Nutrition

The Basic Nutrition, Sports Nutrition and Sports Supplements documents have been prepared to inform you about how to prepare a nutrition plan according to the most recent scientific insights. This document is about the bottom layer of the Nutrition pyramid and provides insight into Basic Nutrition. As the word suggests, the bottom layer forms the foundation on which an athlete can build. Without a good basis you cannot get the most out of Sports Nutrition (middle layer) or Sports Supplements (top layer). Sports Nutrition only becomes relevant if an athlete, despite a balanced diet, cannot ingest sufficient nutrients and needs supplementation. See the "Sports nutrition" document for more information. If the Sports Nutrition is also optimized, Sports Supplements could (further) promote sports performance. For more information on this subject, see the "Sports Supplements" document.

1. Basic Nutrition
The bottom and most important layer of the Nutrition pyramid consists of a balanced diet made up of macronutrients (carbohydrates, proteins and fats) and micronutrients (vitamins, minerals and phytonutrients (antioxidants and bioactive substances; we will not discuss this further)). Nutrition must be tailored to the needs of the individual. A diet (Van Dale dictionary: rule of life regarding food and drink) is therefore unique for everyone. The most important elements are that a diet contains all the nutrients you need, that you can digest it, that it suits you and that you can maintain it. The macronutrients and micronutrients are important for an optimal...
nutritional status. Excluding food groups or products from your diet can lead to a poor nutritional status, which can lead to illness. By following a balanced diet, you provide your body with the nutrients to keep your health optimal.

2. Energy
Nutrition provides the energy a person needs to function and perform. This energy is expressed in kilocalories (kcal) and is mainly supplied by the macronutrients: carbohydrates, fats and proteins. In addition, alcohol and fiber also provide energy (Health Council of the Netherlands, 2001).
1 kcal is the amount of energy required to heat 1 kg of water from 15 °C to 16 °C at sea level (Middleton, Watts, Lark, Milne, & Polya, 2019).

The name calorie is derived from the Latin word *calor* (heat). The amount of energy from foods is usually expressed in kilocalories (kcal), while in science the term joule is often used (the international unit of energy).

• 1 calorie = 4.2 joule
• 1 kilocalorie = 4.2 kilojoules

1 joule = 0.2 calories
1 kilojoule = 0.2 kilocalories

<table>
<thead>
<tr>
<th>Macronutrients</th>
<th>Kcal per gram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbohydrates</td>
<td>4</td>
</tr>
<tr>
<td>Protein</td>
<td>4</td>
</tr>
<tr>
<td>Fats</td>
<td>9</td>
</tr>
<tr>
<td>Alcohol</td>
<td>7</td>
</tr>
<tr>
<td>Fibre</td>
<td>8</td>
</tr>
</tbody>
</table>

The amount of energy that the macronutrients provide, varies:

Table 1: Amount of kcal per gram of carbohydrates, fat, protein, alcohol and fiber (Health Council of the Netherlands, 2001)

Energy consumption
The energy from food is used by the body for the following:

• Basal metabolism (BMR): the energy requirement over 24 hours for maintaining basic body functions (breathing, blood pressure regulation, etc.) while you are awake.
  o The BMR is normally measured under strict conditions and in a state of fasting (so that the digestive system is inactive)
  o The BMR can also be estimated by means of a calculation. Examples of commonly used formulas are Harris & Benedict (1984) and Schofield (Black, Coward, Cole, & Prentice, 1996) (FAO, 2004)
• Rest metabolism (RMR): the amount of energy over 24 hours without activities, but not in a state of fasting
The RMR ≈ 10% higher than the BMR due to the thermal effect of food (TEF = Thermic Effect of Food) that is included in the estimate.

- Physical activity: the amount of energy that you consume through exercise / exercise.
  - Energy consumption through movement can be estimated by choosing a Physical Activity Level (PAL value) that is representative of your lifestyle (Scrimshaw, Waterlow, & Schürch, 1994) (see Table 2).

At the Radboud Sports Center you can "measure" your body composition by means of a bio-impedance analyzer that gives an indication of your muscle and fat mass. The body composition can also be calculated with a skin fold measurement, DEXA scan, Bodpod or MRI. Due to the high costs of the last three methods, a bio-impedance/skin fold measurement is used more often in practice. Both of these are reliable if the measurement takes place under the right conditions (Rutherford, Diemer, & Scott, 2011) (Ulbricht, Neves, Ripka, & Romaneli, 2012). It is important to know that measurement results from the bio-impedance analyzer cannot be compared with the skin fold measurement. A choice must be made between the two for measuring progression (Hetzler, Kimura, Haines, Labotz, & Smith, 2006). On the print-out of the bio-impedance measurement, besides a description of the body composition, an estimate of the BMR is given.

