥ 43.75	≤ 140.00
2	≥ 49	≥ 11.43	≥ 126	≥ 10.5	≤ 26	≥ 18.38	≤ 45.5	≥ 30	≤ 75	≥ 52.50	≤ 131.25
3	≥ 56	≥ 13.07	≥ 144	≥ 11.0	≤ 24	≥ 19.25	≤ 42.0	≥ 35	≤ 70	≥ 61.25	≤ 122.50
4	≥ 63	≥ 14.70	≥ 162	≥ 11.5	≤ 22	≥ 20.13	≤ 38.5	≥ 40	≤ 65	≥ 70.00	≤ 113.75
5	**≥ 70**	**≥ 16.33**	**≥ 180**	**≥ 12.0**	**≤ 20**	**≥ 21.00**	**≤ 35.0**	**≥ 45**	**≤ 60**	**≥ 78.75**	**≤ 105.00**

Figure 1: *Point allocation in the NBP model.*
The columns marked in red and green (absolute values based on 700 kcal) are used to calculate the NBP of a meal. UFA: unsaturated fatty acids; F/V: fruits and vegetables.

Calculation of the NBP Score:

To determine the final NBP score of a meal, the points for qualifying and disqualifying nutrient elements are first summed separately. The difference between these sums is then calculated.

NBP = ∑ points for qualifying nutrients – ∑ points for disqualifying nutrients

The resulting NBP value can range from -40 to 20 points. A score of 20 points indicates a high content of qualifying nutrient elements and a low content of disqualifying ones. A score of -40 points, by contrast, reflects a strong predominance of disqualifying nutrient elements.

The NBP value enables classification and evaluation of a meal's nutritional balance. A scale was developed to group meals into three levels of balance. Meals with a positive score are considered balanced. Meals scoring down to -12 points are classified as acceptable. Meals with lower scores are considered unbalanced (Table 1).

Table 1: *Three-level scale for assessing the nutritional balance of meals in the NBP model.*

NBP points	**Three-level scale for assessing the nutritional balance of meals**
0 to 20 NBP	balanced
-1 to -12 EBP	acceptable
-13 to -40 EBP	unbalanced

For communication purposes and finer differentiation, a five-level scale can also be used to assess nutritional balance (Table 2).

Table 2: *Five-level scale for assessing the nutritional balance of meals in the NBP model*

NBP points	**Five-level scale for assessing the nutritional balance of meals**
10 to 20	very balanced
0 to 9	balanced
-1 to -12	acceptable
-13 to -22	unbalanced
-23 to -40	very unbalanced

More information: Müller, Claudia; Berger, Verena, 2018. Der Menü-Nachhaltigkeits-Index: Bewertungsgrundlage und Kommunikationsansätze. In: Teitscheid, Petra; Langen, Nina; Speck, Melanie; Rohn, Holger, Hrsg., Nachhaltig außer Haus essen: von der Idee bis auf den Teller. München: oekom Verlag. S. 226-241. Available: https://doi.org/10.21256/zhaw-3409