**Appendix: The Healthy Stars Algorithm**

The healthy stars algorithm is based on the Guiding Stars algorithm (see: <https://guidingstars.com/what-is-guiding-stars/our-algorithms/>), but differs because some information is not available in our data base (e.g., if the product contains whole grains)

The star points value is initially set to 0.

A product is assigned a number of points based on the nutrition facts label (i.e., nutrition per serving), product ingredients, and product category. Specifically, points are added and removed based on the following calculations:

|  |  |
| --- | --- |
| **Conditional Statement** | **Star Points Modifier** |
| *Trans and Saturated Fats (g)* |  |
| if (trans fat + saturated fat) > 1 & (trans fat + saturated fat) ≤2 | -1 |
| if (trans fat + saturated fat) > 2 & (trans fat + saturated fat) ≤3 | -2 |
| if (trans fat + saturated fat) > 3 | -3 |
| *Sugar (g)* |  |
| if (sugar / calories \* 100) ≤ 0.1 | -1 |
| if (sugar / calories \* 100)≤.25 and (sugar / calories \* 100) >.1 | -2 |
| if (sugar / calories \* 100)≤.40 and (sugar / calories \* 100) >.25 | -3 |
| if (sugar / calories \* 100)>.40 | -11 |
| *Sodium (mg)* |  |
| if sodium ≤ 240 & sodium > 120 | -1 |
| if sodium ≤ 360 & sodium > 240 | -2 |
| if sodium ≤ 600 & sodium > 360 | -3 |
| if sodium > 600 | -11 |
| *Fiber (g)* |  |
| if fiber ≥ 3.75 | +4 |
| if fiber ≥ 2.50 & fiber < 3.75 | +3 |
| if fiber ≥ 1.50 & fiber < 2.50 | +2 |
| if fiber ≥ 1.25 & fiber < 1.50 | +1 |
| *Micronutrients* |  |
| if 2 or more macronutrients are at or above 10% of percent daily values | +3 |
| elseif 1 or more macronutrients are at or above 10% DV or 2 or more  macronutrients are at or above 5% DV | +2 |
| elseif any macronutrient is above 5% DV | +1 |
| *Product Category* |  |
| if the product does not fall in the snack category | +1 |
| if the product is in the produce category | +10 |
| *Ingredients* |  |
| if the number of ingredients < 4 & the product is not in the snack category | +2 |
| if the number of ingredients < 10 & the product is not in the snack  category | +1 |
| if the number of ingredients > 20 | -1 |
| elseif if the number of ingredients > 20 | -2 |

Star points can range from -27 to 9, and are converted to a 0-4 star scale based on the following:

|  |  |
| --- | --- |
| **Conditional Statement** | **Conversion** |
| if star points <0 | 0 |
| if star points > 0 & star points ≤ 2 | 1 |
| if star points > 2 & star points ≤ 4 | 2 |
| if star points > 5 | 3 |