Example: A 24-year-old male with a height of 1.80 m, who weighs 80 kg and works out three times a week has, based on the Harris & Benedict formula \(88.362 + (13.397 \times 80) + (4.799 \times 180) - (5.677 \times 24) = 1887.694\), a basal metabolism of approximately 1888 kcal. This young man exercises 3 times a week, which falls in the category of light active or average active. The 1888 kcal should be multiplied by a number between 1.7 (recreational athlete, not really intensive) and 1.9 - 2.1 (recreational athlete, intensive training). The number of calories that he should consume therefore lies, depending on his other daily activities, between 3210 and 3587-3965 calories to maintain a stable weight.

Table 2: PAL values categorized by activity level (Health Council of the Netherlands, 2001) (Shetty, 2005)

<table>
<thead>
<tr>
<th>Lifestyle</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair bound/bed-bound</td>
<td>1.2</td>
</tr>
<tr>
<td>Seated work with no option of moving around and little or no strenuous leisure activity</td>
<td>1.4 - 1.5</td>
</tr>
<tr>
<td>Seated work alternated with discretion and requirement to move around but little or no strenuous leisure activity</td>
<td>1.6 - 1.7</td>
</tr>
<tr>
<td>Standing work</td>
<td>1.8 - 1.9</td>
</tr>
<tr>
<td>Significant amounts of sport or strenuous leisure activity (30-60 minutes 4-5 times per week)</td>
<td>+0.3</td>
</tr>
<tr>
<td>Strenuous work or highly active leisure time</td>
<td>2.0 - 2.4</td>
</tr>
<tr>
<td>highest reported PAL</td>
<td>±5.0</td>
</tr>
</tbody>
</table>
When your energy intake is equal to your consumption, you are in energy balance and your body weight does not change. If you ingest more energy than you expend, you will gain weight. If you consume less energy than you expend, you will lose weight.

- Energy intake in accordance with energy consumption → energy balance (stable weight)
- Energy intake greater than energy consumption → energy surplus (weight increases)
- Energy intake smaller than energy consumption → energy deficit (losing weight)

3. Carbohydrates
Carbohydrates (CH) consist of sugar compounds and actually the word “carbohydrates” is the collective name for sugar compounds. There are roughly two types of CH:
- Fast (simple) CH: these consist of 1 or 2 sugar compounds (mono-, and disaccharides)
- Slow (complex) CH: this group consists of more than 2 sugar compounds (polysaccharides)

Table 3: Types of carbohydrates classified by the number of sugar compounds (Whitney & Rolfes, Understanding Nutrition, 2013)

<table>
<thead>
<tr>
<th>Carbohydrate</th>
<th>Product</th>
<th>Number of sugar compounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fructose</td>
<td>Fruit</td>
<td>Monosaccharide (1)</td>
</tr>
<tr>
<td>Glucose</td>
<td>Fruit</td>
<td></td>
</tr>
<tr>
<td>Lactose (glucose + galactose)</td>
<td>Dairy (e.g. milk)</td>
<td>Disaccharide (2)</td>
</tr>
<tr>
<td>Sucrose (glucose + fructose)</td>
<td>Common sugar</td>
<td></td>
</tr>
<tr>
<td>Maltose (glucose + glucose)</td>
<td>Malt syrup</td>
<td></td>
</tr>
<tr>
<td>Amylopectin + amylose (plant-based)</td>
<td>Starch (potatoes, rice, bread)</td>
<td>Polysaccharide (≥2)</td>
</tr>
<tr>
<td>Glycogen (animal-based)</td>
<td>Stored energy in your muscles and liver</td>
<td></td>
</tr>
</tbody>
</table>

Releasing energy from slow/complex CH costs the body more time and effort, so that the energy is (stably) released over a longer period of time (Health Counsel of The Netherlands, 2006). Fast/simple CH often hardly contain any fibers and provide energy quickly and for a short amount of time. The term fast/simple CH usually stands for products such as candy and soda/lemonade. Those products provide energy, but no/hardly any vitamins and minerals (Whitney & Rolfes, Understanding Nutrition, 2013). Our body needs vitamins and minerals to, amongst other things, break down the food we eat into the smallest particles in order to be absorbed. Fast CH are therefore sometimes referred to as "empty energy". Alcohol is often also classified as empty energy, because...
it provides CH, but no micronutrients or fiber. In fact, alcohol contains toxins that are given priority (especially on fats) for processing in the body (Whitney & Rolfes, Understanding Nutrition, 2013).

**Adenosine triphosphate (ATP)**

CH are the most efficient energy source for the body and are therefore used during exercise. As soon as you consume CH, they are partially broken down in the mouth with the help of enzymes (amylase) (Whitney & Rolfes, Understanding Nutrition, 2013). Subsequently, a biochemical process (the citric acid cycle) takes place in the body in which CH are converted into the "end product" glucose. The energy released during the breakdown of glucose is stored in ATP (adenosine triphosphate). ATP is the energy-supplying component that sets our body in motion.

**Glycemic Index**

The glycemic index (GI) is a much-discussed method for determining the effect of CH on blood sugar levels. The blood sugar level indicates how much sugar is released into the blood after consuming a product with CH. The GI has been created for people with diabetes. The advice for patients with diabetes was to consume products with a low GI in order to better regulate their insulin balance (Jenkins, et al., 1983). In addition to the GI, the glycemic load (GL) has been developed. The GL gives a correction of the GI for the concrete quantity of a certain consumed product. The GI can be influenced by various factors, for example by: the composition of the meal, the method of preparation and the duration of the preparation, the size of the product and the temperature of the product (Diabetes Fonds, n.d.). For example, a glass of warm milk has a higher GI than a glass of cold milk. And if you take a slice of bread (high GI score) and add a butter (low GI score), the GI/GL will be lower than if you were eating a mere slice of bread (Flint, et al., 2004). This while the macronutrient ratios and the number of kcal of these products clearly differ from each other.

In addition to the factors just described, the GI can vary 20-25% between people, under standardized circumstances (Baynes & Dominiczak, 2014). That is why it is not a reliable method for choosing food products. People eat combined meals, so the GI/GL is not a good way to exclude products.

In conclusion: the glycemic index/load can be a useful tool to measure the blood sugar response after consuming a product that consists of CH only. Because we (almost) always consume composite meals, the GI cannot be used in daily practice.

### 4. Fats

Fat is an energy source that can serve as fuel. If you eat too much, your body will store the surplus in the form of body fat. Body fat serves as an energy supply and protects your organs and body against the cold, but it has more functions in the body. For example, fat is necessary for the production of hormones, it is part of the cell, it lubricates the joints and it is necessary for the absorption of fat-soluble vitamins A, D, E and K (Baynes & Dominiczak, 2014).
It is a common misconception that eating fatty foods will make you fat. You can indeed get fat by eating too much fat. This does not necessarily have to do with the fat component, but with the total amount of calories that you ingest when you consume a lot of fatty products. A gram of fat contains 9 kcal, which provides more than double the amount of energy per gram in relation to CH and proteins.

As already mentioned in “3. Carbohydrates”, the body only knows glucose as a direct component that can be converted into ATP (energy-supplying component for the body). Fat in itself is also not a directly usable energy source for the body, but must be broken down into components that in turn can be biochemically converted into energy (via the citric acid cycle) (Baynes & Dominiczak, 2014).

Types of fats
Fat can be divided into 3 categories:
- Unsaturated fat (see table 5 for examples)
  Liquid / soft fat (liquid at room temperature)
- Saturated fat (see table 5 for examples)
  Hard fat (solid at room temperature)
- Trans fats

Two important (essential) unsaturated fatty acids are omega-3 and omega-6 (Whitney & Rolfes, 2013). Omega-3 fatty acids have an anti-inflammatory effect and an important function in brain development and vision in unborn babies. The best known are: docosahexaenoic acid (DHA), eicosapentaenoic acid (EPA) and alpha-linolenic acid (ALA). Linoleic acid is the best-known omega-6 fatty acid and is known as an inflammatory agent. Both types of omega fatty acids have a role in the immune system (cleaning up intruders/germs).

Regarding saturated fat, evidence is mounting that they are not that unhealthy (Harcombe, Baker, & Davies, 2017) (Malhotra, Redberg, & Meier, 2017). Cardiovascular diseases are said to be caused by chronic inflammatory reactions and only by addressing the cause of these inflammations, the risk of cardiovascular disease could be reduced. Nevertheless, the Dutch Health Council’s advice is still to replace solid fats with soft fats and vegetable oils (Health Council of the Netherlands, 2015).

Trans fats occur naturally in certain animal products (cheese, butter and beef and lamb) or they arise during the industrial partial hardening of fats (MVO, z.d.). The current dietary guidelines call for the use of saturated fat and trans fat to be economical because trans fats are harmful to the heart and blood vessels due to their molecular form (Health Council of the Netherlands, 2015). Nowadays, trans fat is found in only very small quantities in pre-packaged products due to the use of new technologies and the use of other raw materials. 95-99% of the Dutch population nowadays only ingest ≤1% of trans fatty acids, no longer making it a public health problem.
Table 1: Saturated versus unsaturated fats (Hartstichting, n.d.)

| Type of fat per product | Margarine (tub) | Halvarine | Liquid margarine | Liquid baking and roasting products | Almost all types of oil | Fat fish | Nuts | Seeds | Avocado | Butter | Margarine (stick) | Coconut fat and coconut oil | Full fat cheese | Full fat dairy products | Fat meat | Fat meat products and sausages | Cookies and biscuits | Pastry | Snacks | Palm oil |

5. Protein

Protein is a building material, but can also be used as fuel, although it is not an efficient form of fuel. The human body consists for a large part of proteins; think of muscle cells, hair and nails (Whitney & Rolfes, Understanding Nutrition, 2013). In addition, proteins have an important function as enzymes and in some cases as a precursor to neurotransmitters (transfer of nerve impulses between neurons).

Proteins consist of chains of amino acids called peptides (Whitney & Rolfes, Understanding Nutrition, 2013). Amino acids are distinguished into essential amino acids (the body does not make these itself; they have to be ingested through food) and non-essential amino acids (the body makes these amino acids itself). There are also semi-essential amino acids, also called conditionally-essential amino acids. Normally the body makes the semi-essential amino acids itself, but sometimes that is not possible. This can be the case if not enough of a certain essential amino acid is obtained from the diet, or if there is a condition or illness that makes the body (temporarily) unable to make the required conversion. In that case it is necessary to supplement the conditionally-essential amino acid in question via food/supplementation. Glutamine is the most well-known...
conditionally-essential amino acid, but other examples are glycine, histidine, arginine, tyrosine and cysteine (Baynes & Dominiczak, 2014).

**Protein requirement**
For adults, the advice is to consume 0.8 grams of protein per kilogram of body weight daily to stay healthy (EFSA, z.d.). The advised dosage is higher for athletes (strength and endurance athletes), namely between 1.2 and 2.0 (Morton, et al., 2018) (International Society of Sports Nutrition, 2017) (Academy of Nutrition and Dietetics, Dietitians of Canada & The American College of Sports Medicine, 2016) (Phillips & Van Loon, 2011). For strength athletes, protein is necessary for the recovery, maintenance and/or increase of muscle mass (Jeukendrup & Gleeson, 2018). Protein is also important for endurance athletes to aid in recovery, maintenance and/or build-up of muscle mass, but also for the build-up and construction of more and larger mitochondria and blood vessels. See the document "Sports nutrition" for more information about the protein requirements of athletes.

**Animal versus vegetable protein sources**
Proteins can be derived from animals and plants. Animal based protein is said to be of higher quality compared to plant-based proteins. The reason is that single plant-protein sources do not have all the necessary amino acids (mainly lysine, methionine and leucine) to a sufficient degree for building muscle (Kniskern & Johnston, 2010) (Gorissen, et al., 2018). In theory, making different plant-based combinations could complement the amino acid profiles of the different products (Van Vliet, Burd, & Van Loon, 2015) (Gorissen, et al., 2018). This includes the well-known combination of grains with legumes (Berrazaga, Micard, Gueugneau, & Walrand, 2019). For vegetarians and vegans, the advice is to consume 20% and 30% more protein than the guidelines for non-vegetarians and non-vegans.

6. **Dutch Dietary Guidelines 2015**
Based on scientific literature, the Dutch Health Council has concluded which foods and dietary patterns can lead to health gains (Health Council of the Netherlands, 2015). See Appendix 1 for an overview of the 2015 Dutch Dietary Guidelines.

7. **Applying the theory: calculate your requirements**

**Step 1: Basal metabolism**
Calculate what your basal metabolic rate is with the use of, for example, the Harris & Benedict formula:
If you did a body composition measurement at the Radboud Sports Centre, you can find an estimate of your basal metabolism on the printout. Note: this number still needs to be multiplied by the PAL value, see step 2.
Male: \[88.362 + (13,397 \times W) + (4,799 \times H) - (5,677 \times A)\]

Female: \[447,593 + (9,247 \times W) + (3,098 \times H) - (4,33 \times A)\]

\(W = \) body weight in kg  
\(H = \) height in cm  
\(A = \) age in years

**Harris & Benedict, 1984**

**Step 2: Energy requirement (kcal)**
Multiply your basal metabolic rate by the PAL value that fits you the most. This gives you an estimate of your energy expenditure in 1 day (24 hours). Use Table 5.

**Table 2: PAL values categorized by activity level** (Health Council of the Netherlands, 2001) (Shetty, 2005)

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<td>1.4 - 1.5</td>
</tr>
<tr>
<td>leisure activity</td>
<td></td>
</tr>
<tr>
<td>Seated work alternated with discretion and requirement to move around</td>
<td>1.6 - 1.7</td>
</tr>
<tr>
<td>but little or no strenuous leisure activity</td>
<td></td>
</tr>
<tr>
<td>Standing work</td>
<td>1.8 - 1.9</td>
</tr>
<tr>
<td>Significant amounts of sport or strenuous leisure activity (30-60 minutes</td>
<td>+0.3</td>
</tr>
<tr>
<td>4-5 times per week)</td>
<td></td>
</tr>
<tr>
<td>Strenuous work or highly active leisure time</td>
<td>2.0 - 2.4</td>
</tr>
<tr>
<td>highest reported PAL</td>
<td>±5.0</td>
</tr>
</tbody>
</table>

**Step 3: Gain/lose weight?**
If you want to gain weight you must eat (≤20%) more than you calculated in step 2. If you want to lose weight you need to consume (≤20%) less than the number of kcal that you calculated in step 2. In any case, do not reduce or increase your energy intake too drastically, because it can have an undesirable effect; you could gain too much fat mass, respectively lose too much muscle mass.

You can calculate your current intake by keeping track of what you consume for a few days to 1 week, for example with a food diary. Nowadays there are also handy apps with which you can keep track of your intake, such as MyFitnessPal and FatSecret. Check the macronutrients in the app when you select a product. Often a database is used that can be augmented by users of the app. The users do not always enter the macronutrients correctly. If the data stated in the app does not match the nutritional values on your pre-packaged product, the reliability of the calculation will decrease.

To achieve a specific goal (for example to gain weight (muscle mass) or lose weight (fat mass), it may be wise to make an appointment with Anja de Waal (nutrition consultant at the RSC) or Annelies van den Hoven (sports dietician, who is available at the RSC on Mondays).
Step 4: Protein requirement
For endurance athletes and strength athletes it is recommended to consume between 1.2-2.0 grams of protein per kilogram of body weight daily.
Note: beginners usually have a higher protein requirement than advanced athletes, because their bodies are less efficient at synthesizing protein.
- Choose the amount of protein / kg of body weight that suits you within the range
  - As a vegetarian/vegan you need to consume more protein (+20% or +30% respectively).
- Multiply the chosen number of grams of protein/kg by 4 to calculate the number of kcal from protein intake (1 g protein = 4 kcal)
- In energy percentages, that will amount to 15-35% (en% = energy percent) of the recommended daily allowance (RDA). Note: some nutritional apps enquire your protein requirement in en%, but in sports dietetics the protein requirement is not calculated as a percentage, but only in grams.

Step 5: Fats
1 gram of fat contains 9 kcal. The Dutch Health Council advices to get between 20 and 40% of your total energy requirement from fats on a daily basis. For overweight people it ranges between 20 and 35%.

- Energy percentages¹: 20-40% of RDA

Step 6: Carbohydrates
1 gram of carbohydrates contains 4 kcal.

- Energy percent1: 40-70% of RDA

Calculation example
Male, 24 years, 80 kilograms, 180 cm, sports 3 times a week (strength sports), student.

Step 1
Use the formula for the BMR for men: $88,362 + (13,397 \times 80) + (4,799 \times 180) - (5,677 \times 24) = 1887,694$

¹ The range in energy percentages is rather broad. The advice is to first calculate your protein requirement. How much carbohydrates and fats you need depend on whether your exercise, (and if so,) the kind of sports performance you deliver. An endurance athlete (depending on the level) would do well to consume relatively more carbohydrates; for a strength athlete the emphasis lies more on proteins. In addition, the ratio between carbohydrates and fats also depends on your personal preference and what you feel comfortable with. The document "Sports nutrition" explains the advice about carbohydrate and protein intake specifically for endurance and strength athletes.
rounded up: 1888 kcal.

**Step 2**
According to Table 2, the BMR in this example must be multiplied by a PAL of 1.7; 1888 * 1.7 = 3210 kcal. This is the total number of calories that this active student should consume daily to maintain his weight.

**Step 3**
Assuming he wants to gain muscle mass, he has to eat more than maintenance to stay in energy balance. Let us assume that he opts for a 10% intake increase to prevent his fat mass from increasing disproportionally. His need then amounts to 3210 + 321 kcal ≈ 3511 kcal.

**Step 4**
For a person of 80 kilograms, the advice would be to consume between 64-160 g of protein (min-max range = 0.8-2.0 g per kilo body weight).
→ 1,6 * 80 kg = 128 g * 4 = 512 kcal

**Step 5**
30% of 3210 kcal = 963 kcal. If you divide this number by 9 (the number of calories in 1 gram of fat), you get the number of grams of fat that he can consume per day: 963/9 = 107 g.

**Step 6**
To calculate the number of grams of KH that he can consume during a day, the kcal calculated in steps 4 & 5 can be deducted from the total number of kcal: 3511 - (512 + 963) = 2036 kcal. If you divide this number by 4 (the number of kcal per gram of carbohydrates), it results in the number of grams of carbohydrates that he may consume: 2036/4 ≈ 509 g.

<table>
<thead>
<tr>
<th>Kcal</th>
<th>Percentage of total energy requirement</th>
<th>Gram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total amount of kcal</td>
<td>3510</td>
<td>100%</td>
</tr>
<tr>
<td>Protein</td>
<td>512</td>
<td>15%</td>
</tr>
<tr>
<td>Fats</td>
<td>963</td>
<td>27%</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>2036</td>
<td>58%</td>
</tr>
</tbody>
</table>

Estimation of macronutrient requirement based on example.

Note: The results of the calculations should not be interpreted too rigidly, since they are just an indication. By
actually applying it, it will become clear whether you are on the right track or whether you need to adjust your nutrition plan.
Bibliography


Malhotra, A., Redberg, R. F., & Meier, P. (2017). Saturated fat does not clog the arteries: coronary heart disease is a chronic inflammatory condition, the risk of which can be effectively reduced from healthy lifestyle interventions. *British Journal of Sports Medicine, 51*(15), 1111-1112. doi:10.1136/bjsports-2016-097285


Appendix 1: Dutch Dietary Guidelines 2015

<table>
<thead>
<tr>
<th>Dutch Dietary Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Eat according to a more vegetable and less animal-based diet in accordance with the guidelines below</td>
</tr>
<tr>
<td>• Eat at least 200 grams of vegetables and at least 200 grams of fruit on a daily basis</td>
</tr>
<tr>
<td>• Eat at least 90 grams of brown bread, whole-wheat bread or other whole-wheat products on a daily basis</td>
</tr>
<tr>
<td>• Eat legumes on a weekly basis</td>
</tr>
<tr>
<td>• Eat at least 15 grams of unsalted nuts on a daily basis</td>
</tr>
<tr>
<td>• Take a few servings of dairy per day, including milk or yogurt</td>
</tr>
<tr>
<td>• Eat fish once a week, preferably fatty fish</td>
</tr>
<tr>
<td>• Drink three cups of tea on a daily basis</td>
</tr>
<tr>
<td>• Replace refined grain products with whole-grain products</td>
</tr>
<tr>
<td>• Replace butter, hard margarine and cooking and frying fats with soft margarine, liquid cooking and frying fats and vegetable oils</td>
</tr>
<tr>
<td>• Replace unfiltered with filtered coffee</td>
</tr>
<tr>
<td>• Limit the consumption of red meat and especially processed meat</td>
</tr>
<tr>
<td>• Drink as few sugary drinks as possible</td>
</tr>
<tr>
<td>• Do not drink alcohol or at least no more than one glass per day</td>
</tr>
<tr>
<td>• Limit the intake of table salt to a maximum of 6 grams per day</td>
</tr>
<tr>
<td>• The use of nutrient supplements is not necessary, except for people who belong to a specific group for which a supplementation recommendation applies</td>
</tr>
</tbody>
</table>

(Health Council of the Netherlands, 2015)